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## 【Research report】

### 臺灣產胖絨毛金龜屬 (鞘翅目：金龜子科) 之三新種 【研究報告】

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## Abstract

### 摘要

本文述臺灣產胖絨毛金龜屬之三新種，短脛胖絨毛金龜 *Pachyserica brevitarsis*，南投胖絨毛金龜 *P. nantouensis*，及長脛胖絨毛金龜 *P. similis*，另附目前臺灣產該屬共8種之檢索表。

### Key words:

**關鍵詞:** 絨金龜、短脛胖絨毛金龜、長脛胖絨毛金龜、南股胖絨毛金龜。

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# Notes on Three New Sericid Beetles of Genus *Pachyserica* (Coleoptera: Scarabaeidae) from Taiwan

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## ABSTRACT

Three new sericid beetles, *Pachyserica brevitarsis* sp. nov., *P. nantouensis* sp. nov. and *P. similis* sp. nov. are described from Taiwan. Key to the Taiwanese species is provided.

**Key words:** New sericid beetles, *Pachyserica brevitarsis*, *P. nantouensis*, *P. similis*.

## 臺灣產胖絨毛金龜屬(鞘翅目：金龜子科)之三新種

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## 摘 要

本文敘述臺灣產胖絨毛金龜屬之三新種，短脛胖絨毛金龜 *Pachyserica brevitarsis*，南投胖絨毛金龜 *P. nantouensis*，及長脛胖絨毛金龜 *P. similis*，另附目前臺灣產該屬共 8 種之檢索表。

**關鍵詞：**絨金龜、短脛胖絨毛金龜、長脛胖絨毛金龜、南投胖絨毛金龜。

## Introduction

The genus *Pachyserica* was established by Brenske in 1825 with *Pachyserica rubrobasalis* Brenske, 1897. At the present time, eight species of this genus are known from Taiwan, those of them including three new species. In 1974, Nomura treated *Pachyserica horishana* Nijima et Kinoshita, 1927, as synonym of *P. striatipennis* Moser, 1908, but the both two species names are valid to each other. The holotypes designated in this study are deposited in the collection of the Insect Museum of Plant Pathology and Entomology, National Taiwan University, Taipei, Taiwan, R.O.C. Other specimens are preserved in Kobayashi's and Li's collection.

## Key to the species of *Pachyserica* from Taiwan

1. Antennae 9-segmented. .... 2
- Antennae 10-segmented. .... 3
2. Sides of ventral surface bearing some scale-like setae, which rather densely on sides of mesosternum and mesosternal epimela; pronotum densely punctate in middle, with lateral margins more or less sinuate behind middle, posterior angles subrectangular. ....  
..... *P. nigroguttata* (Brenske)
- Sides of ventral surface covered with tawny or fine hairs, without scale-like setae (rarely with a few short scale-like setae on mesosternal epimela); pronotum evenly punctate, with lateral margins arcuate, posterior angles subrectangular, but rounded at tip. ....  
..... *P. taiwana* Nomura
3. Sides of ventral surface covered with tawny or fine hairs; antennal club

- shorter than 1.5 times as long as footstalk in male. .... 4
- Sides of ventral surface bearing scale-like setae (sometimes setae of sides of abdominal sternites indistinct); antennal club very long in male. .... 5
4. Pronotum with median smooth part, anterior angles produced and somewhat acute, posterior ones dull angulate, lateral margins feebly sinuate in middle in male, nearly straight in female; posterior tibiae rather slender, 3.3 times as long as its breadth, with feebly longitudinal sulcate. ....  
..... *P. sinuaticeps* (Moser)
- Pronotum with median smooth part, but sometimes unnoticeable, anterior angles not protrude and obtuse, posterior ones subrectangular and sharp, lateral margins feebly sinuate at middle; posterior tibiae rather broad, 2.7-3.0 times as long as its breadth, with clearly longitudinal sulcate. .... *P. brevitarsis* sp. nov.
5. Sides of abdominal sternites always bearing some scale-like setae; posterior angles of pronotum acute and sharp. .... 6
- Sides of abdominal sternites without scale-like setae, sometimes with a few very short ones; posterior angles of pronotum subrectangular. .... 7
6. Ventral surface dark reddish brown to blackish brown, almost opaque or faintly shining; elytra with apical oblong blackish maculation on each elytron and with whitish oblique line at apical one-third; posterior femora opalescent. ....  
..... *P. striatipennis* Moser
- Ventral surface reddish brown to dark brown, rather strongly opalescent; elytra with checkered patterned small maculations, without apical blackish maculation and whitish line; posterior

