| Genus | Vol. 23(1): 39-97 | Wrocław, 30 IV 2012 |
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# An attempt on an introductory review of *Smaragdina* Chevrolat, 1836 species from the continental part of Southeastern Asia (Coleoptera: Chrysomelidae: Clytrinae)

Andrzej Warchałowski
Zoological Institute, University of Wrocław, Sienkiewicza 21, 50-335 Wrocław, Poland e-mail: awar1927@gmail.com

Abstract. A concise review of the *Smaragdina*-species from Southeastern Asia with a key to determination, illustrations, alphabetical check-list of all discussed taxa and the complete relevant bibliography are given. A replacement name, *Smaragdina sassii* **nom. nov**., is proposed for *Smaragdina divisoides* Medvedev, 1988 nec Chûjô, 1952.

Key words: entomology, taxonomy, Coleoptera, Chrysomelidae, genus *Smaragdina*, Southeastern Asia, check-list, key, bibliography.

## INTRODUCTION

This paper is an attempt to bring together and to organize the very scattered published information on *Smaragdina*-species distributed in the continental part of Oriental region and on the nearby islands of Sri Lanka, Hainan and Taiwan. Limits of Oriental area in China are defined here as in my recent work (Warchałowski 2010), along North fronters of the provinces: Xizang, Szechwan, Hubei, Henan, Anhui and Jiangsu. Consequently, a few species known only from the Palaearctic part of Oriental Asia were not considered in the key to determination. Complete corresponding bibliography and a list of species with indication of all taxonomical changes are given. In the absence of suitable taxonomical revisions the presented key to determination is based mainly on secondary features and can be used rather to organize materials in collections; at the present stage of research more precise and more comprehensive identifications are not yet possible.

The genus *Smaragdina* Chevrolat, 1836, closely related to *Clytra* Laicharting, 1781, contains about 270 species distributed almost exclusively in Old World, mainly in Palaeotropical superarea. The creation of this genus was from beginning based on negative features, and additionally definitions of allied genera (*Aetheomorpha* Lacordaire,1848, *Clytra* Laicharting 1781, *Exomis* Weise, 1889*, Physosmaragdina* Medvedev, 1971) are not precise; consequently, species have often been moved between the genera. Therefore generic assignment of some species needs still confirmation and this problem refers in particular to a few larger *Smaragdina* species of body length more than 6 mm and to a certain number of smaller (4-5 mm) species with broader epipleural lobes and pygidium not entirely covered by elytra, often determined and ranked, perhaps rightly, as *Aetheomorpha*.

As features differentiating *Aetheomorpha* from *Smaragdina*, only the distinctly or strongly lobed epipleura combined with pygidium not covered by elytra are given. However, between strongly developed and almost absent epipleural lobes all possible intermediate forms exist; at the same time the very sloping, often almost vertical position of pygidium allows not define, particularly in females, whether it is covered by elytra or not. In my opinion, until an exact definition of both genera is published, it would be more convenient to treat *Smaragdina* and *Aetheomorpha* as congeneric.

In Palaearctic fauna the genus *Smaragdina* is divided in a few subgenera, but for the Palaeotropical species a breakdown into subgenera is not yet possible; the nominotypical subgenus is probably not represented here and the majority of species belong to the subgenus *Monrosia* Medvedev, 1971; a few species possibly also to *Nanosmaragdina* Lopatin et Kulenova, 1986 and *Medvedevella* Özdikmen, 2008 (replacement name for *Smaragdinella* Medvedev 1971, nec Adams et Reeve, 1848). The temporary character of actual divisions is emphasized in the recent Catalogue of Palaearctic Coleoptera (Löbl and Smetana, 2010), where all subgeneric names of *Smaragdina* are treated as synonyms.

There are about 130 species in the discussed area.

Recently Medvedev (2010) published a similar work in form of an identification key, discussing the most part of here treated species and containing descriptions of 11 new species, but passed in silence over further about 35 species from India, Indochina and China, described originally as *Smaragdina* (*Cyaniris*, *Gynandrophthalma*). All these species are included into present key to determination, but undoubtedly some of them can turn out to belong to allied genera *Aetheomorpha*, *Aetheodactyla* or *Diapromorpha*.

