

A Synopsis of the Prionine Genus *Spinimegopsis* stat. nov.  
(Coleoptera, Cerambycidae, Prioninae)

(Revisional Studies of the Genus *Megopsis* sensu LAMEERE, 1909–8)

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**Abstract** *Spinimegopsis* K. OHBAYASHI, 1963 is proved to be a full genus. *Megopsis formosana formosana*, *M. f. nipponica*, *M. f. kawazoei*, *M. f. ishigakiana*, *M. f. lanhsuensis*, *M. f. yakushimana*, *M. f. okinawana*, *M. f. hachijoana*, *M. piliventris*, *M. malasiaca*, *M. lividipennis*, *M. buckleyi*, *M. tibialis*, *M. nepalensis*, *M. cingalensis*, *M. mediocostata*, *M. moretto* and *M. perroti* are transferred to this genus. *Megopsis flavipennis* DEMELT, 1989 is regarded as a junior synonym of *M. malasiaca* HAYASHI, 1976. *Megopsis antennalis* FUCHS, 1965 is regarded as a subspecies of *M. piliventris* GRESSITT, 1950. Three subspecies of *M. formosana*, *nipponica*, *kawazoei* and *ishigakiana* are revived as independent species. Five new species and a new subspecies are described under the names *Spinimegopsis kachina*, *S. fujitai*, *S. delahayei*, *S. huai* and *S. curticornis* spp. nov., and *S. formosana tamdaoana* subsp. nov. Lectotypes and paralectotypes are designated for *S. buckleyi* (GAHAN, 1894) and *S. lividipennis* (LAMEERE, 1920). A key to the species of this genus is given.

**Résumé** Dans cet article, *Spinimegopsis* K. OHBAYASHI, 1963 est reconnu comme un genre valide. *Megopsis formosana*, *M. f. nipponica*, *M. f. kawazoei*, *M. f. ishigakiana*, *M. f. lanhsuensis*, *M. f. yakushimana*, *M. f. okinawana*, *M. f. hachijoana*, *M. piliventris*, *M. malasiaca*, *M. lividipennis*, *M. buckleyi*, *M. tibialis*, *M. nepalensis*, *M. cingalensis*, *M. mediocostata*, *M. moretto* et *M. perroti* sont transférés dans ce genre. *Megopsis flavipennis* DEMELT, 1989 est reconnu comme un synonyme de *M. malasiaca* HAYASHI, 1976. *Megopsis antennalis* FUCHS, 1965 est considéré comme une sous-espèce de *M. piliventris* GRESSITT, 1950. Trois sous-espèces de *M. formosana* sont, quant à elles, élevées au rang d'espèces indépendantes et valides. Cinq nouvelles espèces et une nouvelles sous-espèce sont décrites comme *Spinimegopsis kachina*, *S. fujitai*, *S. delahayei*, *S. huai* et *S. curticornis* spp. nov., ainsi que *S. formosana tamdaoana* subsp. nov.

Des lectotypes et paralectotypes sont désignés pour *S. buckleyi* (GAHAN, 1894) et *S. lividipennis* (LAMEERE, 1920). Une clé pour toutes les espèces du genre est donnée.

*Spinimegopsis* was described by Kazuo OHBAYASHI in 1963 as a subgenus of the genus *Megopsis* to receive *M. nipponica* MATSUSHITA and *M. kawazoei* HAYASHI. He characterized this subgenus not only having three lateral spines of the pronotum but also having hair-fringes under the male antennae. HAYASHI (1976, 1980) proposed to enlarge this subgenus by including several species which have distinct three spines on each side of pronotum but not having hair-fringes of antennae. He transferred *Megopsis* (*Aegosoma*) *tibialis* WHITE to the subgenus *Spinimegopsis* and described three more species, *M. lanhsuensis*, *M. malasiaca* and *M. nepalensis*, under this subgenus. However, he did not examine the rest of the known species in the genus *Megopsis* whether some of them should be transferred to this subgenus or not. In this paper, we are going to succeed these works.

Before this subgenus was proposed by K. OHBAYASHI (1963), the phylogenetic importance of pronotal spines had generally been overlooked by previous workers. Only exception was made by GRESSITT (1940) when he included this character in a series of differences between the subgenera *Aegolipton* and *Baralipton* (see KOMIYA, 2005). Concerning the *Aegosoma* group, in which the most species to be transferred to *Spinimegopsis* had been placed, this character was indicated on several species by GAHAN (1906) but he did not suggest any more meaning of this character state. After examination of a long series of specimens which have spines on the pronotum, we concluded that this character clearly divides *Aegosoma* sensu LAMEERE (1909) into two parts, viz., *Aegosoma* and *Spinimegopsis*. Each of these two groups bears similarity in many other characters and they are very distinct from each other. Therefore, we regard *Spinimegopsis* as an independent genus as KOMIYA (2005) noted.

The species to be transferred to this genus have previously been placed in the genus *Megopsis* but they were separately located in many subgenera so far. In the following lines, we are going to transfer *Megopsis buckleyi*, *M. lividipennis*, *M. perroti* and *M. mediocostata* from the subgenus *Aegosoma*, *M. cingalensis* and *M. antennalis* (which is now regarded as a subspecies of *S. piliventris*) from the subgenus *Baralipton*, *M. piliventris* from the subgenus *Aegolipton*, *M. morettoii* (which was not placed in any subgenus at the time of description) from the subgenus *Megopsis*, *M. formosana*, *M. formosana nipponica*, *M. f. kawazoei*, *M. f. yakushimana*, *M. f. lanhsuensis*, *M. f. hachijoana*, *M. f. okinawana*, *M. f. ishigakiana*, *M. nepalensis*, *M. malasiaca* and *M. tibialis* from the subgenus *Spinimegopsis* (*nipponica*, *kawazoei* and *ishigakiana* are regarded in this paper as independent species). Five new species and a new subspecies are described under names *S. kachina*, *S. fujitai*, *S. delahayei*, *S. huai* and *S. curticornis* spp. nov. and *S. formosana tamdaoana* subsp. nov. *Megopsis flavipennis* is regarded as a junior synonym of *M. malasiaca*.

The abbreviations and special terminologies used in this paper are as follows: NSMT – National Science Museum (Nat. Hist.), Tokyo; BMNH – The Natural History



Museum, London; IRSNB – Institut Royal des Sciences Naturelles de Belgique; CAS – California Academy of Science, San Francisco; OMNH – Osaka Museum of Natural History; MNHN – Muséum national d'Histoire naturelle, Paris; ZSMC – Zoologische Staatssammlung, München; ADC – collection of Alain DRUMONT, Belgium; AWC – collection of Andreas WEIGEL, Germany; CHC – collection of Carolus HOLZSCHUH, Austria; EVC – collection of Eduard VIVES, Spain; HFC – collection of Hiroshi FUJITA, Japan; YKC – collection of Yoshiyasu KUSAKABE, Japan; ZKC – collection of Ziro KOMIYA, Japan. Measurements of body parts: BL – body length from clypeus to apices of elytra or abdomen; HL – length of head from clypeus to base; HW – width of head across eyes; PL – length of pronotum; PW – maximum width of pronotum; PA – apical width of pronotum; PB – basal width of pronotum; EL – length of elytra; EW – maximum width of closed elytra; AL – length of antennae; Al<sub>n</sub> – length of (n)th antennal segment. Terminologies: C1 – first internal costa of elytron; C2 – second costa (outer internal costa); C3 – third costa (inner external costa); C4 – fourth costa (outer external costa); Sa – spine of anterior angle of pronotum; Sm – lateral spine of pronotum, which is usually placed in basal third or closer to base; Sb – spine of posterior angle; hair-fringe – long bristly hair lines under antennae which are obviously longer than hairs on the other side of antennae.

### Genus *Spinimegopis* K. OHBAYASHI, 1963

- Aegosoma* WHITE, 1853 (not SERVILLE, *pro parte*).  
*Aegosoma*: GAHAN, 1894, 1906 (not SERVILLE, *pro parte*).  
*Megopis*: LAMEERE, 1909 (not SERVILLE, *pro parte*).  
*Megopis* (*Aegosoma*): MATSUSHITA, 1933, 1934 (not SERVILLE).  
*Megopis* (*Aegosoma*): GRESSITT, 1950 (not SERVILLE).  
*Megopis* (*Aegolipton*): GRESSITT, 1950 (not GRESSITT, 1940).  
*Megopis* (*Spinimegopis*): K. OHBAYASHI, 1963.  
*Megopis* (*Aegosoma*): FUCHS, 1965 (not SERVILLE).  
*Megopis* (*Baralipton*): FUCHS, 1965 (not THOMSON).  
*Megopis* (*Spinimegopis*): HAYASHI, 1974, 1975, 1976.  
*Megopis* (*Spinimegopis*): FUJITA, 1980.  
*Megopis* (*Spinimegopis*): KUSAMA *et al.*, 1984.  
*Megopis* (*Spinimegopis*): N. OHBAYASHI *et al.*, 1992.

Type species: *Megopis* (*Aegosoma*) *nipponica* MATSUSHITA, 1934, Trans. nat. Hist. Soc. Formosa, **24**: 538.

Body elongate and cylindrical. BL 17–55 mm, usually between 30 and 45 mm. Body color brown, often yellow or almost black. Head and pronotum covered with long hairs, elytra haired or glabrous, underside usually covered with long and thick hairs except abdomen which is thinly haired.

Head short. Mandibles usually as long as one-fifth of head, each mandible sickle-shaped, external side smoothly arched or obtusely angled and sometimes furnished with an external dent (tubercle), internal side sharply bladed and furnished with a dent

close to the base. Eyes bulging, coarsely faceted, interspace between eyes of dorsal side usually a half as wide as each lobe, lower eye-lobes on gula more widely separated than on dorsal side. Antennal tubercles large but their inner ends often not clearly defined. Antennae 11-segmented, AL/BL ♂, 0.8–1.2, ♀, 0.6–0.9; basal segments (1–4) sub-cylindrical, apical segments (5–11) depressed and angled ecto-apically, furnished with a longitudinal carina along external line; segment 3 about as long as or longer than segments 4+5+6, segment 1 furnished with distinct longitudinal groove on inner side, several basal segments hair-fringed in some species.

Pronotum sub-rectangular or trapezoidal, 1.5–2.0 times as wide as long; lateral margin edged from base to anterior margin, usually furnished with distinct three spines (Sa, Sm, Sb) on each side, sometimes one or two spines obsolete; disc, uneven and convex at central part. Scutellum linguiform or semicircular.

Elytra usually longer than 2.5 times of united lengths of head and pronotum, pubescent or glabrous, margined with dark color in most species; inner costae (C1 and C2) usually distinct, C3 and C4 mostly absent; sutural teeth small or absent.

Legs slender, thickly haired in general but the length and thickness of hairs are very different by species; metatibiae depressed laterally but not strongly so. Pro-, meso-, and metasterna, meso- and metepisterna and pro-, meso- and metacoxae thickly covered with long hairs.

Penis long and slender, lateral lobes including basal ring 0.5–0.7 times as long as penis.

*Notes.* The genus *Spinimegopis* is similar to *Aegosoma* but is distinguished by having segment 3 of antenna subcylindrical and without internal groove, and pronotum furnished with three distinct spines on each side. In *Aegosoma*, the segment 3 is furnished with a longitudinal groove internally and pronotum always lacking any spines. Three spines on each side of pronotum are also observed in the genus *Baralipon* but the genus *Baralipon* has segment 1 of antenna furnished with distinct apical spine and without any groove inside.

### 1. *Spinimegopis tibialis* Species-group

*Spinimegopis tibialis*, *S. buckleyi*, *S. nepalensis* and *S. kachina* sp. nov. form the *tibialis* species-group, which is characterized by having glabrous and semi-transparent elytra furnished with strong costae.

#### *Spinimegopis tibialis* (WHITE, 1853), comb. nov.

(Figs. 1, 2)

*Aegosoma tibiale* WHITE, 1853, Cat. Coleopt. Ins. Coll. Brit. Mus., Longic., 7: 32; 1853, Proc. zool. Soc.

London, 1853: 28. — GAHAN, 1906, Fauna of British India, Ceylon and Burma, Coleopt., 1: 47.

*Megopis (Aegosoma) tibialis*: LAMEERE, 1909, Anns. Soc. ent. Belg., 53: 141; 1919, Gen. Ins., (172): 74. —

HUA, 1982, Check List of the Longicorn Beetles of China, 4.

*Megopis (Spinimegopis) tibialis*: HAYASHI, 1971, Ent. Rev. Japan, 23: 84.



**Male.** Body generally dark brown or almost black; elytra often reddish especially in female; thickly haired on head, pronotum, scutellum and underside except for middle parts of abdomen, antennae glabrous, elytra glabrous.

Head not large; mandible short, the external lines abruptly bent inwards at about middle, each furnished with a small inner dent at basal third; apex of palpus truncate; interspace between eyes 0.4–0.6 times as long as each upper lobe. Antenna cylindrical and thickened in segments 1–4, weakly depressed dorso-ventrally in several apical segments which are furnished with longitudinal carinae running along external margins and sometimes with another carina running on internal side parallel to the external one; segment 1 furnished with deep internal groove, closely granulate in segments 1–4, irregularly furnished with sparse punctures, scattered with granules and short wrinkles in segments 5–11; AL/BL 0.86–1.06 in male (rich in variation but usually over 1.00), Al 3/Al1 2.9–3.4, Al3/Al4 + 5 + 6 1.00–1.07, Al7 = Al11.

Pronotum wide, almost rectangular and slightly narrowed anteriorly, widest at middle spine (Sm), furnished with three distinct spines on each side, disc mat, covered with small and irregular granules and sparse long hairs. LP/WP 0.49–0.68. Scutellum linguiform, covered with long hairs.

Elytra long, semi-transparent, covered with shallow punctures at basal third, punctures gradually mingled and transiting to indistinct granules at apical halves; lateral sides widest at about basal fourth, then gradually narrowed and rather suddenly rounded just before apex; each elytron furnished with two distinct costae (C1, C2), C1 starting from the side of scutellum, running parallel to sutural margin in basal fourth, then slightly bent inwards and disappearing just beyond middle, C2 starting just inside of humeri, running obliquely inwards in basal three-fifths and then becoming subparallel to sutural line and disappearing just before apex; sutural tooth indistinct or absent.

Legs long and slender, thinly covered with hairs; protibiae thick, tarsi narrow, united length of three tarsal segments about as long as the claw segment.

**Female.** Similar to the male but head narrower, pronotum widest at base and distinctly narrowed apicad, antennae shorter, AL/BL 0.60–0.72.