- femora opalescent. ....  
 ..... *P. horishana* (Nijimaet Kinoshita)  
 7. Posterior angles of pronotum sub-  
 rectangular and sharp; scutellum  
 moderately sized; sides of abdominal  
 sternites always without scale-like  
 setae; posterior femora almost opaque,  
 sometimes dully lustre in female, with-  
 out opalescent; posterior tibiae sle-  
 nder, about 5 times as long as its  
 breadth, longer terminal spur a little  
 longer than two-thirds of basal tarsal  
 segment. .... *P. similis* sp. nov.  
 - Posterior angles of pronotum sub-  
 rectangular but not sharp; scutellum  
 long and large; sides of abdominal  
 sternites sometimes with a few very  
 short scale-like setae; posterior femora  
 opaque or faintly shining; posterior  
 tibiae slender, 4.6 times as long as its  
 breadth, longer terminal spur a little  
 shorter than two-thirds of basal tarsal  
 segment. .... *P. nantouensis* sp. nov.

***Pachyserica brevitarsis* Kobayashi et  
 Yu sp. nov. 短脛胖絨毛金龜 (Fig. 1.4;  
 Fig. 2.3)**

Elongate oval, reddish brown to dark  
 reddish brown, with disk of pronotum,  
 middle of scutellum, numerous longitudinal  
 patches and an apical oblong maculation  
 on each elytron blackish brown or black;  
 mesosternum, metasternum and posterior  
 coxae blackish brown to dark reddish  
 brown, antennal club yellowish brown.  
 Surface of body opaque, with clypeus,  
 antennae, tibiae, tarsi, anterior and poste-  
 rior femora shining.

Clypeus subtrapezoidal, coarsely  
 punctate, bearing scattered erect hairs,  
 with anterior margin deeply, somewhat  
 angularly emarginate, anterior angles  
 rounded. Frons rather sparsely punctate,  
 covered with grayish scale-like setae.  
 Eyes less than one-third as broad as frons  
 between them. Antennae 10-segmented,  
 with club 1.3 times as long as footstalk in  
 male, subequal to it in female.

Pronotum twice as broad as its  
 length, surface punctate and setose, with  
 several small smooth areas in some places  
 but sometimes unnoticeable, lateral margins  
 arcuate in front and feebly sinuate behind  
 in male, gently arcuated in female, ante-  
 rior angles not protrude and obtuse,  
 posterior ones subrectangular and sharp.  
 Scutellum punctate and setose, with me-  
 dian smooth part. Elytral sulcus with row  
 of sparse punctures, intervals feebly con-  
 vex, punctate and setose, with small  
 smooth areas in some places, odd interv-  
 als decorated with several long suberect  
 scales. Pygidium convex, punctate and  
 setose, with long erect hairs near apex.

Abdominal sternites rather sparsely  
 punctate, with row of short setae on each  
 side, scattered hairs at middle. Anterior  
 tibia bidentate. Posterior femur shining,  
 3.0 times as long as its breadth, with  
 broadest point across at middle, surface  
 punctate, with two rows of hairs behind  
 and before middle, posterior margin bear-  
 ing several long hairs on basal half,  
 finely serrate and sinuate on apical third.  
 Posterior tibia rather broad, 2.7-3.0 times  
 as long as its breadth, longitudinally,  
 rugosely punctate, with two oblique spi-  
 nose ridges on outer side, with longitudin-  
 al sulcate at middle, longer terminal spur  
 half as long as basal tarsal segment.  
 Posterior tarsus faintly punctate, without  
 setae on ventral side, each segment with  
 longitudinally sulcate on outer side.

Length: 7.0-8.5mm.; breadth: 3.5-  
 4.0mm.

