

Studies on asiatic *Apophyllia* Thomson, 1858
(Chrysomelidae: Galerucinae). Part 4. Revision of
A. celebensis Pic, 1927 and *A. pallipes* (Jacoby, 1892) groups

Исследование азиатских *Apophyllia* Thomson, 1858
(Chrysomelidae: Galerucinae). Часть 4. Ревизия групп
A. celebensis Pic, 1927 и *A. pallipes* (Jacoby, 1892)

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КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Chrysomelidae, Galerucinae, *Apophyllia*, Ориентальная область, таксономия, новые виды.

ABSTRACT: *Apophyllia celebensis* Pic, 1927 and *A. pallipes* (Jacoby, 1892) species groups are defined and revised. *Apophyllia levi* and *A. borowieci* spp.n. are described. *A. celebensis* Pic, 1927 and *A. pectoralis* Pic, 1927, are redescribed and *A. pectoralis* is removed from synonymy. Main diagnostic characters including male genitalia are figured. Larva of *A. furcigera* described by Zaitsev & Samoderzhenkov [1988] refers to *A. pectoralis*.

РЕЗЮМЕ. Проведено выделение и ревизия видовых групп *Apophyllia celebensis* Pic, 1927 и *A. pallipes* (Jacoby, 1892). Даны описания *Apophyllia levi* и *A. borowieci* spp.n. и переописания *A. celebensis* Pic, 1927 и *A. pectoralis* Pic, 1927; последний вид выведен из синонимии. Даны иллюстрации основных диагностических признаков, включая гениталии самцов. Описание личинки *A. furcigera*, данное Зайцевым и Самодерженковым [1988], относится к *A. pectoralis*.

The fourth contribution to the knowledge of asiatic species of the genus *Apophyllia* Thomson, 1858, is presented. It is the continuation of my previous studies in this genus and it deals with *A. celebensis* and *A. pallipes* species groups.

The following abbreviations identify the collections housing the material examined: BPBM — USA, Hawaii, Honolulu, Bernice P. Bishop Museum (Al Samuelson); FKCC — Czech Republic, České Budějovice, František Kantner collection; ISNB — Belgium, Brussels, Institut Royal des Sciences Naturelles de Belgique (Didier Drugmand, Marcel Cludts); JBCB — Czech Republic, Brno, Jan Bezděk collection; JVCJ — Czech Republic, Jirkov, Jiří Voříšek collection; KUEC — Japan, Fukuoka, Kyushu University (Junichi Yukawa); LMRM — Russia, Moscow, Lev N. Medvedev collection; MCZC — USA, Massachusetts, Cambridge, Museum of Comparative Zoology (Phillip D. Perkins); MNHN — France, Paris, Muséum National d'Historie naturelle (Nicole Berti);

SMNS — Germany, Stuttgart, Staatliches Museum für Naturkunde (Wolfgang Schawaller); SZIM — Italy, Milano, Stefano Zoia collection; USNM — USA, Washington D.C., National Museum of Natural History (Alexander Konstantinov); ZMHB — Germany, Berlin, Museum für Naturkunde der Humboldt-Universität (Johannes Frisch).

In recording the label data of the type material examined, a double slash (//) divides data on different labels. The exact label data are cited for the type specimens. The type localities are cited in original spelling. The other remarks and complementations of the author are found in square brackets: [p] — preceding data are printed; [h] — the same, but handwritten; [w] — white label; x/y — number of males/number of females.

Apophyllia celebensis Pic, 1927 group

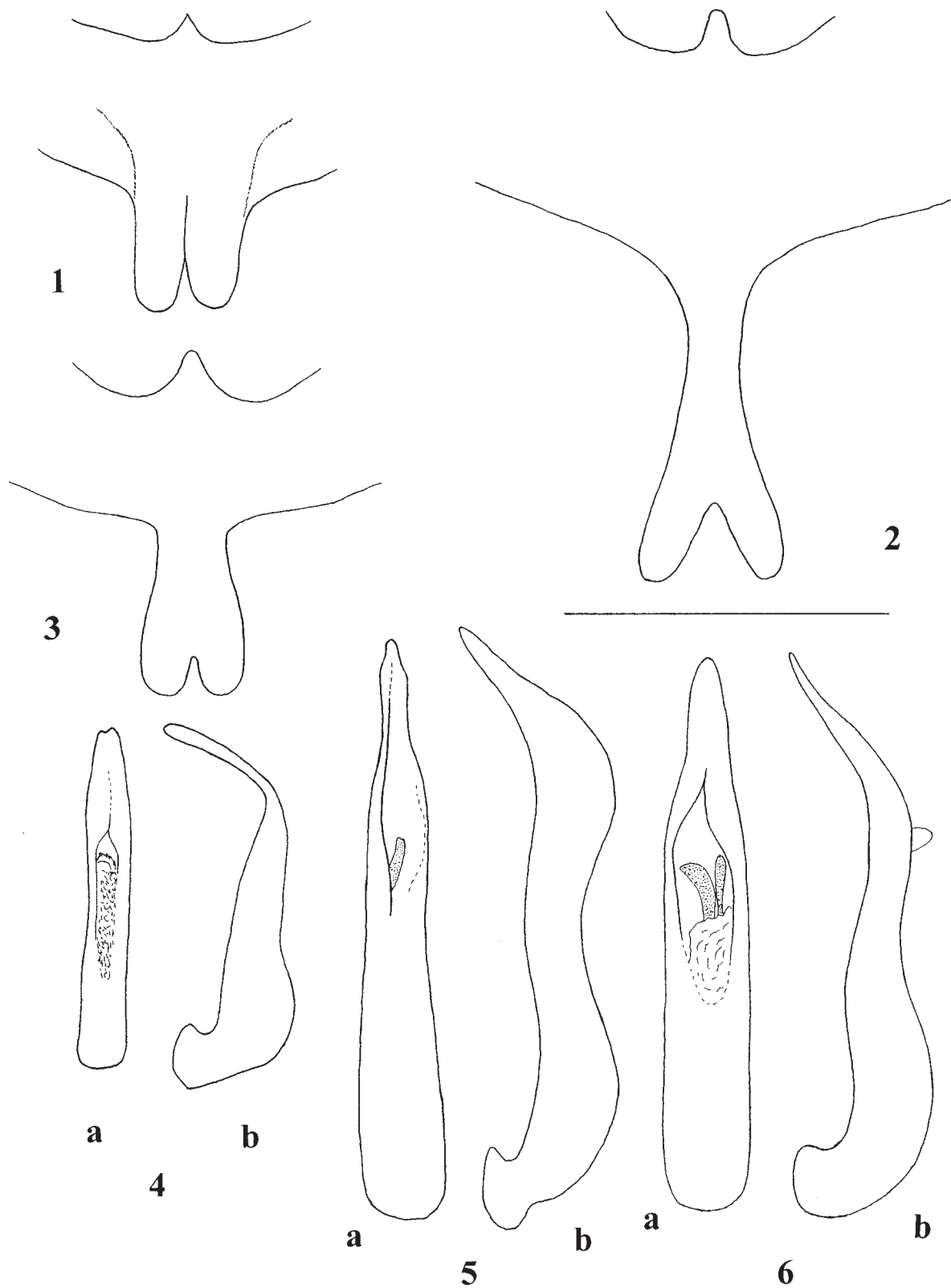
Species of *A. celebensis*-group are characterized by furca-like male metasternal protuberance (Figs 1–3). Until now, 3 species of this group were described: *A. celebensis* Pic, 1927, *A. pectoralis* Pic, 1927 and *A. furcigera* Chûjô, 1962.