BL: ♂, 21.5–35.7 mm, ♀, 35.0–45.0 mm.

Holotype. ♂, preserved in BMNH.

**Distribution.** Northeastern India (area close to Nepal), Nepal, Bhutan (new record, examined specimen: Rord Hongtsho-Lobesa, 3 km east of Dochu La pass, 2,800 m, 6–VIII–2005, Kautt NAUMANN leg. in ZKC), China (Tibet) (examined specimens: 3♂♂, Nyalam, 3,200 m alt., 9~10–VII–1998, in ZKC).

**Specimens examined.** 19♂♂, 13♀♀, from eastern Nepal and northern India, other than the above mentioned examples (IRSNB, ZKC, ADC).

*Spinimegopsis buckleyi* (GAHAN, 1894), comb. nov.

(Figs. 3, 4)

*Aegosoma buckleyi* GAHAN, 1894, Ann. Mag. nat. Hist., (6), 14: 227.

*Megopis (Aegosoma) buckleyi*: LAMEERE, 1909, *Annls. Soc. ent. Belg.*, **53**: 142.

This species resembles *S. tibialis* but is distinct in the following characters:

Body slenderer; antennae more rugosely granulate, A13 relatively long, A13/A11 3.9–4.3, A13/A14 + 5 + 6 1.03–1.12; elytra thickly granulate and mat, slenderer than in *S. tibialis*, HL/HW 2.5–2.7, (C1) extending to apical fifth of elytron.

BL: ♂, 40.0–42.6 mm, ♀, 39.8–45.0 mm.

*Distribution.* Northern India (Himachal Pradesh and Uttar Pradesh).

*Type designation.* Two syntypes, 1♂, 1♀, are preserved in BMNH. We designate as the lectotype the male specimen, length 40 mm with attached labels: "Syntype", "60.15 E.L.C.", "N. India", "Aegosoma Buckleyi ♂ Type GAHAN". The syntype ♀ is designated as a paralectotype which has length 46 mm, labels "Syntype", "60.15 E. L. C.", "N. India". According to Dr. Sharon SHUTE of BMNH, "60.15 E. L. C." is registration label and 60.15 stands for the 15th lot registered in 1860 and these specimens were presented by the secretary of the India Board. E.L.C. probably stands for the name of a collector of this lot who is registered only as Dr. CANTOR.

*Specimens examined.* 5♂♂, 3♀♀, Uttar Pradesh bor., Josimath Auli, 2,800 m. alt. 1–VIII-1994 (ZKC); 1♂, same locality, 13~17-VII-1994; 1♀, Himachal Pradesh, Solang, 2,700 m, 20-VII-1998 (ADC).

*Spinimegopis nepalensis* HAYASHI, 1971, *comb. nov.*

(Figs. 5, 6)

*Megopis (Spinimegopis) nepalensis* HAYASHI, 1971, *Ent. Rev. Japan*, **23**: 83.

This species is close to *S. tibialis* but is conspicuously different in larger body and pale yellowish elytra.

Body robust, integument dark brown and usually reddish on pronotum and legs, elytra pale yellowish brown, semi-transparent, margined with dark color.

Head larger, antennal tubercle developed, antennae shorter, AL/BL 0.88–0.98 in male, 0.76–0.89 in female, A13/A11 0.38–0.41 in male, 0.35–0.37 in female, A13/A14 + 5 + 6 1.07–1.12, segment 11 furnished with distinct knot of fused segment 12.

Elytra furnished with distinct C1 and C2, C1 extending to apical fifth and disappearing, or meeting C2 or sutural margin; sutural tooth small.

Legs stout, thickly haired on underside and thinly so on dorsal side, tarsal segment 1 as long as united length of segments 2 and 3, claw segment slightly longer than united length of 1–3.

BL: ♂, 37.5–54.5 mm, ♀, 43.7–54.4 mm.

*Distribution.* Nepal (near Walunchung, alt. 1,620–3,050, west of Mt. Kanchenjunga, near Taplejung), India (Sikkim) (new record).

*Types.* Holotype ♂, Unnamed place 2,450 m to Chowki, E. Nepal, 1,620 m, 29-VII-1963, in NSMT. Two paratypes were designated but we were unable to find them.

*Specimens examined.* 3♂♂, 1♀, Taplejung, eastern Nepal, VII-2000, 8♂♂, 8♀♀,



near Mangan, Kanchenjunga region, Sikkim Himal, 2,225 m alt. 10~15-VIII-1995, Viktor SINIAEF & Evgeniy AFONIN leg. (ZKC, ADC); 1♀, Sikkim, III-IV, H. FRUHSTORFER (IRSNB) (this female was identified with *Aegosoma buckleyi* GAH. by LAMEERE).

*Spinimegopsis kachina* sp. nov.

(Figs. 7, 8)

**Male.** Integument almost uniformly brown, head, pronotum, scutellum and most part of underside covered with long hairs. Head rather small; each mandible obtusely angled at the middle of external line in dorsal view, furnished with shallow longitudinal foveae on external side of basal half; antennal tubercle not strongly raised. Antennae shorter than body, AL/BL 0.78–0.93; segment 3 relatively short, not strongly thickened and slightly depressed laterally, underside thinly scattered with short hairs; Al 3/A11 2.5–2.7, Al3/A14+5+6 0.98–1.02.

Pronotum mat, narrower as compared with that of other species of the same species-group and more strongly narrowed apicad; three lateral spines obtuse and seldom forming acute spines; anterior angle obsolete and often absent.

Elytra slender, glabrous, smooth and shiny, without granules except on basal part of costae, EL/EW 2.6–2.9, furnished with feebly raised costae which usually fade out in apical third.

Legs slender, thickly covered with short hairs underside; tarsi narrow, three segments of the same width, claw segment about as long as united length of preceding three segments.

**Female.** Similar to male but antennae shorter and slenderer, AL/BL 0.58–0.70, pronotum more strongly narrowed forwards, elytra broader.

BL: ♂, 27.8–38.7 mm, ♀, 34.5–39.6 mm.

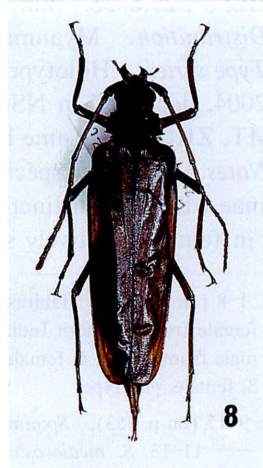
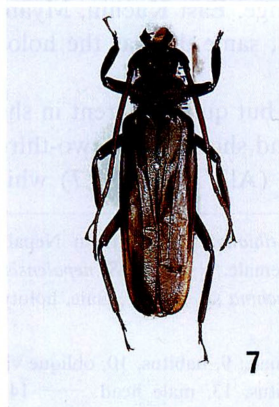
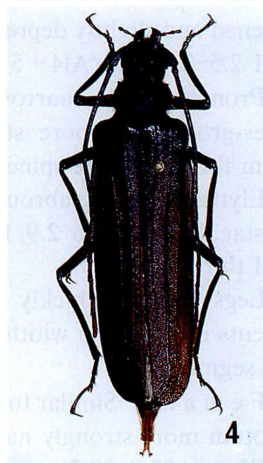
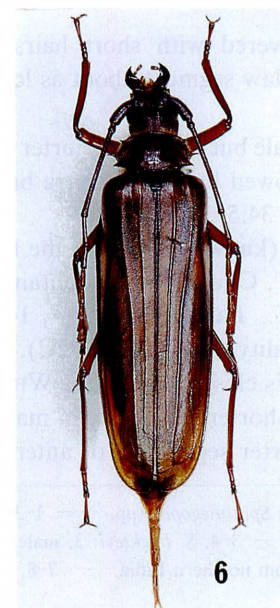
*Distribution.* Myanmar, (known only from the type locality).

*Type series.* Holotype: ♂, Chudu Razi mountain range, East Kachin, Myanmar, VII-2004, deposited in NSMT. Paratypes: 11♂♂, 14♀♀, same data as the holotype, (NSMT, ZKC), 1♀, same locality, VI-2004, (YKC).

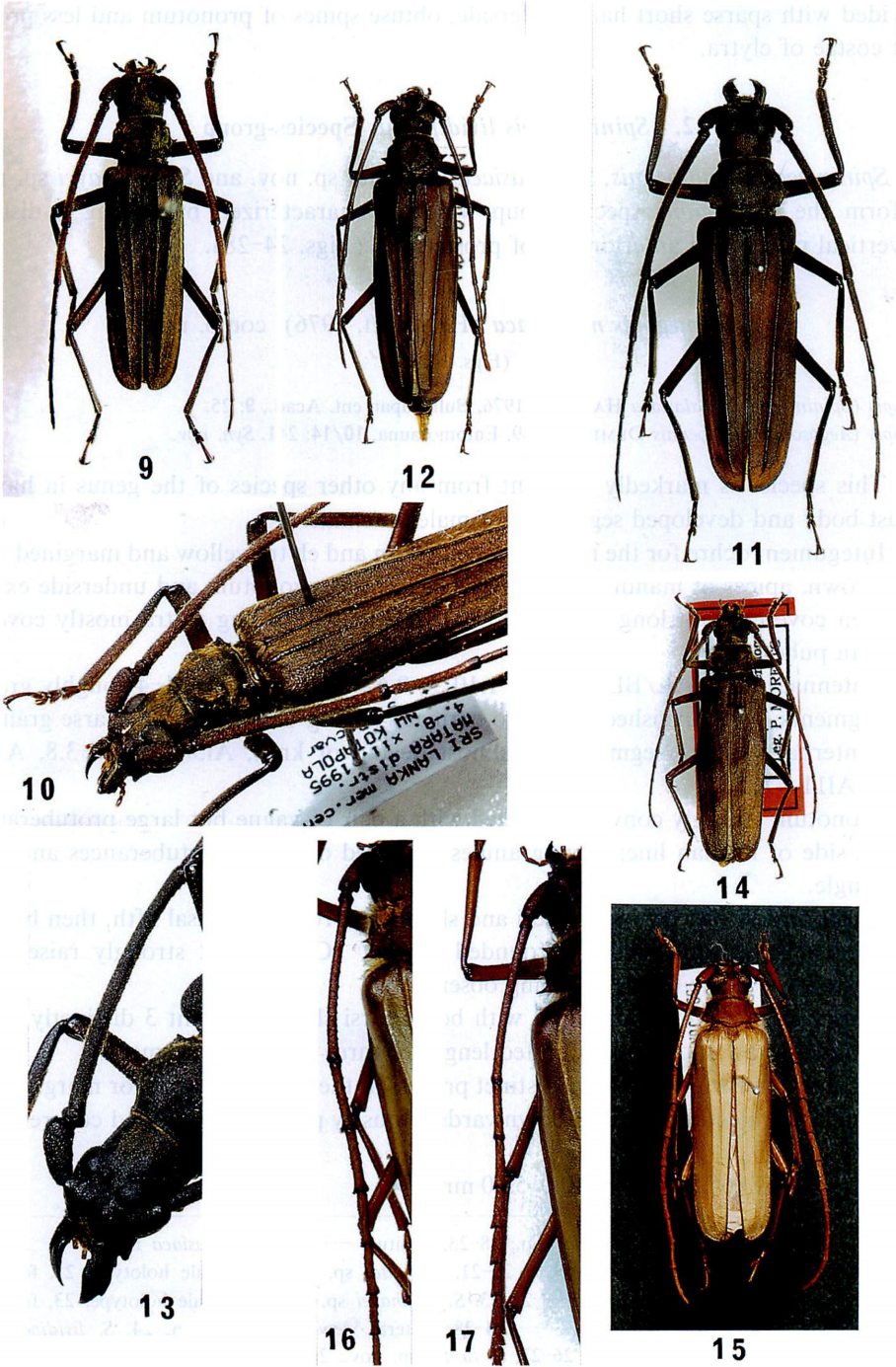
*Notes.* This new species is close to *S. tibialis* WHITE but quite different in shorter antennae which are distinctly shorter than body in male and shorter than two-thirds of body in female, relatively shorter segment 3 of antennae (Al3/A11 2.5–2.7) which is

Figs. 1–8 (on p. 352). Habitus of *Spinimegopsis* spp. — 1–2. *S. tibialis*: 1, male from Nepal, 2, female from northern India. — 3–4. *S. buckleyi*: 3, male, 4, female. — 5–6. *S. nepalensis*: 5, male from Nepal, 6, female from northern India. — 7–8. *S. kachina* sp. nov.: 7, male, holotype, 8, female, paratype.

Figs. 9–17 (on p. 353). *Spinimegopsis* spp. — 9–10. *S. cingalensis* male: 9, habitus, 10, oblique view. — 11–13. *S. mediocostata*: 11, male habitus, 12 female habitus, 13, male head. — 14. *S. morettoii*: male habitus of paratype. — 15–17. *S. perroti*: 15, male from Sapa, habitus, 16–17, antennae, 16, male 17, female.







provided with sparse short hairs underside, obtuse spines of pronotum and less prominent costae of elytra.

## 2. *Spinimegopsis lividipennis* Species-group

*Spinimegopsis lividipennis*, *S. malasiaca*, *S. fujitai* sp. nov. and *S. delahayei* sp. nov. conform the *lividipennis* species-group which is characterized by having a distinct subvertical process on anterior end of prosternum (Figs. 24–28).

### *Spinimegopsis malasiaca* (HAYASHI, 1976), comb. nov.

(Figs. 18, 25)

*Megopsis* (*Spinimegopsis*) *malasiaca* HAYASHI, 1976, Bull. Japan ent. Acad., 9: 25.

*Megopsis* (*Aegosoma*) *flavipennis* DEMELT, 1989, Entomofauna, 10/14: 241. *Syn. nov.*

This species is markedly different from any other species of the genus in having robust body and developed segment 3 of male antennae.

Integument ochre for the most part, scutellum and elytra yellow and margined with dark brown, apices of mandibles and eyes black; head, pronotum and underside except abdomen covered with long hairs and other portions including elytra mostly covered with thin pubescence.

Antennae thick, AL/BL ♂, 1.03–1.10 ♀, 0.62–0.70, segments 1–4 roughly granulate, segments 6–11 furnished with two carinae running underside and sparse granules along internal margin, segments 11 almost devoid of knot, AI3/AI1 3.6–3.8, AI3 > AI4–7, AI11 = AI5.

Pronotum strongly convex, provided with a pair of vague but large protuberances at each side of median line; large granules scattered on these protuberances and near basal angle.

Elytra widest just behind humeri and slightly narrowed to basal fifth, then becoming parallel again and suddenly rounded apicad. C1 and C2 strongly raised and sometimes very feeble C3 or C4 being observed.