**Holotype:** ♂, Taoyuan Hsien, Pa-  
 lin(巴陵), 28-V-1988, C.K. Yu leg.; para-  
 types: Taipei: Wulai(烏來), 1♂, 6-V-1968,  
 K. Takahashi leg.; 1♂, 2-VI-1968, K.  
 Takahashi leg.; 1♀, 18-VI-1968, K. Taka-  
 hashi leg.; 1♀, 13-VI-1968, K. Mizusawa  
 leg. Taoyuan Hsien, Palin, 1♂, 8♀♀,  
 same data as the holotype; 1♂, 2♀♀, 17-  
 VI-1988, C.K. Yu leg.; 6♂♂, 2♀♀, 5-VII-  
 1991, C.K. Yu leg.; 1♂, 24~29-IV-1978, S.  
 Saito leg.; Lalashan(拉拉山), 1♂, 8♀♀,  
 30-VI-1986, J. Lo leg.; 1♂, 2♀♀,



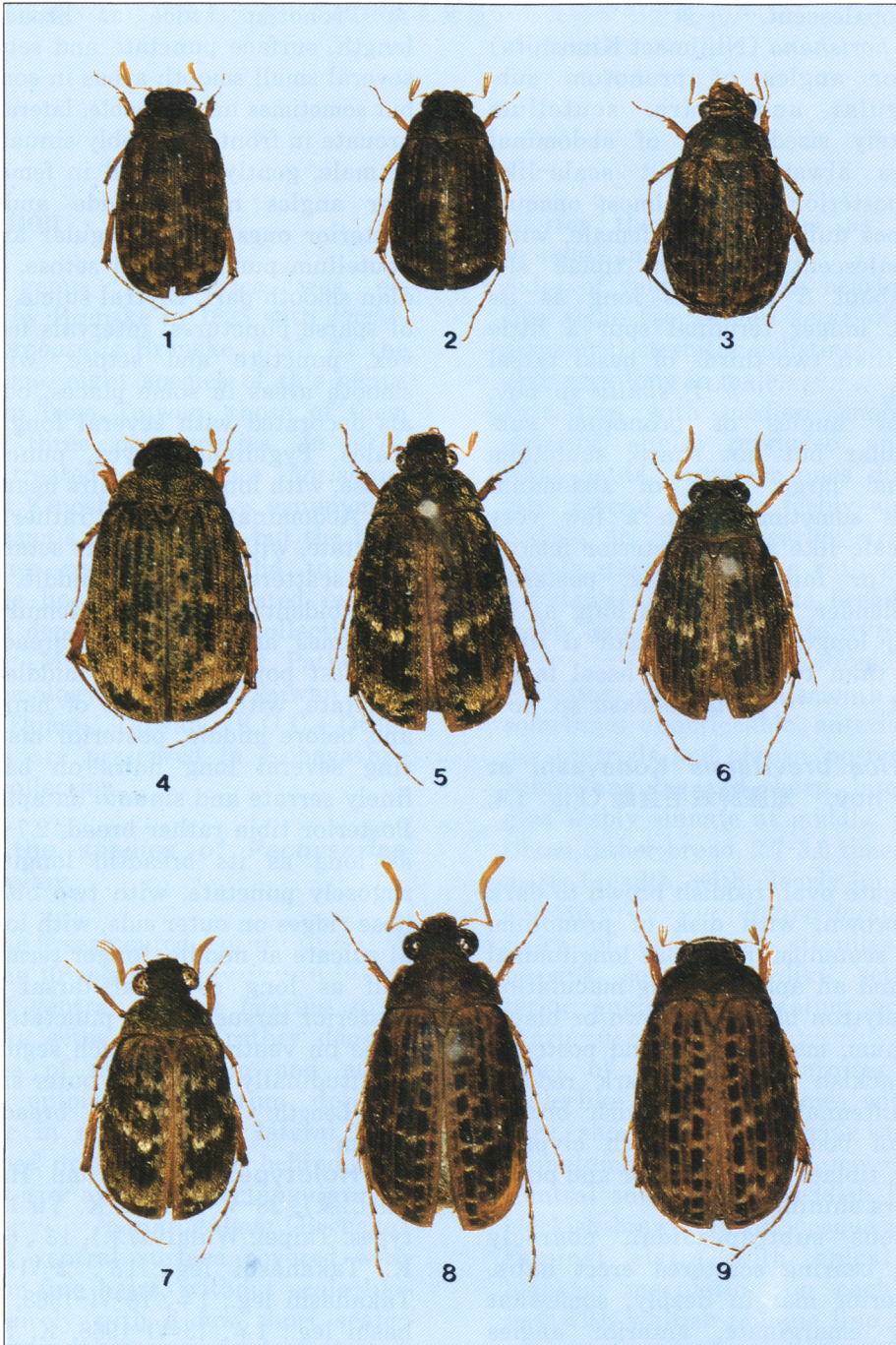


Fig. 1. *Pachyserica* spp. of Taiwan. 1, *P. taiwana* Nomura; 2, *P. sinuaticeps* (Moser); 3, *P. brevitarsis* sp. nov.; 4, *P. nigroguttata* (Brenske); 5, *P. striatipennis* Moser; 6, *P. similis* sp. nov.; 7, *P. nantouensis* sp. nov.; 8, *P. horishana* Nijima et Kinoshita, male; 9, ditto, female.

30-VI-1986, J. Lo leg. Taitung: 5♂♂, 11♀♀, Yen-Ping(延平), 16km point, 10-VII-1992, C.L. Li leg. (preserved in Li's collection).

**Distribution:** Taiwan.

***Pachyserica horishana* (Niijima et Kinoshita)** 埔里胖絨毛金龜 (Fig. 1.8; Fig. 2.8,9)

*Serica horishana* Niijima et Kinoshita, 1927: 3, 78.

*Pachyserica striatipennis* (pars): Nomura, 1974: 97 (nec Moser).

**Specimens examined:** Taoyuan: Lailashan, 1♀, VI-1969; Palin, 2♂♂, 2-V-1988, C.K. Yu leg. Nantou: Sungkang(松崗), 4♂♂, 17~26-V-1982; Meifeng(梅峰), 5♂♂, 2~7-V-1977, W. Suzuki leg.; 1♂, 1♀, 17-VI-1976, M. Kubota leg. Kaohsiung: Tiegchi(藤枝), 1♂, 28-IV-1989, C.K. Yu leg.

**Distribution:** Taiwan.

***Pachyserica nantouensis* Kobayashi et Yu sp. nov.** 南投胖絨毛金龜 (Fig. 1.7; Fig. 2.7)

Elongate oval, dark reddish brown to blackish brown, with anterior and posterior margins of pronotum, along elytral suture and legs (except posterior femora) reddish brown, posterior femora dark reddish brown, antennal club yellowish brown. Pronotum and elytra mottled with whitish or grayish scale-like setae, and with a few somewhat large hairless blackish areas. Surface of body opaque, with clypeus, antennae, tibiae, tarsi and anterior femora shining, posterior femora opaque or faintly shining.