Apophyllia celebensis Pic, 1927
Figs 1, 4.

Apophyllia[sic!] *celebensis* Pic, 1927a: 8 (type locality: Celebes).
TYPE MATERIAL EXAMINED: Holotype (♂), labelled: "S. Celebes Patunuang Jan. 1896 H. Fruhstorfer. [w, p] // Type [w, h] // TYPE [red label, p] // Museum Paris Coll. M. Pic [w, p] / / celebensis n sp [w, h]" (in MNHN)

ADDITIONAL MATERIAL EXAMINED: INDONESIA: Sulawesi, Kendari (0/1 in ZMHB); Sulawesi, Bantimurung, 1882, G. Ribbe leg. (0/1 in ZMHB); Sulawesi, Buton-Wakarumba Is., 3.–7.ii.1994, Štrba & Jeniš leg. (0/1 in JVCJ); Sulawesi, 20 km NE Sabbang, 400 m, 2°28'56"S 120°12'00"E, 5.–7.vi.2001, Bolm leg. (0/2 in SMNS); Sulawesi, Macassar [= Ujung Pandang] (0/1 in ISNB); Sulawesi, Bonthain, ix. 1938, J.P.A. Kalis leg. (0/1 in NHMB).

COMMENTS. *Apophyllia celebensis* was described according to 1 male from Celebes [= Sulawesi] by Pic [1927a]. In his short description, Pic did not mention any underside structures and the furca-like projection was evidently over-



Figs 1-6. *Apophylia* spp: 1, 4 — *A. celebensis*, 2, 5 — *A. furcigera*, 3, 6 — *A. pectoralis*, 1-3 — male metasternum, 4-6 — aedeagus (a — dorsal view, b — lateral view). Scale 1 mm.

Рис. 1-6. *Apophylia* spp: 1, 4 — *A. celebensis*, 2, 5 — *A. furcigera*, 3, 6 — *A. pectoralis*, 1-3 — метастернум самца, 4-6 — эдеагус (а — дорсально, б — латерально). Масштаб 1 мм.

looked. With the exception of the holotype (male), the material examined consisted of females. Due to insufficient description of *A. celebensis* I decided to redescribe it. The holotype is weakly sclerotized and washed-out so that all black parts are pale to brownish.

REDESCRIPTION. Body flattened, subparallel, slightly widened backwards, densely pubescent, dull. Head bicolorous. Vertex and postgenae black, two last segments of palpi maxillares and posterior half of frontal tubercles brownish to blackish, underside of head, clypeus, mouthparts and anterior half of frontal tubercles yellow. Antennomeres 1 to 3 yellow, antennomeres 4 and 5 darkened, last antennomeres black. Pronotum yellow, scutellum black. Elytra metallic green. Prosternum yellow with darkened sides, meso-, metasternum and abdomen black. Legs yellow, two last tarsomeres infuscate.

Labrum trapezoidal, with slightly sinuate anterior margin, covered by 6 long pale setae in a row. Anterior part of head lustrous, sparsely covered by small punctures and by several long pale setae. Vertex dull, with dense small punctures and dense short pale hairs. Interantennal space with large shallow groove. Frontal tubercles subtriangular, slightly elevated above vertex, with microsculpture, dull. Antennae slender, 0.90 times as long as the body in male, 0.65 times in female; length ratio of antennomeres 1 to 11: 14 : 6 : 15 : 19 : 18 : 17 : 15 : 15 : 13 : 12 : 15. Pronotum transverse, 1.9 times as broad as long, widest at the first third. All margins indistinctly bordered. Lateral sides widely rounded, anterior margin moderately sinuate, posterior margin almost straight. Anterior angles widely rounded, posterior angles obtusely angulate, indicated. Two setigerous pores each bearing long pale seta are situated on lateral margin near anterior and posterior angles. Surface with 2 large feeble depressions laterally and indistinctly impressed median line. Pronotum covered by small and dense punctures and short pale hairs. Scutellum small, initially almost parallel, then widely rounded, surface with coarse and dense punctation, dull. Elytra 1.25 times as broad as pronotum, slightly widened backwards, dull. Humeral calli well developed. Elytral surface very densely covered by coarse confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex. Macropterous. Ventral surface lustrous, finely punctured and covered by pale hairs. Basimetatarsomere twice as long as two following metatarsomeres combined. Body length 4.15–5.60 mm (holotype 4.15 mm). The shape of aedeagus as in Fig. 4.

SEXUAL DIMORPHISM: Male: Metasternum with furca-like projection directed backwards (Fig. 1). The last visible sternite with large semicircular excision. Antennae longer. Claws bifid. Female: Metasternum moderately convex, with two small bulges on posterior margin. The last visible sternite complete. Antennae shorter. Claws appendiculate.

DISTRIBUTION. Indonesia: Sulawesi Isl. (formerly Celebes).

DIAGNOSIS. Due to furca-like projection on male metasternum, *A. celebensis* can be compared only with *A. fuscigera* Chûjô, 1962 and *A. pectoralis* Pic, 1927. All three species differ from each other by the structure of metasternal projection (Figs 1–3) and the shape of aedeagus (Figs 4–6). Moreover, the males of *A. fuscigera* and *A. pectoralis* differ by extended protibiae.