Legs rather short as compared with body; tarsi short, segment 3 distinctly wider than 1 and 2, claw shorter than united length of three preceding segments.

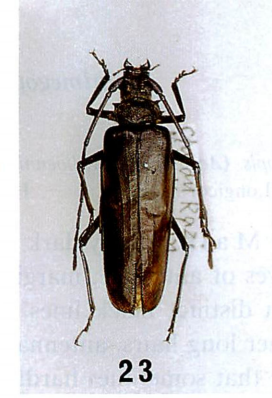
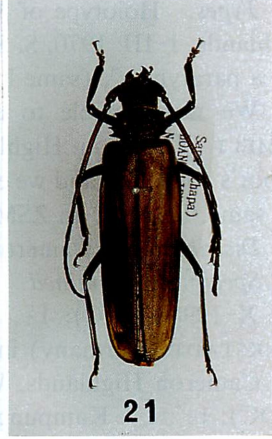
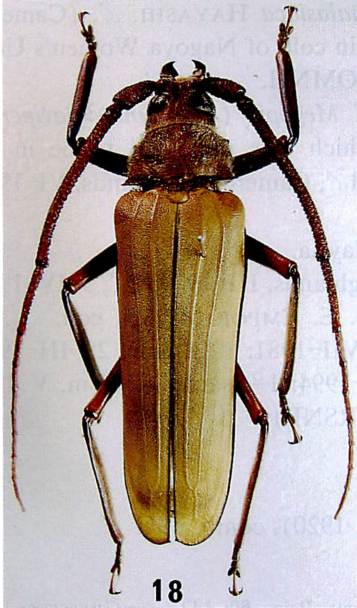
Prosternum furnished with a distinct process at the middle of anterior margin (Fig. 25), which is projected obliquely downwards, obtusely pointed apicad and covered with long hairs.

BL: ♂, 40.8–65.8 mm, ♀, 40.0–53.0 mm.

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Figs. 18–28 (on p. 355). *Spinimegopsis* spp.; 18–23, habitus. — 18. *S. malasiaca* male. — 19. *S. lividipennis* male from Yunnan. — 20–21. *S. fujitai* sp. nov.: 20, male holotype, 21, female paratype, both from Vietnam. — 22–23. *S. delahayei* sp. nov.: 22, male holotype, 23, female paratype, both from Myanmar. — 24–28. Lateral view of prosternum. 24, *S. lividipennis*, female, 25, *S. malasiaca*, male, 26–27, *S. fujitai* sp. nov.: 26, male, 27, female, 28, *S. delahayei* male.





*Types.* Holotype of *Megopis (Spinimegopis) malasiaca* HAYASHI, ♂, (Cameron Highlands, 1-III-1970, S. SUZUKI leg.) is preserved in coll. of Nagoya Women's Univ. and a paratype ♂, (same locality, 4-III-1970) is in OMNH.

We were unable to examine the holotype of *Megopis (Aegosoma) flavipennis* DEMELT (Cameron Highlands, III~VII-1979) which was indicated to be in the author's collection and we examined two paratypes (1♂, Cameron Highlands, VI-1975; 1♀, same, II-1977) in ZSMC.

*Distribution.* Cameron Highlands of West Malaysia.

*Specimens examined.* 5♂♂, 2♀♀, Cameron Highlands, III-1970; 1♂, 5-IV-1990; 1♂, X-1998 (ZKC); 1♀, Pahang, XI-1980, leg. S. E. EMPORIUM, ex. coll. L. H. PAUKSTADT (Germany) in coll. ADC; 1♂, same, VII-1981; 1♂, same, 29-III-1992; 1♂, Cameron Highlands, V-1992; 1♂, same, 11-V-1994; 1♀, same, 1,500 m, V-1998 (ADC); 1♂, 1♀, Kampung Raja, 1,500, IV-1996 (IRSNB).

*Spinimegopis lividipennis* (LAMEERE, 1920), comb. nov.

(Figs. 19, 24)

*Megopis (Aegosoma) lividipennis* LAMEERE, 1920, Anns. Soc. ent. Belg., 60: 142. — GRESSITT, 1950, Longicornia, 2: 16. — HUA, 1982, Check List Longic. Beetles China, 3.

**Male.** Body dark brown for the most part and black in eyes, mandibles, apical halves of antennae, margins of pronotum and scutellum; elytra ivory yellow margined with distinct black lines. Head, pronotum, scutellum and underside furnished with rather long hairs, antennae and elytra very thinly covered with pubescence which is so thin that sometimes hardly recognizable.

Head sparsely granulate; antennal tubercles distinctly raised and forming a crest at the limb of antennal insertion, median furrow deep and wide between antennal tubercles and disappearing basad; mandibles short, each external line abruptly bent inwards and furnished with a small obtuse external dent at apical two-fifths, internal side normally furnished with a dent; eyes fairly large but not so bulging as compared with those of other congeners, interspace between eyes slightly wider than a half of each lobe in dorsal view and twice as large in ventral view. Antennae longer than body, AL/BL 1.03-1.10, covered with granules throughout which become larger on underside of several basal segments and sparser on apical four or five segments; basal three segments thick and segment 4 fairly thick, segment 5 and more apical ones slender; A13/A11 3.7-3.8, A13/A14+5+6 1.03-1.08, segment 11 subequal to segment 5.

Pronotum wide, PW/PL 0.60-0.66, well convex at middle, sparsely granulate and uneven, furnished with distinct three spines at each side, lateral margin distinctly edged in full length. Scutellum semicircular, sparsely haired and punctured.

Elytra long, EL/EW 2.5-2.9, widest and parallel-sided from humeri to basal third, then gradually narrowed apicad to narrowly rounded ends, disc smooth, punctured at basal fourth and other parts granulate; sutural teeth small but distinct; C1 and C2



recognizable by color or states of granules but not raised.

Legs stout, femora and tibiae granulate on underside and punctured on dorsal side, tibiae compressed, tarsi wide, segment 2 wider than long, segment 3 wide and rounded.

Gula roughly granulate; prosternum weakly granulate, furnished with a vertical process at the middle of anterior margin (Fig. 24), which is obtusely and irregularly pointed apicad and provided with long and thick hairs on anterior side (form and length variable); abdomen sparsely punctured, rather thickly covered with long hairs except on lunular parts of each apex of segments 1–4.

**F e m a l e.** Similar to male but antennae shorter and slenderer, AL/BL 0.60–0.69; pronotum narrower, PL/PW 0.65–0.77 and convergent forwards, legs darker and slenderer.

BL: ♂, 30.0–41.5 mm, ♀, 35.1–45.0 mm.

**Type designation.** We designate as the lectotype a female example preserved in IRSNB, length 36 mm, which is attached with labels: “Syntype”, “Coll. R. I. Sc. N. B., Chine, Yunnan, ex coll. Desbrocher”, “ex coll. Desbrocher, Lividipennis Lam., Indochine, Yunnan”, “Coll. R. I. Sc. N. B., ex. réparé par M. Galant”, “Megopis lividipennis Type Lm. (hand-written by LAMEERE) cf. Ann. Sté. Ent. Belg., T. 60, 1920, p. 142”.

**Distribution.** China (Yunnan, Sichuan), Vietnam (Sapa, Tam Dao), Thailand, new record (Chiang Mai), Laos, new record (Xiangkhoang), Myanmar, new record (Knakaya).

**Specimens examined.** (China): 2♂♂, 2♀♀, Miangniang Dmoshan, S. Sichuan, 3,800 m, VII–2004 (ADC); 1♂, Weibaoshan, Weishan, 2,800 m, Yunnan, VI–2004 (ADC). (Vietnam): 1♀, Laokay, Hoang Lien Son, V–1913, coll. DESBROCHER, (IRSNB); 2♀♀, Sapa, VII–1994, (ZKC); 1♀, Mt. Tam Dao, Vinh Phu Province, 12~24-V–1989, Strnad JAN leg. (CHC); 1♀, VI–1992 (ZKC). (Thailand): Fang, Chiang Mai, 1♂, VI–2002; 1♀, V–1996 (ADC); 3♂♂, 2♀♀, 30-V–1993; 1♂, 3♀♀, 9-V–1995, (ZKC). Laos: 1♀, Xianghoang, 23~25-V–1998 (ZKC). Myanmar: 1♀ Knakaya vill. Mizuhina, VI–2005 (ADC).

### *Spinimegopis fujitai* sp. nov.

(Figs. 20, 21, 26, 27)

**M a l e.** Body slender, reddish brown for the most part, eyes, apices of mandibles, each joint part of antennae and legs almost black, elytra brown, margins not distinctly dark colored; head, pronotum, scutellum and underside except abdomen thickly haired, abdomen thinly covered with short hairs.

Head about as long as wide, HL/HW 0.97–1.03; mandibles small, external side obtusely angled; antennal tubercles small and not strongly projected; eyes fairly large but not so bulging, interspace between eyes about as long as a half of each lobe in dorsal view and wider than twice in ventral view. Antennae long and slender, AL/BL 1.10–1.20, ratio of segments and structures close to those of *lividipennis*.

Pronotum sparsely granulate, PL/PW 0.64–0.71, furnished with three spines at each side and SA often not acute. Scutellum small, linguiform and pointed apically, covered with long hairs and minute granules.

Elytra long and slender, EL/EW 2.9–3.3, disc shagreened, not yellowish but rather reddish brown, strongly but evenly punctate throughout.

Gula roughly granulate, prosternum granulate and furnished with a large triangular process at middle of anterior margin and also with a small process just posterior to triangular one (Fig. 26).

*Female.* Antennae and legs shorter and slenderer than in male. HL/HW, PL/PW, EL/EW, AL/BL. Sometimes the triangular process connected with the posterior process and becoming bi-topped one (Fig. 27).

BL: ♂, 20.2–33.5 mm, ♀, 24.0–40.5 mm.

*Distribution.* Northern Vietnam, China (Guizhou, Hubei).

*Type series.* Holotype: ♂, Sapa, Hoan Lien Son, Lao Cai Prov., Vietnam, 13–VI~9–VII–1993, in NSMT. Paratypes: (Vietnam): 1♀, in IRSNB with label “Syntype”, “Laokay, mai 1913” (this example may be the second syntype of *S. lividipennis* written in LAMEERE, 1920 though locality does not agree); 1♂, 1♀, same data as holotype; 1♂, same locality, 5~10–VI–1994; 2♀♀, same, 13–VI~9–VII–1994; 2♂♂, 2♀♀, same, V–1995; 1♀, Mt. Tam Dao, Vinh Phu Prov., 20~26–VII–1993; 1♀, north Pia Oac, Cao Bang Prov., V–1995; 1♀, Mt. Koniya, Cao Bang Prov., 5–VI–1996 (all ZKC). (China): 1♀, Fanjing Shan, Jiangkou, Guizhou, 2001 (ZKC); 1♀, Daba Shan, W. Hubei, 17~22–VII–2001, WRASE leg. (AWC).

*Note.* This new species is close to *S. lividipennis* but easily distinguished by following characters: Body smaller and slenderer; antennae longer (AL/BL of male, 1.10–1.24 but in the latter, 1.03–1.10); elytra brown, deeply and densely punctate so as to have shagreened surface and not yellow as in the latter; process on apex of prosternum obtuse, robust and triangular.

In Sapa, this new species was found higher than 1,500 m alt. and *S. lividipennis* was found under 1,000 m alt. but in Tam Dao, both the two species were found from about 1,000 m.

*Etymology.* This species is named in honor of Mr. Hiroshi FUJITA who is the editor of Gekkan-Mushi. He is also known as the writer of the revision of Japanese *Spinimegopis*.

*Spinimegopis delahayei* sp. nov.

(Figs. 22, 23, 28)

This new species also belongs to the *lividipennis* group.

*Male.* Integument black or dark brown, elytra blackish brown, not distinctly margined with black; head, pronotum, scutellum and underside provided with long hairs, elytra almost glabrous.

Head small, frons and vertex coarsely granulate, HL/HW 0.99–1.02, median



groove wide and meeting basal margin; antennal tubercles strongly projected at the top which is glabrous and shiny; eyes bulging but upper lobe not so large and transversely oval, interspace between eyes slightly shorter than each lobe in dorsal view, about twice as long as each lobe in ventral view; mandibles 0.22 times as long as head, external lines distinctly angled and internal teeth large and placed at basal two-fifths. Antennae slightly longer than body, densely granulate on several basal segments and becoming sparser apicad, AL/BL 1.02–1.06, A13/A11 2.3–2.5, A13 = A13 + 4 + 5.

Pronotum granulate, PL/PW 0.66–0.76, widest at base and slightly narrowed apicad, furnished with three distinct spines at each side. Scutellum small, not pointed.

Elytra long, EL/EW 2.5–3.0, almost parallel-sided from base to apical fifth and roundly but rather steeply narrowed apicad, basal halves weakly punctured and shiny, apical halves weakly and minutely granulate, not shiny; each elytron furnished with feeble C1 and C2 which are often slightly raised.

Legs slender, most parts of femora smooth and shiny; tibiae minutely granulate; tarsi slender, segments 2 or 3 of metatarsi obviously longer than wide.

Gula ruggedly uneven, provided with sparse but large granules, process on anterior margin of prosternum small; abdomen thinly and sparsely haired.

*Female.* Sexual difference is rather small. Antennae shorter and slenderer, AL/BL 0.61–0.73, segment 3 much thinner. Legs, especially tibiae thinner and not strongly depressed.

BL: ♂, 26.7–37.0 mm, ♀, 29.0–37.0 mm.

*Distribution.* Myanmar (Kachin, Chin), China (Yunnan).

*Type series.* Holotype, ♂, Chudu Raji, 2,800 m, Kachin, Myanmar, VIII–2004, in NSMT. Paratypes: (Myanmar – Kachin): 3♂♂, 3♀♀, same data as the holotype (ZKC); 9♂♂, 10♀♀, same locality, VI–2004, (1♀, ADC, others YKC); 1♀, Hpimaw, 8–VI–2002, Y. WATANABE leg.; 1♂, Kambiliti, 9–V–2004, Y. WATANABE leg. (YKC); 1♀, Putao, VI–2001, (ZKC). (Myanmar – Chin): 1♀, Mt. Victoria, Y. KUSAKABE leg. (YKC). (China–Yunnan): 5♂♂, 2♀♀, Gaolushan, Yuxi, VII–2000, YING leg., (2♂♂, ZKC, others ADC); 1♂, Hengduan Shan, VII–1999, M.-J. BOUSQUET leg.; 1♀, Ailaoding, Jingdong, VI–2003, YING & WANG leg.; 1♀, Yingziang, Tongbiguan, YING leg.; 1♀, Xue Shan, Diqin dist., VII–1998, J.-M. BOUSQUET leg. (ADC).