During my studies on discussed genus a secondary homonym (*Smaragdina divisoides* Medvedev, 1988: 33, nec *Gynandrophthalma divisoides* Chûjô, 1952: 48) was detected. I propose for this species the replacement name *Smaragdina sassii* **nom**. **nov**., in honour of the eminent coleopterologist, dr Davide Sassi (Castelmarte, Italy).

I would also like to thank here Ing. František Kantner (České Budějovice), Prof. dr Lech Borowiec (Wrocław) for the kind assistance, and in particular Prof. dr Jan Bezděk (Brno) for his unusual painstaking revision of the first draft of the manuscript, which allowed to avoid or corrected numerous errors in the text.

## KEYS TO DETERMINATION

The following species were insufficiently described and are not included in the key: *atropyga* Pic, 1941; *diversesignata* Pic, 1946; *latemedionotata* Pic, 1946; *nigropygidialis* Pic, 1946; *piceifrons* Pic, 1941; *reductelineata* Pic, 1946; *salemensis* Pic, 1946; *trimaculaticeps* Pic, 1946.

### KEY TO AUXILIARY GROUPS

1. Pronotum entirely pale ..... 2.
–. Pronotum bicolored (pale with black pattern) or entirely dark (metallic or black) ..... 4.
2. Elytra entirely pale ..... Auxiliary group **A**.
–. Elytra bicolored or entirely dark ..... 3.
3. Elytra bicolored ..... Auxiliary group **B**.
–. Elytra dorsally entirely dark or sometimes with epipleura pale only ..... Auxiliary group **C**.
4. Pronotum bicolored ..... 5.
–. Pronotum entirely dark, black or metallic ..... Auxiliary group **G**.
5. Elytra entirely pale ..... Auxiliary group **D**.
–. Elytra bicolored or entirely dark ..... 6.
6. Elytra bicolored ..... Auxiliary group **E**.
–. Elytra entirely dark ..... Auxiliary group **F**.

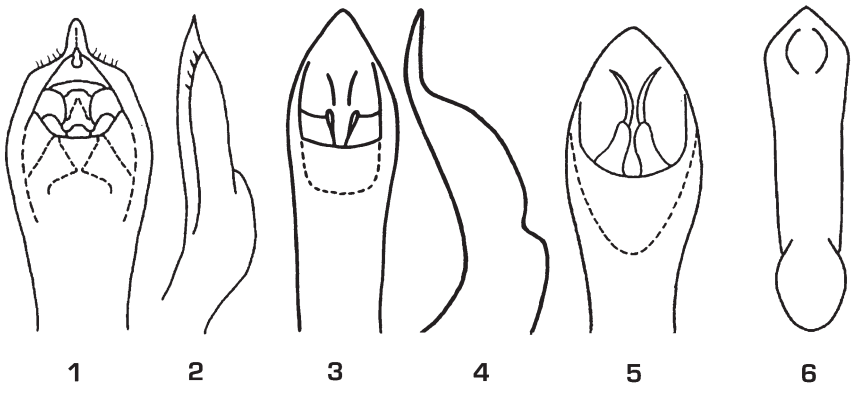
### Auxiliary group **A**

(both pronotum and elytra entirely pale, very rarely with somewhat darkened, blurred, indistinct spots on pronotum or humeri or with other blurred, rather pale brownish, never black or blackish, darkenings on upper side)

#### Key to species

1. Head black ..... 30.
–. Head pale, at most partly (mandibles, genae) blackened, in female sometimes generally darkened, but not black ..... 2.
2. Body dark yellowish, elytra distinctly paler, pale flavous. Antennomeres 4-11, tibiae and tarsi black. Aedeagus as in **figs 1, 2**, its apical part broadened with narrow and relatively long lamella. Length 4.9 mm. Described from Vietnam ..... ***insulana*** Medvedev, 1992c.
–. Not as above ..... 3.
3. Punctation of elytra extremely fine, sparse and shallow, surface at first sight almost or entirely impunctate ..... 4.
–. Punctation of elytra sometimes very fine, but always perceptible ..... 5.
4. Elytra entirely impunctate, smooth. In remaining details very similar to *chrysomeloides* (thesis 6). Fore legs somewhat elongate. Species rather insufficiently described. Length about 5.0 mm. (= *ceylonica* Jacoby, 1908). Female unknown. Described from Sri Lanka. Newly discussed in the genus *Ceratobasis* Lacordaire, 1848 ..... ***vinula*** (Weise, 1903).