Apophyllia fuscigera Chûjô, 1962
Figs 2, 5.

Apophyllia fuscigera Chûjô, 1962: 103–104 (type locality: Chieng-Mai, Thailand); Chûjô & Chûjô, 1997: 43;

Apophyllia fuscigera [sic!]: Chûjô, 1964: 284 (Thailand); Kimoto, 1989: 15 (key), 16 (Thailand, Laos, Vietnam) (partim).

TYPE MATERIAL EXAMINED: Holotype (♂), labelled: “Chieng Mai THAILAND 19. vi. 1958 H. IKOMA leg. [w, p] // Holotype [red label, h] // *Apophyllia fuscigera* CHÛJÔ ♂ [h] DET. M. CHÛJÔ, 19[p]61[w, h]” (in KUEC)

ADDITIONAL MATERIAL EXAMINED: THAILAND: Kaen Municipality, 27.v.1954, R.E. Elbel (0/1 in USNM); Chiang Dao env., 21.v.–4.vi.1995, M. Snižek leg. (2/0 in SZIM); LAOS: Boli Kham Xai prov., Pakkading, 300 m, 18°20'N 104°00'E, 1.–2.vi.2001, C.L. Peša leg. (0/1 in JBCB); Kham Mouan prov., Nakai vill. env., 70 km NNE Muang Khammouan, 560 m, 7.–25.v.2002, M. Atrba leg. (3/2 in FKCC); VIETNAM: 34 km N of Phan Rang, 9.xi.1960, C.M. Yoshimoto leg. (1/0 in BPBM)

COMMENTS. *Apophyllia fuscigera* was described according to 4 specimens (2♂♂ and 2♀♀) from North Thailand [Chûjô, 1962]. Many subsequent authors treated *A. pectoralis* erroneously as *A. fuscigera*. Both species can be easily distinguished by the structure of aedeagus (Figs 5–6), by the colour of head and by the structure of furca-like male projection. *A. fuscigera* has yellow vertex with Y-shaped dark spot (dark specimens have black vertex with two yellow spots) contrary to *A. pectoralis* with black vertex. The furca-like projection is shorter in *A. pectoralis* and longer in *A. fuscigera* (Figs 2–3).

The larva described by Zaitsev & Samoderzhenkov [1988] refers to *A. pectoralis*.

DISTRIBUTION. Thailand, Laos, Vietnam.

Apophyllia pectoralis Pic, 1927, **sp. valid.**
Figs 3, 6.

Apophyllia pectoralis Pic, 1927b: 188 (type locality: Laos); Wilcox, 1971: 146; Samoderzhenkov, 1988: 75 (key); Kimoto, 1989: 16 (= *flavovirens*)

Apophyllia fuscigera: Samoderzhenkov, 1988: 76 (key), 79–80 (feeding on ?*Mallotus* and *Helicteres hirsuta*; Vietnam); Zaitsev & Samoderzhenkov, 1988: 95 (description of larva, feeding on ?*Mallotus* sp.)

Apophyllia fuscigera [sic!]: Kimoto, 1989: 15 (key), 16 (Thailand, Laos, Vietnam) (partim)

TYPE MATERIAL EXAMINED: Holotype (♀), labelled: “Ht Laos [w, h] // type [w, h] // TYPE [red label, p] // Muséum Paris Coll. M. Pic [w, p] // *pectoralis* n sp [w, p]” (in MNHN)

ADDITIONAL MATERIAL EXAMINED: CHINA: China (2/0 in BMNH); Hong Kong, Schaum leg. (1/0 in DEI); VIETNAM: Daklak prov., Buonmethuot env., 22.–26.vi.1985 (1/0 in JBCB); Daklak prov., 65 km S of Buonmethuot, 21.vi.1985 (1/0 in LMRM, 0/3 in SMNS); Daklak prov., Buonmethuot env., 22.–26.vi.1985 (1/0 in LMRM); Pleiku, 700 m, 8.–14.v.1960, L. W. Quate leg. (1/0 in BPBM); 20 km N of Pleiku, 650 m, 9.v.1960, L.W. Quate leg. (2/3 in BPBM); LAOS: Borikhane prov., Pakkading, 13.vii.1965, native collector (1/4 in BPBM);

COMMENTS. *A. pectoralis* was described by Pic [1927b] according to 1 female from Laos. The holotype deposited now in MNHN is in a poor condition with both antennae and most of legs broken. However, the black vertex and the yellow abdomen are important characters. Kimoto [1989] synonymized erroneously *A. pectoralis* with *A. flavovirens* (Fairmaire, 1878).

During the study of extensive *Apophyllia* material, I have found several specimens with furca-like projected male metasternum. The females of this species (erroneously treated by many recent authors as *A. fuscigera*) are identical with the holotype of *A. pectoralis*. The redescription of *A. pectoralis* is given below.

Zaitsev & Samoderzhenkov [1988] described the larva of *A. fuscigera*, but this description refers evidently to *A. pectoralis*. Samoderzhenkov [1988] noted that the vertex is black and the furca-like projection is shorter than in true *A. fuscigera* in the same material examined as in description of larva.

REDESCRIPTION. Body flattened, subparallel, slightly widened backwards, densely pubescent, dull. Head bicolorous. Vertex and postgenae black, two last segments of palpi maxillares and labrum brownish to blackish, underside of head, clypeus and frontal tubercles yellow. Antennomeres 1 to 3 yellow, darkened from antennomere 4, last antennomeres black. Pronotum yellow, scutellum black. Elytra metallic green. Prosternum yellow, mesosternum yellow or infuscate, metasternum black with yellow lateral and posterior margins. Abdomen usually yellow, rarely infuscate or blackish. Legs yellow, two last tarsomeres infuscate.