Clypeus subparallel sided, coarsely and shallowly punctate, bearing scattered erect hairs, with anterior margin almost straight, feebly refracted, anterior angles rounded. Frons finely, sparsely punctate, bearing scattered rather long erect hairs. Eyes large and prominent, more than half

as broad as frons between them in male. Antennae 10-segmented, with club long and curved, about twice as long as footstalk in male.

Pronotum twice as broad as its length, broadened at base, surface punctate and setose, with longitudinal smooth area in middle, lateral and sides of anterior margins fringed with sparse long setae, lateral margins convergent to front, feebly sinuate at basal half, anterior angles not protrude and obtuse, posterior ones subrectangular but not sharp in male. Scutellum long and large, punctate and setose, with median smooth part. Elytral sulcus with row of sparse punctures, intervals almost flattened, punctate and setose. Pygidium rather convex, rather sparsely punctate, bearing sparse hairs on disk and some long erect hairs near apex.

Abdominal sternites densely punctate near base and apex, with row of setae on each side, scattered hairs at middle (basal three sternites each with very short setae on basal part and sides). Anterior tibia bidentate. Posterior femur 3.5 times as long as its breadth, with broadest point across at middle, surface punctate, with two rows of hairs behind and before middle, posterior margin bearing several hairs on basal half, finely serrate and feebly sinuate on apical third. Posterior tibia slender, 4.6 times as long as its breadth, longitudinally, rugosely punctate, with two oblique spinose ridges on outer side, longer terminal spur longer than two-thirds as long as basal tarsal segment. Posterior tarsi faintly punctate, without setae on ventral side (apical segment with a few very short setae on its), basal segment with a longitudinally sulcate on outer side.

Length: 9.0mm.; breadth: 4.5mm.