–. Elytra almost impunctate. Apex of aedeagus (**figs 3, 4**) in lateral view bent dorsally. Length 4.0-4.8 mm. Described from N Vietnam ..... ***montana*** Medvedev, 1988a.
5. Pronotum on each side with an oblique depression laterally in basal part, hind angles somewhat elevated. In female pygidium with deep triangular emargination. Length 5.5-7.5 mm. Here the palest variation of *fuscicornis* (see thesis 17).
–. Not as above ..... 6.
6. Pronotum entirely impunctate, at most with a few minute punctures at basal margin ..... 7.
–. Pronotum punctate, Punctation sometimes sparse and fine, but always perceptible at least basally or laterally ..... 26.
7. Entirely pale flavous, sometimes on elytra blurred, darker spots. Antennae entirely pale ..... 8.
–. At least antennomeres 5-11 darkened or black, often also tarsi and breast darker than remaining body ..... 10.
8. Larger species, lenght of body 5.0-6.7 mm ..... 9.
–. Much smaller. Hind angles of pronotum rounded. Aedeagus as in **fig. 6**. Frons 1.3 × as wide as transverse diameter of eye. Pronotum relatively narrow, 1.65 × as wide as long. Length 3.6 mm. Described from Vietnam, based on one male only ..... ***daklaka*** Medvedev, 2010.
9. Hind angles of pronotum marked, surface entirely impunctate. Legs short, slender, tarsi very short, tarsomeres 1 and 2 trigonal, equal. Elytra very finely punctate, punctures arranged in regular or almost regular rows. Length about 5.4 mm (= *citrinella* Jacoby, 1908). Aedeagus as in **fig. 5**. One subspecies, *S. c. rufocapitis* Medvedev et Kantner, 2002, differing from the nominotypical subspecies by reddish-brown head and by presence of a weak rib on underside of aedeagus, is described from Northern India; nominotypical form is distributed in Sri Lanka, Laos and Thailand ..... ***chrysomeloides*** (Lacordaire, 1848).




1-6. Aedeagus in dorsal and lateral view (1, 2, 5, 6 after Medvedev 1910, 3, 4 after Medvedev 1988a, 5 after Medvedev 1984) 1, 2 – *Smaragdina. insulana*, 3, 4 – *S. montana* differently presented, 5 – *S. chrysomeloides*, 6 – *S. daklaka*

–. In pronotum hind angles broadly rounded. Pronotum less than 2 times broader than long. Aedeagus with longitudinal ridge on underside of basal part, its general outline as in **fig. 15**. On each elytron sometimes a blurred, dark spot in hind part; this spot may be prolonged anteriad. A very dark (unnamed) aberration also exists, with elytra black or black with pale apex. Length 5.7-6.7 mm. Described from Pakistan ..... ***pakistanica*** Medvedev, 2010.

10. Apical part of antennae and sides of sternum only slightly darkened. On pronotum a few punctures at basal margin. Aedeagus as in **figs 19, 20**, in dorsal view shortly finger-shaped, in lateral view crooked down. Length 4.0-4.6 mm. Described fron India (Darjeeling) ..... ***fulvitarsis*** Medvedev, 1992.

–. Apical part of antennae strongly darkened or black, aedeagus differently shaped ..... 11.

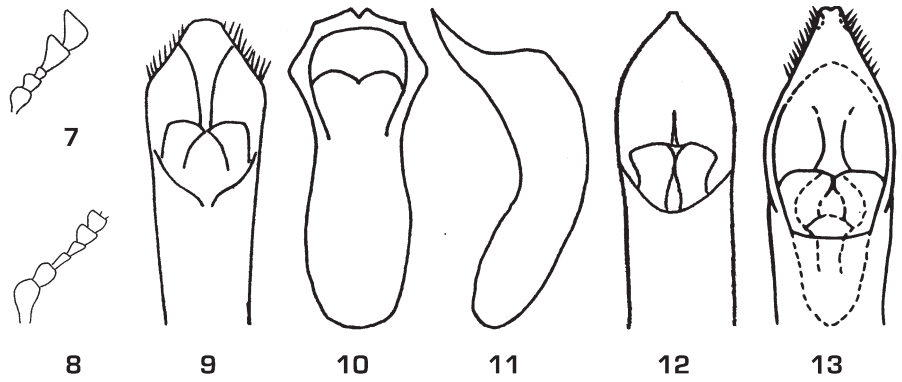
11. Body pale fulvous, hind half of elytra distinctly paler ..... 12.