Labrum transverse, with slightly sinuate anterior margin, covered by several long pale setae. Anterior part of head lustrous, sparsely covered by small punctures and with several long pale setae, vertex dull, with dense small punctures and dense short pale hairs. Interantennal space with large shallow groove. Frontal tubercles subtriangular, slightly elevated above vertex, covered by microsculpture, dull. Antennae slender, 0.85 times as long as the body; length ratio of antennomeres 1 to 11: 20: 8: 18: 24: 22: 21: 21: 19: 16: 15: 16. Pronotum transverse, 1.6 - 1.7 times as broad as long, widest at the first third. All margins thin distinctly bordered. Lateral sides almost parallel, slightly narrowed anteriorly and posteriorly, anterior and posterior margins slightly sinuate. Anterior angles rectangular, with rounded corners, posterior angles obtusely angulate, indicated. Anterior and posterior angles with small dent. Surface with 2 large feeble depressions laterally and wide impressed median line. Pronotum covered by small and dense punctures and short pale hairs. Scutellum subtriangular, with rounded apex, surface with coarse and dense punctures, dull. Elytra subparallel, slightly widened backwards, dull. Humeral calli well developed. Elytral surface very densely covered by coarse confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex. Macropterous. Ventral surface shiny, finely punctured and covered by pale hairs. Basimetatarsomere 1.25 times as long as two following metatarsomeres combined. Body length 5.20–6.50 mm. The shape of aedeagus as in Fig. 6.

SEXUAL DIMORPHISM: Male: Metasternum with furca-like projection directed backwards (Fig 3). The last visible sternite with large semicircular excision. Protibiae largely extended, flattened. Claws bifid. Female: Metasternum moderately convex. The last visible sternite complete. Protibiae not extended. Claws appendiculate.

DISTRIBUTION. China, Vietnam, Laos.

DIAGNOSIS. *A. pectoralis* is closely related to *A. fuscigera* and *A. celebensis*. All three species can be distinguished by the structure of aedeagus (Figs 4–6) and of furca-like male projection (Figs 1–3). Moreover, *A. celebensis* differs by protibiae not extended. *A. fuscigera* has yellow vertex with Y-shaped dark spot (dark specimens have black vertex with two yellow spots) contrary to *A. pectoralis* with black vertex.

Apophylia pallipes (Jacoby, 1892) group

The following combination of characters differentiates the species of *A. pallipes*-group from other *Apophylia* species: body black, head black with yellow anterior part, frontal tubercles black, very large and lustrous, pronotum with large deep lateral depressions, last 3 antennomeres dilated, aedeagus with prolonged right apical part. Until now, 2 species of this group were described: *Apophylia pallipes* (Jacoby, 1892) and *Apophylia clavicornis* Samoderzhenkov, 1988. Additional 2 new species are described below.

Apophylia pallipes (Jacoby, 1892)

Figs 7, 16.

Malaxia pallipes Jacoby, 1892: 969 (type locality: Carin Cheba)
Apophylia pallipes: Weise, 1924: 184; Maulik, 1936: 80 (key), 86 (as var. of *sericea*; Burma, Assam); Chûjô, 1961: 349 (Thailand); Chûjô, 1964: 284 (Thailand); Wilcox, 1971: 148 (as syn. of *sericea*); Kimoto, 1989: 14 (key), 16 (Thailand); Mohamedsaid, 2000: 348 (Malaysia); Medvedev, 2001: 179 (lectotype designation)