*Notes.* This new species is close to *S. lividipennis* and usually distinguished from the latter by having blackish elytra. It is also different in shorter segment 3 of antennae, narrower tarsi and smaller process of prosternum (Fig. 28). It is also close to *S. fujitai* sp. nov. but is different in almost black body, slenderer apical segments of palpus and blackish elytra.

*Etymology.* This species is named in honor of Mr. Norbert DELAHAYE (France) who built a huge data-base of the Cerambycidae and keeps managing it. We were able to examine his collection for this study.

### 3. *Spinimegopsis cingalensis* Species-group

*Spinimegopsis cingalensis*, *S. mediocostata* and *S. morettoii* have segment 2 of antenna connected to apico-external angle of segment 1 so as to kink at the part (Figs. 10, 13). Segments 1–4 of male antennae thickly covered with long hairs on all side.

#### *Spinimegopsis cingalensis* (WHITE, 1853), comb. nov.

(Figs. 9, 10)

*Aegosoma cingalense* WHITE, 1853, Cat. Coleopt. Ins. Coll. Brit. Mus., Part VII, Longic., 1: 31; 1853, Proc. zool. Soc. London, 21: 27–28. — GAHAN, 1906, Fauna Brit. India, Coleopt., 1: 46.

*Aegosoma angustatum* BATES, 1875, Entomologist's mon. Mag., 12: 51.

*Megopsis (Baralipon) cingalensis*: LAMEERE, 1906, Anns. Soc. ent. Belg., 53: 159; 1919, Gen. Ins., (172): 77.

*Megopsis cingalensis*: DRUMONT, 2003, Les Cahiers Magellanes, 24: 3.

Body slender, integument brown for the most part, dark brown in eyes, apices of mandibles, apices of antennal segments and margins of elytra; long yellowish brown hairs covering head, pronotum, scutellum and elytra; other parts of dorsal side and ventral side clothed with short and sparse pubescence.

**Male.** Head slightly longer than wide, sparsely granulate; mandibles rather long, each external line almost smoothly arched but furnished with a small tubercle at middle just underside of external line; eyes bulging, upper-lobe obliquely oval in dorsal view, interspace between eyes about two-thirds of each lobe in dorsal view, about one and a half times in ventral view. Antennae long and slender, AL/BL 1.10–1.19, segment 1 short and robust, segments 2–4 fairly thick, segment 5 suddenly narrowed, remainders gradually narrowed apicad, segment 2 connected with segment 1 at apico-internal angle, segments 1–4 thickly granulate, subequally haired on all side but the hairs on underside are a little longer and erect, segments 5–11 not granulate, weakly punctured and scattered with hairs, having carinae running on external side and indistinct one on internal side, A13/A11 4.3–4.7, A13 = A14 + 5 + 6, A111 = A18.

Pronotum long, PL/PW 0.60–0.66, widest at Sm and slightly narrowed basad, strongly narrowed apicad and constricted just before apical margin which is distinctly edged; edges of lateral margin not prominent in apical halves; Sa absent, Sm acute and well projected, Sb small, obtuse and pointed upwards; disc uneven and concave at middle, sparsely granulate, thickly covered with long hairs. Scutellum linguiform, thickly covered with long hairs, furnished with distinct median groove.

Elytra long, EL/EW 2.7–2.9, covered with long but sparse hairs except costae and margins, and with granules which become distinct on costae; each elytron furnished with distinct C2 which starts just after base, running almost straight and disappearing just before apex, and C1 which starts at a point closer to base and more prominent than C2 for a short distance and disappearing at about middle, sometimes C3 or C4 faintly observed, sutural tooth absent.

Legs slender, covered with thin hairs, femora and tibiae minutely granulate; each



tibia furnished with a longitudinal groove on dorsal side; segment 1 of protarsi furnished with a shallow groove on dorsal side.

Underside thinly pubescent for the most part.

**F e m a l e.** Antennae shorter, hairs of body sparser, AL/BL 0.87–0.92, segments 3 and 4 slenderer. Legs shorter, femora slenderer.

BL: ♂, 24.0–45.5 mm, ♀, 29.0–41.5 mm.

**Distribution.** Sri Lanka.

**Specimens examined.** Lectotype ♂, and a paralectotype 1 ♂, in BMNH, Ceylon, no further data, both designated by DRUMONT, 2003. Other specimens are as given in DRUMONT, 2003 (17♂♂, 9♀♀, in BMNH, IRSNB and MNHN) and in addition, 1♂, Kandy, 10–VI–1995, 4♂♂, 1♀, 3 km NW from Kotapola, Natara dist. 4~8–XII–1995, S. BECVAR leg. (ZKC).

*Spinimegopis mediocostata* (GRESSITT, 1950), comb. nov.

(Figs. 11–13)

*Megopis (Aegosoma) mediocostata* GRESSITT, 1950, Pan-Pacif. Entomol., **24**: 134.

*Megopis mediocostata* DRUMONT, 2003, Les Cahiers Magellanes, **24**: 9, 11.

**M a l e.** Integument dark brown, black on eyes, mandibles, apices of antennal segments, costae and margins of elytra reddish brown; on abdomen and femora, covered with short brownish yellow hairs. Head sparsely granulate, HL/HW 0.96–1.12, antennal tubercle large and distinctly punctuate – granulate; mandibles large, 0.33 times as long as head, furnished with distinct external dent at about apical third. Antennae rather thick, granulate and thickly haired on segments 1–4; segments 5–11 slender, almost smooth, sub-flattened and carinate externally; segment 2 connected with internal angle of segment 1 so that antenna kinks between 2 and 3 (Fig. 13); AL/BL 1.06–1.09, A13/A11 4.3–4.5, A13/A14 + 5 + 6 1.2, A14 = A15 + 6, A15 = A11.

Pronotum (PL/PW, 0.53–0.56), widest at middle spine which is placed at basal two-fifths, rather steeply convergent both apicad and basad, constricted just before apical end and minutely so close to basal margin; disc well convex, concave in central area and two or three irregular swellings at each side. Scutellum small, semicircular, thickly covered with long yellow hairs.

Elytra subparallel-sided, widest at about basal third; thinly clothed with short hairs for the most part except on costae; covered with minute granules which are rather large on basal areas especially on costae, then becoming weaker and almost invisible in apical half; each elytron furnished with distinct C1 and C2, C1 starting from base, very distinct for a short distance and then weakened and disappearing beyond middle, C2 starting from base, weak in short distance, then becoming stronger and extending close to apex; sutural angle rounded.

Legs long, slender but fairly stout, profemora granulate, mesofemora weakly so, metafemora punctate, tibiae strongly punctate for the most part; claw segment about as

long as united length of three tarsal segments, segment 1 of metatarsi as long as segments 2 + 3.

Underside covered with short hairs, gula roughly granulate,

**F e m a l e.** Body wider than in male, head smaller, antennae shorter and slenderer, pronotum narrower, more steeply narrowed anteriorly and furnished with more acute SM. Elytra shorter, glabrous at middle parts. AL/BW 0.82–0.87, PW/PL 1.8–2.0, EL/EW 2.7–2.8.

BL: ♂, 22.6–46.8 mm, ♀, 35.2–49.4 mm.

**Distribution.** Southern India, Tamil, Kerala (hills of about 1,000 m in altitude).

**Holotype.** ♂, preserved in the California Academy of Sciences (CAS), type No. 7532 (Anamalai Hills of South India, VI–26–46, P. S. Nathan).

**Specimens examined:** 1♂, Nilgiri hill, X–2001, 1♂, same locality, XI–2000, 1♀, same locality, 1♀, same locality, 1♀, Nadugari hill, XI–1995 (ZKC); 1♂, Nilgiri Hills, O. Valley, 3,000 feet, VII–1910, H. L. ANDREWES leg (BMHN), same, 10–VIII–1993, RAUTENSTRAUCH leg. (ADC).

**Notes.** This species is distinguished from *S. cingalensis* by larger body (usually larger than 40 mm) and darker color but in a small example, it is more similar to the latter species. In this species, body is clothed with shorter hairs, C2 of elytra is developed, tibiae and segment 1 of protarsi are devoid of longitudinal grooves.

### *Spinimegopis morettoii* (DRUMONT, 2003), comb. nov.

(Fig. 14)

*Megopis morettoii* DRUMONT, 2003, Les Cahiers Magellanes, **24**: 8, 10, 11.

This species is also a member of the *cingalensis* group.

**M a l e.** Body reddish brown, thickly covered with long, fur-like, yellowish brown hairs on head, basal halves of mandibles, pronotum, basal areas of elytra and apical half of underside, other parts mostly sparsely covered with thinner and shorter hairs.

Head small, slightly wider than long, frons irregularly granulate, vertex finely punctured, antennal tubercles small; eyes bulging, interspace between eyes as long as each lobe; mandibles short, thickly pubescent on basal halves, external lines smoothly rounded and without any tubercle. Antennae rather short, AL/BL 0.85–0.87; segment 2 connected with apico-external angle of segment 1; segments 2–4 rather slender and not distinctly narrowed between segments 4 and 5; segments 1–4 roughly granulate and thickly haired, segments 5–11 almost glabrous, segments 6–11 slightly depressed and carina running along external side.

Pronotum trapezoidal, PA/PB 0.75, PL/PW 0.57, furnished with a small but acute spine at basal two-fifths, apical and basal corners looking angled in dorsal view but without spine; disc covered with particularly long hairs and slightly concave at middle. Scutellum small, semicircular, covered with long hairs.

Elytra rather flat, subparallel-sided in basal two-thirds, then slightly narrowed to



apical sixth and rounded apicad, EL/EW 2.7; C1 and C2 vestigial and less prominent though pattern of two costae close to those of *cingalensis*; sutural angle without tooth.

Legs slender, relatively short; tarsi narrow, segment 3 slightly wider than 1 and 2, segment 1 about as long as segments 2+3, claw subequal to segments 1+2+3.

**Female.** Body a little longer; head, antennae and most part of elytra glabrous and only pronotum thickly covered with yellowish hairs, mandible smaller, antennae shorter, AL/BL 0.72, legs shorter and slenderer.

BL: ♂, 21–30.5 mm, ♀, 21.5–32 mm.

**Types.** Holotype, ♂, in MNHN (Horton Plains, Ceylon, 29-V-1982, P. MORETTO leg.). Allotype, ♀, in MNHN, same data. Paratypes, 2♂♂, 1♀, same data (ADC, ZKC).

**Notes.** This species is close to *S. cingalensis* and different in shorter antennae, more thickly haired pronotum, less convex and wider elytra with obsolete costae.

#### 4. *Spinimegopis formosana* Species-group

Members of *S. formosana* species-group are distinct in having antennae hair-fringed on segments 1–4~7 in both sexes. *Spinimegopis formosana*, *S. ishigakiana*, *S. kawazoei*, *S. nipponica*, *S. huai* sp. nov., *S. curticornis* sp. nov., *S. piliventris* and their subspecies are included in this group.

##### *Spinimegopis formosana formosana* (MATSUSHITA, 1933), comb. nov.

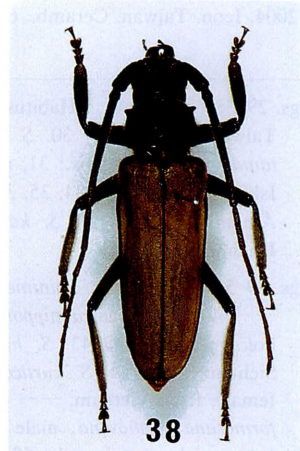
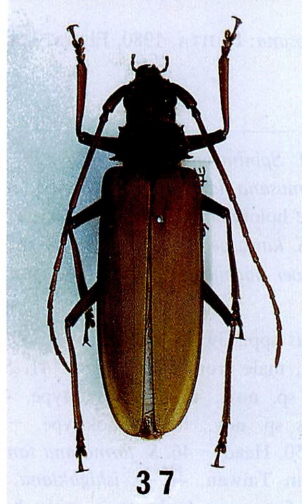
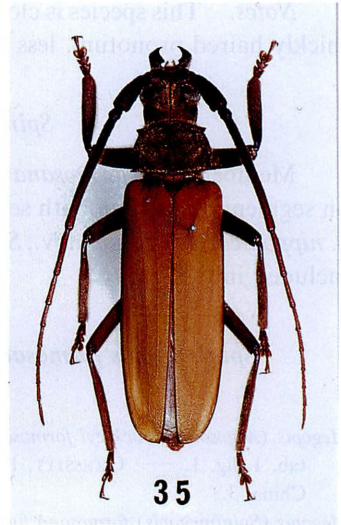
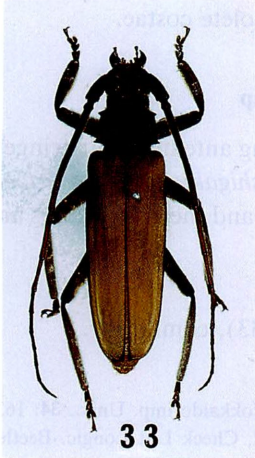
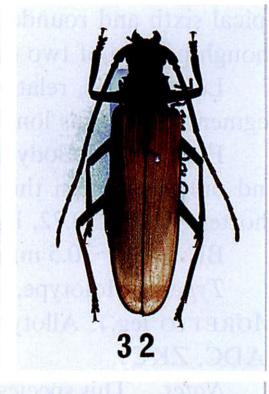
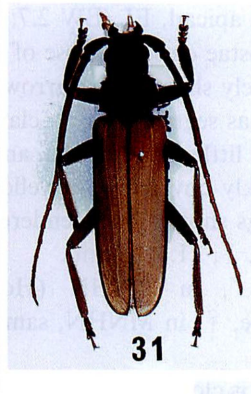
(Figs. 29, 47)

*Megopis (Aegosoma) buckleyi formosana* MATSUSHITA, 1933, J. Fac. Agric. Hokkaido imp. Univ., **34**: 163, tab. 1, fig. 1. — GRESSITT, 1951, Longicornia, **2**: 15. — HUA, 1982, Check List Longic. Beetles China, **3**.

*Megopis (Spinimegopis) formosana formosana*: FUJITA, 1980, Elytra, Tokyo, **8**: 1 & 3, figs. 1–4. — CHOU, 2004, Icon. Taiwan. Ceramb., **60**.

