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A New Species and Two New Records of Pachylaelaps Berlese, 1888 from Taiwan (Pachylaelapidae, Mesostigmata) 【Scientific note】

臺灣厚厲蟎屬一新種和二新記錄種 (蜱蟎亞綱：中氣門目：厚厲蟎科) 【科學短訊】

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Abstract

A new species, *Pachylaelaps tsengyihsiungi* sp. nov., and two newly recorded species, *P. squamosus* Koroleva, 1977 and *P. magnus* Halbert, 1915, were collected from soil samples in Taiwan. Pachylaelapidae is recorded in Taiwan for the first time.

摘要

記述臺灣厚厲蟎屬 *Pachylaelaps* Berlese, 1888 一新種和二新記錄種。新種為曾氏厚厲蟎 *Pachylaelaps tsengyihsiungi* sp. nov.。新記錄種為鱗片厚厲蟎 *Pachylaelaps squamosus* Koroleva, 1977 及巨大厚厲蟎 *Pachylaelaps magnus* Halbert, 1915。此為台灣首度報導厚厲蟎科。

Key words: Pachylaelapidae, *Pachylaelaps*, new species, new record, Taiwan

關鍵詞: 厚厲蟎科、厚厲蟎屬、新種、新記錄種、臺灣。

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A New Species and Two New Records of *Pachylaelaps* Berlese, 1888 from Taiwan (Pachylaelapidae, Mesostigmata)

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ABSTRACT

A new species, *Pachylaelaps tsengyihsiungi* sp. nov., and two newly recorded species, *P. squamosus* Koroleva, 1977 and *P. magnus* Halbert, 1915, were collected from soil samples in Taiwan. Pachylaelapidae is recorded in Taiwan for the first time.

Key words: Pachylaelapidae, *Pachylaelaps*, new species, new record, Taiwan

After having worked for years on agricultural mites, the authors realized the importance of the predators that inhabit the soil, since many insect and mite pests of crops spend part of their life in the soil. The mite fauna of the soil was therefore studied. Soil samples with leaf litters were taken from various agricultural lands and montane areas in Taiwan. Many gamasid mites were obtained from these samples, including Ameroseiidae, Pachylaelapidae, Podocinidae, and Zerconidae. Slide specimens of these mite families were sent to the first author for identification of the species. This report includes 3 species in the genus of *Pachylaelaps* Berlese, 1888, one new to science and two new to Taiwan, that belongs to the family Pachylaelapidae.

Measurements are given in micrometers (μm), and provided as range, with average in parentheses.

曾氏厚厲蟎 *Pachylaelaps tsengyihsiungi* sp. nov. (Figs. 1-9)

Female (Figs. 1-5)

Idiosoma yellow, oval, length 645-667 (652), width 462-473 (466). Dorsal shield covers entire dorsum, with 30 pairs of simple setae, i1, z1, and J5 shorter than other setae. Sternal shield coalesced with metasternal shield, length in middle 183-194 (186), width 108 at level of coxae II, with 4 pairs of setae, posterior margin deeply concave, anterior with an arch line behind st 1. Genitoventral shield 204-226 (215) long and 237 wide, with 2 pairs of

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setae. Anal shield 65-75 (72) long and 108-129 (122) wide, with 3 perianal setae, all longer than anus, adanal setae situated before level of middle of anus. Peritrematal shield fused with exopodal shield, posterior end protruding, posterior corner connected with genitoventral shield, anterior end of peritreme reaching beyond coxa I. One pair of metapodal shields in short rod shape. Opisthosoma with about 10 pairs of ventral setae. Tectum narrow and long, distal with long comb teeth, basal lateral margin serrated. Corniculus triangular. Hypostomal setae simple, anterior and internal ones long, external and posterior ones short. Tarsus II with a stout spine.