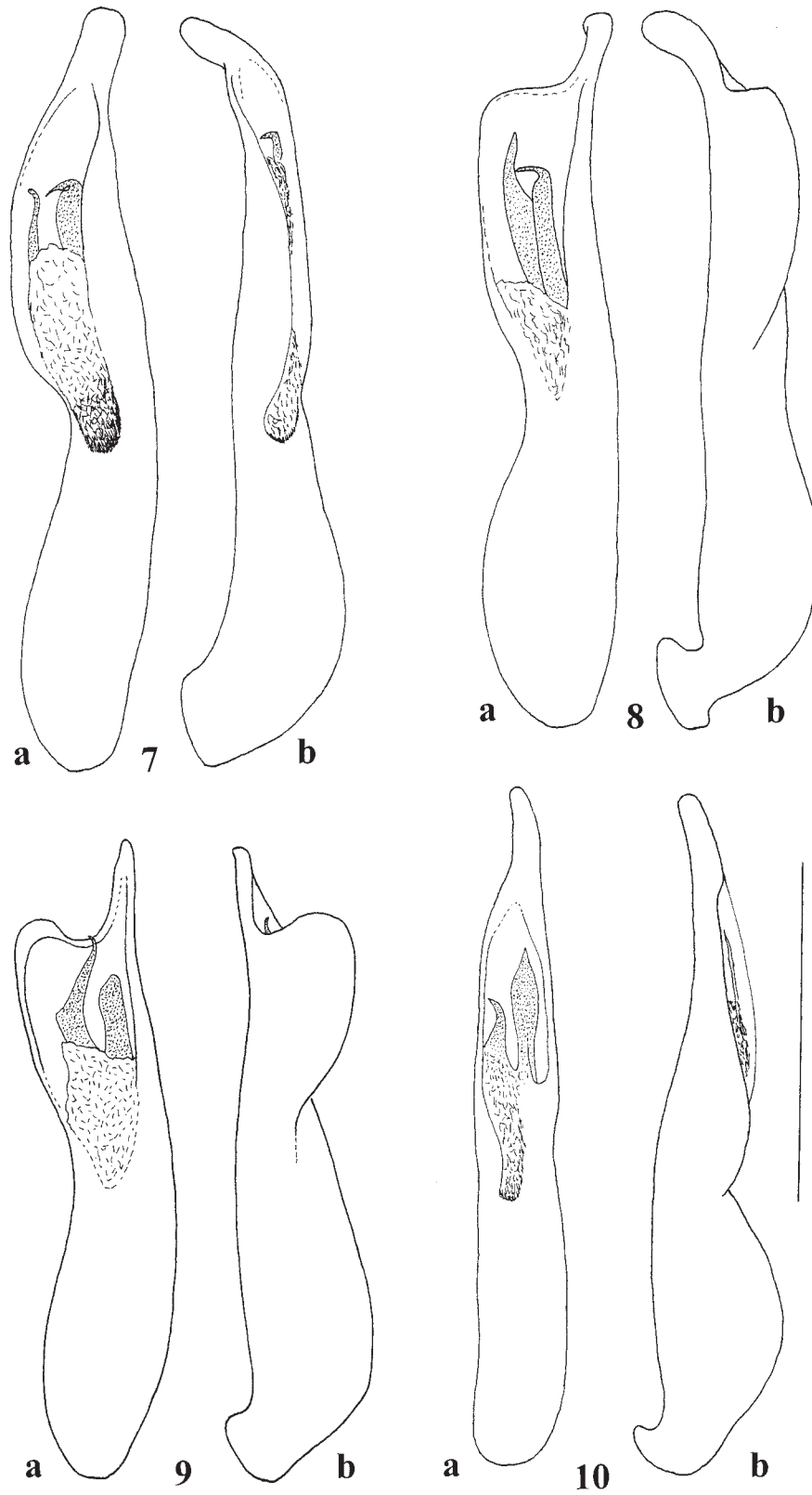
TYPE MATERIAL EXAMINED: Lectotype (♂), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // SYNTYPUS [p] *Malaxia pallipes* Jacoby, 1892 [red label, h] // Museo Civico di Genova [w, p] // *Malaxia pallipes* Jac. [h] L. Medvedev det. [w, p] // Hololectotypus *Apophylia pallipes* Jacoby L. Medvedev [red label, h]” (in MCSN); 3 paralectotypes (♀♀), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // SYNTYPUS [p] *Malaxia pallipes* Jacoby, 1892 [red label, h] // Museo Civico di Genova [w, p]” (in MCSN); 1 paralectotype (♀), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // *pallipes* Jac. [w, h] // *Malaxia pallipes* Jac. [blue label, h] // SYNTYPUS [p] *Malaxia pallipes* Jacoby, 1892 [red label, h] // Museo Civico di Genova [w, p]” (in MCSN); 3 paralectotypes (1 ♂, 2 ♀♀), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // 81668 [w, p] // *Malaxia pallipes* Jac. [w, h]” (in ZMHB); 1 paralectotype (♀), labelled: “Coll. R. I. Sc. N. B. Birmanie [yellow label on which one following label is stucked, p] // Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // det. [p] Jacoby 1892 [white label on which one following label is stucked, p] // *Malaxia pallipes* n. sp. [w, h] // Ex-Typis [w, p] // cf. Ann. Mus. Genova, [p] XXXII, 1892, p. 969 [w, h] // sec. Weise, Col. Cat. Junk (78), 1924 [p], p. 184: *Apophylia pallipes* Jac. [w, h]” (in ISNB); 2 paralectotypes (♀♀), labelled: “Coll. R. I. Sc. N. B. Birmanie [yellow label on which one following label is stucked, p] // Carin Cheba 900–1100 m L. Fea V XII-88 [w, h] // M. Jacoby det. [p] *Malaxia pallipes* Jac. [w, h] // Ex-Typis [w, p] // cf. Ann. Mus. Genova, [p] XXXII, 1892, p. 969 [w, h] // sec. Weise, Col. Cat. Junk (78), 1924 [p], p. 184: *Apophylia pallipes* Jac. [w, h]” (in ISNB); 1 paralectotype (♂), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // Type [p] 18498 [red label, h] // *Malaxia pallipes* Jac. [w, h]” (in MCZC); 1 paralectotype (♂), labelled: “Birmah Fea [w, h] // Jacoby Coll. 1909-28a. [w, p] // *A. pallipes* Jac. [h] det. K.G.Blair. [w, p]” (in USNM); 3 paralectotypes (♀♀), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // Coll. Kraatz [w, p]” (in DEI); 4 paralectotypes (♀♀), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // Coll. Kraatz [w, p] // Mal. pallipes sp. n. [w, h]” (in DEI); 1 paralectotype (♀), labelled: “Coll. Kraatz [w, p] // *Malaxia pallipes* Carin Cheba [w, h]” (in DEI); 1 paralectotype (♂), labelled: “Type H.T. [white round label with red margin, p] // Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // Jacoby Coll. 1909-28a. [w, p] // *Malaxia pallipes* Jac. [blue label, h] // SYNTYPUS *A. pallipes* Jac. [w, p]” (in BMNH); 1 paralectotype (♂), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // Jacoby Coll. 1909-28a. [w, p] // SYNTYPUS *A. pallipes* Jac. [w, p]” (in BMNH); 1 paralectotype (♀), labelled: “Birmah [w, p] // Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // *Malaxia pallipes* n. sp. [w, h] // Fry Coll. 1905.100. [w, p] // SYNTYPUS *A. pallipes* Jac. [w, p]” (in BMNH); 4 paralectotypes (1 ♂ and 3 ♀♀), labelled: “Carin Cheba 900–1100 m L. Fea V XII-88 [w, p] // *Malaxia pallipes* sp.n. [w, h] // *Apophylia pallipes* [h] det. L. Medvedev [w, p]” (in LMRM)

ADDITIONAL MATERIAL EXAMINED: No additional material examined.

COMMENTS. The type series of *Malaxia pallipes* Jacoby, 1892 is deposited in several institutions. Medvedev [2001] designated the lectotype from the part of type series deposited in MCSN. According to International Code of Zoological Nomenclature, all syntypes are treated as paralectotypes (see type material examined).

Aedeagus as in Fig. 7. Antennae as in in Fig. 16.

DISTRIBUTION. Records from Thailand [Chûjô, 1961, 1964; Kimoto, 1989] and Assam [Maulik, 1936] may refer to



Figs 7-10. *Apophyllia* spp: 7 — *A. pallipes*, 8 — *A. clavicornis*, 9 — *A. levi* sp.n., 10 — *A. borowieci* sp.n., 7-10 — aedeagus (a — dorsal view, b — lateral view). Scale 1 mm.

Рис. 7-10. *Apophyllia* spp: 7 — *A. pallipes*, 8 — *A. clavicornis*, 9 — *A. levi* sp.n., 10 — *A. borowieci* sp.n., 7-10 — эдеагус (а — дорсально, б — латерально). Масштаб 1 мм.

the other species of the *A. pallipes*-group and should be revised. I have seen only the specimens from the type series. The specimens from Bhutan identified and published by Kimoto [1977] refer to *A. assamensis*. Mohamedsaid [2000] reported *A. pallipes* also from Malaysia, but this record seems to be erroneous.

Apophylia clavicornis Samoderzhenkov, 1988

Figs 8, 17.

Apophylia clavicornis Samoderzhenkov, 1988: 77 (key), 82 (type locality: Ha Son Binh prov.: Tuongtien; feeding on *Cordia*)

TYPE MATERIAL EXAMINED: Holotype (♂), labelled: „Holotypus [red label, p] // Vietnam-Ha Son Binh Thuong tien, 10 km W Kim Boi, 28.X.–13.XI. 1978, L. Medvedev leg. [w, p] // *Cordia* [w, h] // *Apophylia clavicornis* Samoderzhenkov [w, h] // *Apophylia clavicornis* [h] SAMODERZHENKOV det. [w, p]“ (in LMRM); paratype (♀), labelled: „Paratypus [red label, p] // Vietnam-Ha Son Binh Thuong tien, 10 km W Kim Boi, 28.X.–13.XI. 1978, L. Medvedev leg. [w, p] // *Cordia* [w, h]“ (in LMRM)

ADDITIONAL MATERIAL EXAMINED: No additional material examined.