Figs. 29–38 (on p. 364). Habitus of *Spinimegopis* spp. — 29. *S. formosana formosana* from Taiwan, male. — 30. *S. formosana lanhsuensis* holotype, male. — 31–32. *S. formosana tamdaoana* subsp. nov.: 31, male holotype, 32, female paratype. — 33. *S. ishigakiana* from Is. Ishigaki, male. — 34, 35, 37. *S. kawazoei*: 34, female holotype, 35, male, 37, female all from Is. Amami. — 36, 38. *S. kawazoei hachijoana*, males: 36, from Is. Nakanoshima, 38, from Is. Hachijō.

Figs. 39–52 (on p. 365). *Spinimegopis* spp.; 39–45, habitus. — 39. *S. kawazoei okinawana*, female. — 40. *S. nipponica nipponica*, male from Ehime. — 41. *S. nipponica yakushimana*, male, holotype. — 42–43. *S. huai* sp. nov.: 42, male holotype, 43, female paratype, both from Sichuan. — 44. *S. curticornis* sp. nov., female holotype. — 45. *S. piliventris antennalis*, female, from Vietnam. — 46–50. Head. — 46. *S. formosana tamdaoana* subsp. nov., male. 47. *S. formosana formosana*, male from Taiwan. 48. *S. ishigakiana*, male from Is. Ishigaki. 49. *S. kawazoei kawazoei*, male. 50. *S. formosana lanhsuensis*, male, holotype. — 51–52. Antenna. — 51. *S. nipponica nipponica*, male. 52. *S. kawazoei kawazoei*.







39



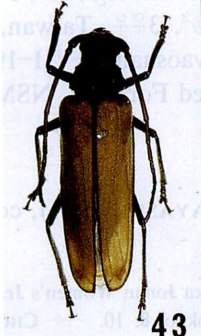
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Head, pronotum, legs and antennae reddish brown. Elytra yellowish brown, margined with narrow black lines. Head punctured and uniformly haired; mandibles 0.25 times as long as head, each external line obtusely but distinctly bent inwards and furnished with a small tubercle (tooth) at about middle (Fig. 47). AL/BL 1.03–1.17, A13/A11 3.5–3.9, A13/A14+5+6 1.00–1.03 in male, AL/BL 0.84–0.91, A13/A11 2.7–2.8, A13/A14+5+6 1.00–1.07 in female. Elytra thinly pubescent, minutely granulate; EL/EW 2.41–2.83 in male, 2.92–3.60 in female, each furnished with C1 and C2 which are slightly pigmented but almost not elevated. Legs rather stout in male, slender in female.

BL: ♂, 22.0–31.0, ♀, 31.5–38.4.

*Distribution.* China (Taiwan, Guangxi Zhuangzu Zizhiqu).

*Holotype.* ♀, preserved in the collection of Hokkaido Univ., attached labels “Shichokei, IV. 1926, K. KIKUCHI” “formosana MATSUSHITA”.

*Specimens examined.* (China – Taiwan): 1♂, Lishan, Nantou Hsien, 25–V–1988; 1♂, 1♀, Horisha, Nantou Hsien, VI–1993, N. OHYOYAMA leg.; 1♂, 1♀, Wulai Township, 4–VI–2003; 4♀♀, Taiwan (no further data); 2♂♂, 3♀♀, Taiwan, 1966, (no further data). (Guangxi Zhuangzu Zizhiqu): 1♀, Mt. Dayaoshan, 7–VII–1994, W. KITAWAKI leg.; 1♀, same locality, VI–1997 (ZKC). 1♀, labeled Formosa, NSMT–I–C, 3779K, T. KANO collection (NSMT).

*Spinimegopsis formosana lanhsuensis* (HAYASHI, 1974), comb. nov.

(Fig. 30, 50)

*Megopsis (Spinimegopsis) lanhsuensis* HAYASHI, 1974, Bull. Osaka Jonan Women’s Jr. Coll., 9: 2.

*Megopsis (S.) formosana lanhsuensis*: FUJITA, 1980, Elytra, Tokyo, 8: 10. — CHOU, 2004, Icon. Taiwan. Ceramb., 60.

*Megopsis lanhsuensis*: HUA, 1982, Check List Longic. Beetles China, 3.

As compared with subsp. *formosana*, integument darker, elytra brownish and scutellum almost black; segment 3 of antennae longer; inside of meso- and metatibiae clothed with thick yellow hairs. In body color, antennal ratio of segments and thick hairs on legs, it resembles *S. ishigakiana* but is easily distinguished by having an external tubercle of mandible while smoothly rounded in the latter.

BL: ♂, 29.0–30.7 mm, ♀, 36 mm (after CHOU, 2004).

*Types.* Holotype ♂, preserved in OMNH, labeled “Is. Lan Hsu, Taiwan, 21–III–1971, K. MATSUDA leg.” “Holotype, *Megopsis (Spinimegopsis) lanhsuensis* HAYASHI, 1974”.

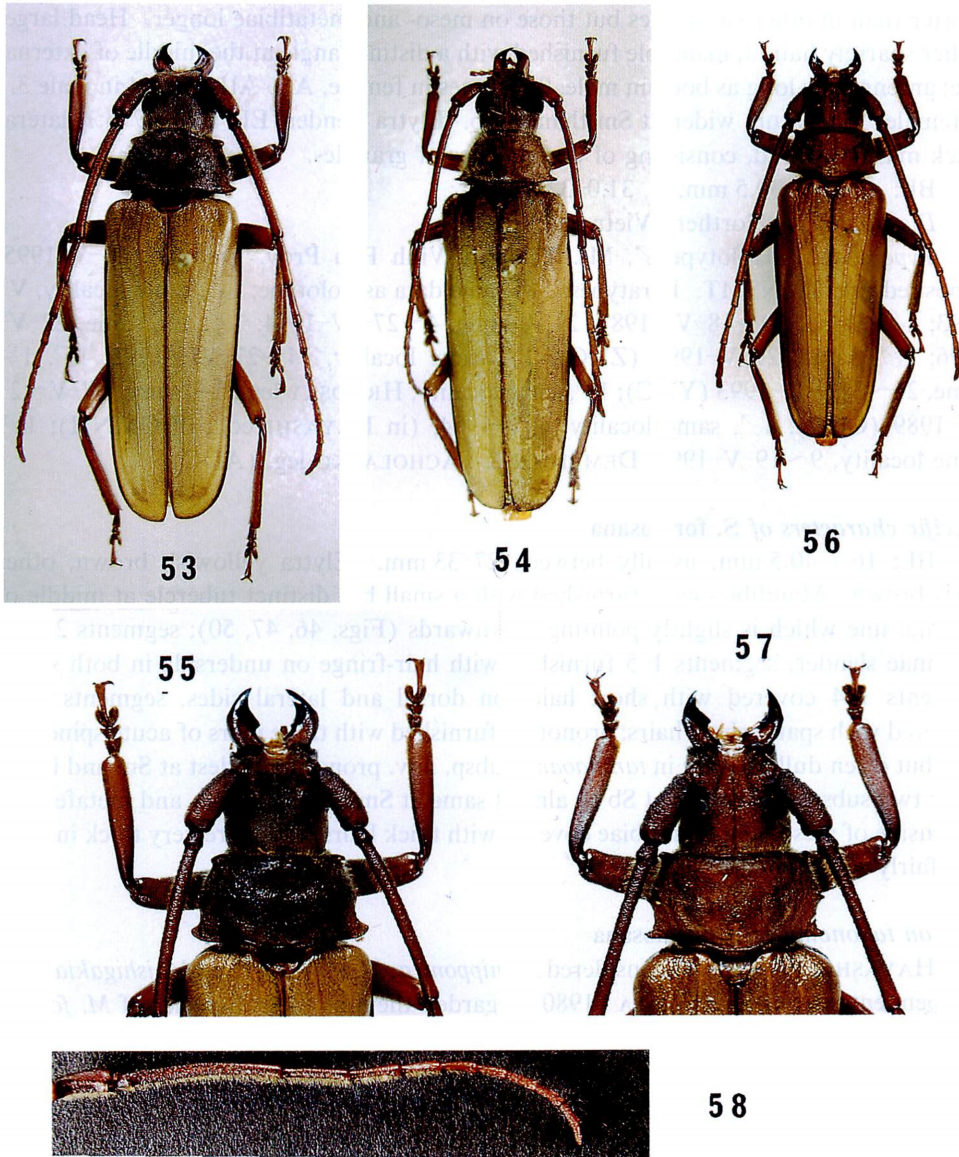
*Specimen examined.* 1♂, Is. Lanyu, 10–IV–1990, Mao-su LIM leg.

*Spinimegopsis formosana tamdaoana* subsp. nov.

(Figs. 31, 32, 46)

Body brownish yellow and close to that of *lanhsuensis*; hairs on head and pronotum





53–58. *Spinimegopis* spp. — 53–55. *S. piliventris piliventris*: 53, male habitus, 54, female habitus, 55, male head and pronotum. — 56–58. *S. piliventris antennalis* from Vietnam, 56, male habitus, 57, male head and pronotum, 58, male antenna.

shorter than in other subspecies but those on meso- and metatibiae longer. Head large, rather sparsely haired; mandible furnished with a distinct angle at the middle of external line; antennae as long as body in male, 0.78 times in female,  $Al3/Al1$  3.1–3.4 in male 3.1 in female. Pronotum wider at Sm than at Sb. Elytra slender,  $EL/EW$  2.7–3.1, lateral black margins broad, consisting of double lines of granules.

BL: ♂, 16.7–30.5 mm, ♀, 31.0–32.6 mm.

*Distribution.* Northern Vietnam.

*Type series.* Holotype ♂, Mt. Tamdao, Vinh Phu Prov. Vietnam, 20–V–1995, deposited in coll. NSMT. Paratypes: 1♂, same data as holotype; 1♂, same locality, V–1993; 1♂, same, 10~18–VI–1981; 2♀♀, same, 4~27–IV–1994; 1♂, 1♀, same, 22–V–1996; 1♂, same, 29–V–1995 (ZKC); 1♀, same locality, 14~27–VII–1992; 1♂, 1♀, same, 26~31–VII–1993 (YKC); 1♂, same locality, HRADSKY leg.; 1♀, same, 27–V~2–VI–1989 (CHC); 1♂, same locality, 4–V–1994, (in HAYASHI coll. of OMNH); 1♂, same locality, 9~19–V–1996, DEMBICKY & PACHOLATKO leg. (ADC).

#### *Specific characters of S. formosana*

BL: 16.7–40.5 mm, usually between 27–33 mm. Elytra yellowish brown, other parts brown. Mandibles each furnished with a small but distinct tubercle at middle of external line which is slightly pointing downwards (Figs. 46, 47, 50); segments 2–4 of antennae slender, segments 1–5 furnished with hair-fringe on underside in both sexes, segments 1–4 covered with short hairs on dorsal and lateral sides, segments 5–11 scattered with sparse short hairs; pronotum furnished with three pairs of acute spines, Sa long but often dull at apex; in *tamdaoana* subsp. nov. pronotum widest at Sm and in the other two subspecies widest at Sb or almost same at Sm and Sb; meso- and metafemora and inside of meso- and metatibiae covered with thick hairs which are very thick in male and fairly so in female.

#### *Note on taxonomy of S. formosana*

HAYASHI (1969, 1984) considered *M. nipponica*, *M. kawazoei* and *M. ishigakiana* as independent species and FUJITA (1980) regarded them as the subspecies of *M. formosana*. The facts that most of them commonly bore *Ilex* spp. and that some species involving variations which seem to suggest transition to other species, support FUJITA's argument. However, we prefer to take HAYASHI's view (1984) and revive *nipponica*, *kawazoei* and *ishigakiana* as independent species. The reasons for such arrangement are as follows: 1) Morphological diversities among typical forms are large enough as compared with specific relations in the other species-groups in the same-genus. 2) Just as N. OHBAYASHI *et al.* (1992) pointed, the distances among FUJITA's subspecies are quite uneven, though every one is recognizable, and we consider it better to give grades to them by such arrangement. 3) Some special variations found in the Ryukyu Archipelago can be the result of human activity by carrying fire woods from island to island throughout a long period.



**Key to the Subspecies of *Spinimegopis formosana***

1. Elytra yellowish, black margins thinner, internal side of metatibia clothed with rather short and sparse hairs; (China – Taiwan, Guangxi) . . . . .subsp. *formosana*.  
— Elytra brownish, black margins broader, internal side of metatibia clothed with very long hairs . . . . .2.
2. External tubercles of mandibles small, antennae longer (AL/BL, ♂, 1.14, ♀, 0.90); (Lanyu Is.) . . . . .subsp. *lanhsuensis*.  
— External tubercles of mandibles large, antennae shorter (AL/BL, ♂, 1.03–1.10, ♀, 0.83–0.88); (Vietnam) . . . . .subsp. *tamdaoana* nov.

***Spinimegopis ishigakiana* (YOSHINAGA et NAKAYAMA, 1972), comb. nov.**

(Figs. 33, 48)

*Megopis (Spinimegopis) ishigakiana* YOSHINAGA et NAKAYAMA, 1972, Gensei, Kôchi, (23): 19. — HAYASHI, 1984, Coleopt. Japan Col., Osaka, 4: 3.

*Megopis (Spinimegopis) formosana ishigakiana* FUJITA, 1980, Elytra, Tokyo, 8: 10. — KUSAMA & TAKAKUWA, 1984, Longic.-beetles Japan Col., 136. — N. OHBAYASHI *et al.*, 1992, An Illustr. Guide Identific. Longicorn Beetles Japan, 414.

This species is similar to subspecies *lanhsuensis* and *tamdaoana* of *S. formosana* in body color, size and length ratios of body parts. As compared with them, mandibles longer and with neither tubercles nor distinct angles on external lines (Fig. 48); protibiae of male more robust; hairs on femora and inside of tibiae soft, fur-like, longer and thicker especially in male. Usually, male antennae more robust, hair-fringe of segment 5 not distinctly weakened as in *formosana*, femora stouter.

AL/BL 1.05–1.07 in male, 0.85–0.90 in female, A13/A11 3.4–3.6 in male, 3.0–3.5 in female, A13/A14 + 5 + 6 1.14–1.17 in male, 1.15 in female. Elytra yellowish brown, margined with black, EL/EW 2.40–2.55 in male, 2.50–3.00 in female.

BL: ♂, 26.5–34.0 mm, ♀, 30.5–37.5 mm.

*Distribution.* Japan – Is Ishigaki, Is. Iriomote.

*Holotype.* NAKAYAMA's private collection (Kôchi).