–. Not as above ..... 14.

12. Antennomeres 5-11 and tarsi (not always) black. Breast more or less darkened ..... 13.

–. Body fulvous, apical part of elytra lightened, antennomeres 4-11 and tibiae (apically or almost entirely) black. Pronotum impunctate, Punctation of elytra distinct and dense. Aedeagus as in **fig. 21**, not emarginate on apex. Length 4.5-4.8 mm (male) to 5.2-5.3 mm (female). Described from N India. Ranked also as *Aetheomorpha* ..... ***regalini*** Medvedev et Kantner, 2002.

13. Basal antennomeres as in **fig. 8**. Frons not particularly narrow. Pronotum more than 2× broader than long, entirely impunctate. Elytra finely punctate, punctures arranged in irregular rows, more finely posteriad. Apex of adeagus emarginate, but differently presented (**figs 9-13**). Length 3.2-5.4 mm (= *indica* Jacoby, 1895, *fuscicornis* Chûjô, 1964, nec Lacordaire 1848). Distributed in India, Sri Lanka, Myanmar and Thailand. ..... ***divisa*** (Jacoby, 1889).




7-13. Basal antennomeres, aedeagus in dorsal and lateral view (7 after Medvedev 1995, 8, 12 after Medvedev 1984, 9 after Medvedev 1988b, 10, 11 after Kimoto et Gressitt 1979, 13 after Medvedev 1988a): 7 – *Smaragdina minuta*, 8-13 – *S. divisa,* differently presented

–. Similar to *divisa*, but frons narrow, two times narrower than transverse diameter of eye, aedeagus as in **fig**. **14**, with characteristic bristles. Length about 5.0 mm. Described from N India ..... . ***oculata*** Medvedev, 1988b.

14. Similar to *divisa* (thesis **13**), but antennomere 4 much smaller, elytra not distinctly paler in apical half and in female apices of tibiae, metasternum and apex of abdomen strongly darkened. Length 4.4-4.8 mm. Described from Thailand ..... ***divisomima*** Medvedev, 2010.

–. Not as above ..... 15.

15. Antennomeres 4-11 strongly dilated, 5-11 black ..... 16.

–. Antennomeres 4-11 often robust, but not particularly strongly dilated ..... 17.

16. Frons narrow, in male about 0.7 × narrower than transverse diameter of eye, in female as broad as this diameter. Prothorax in both sexes twice as wide as long. Aedeagus very characteristic (**fig. 16**). Length 5.0-6.0 mm. Described from Thailand ..... ***constrictifrons*** Medvedev, 2010.

–. Frons not particularly narrow. Pronotum in male 1.5×, in female 2× broader than long, posterior angles rounded**,** surface impunctate. Punctation of elytra very close and fine, arranged in irregular rows. Length about 6.0 mm. Described from Myanmar. After Medvedev (2010) an unclear species, possibly belonging to another genus. ..... ..... ***fuscitarsis*** (Jacoby, 1900).

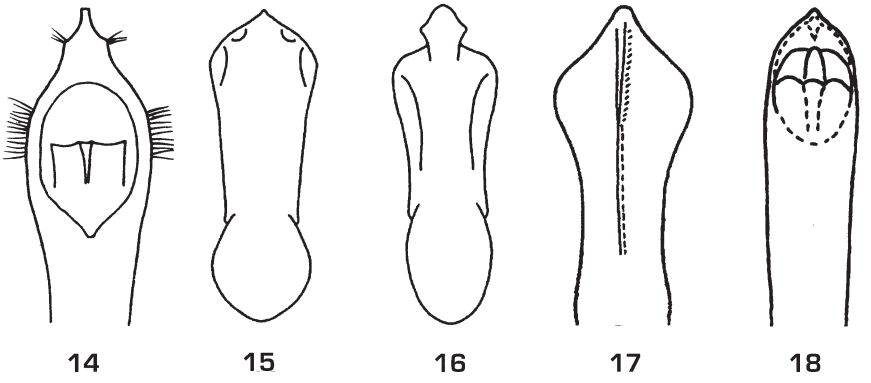
17. Antennomeres 5-11 fuscous Pronotum 1.3 times broader than long, entirely impunctate. Elytra very variably coloured (**figs 27-37**) finely but distinctly punctate. Legs subequal, rather robust. Aedeagus as in **fig. 17**. Length about 6.5 mm. A rather poorly studied species described from E India. Sometimes ranked as *Aetheomorpha* ..... ***fuscicornis*** (Lacordaire, 1848).