Aedeagus as in Fig. 8. Antennae as in Fig. 17.

DISTRIBUTION. Described according to one couple from the Vietnamese province Ha Son Binh.

Apophylia levi Bezděk, sp.n.

Figs 9, 14, 18.

TYPE MATERIAL: Holotype (♂) and 9 paratypes (♀♀), labelled: „N.VIETNAM, Sa Pa 11–19.VI.1990 Brantlová lgt. [w, p]“ (in NHMB); 1 paratype (♀), labelled: „VIETNAM NORD, Tonkin, Sa Pa, 16–20.V.1990, O. Šauša leg. [w, p]“ (in NHMB); 6 paratypes (1 ♂, 5 ♀♀): „SaPa 11–18.6.N.VIETNAM A. Olexa 1990 [w, p]“ (in NHMB, 1 paratype in LMRM); 6 paratypes (2 ♂♂, 4 ♀♀), labelled: „N VIET NAM (Tonkin) pr. Hoang Lien Son SA PA 11.–15.V.1990 P. Pacholátko leg. [w, p]“ (in NHMB, 1 paratype in JBCB, 1 paratype in LMRM); 1 paratype (♀), labelled: „11.–16.5.1990 SA PA Hoang Lien Son Distr. N VIETNAM, 1600 m JAN HORÁK LEG. [w, p]“ (in NHMB). The specimens of the newly described species are provided with one red label: “HOLOTYPUS [or PARATYPUS] *Apophylia levi* sp. nov. J. Bezděk det. 2002”.

DESCRIPTION. Body slender, flattened, parallel, dull, pubescent. Head bicolorous; vertex, postgenae, frontal tubercles and underside black; anterior part of head and mouthparts yellow; mandibles dark brown. Antennomeres 1 to 5 or 6 yellow in males (in females antennomeres 1 to 4 usually yellow), the rest black, antennomeres 1 to 3 infuscate dorsally. Elytra metallic green or blue.

Labrum transverse, covered by several long setae, anterior margin sinuate. Anterior part of head lustrous, sparsely covered by very fine punctures and long pale setae. Frontal tubercles large, subtriangular, slightly elevated above vertex, lustrous. Interantennal space with deep furrow. Vertex dull, covered by large dense punctures and dense fine short pale hairs. Antennae 0.7 times as long as body in male (0.6 times in female); length ratio of antennomeres 1 to 11: 21 : 9 : 12 : 21 : 17 : 15 : 14 : 13 : 10 : 12 : 19. Pronotum transverse, 2.0–2.1 times as broad as long, widest before the middle. Anterior and posterior margins widely shallow sinuated, lateral margins rounded. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, indicated. The stout ridge deeply interrupted in the middle is situated along anterior margin. Surface uneven, with two very large depressions laterally. Anterior margin and the stout ridge sparsely covered by very large punctures, lustrous, nearly glabrous. The rest of surface with smaller dense punctures and dense

short pale hairs, dull. Setigerous pores bearing one long pale seta each are situated near each corner. Scutellum subtriangular, with apex widely rounded, densely covered by small punctures and short pale hairs, dull. Elytra densely covered by small confused punctures and short dense pale hairs. Humeral calli well developed. Epipleura distinct, gradually narrowed towards apex. Macropterous. Basimetatarsomere 1.75 times as long as two following metatarsomeres combined. Underside subopaque, with dense fine punctures and dense pale hairs. Body length 5.30–6.05 mm (holotype 5.50 mm). The shape of aedeagus as in Fig. 9.

SEXUAL DIMORPHISM. Male: Last visible sternite with large semicircular excision. Claws bifid. Apices of basipro- and basimesotarsomere prolonged and directed downwards, crescent-shaped (Fig. 14). Last 3 antennomeres strongly dilated (Fig. 18). Female: Last visible sternite complete. Claws appendiculate. Basipro- and basimesotarsomere not prolonged. Antennae filiform.

DISTRIBUTION. Vietnam.

DIAGNOSIS. *A. levi* sp.n. differs from the other species of the *A. pallipes*-group by the structure of aedeagus (Fig. 9), in which the right apical part is short and sharp.

ETYMOLOGY. Dedicated to Dr. Lev N. Medvedev (Moscow, Russia), excellent specialist in Chrysomelidae.