**Holotype:** ♂, Nantou Hsien, Sungkang, 17-V-1982.; **paratype:** 1♂, same data as the holotype.

**Distribution:** Taiwan.

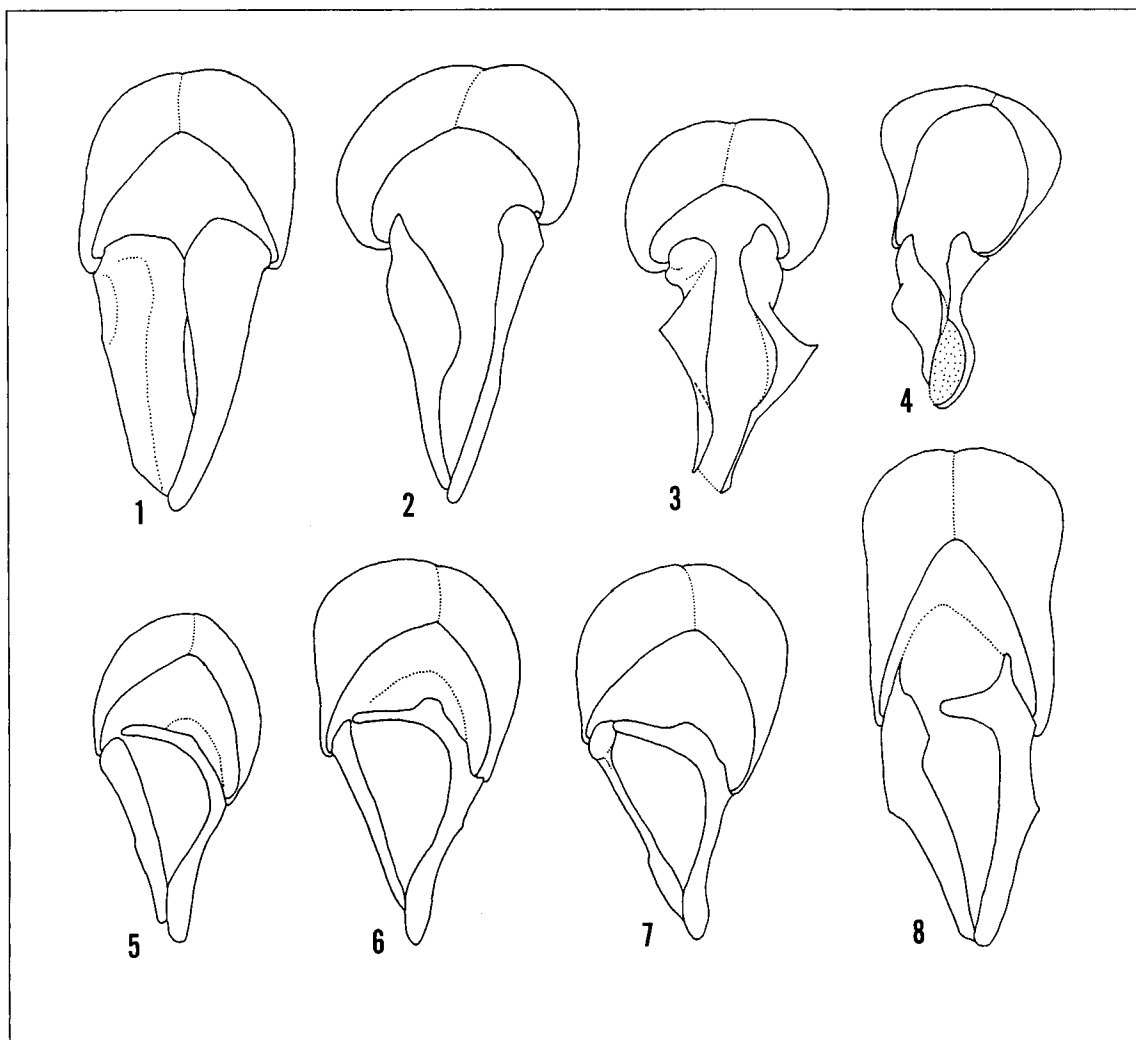


Fig. 2. Male genitalia of *Pachyserica* spp.; dorsal view. 1, *P. nigroguttata* (Brenske); 2, *P. taiwana* Nomura; 3, *sinuaticeps* (Moser); 4, *P. brevitarsis* sp. nov.; 5, *P. striatipennis* Moser; 6, *P. similis* sp. nov.; 7, *P. nantouensis* sp. nov.; 8, *P. horishana* Nijima et Kinoshita.