–. Antennomeres 4-11 black or at least strongly darkened ..... 18.

18. Very small, Length of body under 3.0 mm ..... 19.

–. Body length at least 3.2 mm ..... 20.

19. Flavous, breast and abdomen black. Antennomeres 4-11 slightly darkened, 4-11 strongly serrate, basal antennomeres as in **fig. 7**. Pronotum 1.5× broader than long,




14-18. Aedeagus in dorsal view (14 after Medvedev 1988b, 15, 16 after Medvedev 1910, 17 after Medvedev 1984, 18 after Medvedev 1995): 14 – *Smaragdina oculata*, 15 – *S. pakistanica*, 16 – *S. constrictifrons*, 17 – *S. fuscicornis,* 18 – *S. minuta*

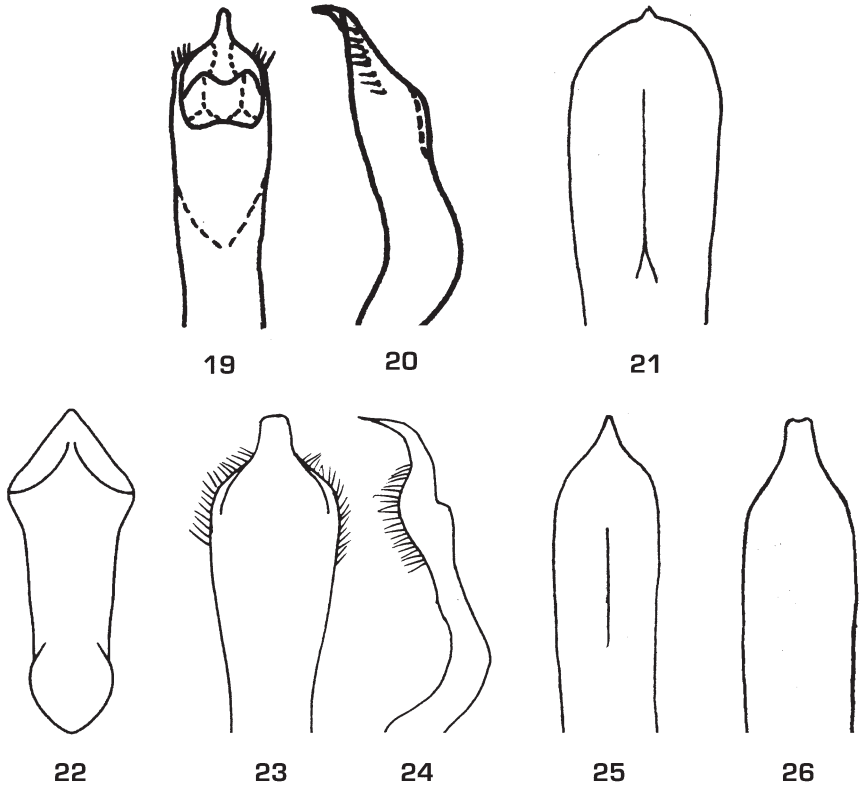
impunctate. Elytra subcylindrical, finely puctate-striate. Aedeagus as in **fig. 18**. Length 2.5 mm. Described from India (Belgaum) based on one specimen (sex not determined) only..... ***minuta*** (JACOBY, 1908).

–. Body entirely pale except for black antennomeres 4-11. Antennae distinctly serrate, antennomere 4 triangular, but much smaller than 5. Pronotum impunctate with arcuate impression before scutellum. Punctation of elytra arranged in regular rows, in hind part almost disappearing. Aedeagus (**fig. 22**) in dorsal view with triangular apical part. Length 2.8 mm. Described from Malakka based on one male only ..... ***malaccana*** MEDVEDEV, 2010.