Male (Figs. 6-9)

Idiosoma 645-667 (656) long, 387-398 (392) wide. Dorsum as in female. Holovenral shield 495-527 (511) long, 290-323 (306) wide at level of posterior margin of coxae IV. Sternogenital area with 4 pairs of setae, ventroanal area with 4 pairs of ventral setae and 3 perianal setae. Ventral integument with 4 pairs of setae. Spermatodactyl ribbon like. Corniculus horn-like. Femur II, genu II, and tibia II each with spur, with a point process on tip of spur. Tarsus II with two stout spines. Peritreme, perianal setae, tectum and hypostomal setae as female.

Material examined

Holotype ♀ (HAL096A005) and paratypes 2♀ (HAL096A001, HAL096A002) 2♂ (HAL096A003, HAL096A004), ILAN: Datung 大同, Taipin Shan 太平山, Mauhsing 茂興, 15-XI-2007, C. C. Ho, soil. Types are deposited in the mite collection of the National Museum of Natural Science, Taichung, Taiwan.

Remarks

The new species is similar to *Pachylaelaps ishizuchiensis* Ishikawa, 1977 in having short dorsal setae, tectum with long teeth, and adult male with one spur on tarsus II. It differs in having the lateral side of anal shield of female

slightly convex, tarsus II long, spermatodactyl of male long and narrow, whereas in *P. ishizuchiensis* the lateral side of the anal shield of female is concave, tarsus II short, and spermatodactyl of male short.

Etymology

The new species is named after the famous Taiwan acarologist Yi-Hsiung Tseng in honor of his contributions to the acarological studies of Taiwan.

鱗片厚厲蟎 *Pachylaelaps squamosus* Koroleva, 1977

Material examined

TAOYUAN: Yangmaei 楊梅, Guanting Organic Farm 冠庭有機農場, 4 ♀ 6♂ 2 deutonymphs, 24-X-2001, ex *Spinacia oleracea* plantation soil; Chungli 中壢, Lungkang 龍崗, Fulung Farm 福隆農場, 4 ♀, 25-X-2001, ex *Brassica pekinensis* plantation soil; Dashi 大溪, Chuehtzu 缺仔, 1 ♀, 26-X-2001, ex *Allium odorum* plantation soil. MIAOLI: Nanzhuong 南庄, Xiantienhu 向天湖, 1♀, 5-XII-2004, ex yew plantation soil. TAICHUNG: Wufeng 霧峰, Taiwan Agricultural Research Institute (TARI) 農業試驗所, experimental farm, 2 ♀, 4-XI-1987, ex soil; 7 ♀ 8♂, 26-II-1988; 2 ♀ 1♂, 26-IV-1988; 1♂, 28-XI-2000; 1♂, 20-III-2001, other data same as above; Hoping 和平, Nanshi 南勢, 1♀, 23-III-2004, ex soil; Hoping, Fusoushan Farm 福壽山農場, 1♂, 22-IX-2004, ex apple plantation soil; Hoping, Wuling 武陵, Taoshan Waterfall 桃山瀑布, 1 ♀ 1♂, 30-XI-2006, ex soil around roots of *Cunninghamia lanceolata*. NANTOU: Lugu 鹿谷, Hsitou Forest Recreation Area 溪頭森林遊樂區, 2 ♀ 4♂, 19-IX-2004, , ex yew plantation soil and red cypress plantation soil; Lugu, Yutsi 魚池, Sueiseshan 水社山, 1 ♀, 7-XI-2004, ex *Phyllostachys pubwscens* plantation soil; Hsinyi 信義, Tatajia 塔塔加, Gigantic hemlock fir 大鐵杉, 3 ♀ 2♂, 10-XII-2004, ex soil in plantation of mixing *Tsuga* sp. and *Yushania niitakayamensis*; Hsinyi, Tatajia, Nansi forest road 楠溪林道,