***Pachyserica nigroguttata* (Brenske)**  
 黑紋胖絨毛金龜 (Fig. 1.1; Fig. 2.4)

*Serica nigroguttata* Brenske, 1897: 389.

*Pachyserica nigroguttata*: Nomura, 1974: 98.

**Specimens examined:** TAIPEI: Wu-lai, 2 ♀♀, 14-V-1977, H. Sakaino leg.; 1 ♂, 25-V-1971, K. Sakai leg.; 1 ♀, 31-V-1971, M. Nishikawa leg.; 2 ♀♀, 28-V-1-

VI-1968, K. Takahashi leg.; 1 ♀, 2-VI-1987, T. Shimomura leg.; 1 ♀, 14-VI-1970, T. Kuroda leg. Taoyuan: Palin, 1 ♀, 23-V-1984, J. Lo leg.

**Distribution:** Taiwan, China Continent.

***Pachyserica similis* Kobayashi et Yu sp. nov.** 長脛胖絨毛金龜 (Fig. 1.6; Fig. 2.6)

Elongate oval, blackish brown to dark reddish brown, with antennae and legs reddish brown (sometimes antennae yellowish brown). Pronotum and elytra mottled with whitish or grayish scale-like setae, in which whitish ones constituted oblique line at middle of elytra, and with several rather small hairless parts. Surface of body opaque, with clypeus, antennae, tibiae, tarsi, anterior femora shining, posterior femora almost opaque, but sometimes with faintly shining in female.

Clypeus subparallel sided, finely and rather densely punctate, bearing scattered erect hairs, with anterior margin almost straight, anterior angles subrectangular, obtuse at tip. Frons finely and rather sparsely punctate, bearing scattered rather long erect hairs. Eyes large and prominent, two-thirds as broad as frons between them in male, small and less than half in female. Antennae 10-segmented, with club long and curved, about twice as long as footstalk in male, subequal to its in female.

Pronotum twice as broad as its length, rather sparsely with setigerous punctures, with longitudinal smooth areas in middle, lateral margins convergent to front, feebly sinuate at basal half, anterior and lateral margins fringed with sparsely long setae, anterior angles not protrude and obtuse, posterior ones subrectangular and sharp. Scutellum moderately sized, punctate and setose, with median smooth part. Elytral sulcus with row of sparse punctures, intervals feebly convex, punctate and setose, with small smooth areas in some places, odd intervals decorated with several long suberect scales. Pygidium feebly convex, punctate and setose, with long erect hairs near apex.

Abdominal sternites rather densely punctate near base and apex, with row of short setae, and scattered minute hairs. Anterior tibia bidentate. Posterior femur 3.0 times as long as its breadth, with broadest point across at middle, surface

punctate, with two rows of hairs behind and before middle, posterior margin bearing several hairs on basal half, finely serrate and feebly sinuate on apical third. Posterior tibia slender, about 5 times as long as its breadth, longitudinally, rugosely punctate, with two oblique spinose ridges on outer side, longer terminal spur less than two-thirds as long as basal tarsal segment. Posterior tarsi faintly punctate, with few microscopic hairs on ventral side, each segment with a longitudinally sulcate on outer side.

Length: 7.5–9.5mm.; breadth: 4.0–4.5mm.

**Holotype:** ♂, Nantou Hsien, Nanshanchi(南山溪), 13-VII-1992, C.K. Yu leg.; paratypes: TAICHUNG; Anmashan(鞍馬山), 1♂, 29-IV-1992, C.K. Yu leg. NANTOU: Nanshanchi, 1♀, same data as the holotype; 1♂, 3♀♀, 25-V-1992, C.K. Yu leg.; 1♀, 29-V-1992, C.K. Yu leg.; Guandaoshan(關刀山), 4♂♂, 5-V-1988, C.K. Yu leg.; Chusheh(卓社), 1♀, 4-V-1992, C.K. Yu leg. HUALIEN: Bihluh-Shenmuh(碧綠神木), 1♂, 3-VII-1992, C.K. Yu leg.