*Specimens examined.* (Is. Ishigaki): 1♀, Mt. Bannadake, 14–VI–1969, Y. KUSUI leg.; 1♂, 2♀♀, Koda-Rindô, 27–V–1993; 2♂♂, 2♀♀, Mt. Omotodake, 4~10–VI–1994, (Is. Iriomote): 2♂♂, 2♀♀, Shirahama, 17~20–VI–1997 (ZKC).

*Host plant.* *Ilex integra* THUNBERG.

***Spinimegopis nipponica nipponica* (MATSUSHITA), 1934, comb. nov.**

(Fig. 40)

*Megopis (Aegosoma) nipponica* MATSUSHITA, 1934, Trans. nat. Hist. Soc. Formosa, 24: 538–539.

*Megopis (Spinimegopis) nipponica*: K. OHBAYASHI, 1963, Fragm. coleopterol., Kyoto, (2): 7 (designation of the type species of the subgenus). — NAKANE *et al.*, 1963, Icon. Ins. Japon., 2: 267, pl. 134. — KOJIMA & HAYASHI, 1969, Ins. Life Japan, 1: 5, pl. 1.

*Megopis (Spinimegopis) formosana nipponica*: FUJITA, 1980, Elytra, Tokyo, 8: 4. — KUSAMA & TAKAKUWA, 1984, Longic.-Beetles Japan Color, 136. — N. OHBAYASHI *et al.*, 1992, Illustr. Guide Identific. Longic. Beetles Japan, 414.

Size and proportion of body close to those of *S. formosana*; each external tubercle of mandible smaller; antennae usually slenderer, hair-fringe furnished on segments 1–4 and rarely scattered hairs observed on 5 in male, sparse hair-fringe found on segments 1–4 to 6 in female; pronotum widest at base (Sb) and rather straightly narrowed apicad, Sm usually absent; elytra gradually narrowed at apical third and long hemi-oval at apices.

AL/BL 1.00–1.09 in male, 0.79–0.89 in female, A13/A11 3.35–3.56 in male, 3.05–3.10 in female, A13/A14 + 5 + 6 1.17 in male, 1.15–1.19 in female, elytra yellowish brown and margined with narrow black lines, EL/EW 2.56–2.60 in male, 2.55–2.58 in female.

BL: 26.6–36.4 mm, 29.5–39.5 mm.

*Distribution.* Japan – Shikoku.

*Specimens examined.* We were unable to find the holotype of this species. 1♂, Kuroson, Kôchi Pref., 15–VII–1986, S. NAKAMURA leg.; 1♂, Matsuyama, Ehime Pref., 8–VIII–1974, H. KAN leg.; 2♂♂, 3♀♀, same locality, 13–VIII–1971, 15–VII–1975; 1♂, 1♀, Kotohira, Kagawa Pref., 21–VII–1996, T. KAMIYA leg.; 1♂, 1♀, Naruto City, Tokushima, 6–VI–2001; 1♀, 2–VII–1996, T. KAMIYA leg. (ZKC).

*Host plant.* *Ilex integra* THUNB., *I. pedunculosa* MIQ.

*Spinimegopis nipponica yakushimana* (FUJITA, 1980), comb. nov.

(Fig. 41)

*Megopis (Spinimegopis) formosana yakushimana* FUJITA, 1980, Elytra, Tokyo, 8: 4.

As compared with the nominotypical form, elytra wider and legs shorter, often more reddish, hair fringe of male more developed and extending to segment 5, pronotum provided with a small Sm in female.

BL: ♂, 36.5–37.5 mm, ♀, 33.5–38.5 mm.

*Distribution.* Is. Yakushima, Is. Tanegashima and Is. Kuchinoerabujima of Isls. Kumage, Kyushu (mainland).

*Holotype.* Preserved in NSMT, Nagata, Is. Yakushima, 14–VII–1972, Toku WATANABE leg.

*Specimens examined.* 1♀, Miyanoura, Is. Yakushima, 19–VII–1971, K. KUSAMA leg. (in coll. KUSAMA); 1♀, Shiratani, 19–VII–1971, H. FUJITA leg.; 2♀♀, same locality, 23–VII–1998, K. IJIMA leg.; 1♂, Is. Kuchinoerabujima, 23–VII–1998, S. YAMAYA leg.; 1♀, Nishinoomote, Is. Tanegashima, 10–II–1986 (emerged 22–VII–1986), Y. JOHKI leg.; 1♀, Uchinoura, Kimotsuki-gun, Kagoshima Pref., 17–VII–2002, N. UEDA leg. (HFC, ZKC).

*Specific characters of S. nipponica.* Elytra yellow, rarely reddish (in ssp. *yakushimana*) margined with narrow black lines. Mandibles small, each external side furnished with a small tubercle; antennae about as long as body in male, A13/A11 > 3, hair-fringe



sparse and short, usually found on segments 1–4; pronotum widest at base, Sm absent or vestigial.

*Spinimegopsis kawazoei kawazoei* (HAYASHI, 1961), comb. nov.

(Figs. 34, 35, 37, 49)

*Megopsis (Aegosoma) kawazoei* HAYASHI, 1961, Ent. Rev. Japan, 13: 36–37.

*Megopsis (Spinimegopsis) kawazoei*: K. OHBAYASHI, 1963, Fragm. coleopterol., Kyoto, (2): 7.

*Megopsis (Spinimegopsis) formosana kawazoei*: FUJITA, 1980, Elytra, Tokyo, 8: 4–5. — N. OHBAYASHI *et al.*, 1992, Illustr. Guide Identific. Longic. Beetles Japan, 415.

This species is usually distinct from others in thick segment 3 of antennae and developed hair-fringe which extends from segment 1 to segment 5, reddish brown elytra margined with dark brown lines.

BL. ♂, 34.0–43.5 mm, ♀, 34.1–41.0 mm.

*Distribution.* Japan – Is. Amami Ōshima.

*Holotype.* ♀, preserved in OMNH in HAYASHI coll., with labels OMNH 98–32, Is. Amami Ōshima, 30–VII–1959, A. KAWAZOE leg. We examined 27 exs. including the following 15 specimens from Is. Amami but they are mostly similar to each other (Figs. 35, 37) and quite different from the holotype (Fig. 34). However, we regard them as belonging to this species, not only because the ratio of antennal segments is similar to that in the holotype but also because we cannot believe two species of this group occur in this small island.

*Specimens examined.* (Is. Amami Ōshima) 1♂, 2♀♀, Mt. Yuwandake, 16–VII–1979, T. MIZUNUMA leg.; 1♂, Nishinakama, Sumiyō-son, 16–VII–1979; 1♀, Hatsuno, 14–VII–1974, Y. YAMAKAWA leg.; 1♂, 1♀, Mt. Akatuchiyama, VII–1978, M. ITO leg.; 1♂, same locality, 11–VII–1994, N. KOBAYASHI leg., same locality; 2♂♂, 3♀♀, 2~5–VII–1997; 1♂, 1♀, Mt. Yuwandake, 6–VII–2001 (HFC, ZKC).

*Host plant.* *Ilex integra* THUMB., *Machilus japonica* SIEB. et Zucc.

*Spinimegopsis kawazoei okinawana* (FUJITA, 1980), comb. nov.

(Fig. 39)

*Megopsis (Spinimegopsis) formosana okinawana* FUJITA, 1980, Elytra, Tokyo, 8: 5–8.

Close to subsp. *kawazoei* but external angle of mandibles more obtuse, elytra darker and more brownish, margins usually black. AL/BL 1.07 in male, 0.88 in female, A13/A11 2.7 in male 2.4 in female, A13/A14+5+6 1.12 in male, 0.96 in female, EL/EW 2.32 in male, 3.05 in female.

BL: ♂, 42.0 mm, ♀, 28.1–35.0 mm.

*Holotype.* Preserved in the collection of T. KOBAYASHI.

*Spinimegopsis kawazoei hachijoana* (FUJITA, 1980), comb. nov.

(Figs. 36, 38)

*Megopsis* (*Spinimegopsis*) *formosana hachijoana* FUJITA, 1980, *Elytra*, Tokyo, 8: 11.

Close to *kawazoei* but body darker, elytra yellowish brown, margined with black lines, antennae longer, spines of pronotum usually dull, Sm shorter.

BL (only in specimens from Is. Hachijō): ♂, 38.5–40.9 mm, ♀, 36.0–39.9 mm.

*Distribution.* Japan – (Izu Islands): Is. Hachijō, (Tokara Islands, new records): Is. Kuchinoshima, Is. Nakanoshima, Is. Gaja-tō, Is. Suwanosejima, Is. Akusekijima.

*Specimens examined.* (Is. Hachijō): Holotype ♂, Sueyoshi, 16–VII–1977, H. FUJITA leg. (NSMT). Paratype: 1♀, same locality, 17–VII–1977; 1♂, Oogagō, 4–VII–1997; 1♂, 1♀, Nakanogō, 4–VII–1996; 2♂♂, Sueyoshi, 11–VII–1999. (Is. Nakanoshima): 2♂♂, 1♀, 4–VII–1995; 1♂, 15–VII–1989; 1♀, 7–VII–1990, K. IJIMA leg.; 1♀, 8–VII–1998, K. IJIMA leg.; 2♂♂, 30–VI–1998, R. SADAKI leg.; 1♂, 5–VII–1999, Y. TANAKA leg. (Is. Kuchinoshima): 3♂♂, 3♀♀, 26–27–VI–1998, J. HAMADA leg. (Is. Gaja-tō): 1♂, 28–VI–1998, M. TABANA leg.; 2♂♂, 3♀♀, 6–VI–1999, T. MATSUSHITA leg. (Is. Swanosejima): 4♂♂, 4♀♀, Y. TANAKA leg. (Is. Akusekijima): 3♀♀, VII–1985; 1♂, 10–VII–1988, K. HAMAI leg. (HFC, ZKC).

*Host plant.* *Ilex integra* THUMB.

*Variations in the Tokara Islands.* Specimens of the Tokaras are slightly different from island to island. Specimens of Is. Hachijō (Fig. 38) have darker body and shorter Sm and those of Is. Nakanoshima (Fig. 36) have shorter legs and longer Sm, but often not separable and closer to the latter than to other islands. Specimens of Is. Kuchinoshima are close to those of Nakanoshima but elytra more yellowish and in Suwanosejima and Akusekijima, specimens close to *kawazoei* from Amami-Ōshima are included.

*Specific character of S. kawazoei.* Usually a little larger than *S. formosana* or *S. nipponica*. External line of mandible obtusely angled but without distinct tubercle; segment 1 relatively longer,  $Al3/Al1 < 3$ , segment 3 of antennae rather thick, segments 1–5 furnished with hair-fringe which is not strongly reduced on segment 5, very sparse hairs scattered on segments 6–10, segments 1–4 finely granulate, 6–11 sparsely and rather rugosely punctate-granulate; AL/BL 1.01–1.07 in male, 0.84–0.88 in female; pronotum furnished with three distinct spines at each side, Sm usually as long as Sa or Sb but acuter and slenderer.

**Key to the Subspecies of *S. kawazoei***

1. Sm shorter than other spines, elytra yellowish brown, margined with black; (Is. Hachijō, Isls. Tokara) .....subsp. *hachijoana*.  
— Sm of pronotum as long as Sa or Sb, elytra reddish brown .....2.



2. Body more reddish, external angle of mandible more distinct; (Is. Amami Ôshima)  
 .....subsp. *kawazoei*.  
 — Body more brownish, external angle of mandible less distinct; (Is. Okinawa, Is.  
 Tokashikijima) .....subsp. *okinawana*.

*Spinimegopsis huai* sp. nov.

(Figs. 42, 43)

**Male.** Body dark grayish brown, usually almost black, elytra soiled – seemingly grayish yellow margined with narrow black lines; head, pronotum, scutellum, basal halves of antennae and mandibles, legs and venter covered with gray or grayish yellow hairs, elytra uniformly covered with short yellowish gray pubescence.

Head wider than long, HL/HW 0.67–0.80, uniformly granulate, frons steeply inclined downwards, antennal insertion lying in front of inner half of upper eye-lobe; eyes fairly bulging, upper eye-lobes strongly emarginate, interspace between eyes in dorsal view about two-thirds as long as each lobe; mandibles short, about 0.2 times as long as head, external line obtusely angled and without tubercle, internal tooth small. Antennae as long as body, segments 1–5 granulate, thickly haired and hair-fringed, segments 6–11 sparsely and roughly granulate and sparse short hairs scattered, segment 3 robust and shorter than three times of segment 1, AL/BL 1.01–1.03, A13/A11 3.03–3.07, A13/A13+4+5, 1.06–1.11.

Pronotum large, PW almost as long as basal width of elytra, PL/PW 0.63–0.67, widest at Sm which is located at basal third, disc furnished with an irregular cross-formed raised part, and also with a pair of shallow foveae at each side of middle close to apical margin; three spines small and often becoming small tubercles, Sa located not exactly on apical angle but a short distance posteriad. Scutellum linguiform and often minutely emarginate at apex.

Elytra widest just after humeri, subparallel-sided in basal two-thirds, smoothly narrowed to small arch of apices; costae obsolete, EL/EW 2.48–2.53.

Underside covered with long and thick hairs; apices of last two abdominal segments furnished with long hairs.

Legs slender, covered with yellowish gray hairs which are very long on inner sides of femora and tibiae; segment 2 of metatarsi slightly longer than wide, united length of segments 1+2 as long as claw segment.

Male genital organ close to that of *S. formosana* but penis slenderer and more acutely pointed apicad.

**Female.** Head smaller, AL/BL 0.65–0.74; pronotum smaller, widest at Sm, lateral spines usually small, Sa or Sb sometimes absent, Sa located a short distance from apical margin and lateral lines steeply narrowed again between Sa and apex; Sm located at basal quarter or fifth, PL/PW 0.55–0.67; EL/EW 2.55–2.94.

BL: ♂, 26.3–30.2 mm, ♀, 21.6–32.8 mm.

*Distribution.* China (Sichuan, Hubei, Shaanxi, Fujian).

*Type series.* Holotype: ♂, Mt. Huaeshan, 25 km east of Wanyuan City, Sichuan, China, 21~27-VII-1998, preserved in NSMT. Paratypes: (Sichuan): 1♂, 2♀♀, same data as holotype; 1♀, Shingang, Wanyuan, 5~10-VII-1997; 1♀, Mt. Dabashan, VII-1997, Z. L. PENG leg.; 1♀, same locality, VII-1998; 1♀, same locality, VII-1999; 1♂, Mt. Emeishan, VII-1997, TONG leg.; 2♀♀, same locality, VII-1999. (Hubei): 1♀, Mt. Song-bai, Shen-tong, VII-1998, LIN leg. (Shaanxi): 1♀, Sud-Shaanxi, VIII-1997. (Fujian): 1♀, Mt. Wuyishan, 580 m, VII-1997; 1♀, same, 17-VII-1998, Y. H. RONG leg. (paratypes are in ADC, ZKC and EVC).