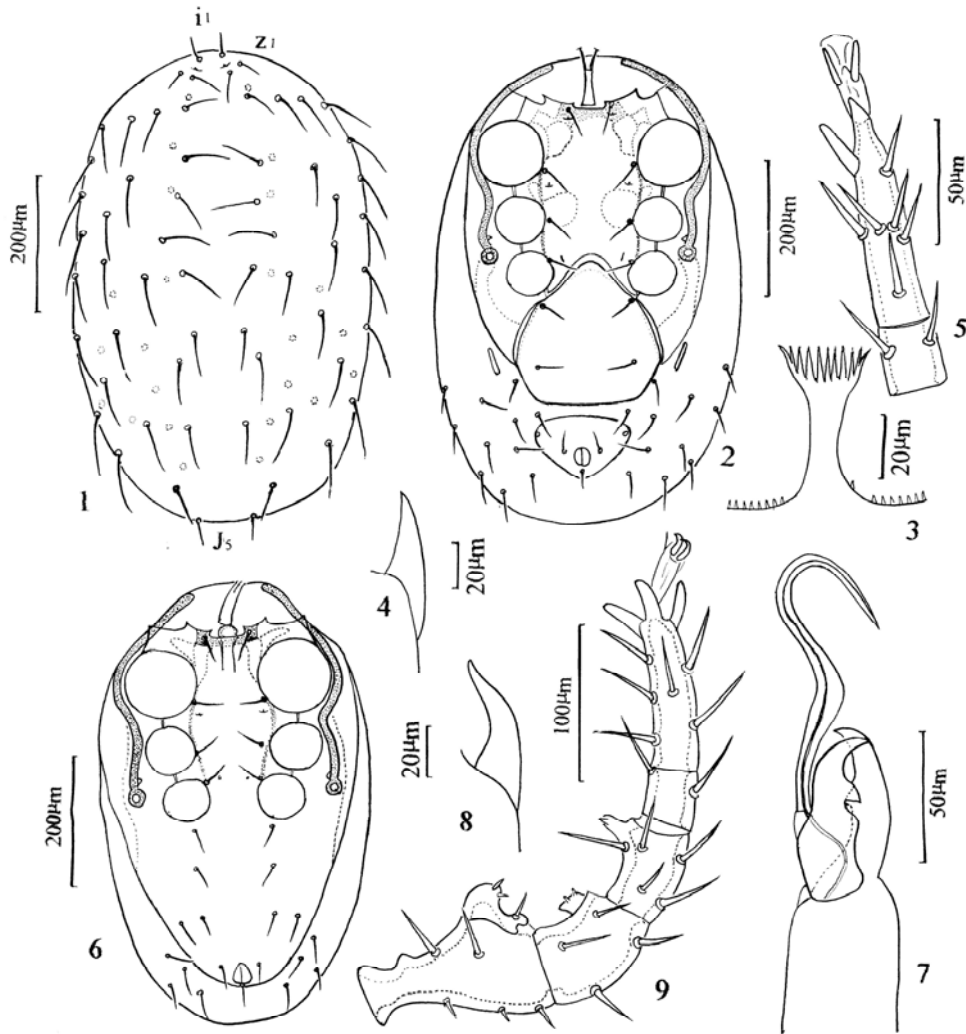


Fig. 1-9. 曾氏厚厲蟎 *Pachylaelaps tsengyihsiungi* sp. nov. Adult female (1-5): 1. dorsal view, 2. ventral view, 3. tectum, 4. corniculus, 5. tarsus II, Adult male (6-9): 6. ventral view, 7. chelicera with spermatodactyl, 8. corniculus, 9. leg II, femur to tarsus.

2 ♀ 1 ♂ 1 deutonymph, 6-I-2005, ex *Pinus taiwanensis* plantation soil and *Prunus takasagomontana* plantation soil; 2 ♀, 8-III-2005, ex *Biotae* sp. plantation soil; Hsinyi, Tatajia, Linjih old pass 麟趾古道, 1 ♂, 7-I-2005, 1 ♀ 1 deutonymph, 9-III-2005, ex soil in plantation of mixing *Pinus taiwanensis*, *Yushania niitakayamensis* and grass; Hsinyi, Tatajia, Lulin pass, 1 deutonymph, 7-III-2005, ex *Yushania*

niitakayamensis plantation soil; 1 ♀, 6-VI-2005, ex soil in plantation of mixing *Yushania niitakayamensis* and *Pinus taiwanensis*; Hsinyi, Tatajia, Yushan forest road 玉山林道, 3 ♀ 1 ♂, 7-III-2005, ex *Rhododendron* sp. plantation soil. CHIAI: Taipao 太保, Chiatai Industria District 嘉太工業區, 1 ♀, 14-VIII-2001, ex *Saccharum sinensis* plantation soil; Potzu 朴子, Kaoshihtan 考試潭, 1 ♀, 7-V-2002, ex soil;