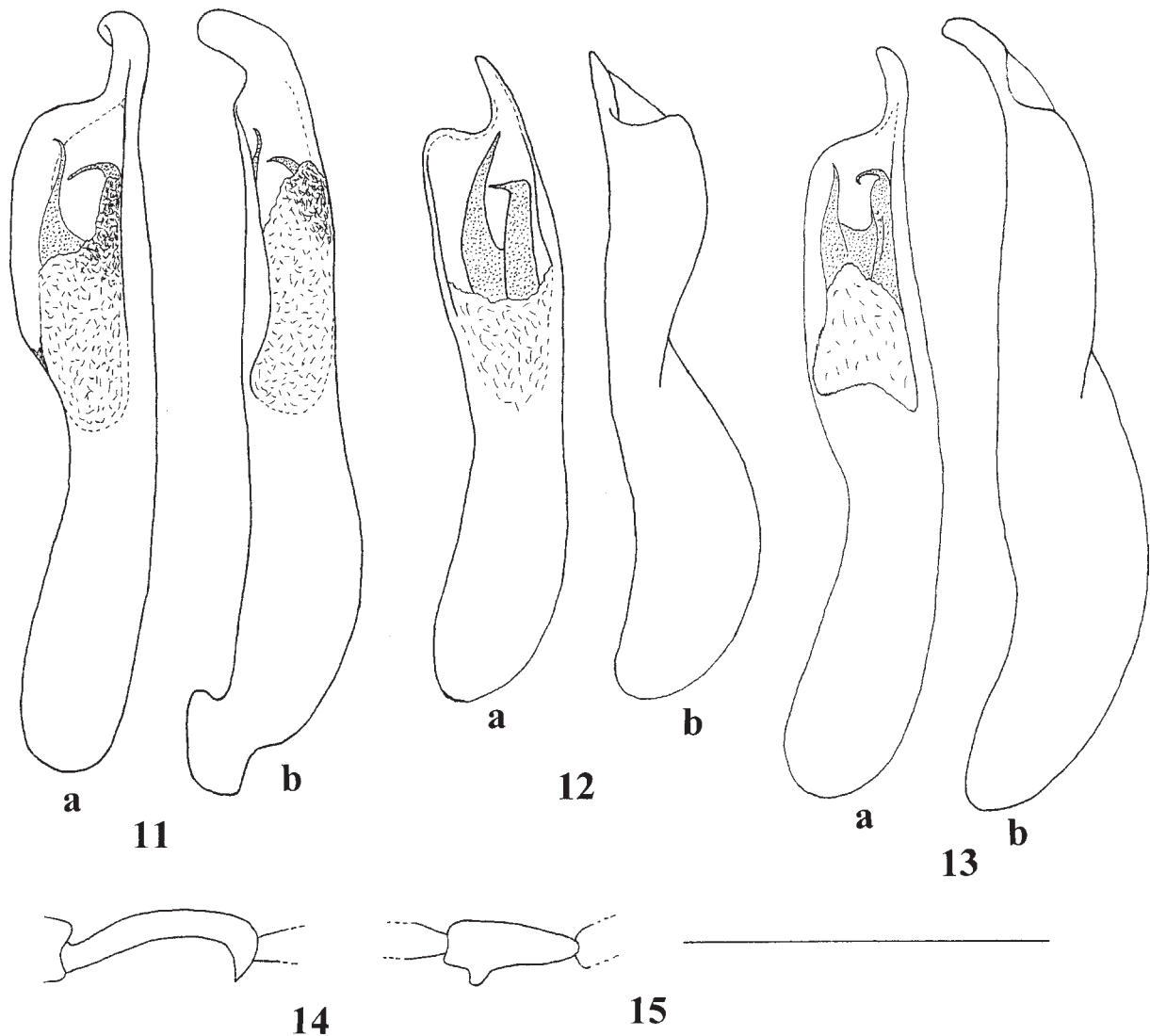
Apophylia borowieci Bezděk, sp.n.

Figs 10, 15, 19.

TYPE MATERIAL: Holotype (♂) and paratype (♀), labelled: “LAOS–NE; HUA PHAN prov.; 25 km SE Vieng Xai (by road); BAN KANGPABONG env.; 20°19'N 104°25'E; J. Bezděk leg.; 14–18.v.2001 [w, p]” (holotype in NHMB, paratype in JBCB). The specimens of the newly described species are provided with one red label: “HOLOTYPUS [or PARATYPUS] *Apophylia borowieci* sp. nov. J. Bezděk det. 2002”.

DESCRIPTION. Body slender, flattened, parallel, dull, pubescent. Head bicolorous; vertex, postgenae, frontal tubercles, underside and mandibles black; anterior part of head, labrum and labial and maxillar palps yellow. Antennomeres 1 to 3 yellow, the rest black, antennomere 1 with large dark spot dorsally, antennomeres 2 and 3 somewhat infuscate. Elytra metallic green.

Labrum transverse, covered by several long setae, anterior margin sinuate. Anterior part of head lustrous, sparsely covered by very fine punctures and long pale setae. Frontal tubercles large, subtriangular, slightly elevated above vertex, lustrous. Interantennal space with deep furrow. Frons with large shallow depression. Vertex dull, covered by large dense punctures and dense fine short pale hairs. Antennae 0.83 times as long as body in male (0.67 times in female); length ratio of antennomeres 1 to 11: 18 : 7 : 11 : 19 : 18 : 18 : 18 : 14 : 12 : 11 : 17. Pronotum transverse, 2.1 times as broad as long, widest at the first third. Anterior and posterior margins widely shallow sinuated, lateral margins rounded. All margins thinly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, indicated. The stout ridge, interrupted in the middle, is situated along anterior margin. Surface uneven, with two very large depressions laterally. Anterior margin and the stout ridge sparsely covered by very large punctures, lustrous, nearly glabrous. The rest of surface with smaller dense punctures and dense short pale hairs. Setigerous pores bearing each one long pale seta are situated near each corner. Scutellum subtriangular, with apex widely rounded, densely covered by small punctures and short pale hairs, dull. Elytra densely covered by small confused punctures and short dense pale hairs. Humeral calli well devel-



Figs 11–15. *Apophyllia* spp.: 11 — *Apophyllia* sp. 1, 12 — *Apophyllia* sp. 2, 13 — *Apophyllia* sp. 3, 14 — *A. levi* sp.n., 15 — *A. borowieci* sp.n., 11–13 — aedeagus (a — dorsal view, b — lateral view), 14–15 — male mesotarsomere. Scale 1 mm.

Рис. 11–15. *Apophyllia* spp.: 11 — *Apophyllia* sp. 1, 12 — *Apophyllia* sp. 2, 13 — *Apophyllia* sp. 3, 14 — *A. levi* sp.n., 15 — *A. borowieci* sp.n., 11–13 — эдеагус (а — досально, б — латерально), 14–15 — мезотарзомеры самца. Масштаб 1 мм.

oped. Epipleura distinct, gradually narrowed to apex. Macropterous. Basimetatarsomere 1.4 times as long as two following metatarsomeres combined. Underside subopaque, with dense fine punctures and dense pale hairs. Body length 4.80–5.60 mm (holotype 4.80 mm). The shape of aedeagus as in Fig. 10.

SEXUAL DIMORPHISM. Male: Last visible sternite with large semicircular excision. Claws bifid. Basiprotarsomere with small dent in the middle directed downwards. Basimesotarsomere with small dent before apex directed downwards (Fig. 15). Female: Last visible sternite complete. Claws appendiculate. Basipro- and basimesotarsomere without dents.

DISTRIBUTION. Laos.

DIAGNOSIS. *A. borowieci* sp.n. can be distinguished from the other species of *A. pallipes*-group by less extended apical antennomeres (Fig. 19), by dents on basipro- and basimesotarsus (Fig. 15) and by the structure of aedeagus (Fig. 10).