*Etymology.* This species is named in honor of Professor Dr. HUA Lizhong of Zhongshan University, Institute of Entomology, for expressing our respect to his distinctive works on the Chinese Cerambycidae.

*Spinimegopsis curticornis* sp. nov.

(Fig. 44)

This new species is known only from a female and is an only representative of the *formosana* species-group from the Guangdong area of China.

*Female.* Body black, elytra obscure grayish brown and margined with broad black lines, irregularly darkened around scutellum; rather uniformly covered with short pubescence.

Head slightly longer than wide, roundly narrowed to base; frons rugosely granulate; eyes bulging, interspace between upper eye-lobes about a half of each lobe; mandibles 0.2 times as long as head, triangularly narrowed apicad and acutely pointed in lateral view, thickly pubescent in basal three-fourths, obtusely angled and without tubercle on external side, having a rather distinct internal tooth. Antennae short and broad, hair-fringes recognized on segments 1-5 but very short and rather difficult to be regarded as fringe, AL/BL 0.59, A13/A11 2.9, A13 > A14 + 5 + 6.

Pronotum wide, PL/PW 0.49, covered with long hairs, furnished with three similar-sized spines at each side, widest at base (Sb), slightly narrowed from Sb to Sm and more strongly convergent to Sa which is placed at apical angle, apical margin strongly carinate. Scutellum linguiform, uniformly granulate, median groove distinct, not emarginate at apex.

Elytra wide, EL/EW 2.3; uniformly covered with thin yellowish gray pubescence which is denser as compared with that in congeners; sutural angle furnished with small tooth.

Legs rather short.

Underside covered with hairs which are long on metasternum and metepisternum, segments 4 and 5 of abdomen furnished with long hairs on each apices.

BL. 29.1 mm.

Holotype. ♀, Mt. Luodingshan, 1,700 m, near Luoding City, Guangdong, China, IX-2001, YIN leg. Preserved in ADC and will be deposited in IRSNB.

*Notes.* This new species is close to *S. huai* sp. nov. in body color but quite different



as follows: pronotum widest at base, Sa located at apical angle and distinctly projected, antennae short, segments 6–11 wider. It is rather close to *S. kawazoei* in the structure of mandibles, antennae and pronotum but quite different from the latter in body color, size, and broader and shorter antennae.

*Spinimegopsis piliventris piliventris* (GRESSITT, 1950), comb. nov.

(Figs. 53–55)

*Megopsis (Aegolipton) piliventris* GRESSITT, 1950, Pan-Pacif. Entomologist, 24: 135.

This species is also regarded as a member of the *S. formosana* species-group in having hair-fringed antennae in both sexes, though it is quite different from other members of the same group in larger size, widely separated eyes, superficially twelve-segmented antenna and developed costae of elytra.

**Male.** Body large and robust, ochreous, elytra ivory-yellow with black margins. Body clothed with fine erect yellow or tawny hairs, elytra glabrous.

Head slightly longer than wide, HL/HW 1.08, roundly narrowed basad, coarsely granulate and furnished with a depression between eyes, antennal tubercles small, antennal insertions lying in front of inner halves of upper eyelobes; eyes bulging, upper lobe transversely oval, interspace between eyes 1.2 as long as each lobe on dorsal side and 2.0 times on ventral side; mandibles 0.31 times as long as head, external lines abruptly bent inwards at middle but not angled, internal lines forming usual posteriorly delimited tooth which is large on left side but very small on right one. Antennae 0.84 times as long as body, segment 1 deeply grooved inside, segments 1–3 granulate, segments 4–6 weakly granulate and rather smooth, segments 7–11 sparsely but roughly sculptured; segments 1–7 hair-fringed; segments 6–11 slightly depressed and a longitudinal carina running along external line, segments 6–10 angled ecto-apically, segment 11 divided into two parts by a fixed joint; A13/A11 2.7, A13/A14 + 5 + 6 1.03, A15 = A11.

Pronotum trapezoidal, base slightly narrower than humeri, PL/PW 0.67–0.68, furnished with three spines at each side, middle one (Sm) not well developed, widest at Sb and almost straightly narrowed forwards, disc irregularly uneven, coarsely granulate, covered with long but sparse hairs. Scutellum rectangular and rounded at corner, minutely emarginate at middle.

Elytra wide, EL/EW 2.41, widest just after humeri, subparallel-sided and only slightly narrowed in apical sixth and rounded at apices; each furnished with distinct C1 and C2 and fairly recognizable C3 and C4; without sutural tooth.

Underside covered with rather thick long hairs, gula sparsely granulate, other parts mostly sparsely punctured.

Legs short and stout, protibia depressed and finely punctured, underside of femora and tibiae covered with longer hairs than on other sides.

**Female.** Mandibles long, 0.35 times as long as head, internal teeth very small and located close to base; AL/BL 0.70, slenderer than in male, sparsely hair-fringed on

the underside of segments 1–7; pronotum narrower, distinctly convergent forwards, Sm slender and more acute; elytra longer, EL/EW 2.55; underside of legs haired as in male but thinner; abdomen thinly covered with hairs and finely punctured.

BL: ♂, 43.0–44.0 mm. ♀, 42.5–46.8 mm.

*Distribution.* Mt. Doi Inthanon in Thailand.

*Types.* Holotype ♂ (Mt. Angka, alt. 2,150 m. Siam, III–1933, Asiatic Primate Expedition) in the Museum of Comparative Zoology at Harvard University. Allotopotype, ♀, was designated by the author (in Lingnan N. H. Mus.) but we were unable to confirm this specimen.

*Specimens examined.* 1♂, Mt. Doi Inthanon. (=Mt. Angka), 20–V–1985; 1♀, same locality, 12–IV–1985 (ZKC).

*Spinimegopsis piliventris antennalis* (FUCHS, 1965), stat nov.

(Figs. 45–58)

*Megopsis (Baralipiton) antennalis* FUCHS, 1966, Koleopt. Rdsch., 43/44 [for 1965/1966]: 18.

*Male.* HL/HW 0.94–1.02; mandible 0.34–0.37 times as long as head; AL/BL 0.84–0.94; PL/PW 0.55–0.78; EL/EW 2.32–2.45.

*Female.* AL/BL 0.74–0.80; EL/EW 2.45–2.76.

This subspecies is close to nominotypical *piliventris* but is distinguished in the following points: In male, eyes more bulging, antennae shorter, elytra brownish yellow and not ivory-yellow, pronotum wider at apical margin, scutellum linguiform and not truncate apicad, legs longer, stouter and more thickly haired underside. In female, antennae slenderer, apical angle of pronotum distinctly projected, legs longer and stouter.

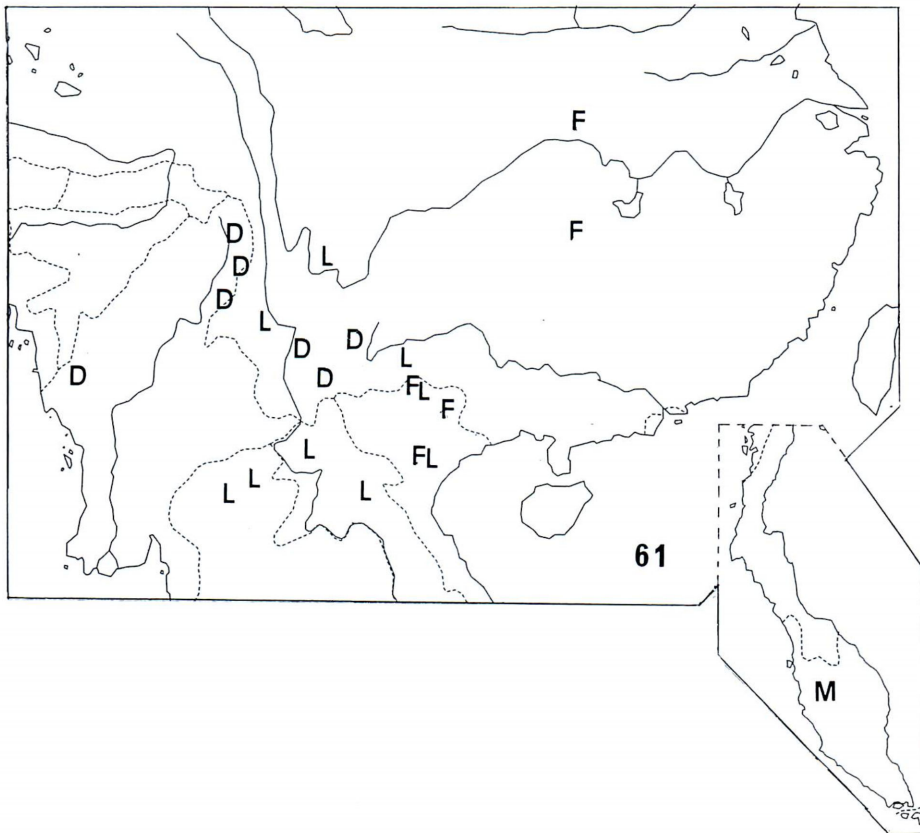
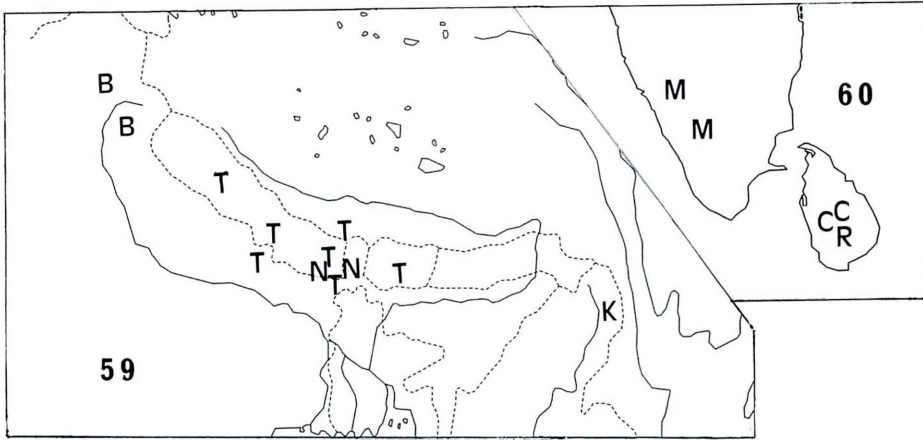
BL: ♂, 31.1–48.7 mm, ♀, 34.5–48.5 mm.

*Type specimen and type locality.* We were unable to locate the holotype of this subspecies. It was described from Mt. Tam Dao of northern Vietnam but we have been unable to find this form from the same locality, and we regarded specimens from Sapa, about 200 km northwest from Mt. Tam Dao, as typical form.

*Distribution.* Vietnam (Hoang Lien Son Prov., Vinh Phu Prov.), Laos (new record, Xiangkhoang Prov., Louangphrabang Prov., Louannamutha Prov.), Thailand (new record, Chiang Rai Prov.), Myanmar (new record, Kachin state, Mandalay Prov.), China (new record, Yunnan, Tibet).

*Specimens examined.* (Vietnam): 1♀, Sapa, Hoang Lien Son, 13–VI–1994; 1♀, same, 28–VI–1994; 6♂♂, 3♀♀, same, 28–VI–1995; 3♂♂, 3♀♀, 5–VI–1997. (Laos): 2♂♂, 1♀, Xiangkhoang Prov., 18–23–V–1996; 1♂, 1♀, Rou – Pac Sen, Louangphrabang, VI–1999; 1♀, Long, Louannamutha, 1–9–VIII–2004; 1♂, Phong Saly, 26–28–V–2006, T. ENDO, leg. (Thailand): 1♂, Chianmai, VI–1994; 3♂♂, 2♀♀, Phan, Chiang Rai, 9–V–1995. (Myanmar): 1♂, Dawna, Kachin, 30–V–1995; 1♀, Shan Highland, Mandalay, 1–22–V–2005; 1♀, Zan-Phut, 1,200 m alt., S. Kumon range, Kachin, 30–V–





59–61. Distribution maps of *Spinimegopis* spp. — 59. *S. tibialis* species-group. T – *tibialis*, B – *buckleyi*, N – *nepalensis*, K – *kachina* sp. nov. — 60. *S. cingalensis* species-group. C – *cingalensis*, M – *mediocostata*, R – *morreto*i. — 61. *S. lividipennis* species-group. L – *lividipennis*, M – *malasiaca*, F – *fujitai*, D – *delahayei*.

2000, Y. YAMAOKA, S. NAGAI & H. MIYAMA leg. (China, Yunnan): 3♀♀, Mengzi Laozhaidaxueshan-east, 15-V-2000; 1♂♂, 1♀♀, Haiming Jiangcheng, Shimao City, 20~29-VI-2005. (Tibet): 1♂♂, Xiachayu, Chayu county, 22~28-VI-2006 (all in ZKC and ADC).

### 5. *Spinimegopsis perroti* Species-group

This group is composed of only one species.

#### *Spinimegopsis perroti* (FUCHS, 1966), comb. nov.

(Figs. 15-17)

*Megopsis (Aegosoma) Perroti* FUCHS, 1966, Koleopt. Rdsch., **43/44** [for 1965/66]: 17-18.

This species is different from any other congeners in having special structure of antennae and closely placed eyes.

**Male.** Body yellowish brown, sometimes reddish, elytra semi-transparent yellowish brown, pronotum and apical half of underside covered with long fur-like golden hairs; head and basal part of mandibles sparsely covered with long hairs; legs covered with short hairs; antennae and elytra glabrous.

Head small, HL/HW 0.60-0.68, narrowed basad, frons concave at middle and sparsely punctured, vertex granulate, antennal tubercle large and well raised; mandibles short, inner tooth small; eyes bulging, interspace between eyes shorter than a half of each eye-lobe both on dorsal and ventral sides. Antennae long and slender, AL/BL 1.13-1.20, segments 3-11 almost of the same width, flattened underside; segment 1 punctate-granulate, furnished with a deep longitudinal groove inside, segments 2-11 roughly, irregularly and rather sparsely granulate or vermiculate; segment 3 narrowed at middle, A13/A11 2.89-3.00, A13/A14 + 5 + 6 0.85, segment 11 longer than segment 4, segments 3-10 triangularly projected at each apico-external end, segments 6-11 furnished with longitudinal carina along external line.