Alishan 阿里山, Dadonshan 大凍山, 2 ♀ 3 ♂
1 deutonymph, 3-X-2004, ex yew
plantation soil. TAINAN: Peimen 北門, 11
♀ 5♂, 10-IV-2002, ex *Sorghum nitidum*
plantation soil; Shanhua 善化, 1♀ 2♂,
10-IV-2002, ex *Carica papaya* plantation
soil; Jiangjyun 將軍, Lingtzuliao 苓子寮, 2♀,
10-IV-2002, ex fallow ground soil; Chiali 佳
里, 1 ♀ 1♂, 10-IV-2002, ex *Vigan radiate*
plantation soil; Shikang 西港, Shipu 溪埔,
1♂, 10-IV-2002, ex *Lucopersicon esculentum*
plantation soil; 1 ♀, 10-IV-2002, ex *Allium*
scordoprasum plantation soil; Matou 麻豆,
2 ♀ 1 ♂, 11-IV-2002, ex *Citrus maxima*
plantation soil; Matou, Anding 安定, 1♂,
10-IV-2002, ex *Citrus maxima* plantation
soil; Guanmiao 關廟, Tienchung 田中, 2 ♀ 2
♂, 4-VII-2002, ex *Zizyphus mauritiana*
plantation soil; Liuying 柳營, 1♂, 10-
IV-2002, ex *Cucumis melo* plantation soil.
PINTUNG: Cheitung 茄苳, 2 ♀, 21-IV-2003,
ex *Ipomoea batatas* plantation soil;
Changjhih 長治, Donghaifeng 東海豐, 2 ♀,
23-IV-2003, ex *Terminalia catappa* plantation
soil; Manzhou 滿州, Nanzenshan 南仁山,
1♀, 16-II-2005, ex soil. HUALIEN: Chian
吉安, 4 ♀ 4 ♂ 1 deutonymph, 2-X-2002, ex
Allium fistulosum plantation soil; Hsincheng
新城, 1 ♀, 3-X-2002, ex bamboo plantation
soil. All specimens were collected by C. C.
Ho.

Distribution

Georgia, in the forest litter.

Remarks

This mite species is recorded in
Taiwan for the first time.

巨大厚厲蟎 *Pachylaelaps magnus* Halbert, 1915

Material examined

TAITUNG: Taitung City, Yenwan 岩灣,
2 ♂, 20-III-2001, ex *Allium cepa* plantation
soil. HUALIEN: Chian 吉安, 2 ♀, 2-X-2002,
ex soil. NANTOU: Lugu 鹿谷, Hsitou
Forest Recreation Area 溪頭森林遊樂區, 1
♀, 19-IX-2004, C. C. Ho, ex yew plantation
soil. All specimens were collected by C. C.
Ho.

Distribution

Russia, Western Europe, in the leaf
litter, soil, and wood residue in the forest.

Remarks

This mite species is recorded in
Taiwan for the first time.

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臺灣厚屬蟎屬一新種和二新記錄種 (蜱蟎亞綱：中氣門目：厚屬蟎科)

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摘 要

記述臺灣厚屬蟎屬 *Pachylaelaps* Berlese, 1888 一新種和二新記錄種，新種為曾氏厚屬蟎 *Pachylaelaps tsengyihsiungi* sp. nov.，新記錄種為鱗片厚屬蟎 *Pachylaelaps squamosus* Koroleva, 1977 及巨大厚屬蟎 *Pachylaelaps magnus* Halbert, 1915。此為台灣首度報導厚屬蟎科。

關鍵詞：厚屬蟎科、厚屬蟎屬、新種、新記錄種、臺灣。

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