**Distribution:** Taiwan.

***Pachyserica sinuaticeps* (moser) 曲斑胖絨毛金龜** (Fig. 1.3; Fig. 2.2)

*Serica sinuaticeps* Moser, 1915: 115.

*Pachyserica sinuaticeps*: Nomura, 1974: 97.

**Specimens examined:** TAOYUAN: Palin, 1♂, 7-V-1978, S. Saito leg.; NANTOU: Nanshanchi, 8♂♂, 3♀♀, 25-IV~18-V-1992, C.K. Yu leg.; 2♂♂, 25-V-1976, T. Shimomura leg.; 1♂, 15-V-1976, K. Akiyama leg.; 2♂♂, 1♀, 12-VI-1976, M. Kubota leg.; Lushan(蘆山), 1♀, 29-VII-1983, T. Shibata leg.; Jiuyuetan(日月潭), 1♀, 27-V-1976, T. Shimomura leg.; Sungkang, 3♂♂, 6♀♀, 4-VII-1987, C.K. Yu leg.; Chusheh, 1♂, 1♀, 19-VII-1992, C.K. Yu leg.; Tui Feng(翠峰), 1♂, 19-VII-1987, C.K. Yu leg.; Penbuchi(本部溪), 2♀♀, 15-VI-1988, C.K. Yu leg.; Shoucheng-Dahshan(守城大山), 1♀,

14-VI-1988, C.K. Yu leg.; Guandaoshan, 1 ♀, 7-VII-1985, J. Lo leg.; Wushe(霧社), 1 ♂, 9-V-1975, M. Kubota leg. HUALIEN: Tienhsiang(天祥), 1 ♂, 1 ♀, 15~21-V-1978, T. Shimomura leg. KAOHSIUNG: Liukuei(六龜), 1 ♂, 24-V-1984, W. Chen leg.; Tiengchi(藤枝), 1 ♂, 11-V-1978, H. Sakaino leg.

**Distribution:** Taiwan, China Continent.

***Pachyserica striatipennis* Moser** 條斑  
胖絨毛金龜(Fig. 1.5; Fig. 2.5)

*Pachyserica striatipennis* Moser, 1908: 30.

*Pachyserica mormorata*: Sawada, 1938: 87,  
(nec Blanchard).

*Pachyserica striatipennis*: Nomura, 1974:  
97.

**Specimens examined:** TAIPEI: Wulai, 1 ♀, 28-V-1968, K. Takahashi leg.; Lahau(羅宏), 1 ♀, 5-V-1968, K. Takahashi leg. TAOYUAN: Lalashan, 1 ♀, VI-1969; 1 ♂, 9-V-1978, S. Saito leg. NANTOU: Nanshanchi, 1 ♀, 13-VII-1992, C.K. Yu leg.

**Distribution:** Taiwan; Tonkin.

***Pachyserica taiwana* Nomura** 臺灣胖  
絨毛金龜(Fig. 1.2; Fig. 2.1)

*Pachyserica taiwana* Nomura, 1974: 97.

**Specimens examined:** TAIPEI: Wulai, 1 ♂, 17-V-1972, K. Sakai leg.; 3 ♂ ♂, 1 ♀, 31-V~4-VI-1968, K. Takahashi leg. TAOYUAN: Palin, 1 ♂, 2 ♀ ♀, 28-V~17-VI-1988, C.K. Yu leg.; NANTOU: Lushan, 5 ♂ ♂, 7 ♀ ♀, 10-VI-1982; Guandaoshan(關刀山), 1 ♂, 2 ♀ ♀, 10-V-1988, C.K. Yu leg.; Tsuifeng, 1 ♂, 19-VII-1987, C.K. Yu leg.; Nanshanchi, 12 ♂ ♂, 8 ♀ ♀, 30-IV~29-V-1992, C.K. Yu leg.; 1 ♀, 4-V-1978, S. Saito leg.; Sungkang, 10 ♂ ♂, 7 ♀ ♀, 4~8-

VII-1987, C.K. Yu leg.; Chusheh, 4 ♂ ♂, 2 ♀ ♀, 5-VI-1992, C.K. Yu leg.; Penbuhchi, 1 ♀, 15-VI-1988, C.K. Yu leg.; Shoucheng-Dahshan, 2 ♂ ♂, 1 ♀, 14-VI-1988, C.K. Yu leg.

**Distribution:** Taiwan.

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