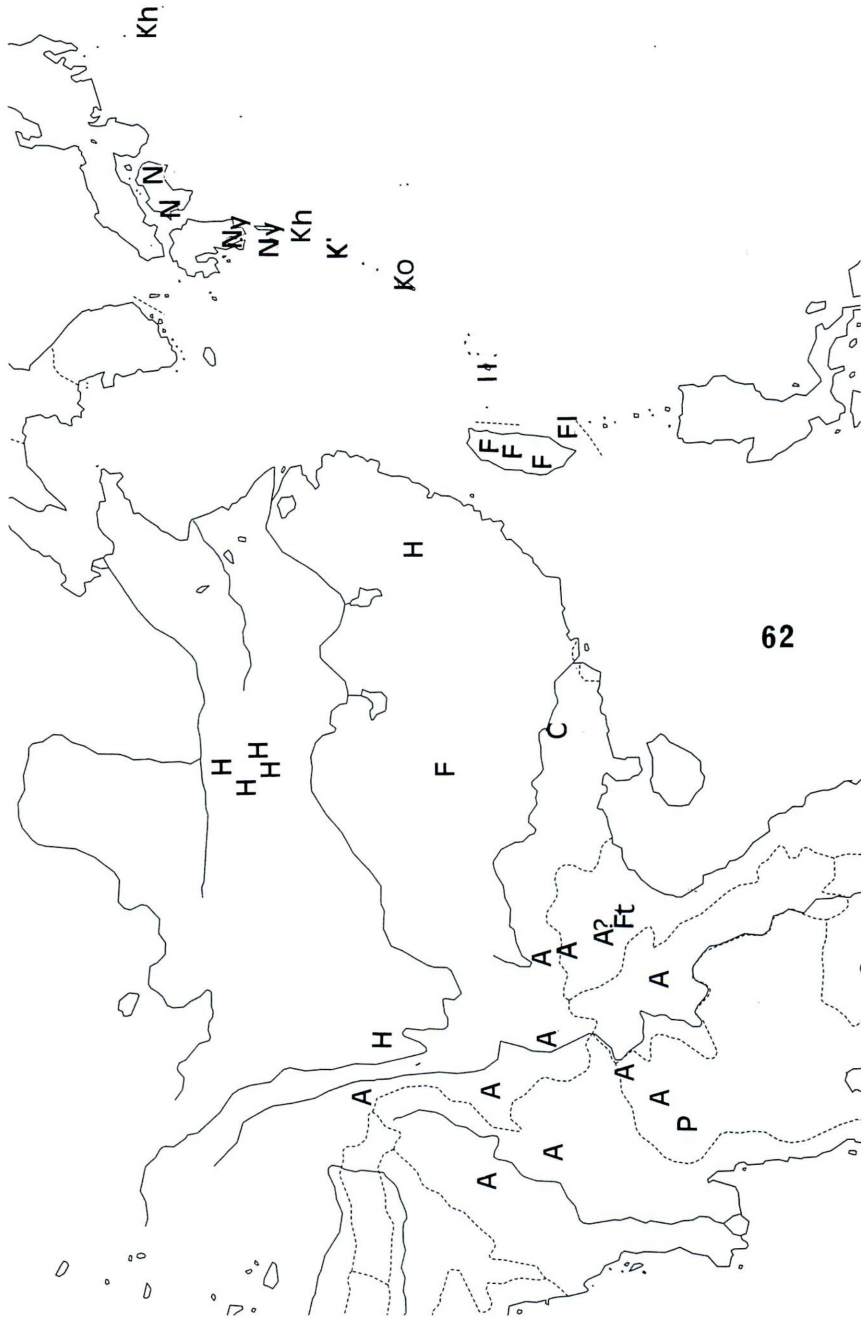
Pronotum widest at base and straightly convergent apicad, covered with long hairs which are projected from every margin in dorsal view; lateral margins distinctly carinate throughout, furnished with distinct three spines at each side, Sb and Sm long and acute, Sa distinct but often obtuse; disc uneven and roughly punctured. Scutellum linguiform, punctured and thinly haired.

Elytra slender, EL/EW 2.65-3.02, finely punctured throughout except on costae; each furnished with two distinct and two feeble costae; C1 and C2 starting from humeri,

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Fig. 62. Distribution map of *Spinimegopsis formosana* species-group. F - *formosana formosana*, Fl - *formosana lanhsuensis*, Ft - *formosana tamdaoana*, I - *ishigakiana*, N - *nipponica nipponica*, Ny - *nipponica yakushimana*, K - *kawazoei kawazoei*, Kh - *kawazoei hachijoana*, Ko - *kawazoei okinawana*, H - *huai* sp. nov. C - *curticornis* sp. nov. — P - *piliventris piliventris*, A - *piliventris antennalis*.





becoming weaker at about apical fourth and then branching, connecting with each other or with suture by branches; C3 or C4 shortly appearing at about apical third; sutural tooth acute and prominent.

Underside thickly covered with long hairs, abdomen covered with sparse short hairs; gula shallowly concave at middle and granulate; abdomen finely punctured, thinly haired.

Legs slender, finely and minutely punctured; protibia strongly depressed; tarsi normally wide, claw shorter than united length of three tarsal segments.

Penis long and slender, lateral lobe including basal ring about a half as long as median lobe.

*Female.* Very close to male, body less hairy, antennae shorter, BL/AL 0.84–0.92, pronotum shorter.

BL. ♂, 26.5–39.3 mm, ♀, 34.0–45.5 mm.

*Type and type locality.* We were unable to locate the holotype. FUCHS (1965) wrote that the locality was Tam Dao but no example was available from the same place. The nearest locality of available examples was Sapa (Hoang Lien Son).

*Distribution.* Vietnam (Hoang Lien Son Prov., Vinh Phu Prov.?), China (new record, Yunnan), Myanmar (new record, Kachin).

*Specimens examined.* (Vietnam): 9♂♂, 3♀♀, Sapa. Hoang Lien Son Prov., 13–VI~3–VII–1994; 4♂♂, 1♀, same place, 25–V–1995; 2♂♂, 1♀, same place, 5–V–1997 (ZKC). (China, Yunnan): 1♀, Tche-pin-Tcheou (IRSNB); 6♂♂, 2♀♀, Mt. Sanfengshan, VII–2000; 1♂, Suiyuanqing, Maguan, VIII–2000; 4♂♂, 1♀, Mt. Weibaoshan, Weishan, VI–2004 (ADC). (Myanmar, Kachin): 2♂♂, Mts. Chudu-Razi, V–2004 (YKC).

#### Key to the Species of the Genus *Spinimegopsis*

1. Middle parts of antennal segment 3 distinctly narrower than segments 4–7 (Figs. 16, 17); (Vietnam, China, Myanmar) ..... *S. perroti*.  
— Middle parts of antennal segment 3 distinctly thicker than segments 4–7 ..... 2.
2. Antennae kinking between segments 1 and 2 (Figs. 10, 13) ..... 3.  
— Antennae normally connected between segments 1 and 2 ..... 5.
3. Antennae short, AL/BL < 1 in male, AL/BL < 0.7 in female; (Sri Lanka) .....  
..... *S. morettoii*.  
— Antennae long, AL/BL > 1 in male, AL/BL > 0.8 in female ..... 4.
4. Body darker, elytra almost glabrous and densely granulate in both sexes; (southern India) ..... *S. mediocostata*.  
— Body brown, elytra punctured, thickly pubescent in male; (Sri Lanka) .....  
..... *S. cingalensis*.
5. A distinct vertical process present on anterior margin of prosternum ..... 6.  
— No vertical process on prosternum ..... 9.



6. Body large, longer than 40 mm but usually over 50 mm, two distinctly raised costae on each elytron; (W. Malaysia around Cameron Highlands) ····· *S. malasiaca*.
- Body small, shorter than 45 mm but usually less than 35 mm, elytra without raised costae or with very feebly raised ones ····· 7.
7. Antennae longer, elytra brown and thickly punctured; (Vietnam, China – Guizhou, Hubei) ····· *S. fujitai* sp. nov.
- Antennae shorter, elytra smooth, yellow or almost black ····· 8.
8. Elytra almost black, segment 3 of antenna shorter,  $Al3/Al1 < 3$ , metatarsi narrow; (China – Yunnan, Myanmar) ····· *S. delahayei* sp. nov.
- Elytra yellow, margined with black, segment 3 of antennae longer,  $Al3/Al1 > 3$ , (China – Yunnan, Sichuan, Myanmar, Thailand, Vietnam) ····· *S. lividipennis*.
9. Antennae glabrous or partly covered with very short hairs, elytron semi-transparent, two costae distinctly raised ····· 10.
- Antennae hair-fringed in both sexes, costae of elytra weak or absent ····· 12.
10. Body yellowish and large (usually  $BL > 45$  mm); (Nepal, India) ····· *S. nepalensis*.
- Body brownish and small (usually  $BL < 40$  mm) ····· 11.
11.  $Al3/Al1$  3.9–4.3, elytra shagreened; (north India) ····· *S. buckleyi*.
- $Al3/Al1$  2.9–3.4, elytra semi-transparent; (northeastern India, Nepal, Bhutan, China – Tibet) ····· *S. tibialis*.
- $Al3/Al1$  2.5–2.7, pronotum mat, Sa absent; (Myanmar – Kachin) ····· *S. kachina* sp. nov.
12. Body large and robust, hair-fringe of antennae extending to segment 7, elytra glabrous, and costae distinct (C1 and C2); (Thailand, Myanmar, Laos, Vietnam, China – Yunnan, Tibet) ····· *S. piliventris*.
- Body middle-sized or small, hair-fringe of antennae ending at segment 5, elytra pubescent, costae feeble ····· 13.
13. Head almost black, elytra dark, grayish and soiled-looking yellow ····· 14.
- Head, reddish brown, elytra uniformly clear reddish or yellowish brown ····· 15.
14. Antennae long; pronotum widest at Sm, anterior corner rounded, Sa located a little posterior to apical corner; (China – Sichuan, Hubei, Shaanxi, Fujian) ····· *S. huai* sp. nov.
- Antennae short, pronotum widest at Sb, Sa at apical corner (male unknown); (China – Guangdong) ····· *S. curticornis* sp. nov.
15. Antennae hair-fringed on segments 1–4, rarely sparsely haired on segment 5, Sm of pronotum absent or very short, elytron yellowish and ecto-apical end rounded in small arch; (Japan – Shikoku, Kyushu, Is. Yakushima, Is. Tanegashima, Is. Kuchinoerabujima) ····· *S. nipponica*.
- Antennae hair-fringed on segments 1–5, pronotum furnished with three subequal spines on each side, elytron usually reddish or brownish yellow and ecto-apical margin forming a large arch ····· 16.
16. Mandibles with neither external tubercles nor distinct angles, male protibia wider, inside of metatibia very thickly haired; (Japan – Is. Ishigaki, Is. Iriomote) ·····

- ..... *S. ishigakiana*.
- Mandibles furnished with external angles or tubercles, male protibia narrower, inner hairs of metatibia shorter and less thick ..... 17.
17. Segment 3 of antennae thick,  $Al3/Al1 < 3.0$ , external side of mandible angled but without tubercle (Fig. 49); (Japan - Is. Amami, Is. Okinawa, Is. Hachijō, Is. Tokara) ..... *S. kawazoei*.
- Segment 3 of antennae slender,  $Al3/Al1 > 3$ , external side of mandible furnished with a small tubercle; (China - Taiwan, Guangxi, Vietnam) ..... *S. formosana*.

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### 要 約

小宮次郎・Alain DRUMONT: *Spinimegopis* の属昇格ならびに再検討。 — *Spinimegopis* OHBA-YASHI, 1963 は *Megopis* 属の亜属として記載された。検討の結果、前胸背板側縁に3対の棘をもち、触角第1節内側に縦の深い溝をもつ点で、近似の *Aegosoma* 等とまったく異なり、独立した属だと考えられる。従来 *Megopis* 属の *Spinimegopis* 亜属、*Aegosoma* 亜属等に分かれて含まれていた種をこの属に移動する。5 種群に大別できる。 *tibialis* 種群は鞘翅が無毛で半透明、 *Spinimegopis tibialis*, *S. buckleyi*, *S. nepalensis* ならびに *S. kachina* sp. nov. が含まれ、インド北部、ネパールからミャンマー北部に分布する。 *cingalensis* 種群は触角第2節が第1節の外側に接続し、雄触角1-3節が下面のみでなく全面長毛に覆われる。 *S. cingalensis*, *S. mediocostata* および *S. morettoii* が含まれ、スリランカとインド南部に分布する。 *lividipennis* 種群は前胸腹板前縁に垂直の突起があることで特徴づけられる。 *S. lividipennis*, *S. malasiaca*, *S. fujitai* sp. nov. および *S. delahayei* sp. nov. が含まれ、中国西南部、インドシナ-マレー半島に分布する。 *formosana* 種群は雌雄とも触角基部数節の下面に長毛の列 (hair-fringe) がある。 *S. formosana*, *S. nipponica*, *S. kawazoei*, *S. ishigakiana*, *S. piliventris*, *S. huai* sp. nov. および *S. curticornis* sp. nov. が含まれる。 *S. nipponica*, *S. kawazoei*, *S. ishigakiana* の3種は、FUJITA (1980) が *S. formosana* の亜種とするよう提案した。たしかに相互に近似し、各種の変異は移行を示唆するようにも見える。しかし各亜種間の形態差に極端なひらき



があり、同一属の他種群における種間関係とのバランスを考慮し、この扱いとした。台湾を含む中国南半分、インドシナ半島北部、日本南部に分布する。うち少なくとも3種は *Ilex* 属、*Machilus* 属等の樹木を食害する。雑木材はかつて燃料として頻りに島嶼間を運搬されたといわれるので、その影響が各島嶼個体群の変異に現れている可能性がある。*M. lanhsuensis*, *S. f. tamdaoana* subsp. nov. は *formosana* の亜種、*M. f. yakushimana* は *nipponica* の亜種、*M. f. hachijoana*, *M. f. okinawana* は *kawazoei* の亜種とした。またこの種群に新たに *S. huai* sp. nov. を四川省などから、*S. curticornis* sp. nov. を広東省から記載した。またヴェトナムの *M. antennalis* FUCHS は *piliventris* GRESSITT の亜種とした。ヴェトナム、中国の *S. perroti* は、触角第3節が中央部で細くなり、複眼が上下側とも接近するなど特異で、他の種群に属さない。

また、*M. flavipennis* DEMELT, 1989 は *M. malasiaca* (HAYASHI), 1976 のシノニムとした。*S. buckleyi* および *S. lividipennis* のレクトタイプおよびパラレクトタイプを指定した。

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