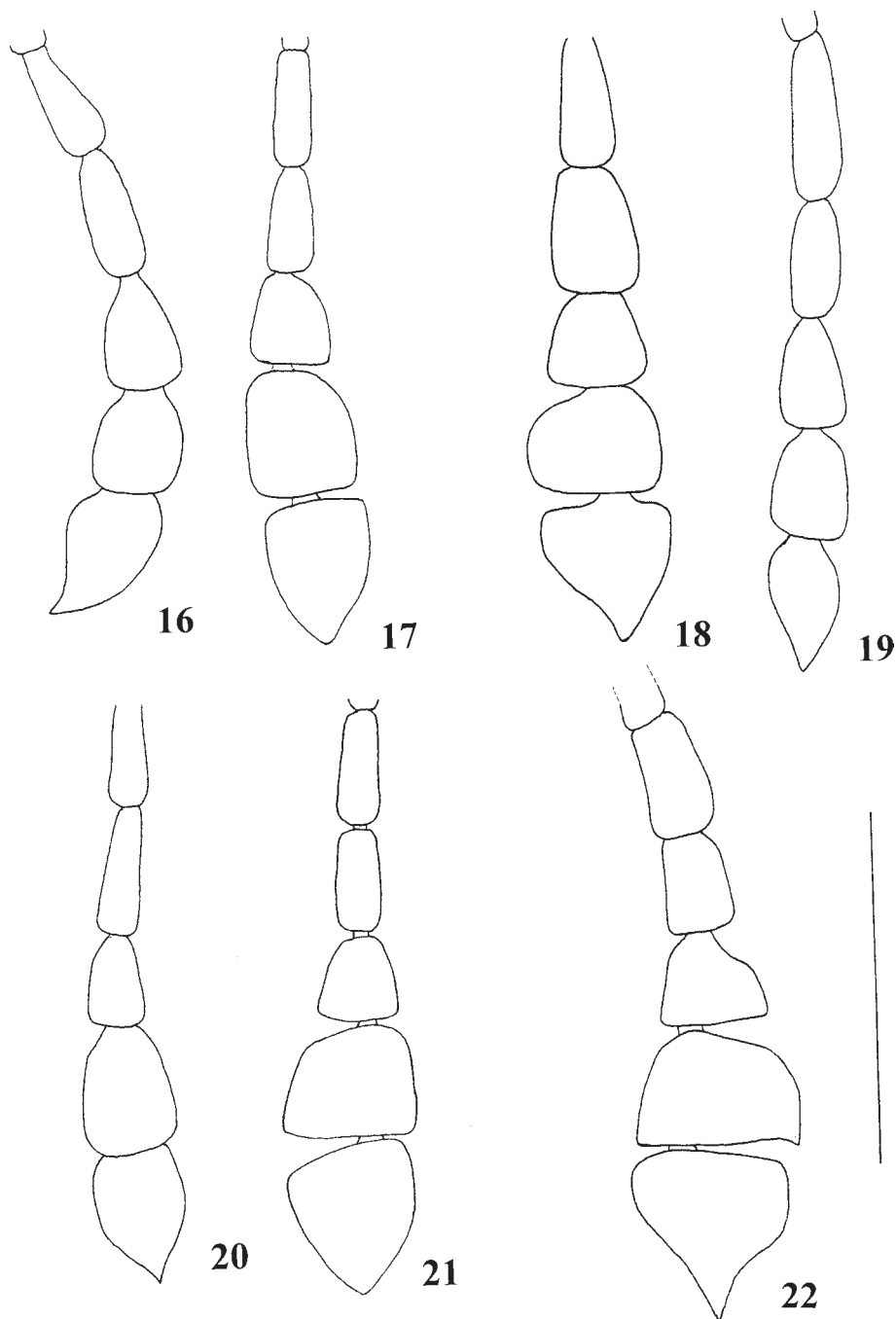
ETYMOLOGY. Dedicated to Prof. Lech Borowiec (Wroclaw, Poland), an excellent specialist in Chrysomelidae.

I had also the possibility to examine the specimens of possibly 3 additional species of *A. pallipes*-group. However, only 3 specimens of each „species“ were available, so I decided not to describe them at present and to wait for additional material which could clarify the status of these specimens.

Apophyllia sp. 1

Figs 11, 20.

MATERIAL EXAMINED: 1 ♂, labelled: “THAILAND, Nan prov., Doi PhuKa Nat. Park, 28.IV.–12.V.2002 P. Průdek & M. Obřil leg. [w, pl]” (in JBCB); 2 ♂♂, labelled: “THAI, N, Mae Hong Son prov., SE of Soppong, 1500 m, 19°27'N, 98°20'E, 27-27.v.1999, M. Říha leg. [w, pl]” (in JBCB).



Figs 16–22. *Apophylia* spp.: 16 — *A. pallipes*, 17 — *A. clavicornis*, 18 — *A. levi* sp.n., 19 — *A. borowieci* sp.n., 20 — *Apophylia* sp. 1, 21 — *Apophylia* sp. 2, 22 — *Apophylia* sp. 3. Scale 1 mm.

Рис. 16–22. *Apophylia* spp.: 16 — *A. pallipes*, 17 — *A. clavicornis*, 18 — *A. levi* sp.n., 19 — *A. borowieci* sp.n., 20 — *Apophylia* sp. 1, 21 — *Apophylia* sp. 2, 22 — *Apophylia* sp. 3. Масштаб 1 мм.

Aedeagus as in Fig. 11. Antennae as in Fig. 20. Males from Thailand are very similar to *A. clavicornis*.

Apophylia sp. 2

Figs 12, 20.

MATERIAL EXAMINED: 1 ♂ and 1 ♀, labelled: "LAOS, 21°09'N, 101°19'E, Louangnamtha pr., Namtha→Muang Sing, 5–31.v.1997, 900- Vít Kubár leg. -1200m [w, p]" (in NHMB).

Aedeagus as in Fig. 12. Antennae as in Fig. 21. I have only one couple from Laos in disposal. The structure of aedeagus shows that this species is possibly closely related with *A. levi* sp.n.

Apophylia sp. 3

Figs 13, 22.

MATERIAL EXAMINED: 3 ♂♂, labelled: "Laos N, 24.iv.–16.v.1999 Louang Phrabang prov. Bang Song Cha, 1200 m,

20°33–4'N, 102°14'E, lgt. Holzchuh [w, p]' (in JBCB).

Aedeagus as in Fig. 13. Antennae as in Fig. 22. The structure of aedeagus shows that this species is possibly closely related with *A. clavicornis*, but extended apex of antennae is larger than in *A. clavicornis*.

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