20. Antennomere 3 short and cylindrical, 4 elongate, widened at apex, but much smaller than 5, 5-10 as long as broad. Propleurae bare. Male unknown. Described from N Vietnam based on a few females only ..... ***tamdaoana*** MEDVEDEV, 2010.

–. Not as above ..... 21.

21. Pronotum very short and transverse, about 3× broader than long. Underside, antennomeres 4-11, tibiae and tarsi black. Clypeus deeply subquadrately emarginate.




19-26. Aedeagus in dorsal, lateral and ventral view (19, 20 after MEDVEDEV 1992, 21 – after MEDVEDEV et KANTNER 2002, 22 after MEDVEDEV 2010, 23, 24 after MEDVEDEV 1988b, 25 after MEDVEDEV 2002, 26 after MEDVEDEV 2003): 19, 20 – *Smaragdina fulvitarsis*, 21 – *S. regalini*, 22 – *Smaragdina malaccana*, 23, 24 – *S. sikkimia*, 25 – *S. sprecherae*, 26 – *S. pacholatkoi*

Elytra parallel-sided, scarcely but perceptibly punctate. Legs elongate. Length about 4.5 mm. Female unknown. Described from India (Nilgiri) based on one specimen only ..... ***nigrotibialis*** (Jacoby, 1908).

–. Pronotum at most 2.5× broader than long ..... 22.

22. Larger, body lenght 6.0-6.5 mm ..... 23.

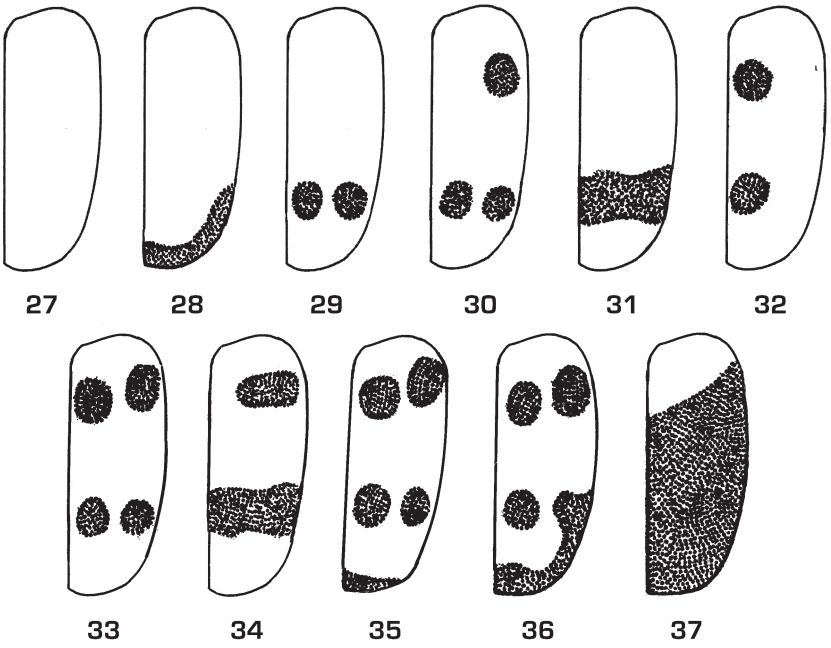
–. Smaller, body length under 4.8 mm ..... 24.

23. On pronotum five or six rather indistinct darker (pale fuscous) spots, Tarsi and antennomeres 4-11 black, all remaining parts of body flavous. pronotum slightly more than twice as broad as long, impunctate. Elytra very finely, rather closely, randomly punctate. Aedeagus as in **figs 23, 24**. Length about 6.0 mm. Described from India (Sikkim) ..... ***sikkimia*** (Jacoby, 1903).

–. Upper side fulvous. Knees, tarsi and tibiae black. In male labrum and anterior margin of clypeus blackened. on ventral side of aedeagus (**fig. 25**) a longitudinal ridge. Length 6.3-6.4 mm, possibly conspecific with (rather insufficiently described) *sikkimia*, (thesis 23). Described from NE India ..... ***sprecherae*** Medvedev, 2002.

24. Body entirely pale, antennae partly, tibiae and tarsi slightly infuscate, metasternum and abdomen darkened, brown to pitch black .....25.

–. Body entirely pale except for antennomeres 4-11 darkened or black. Antennomere 3 much smaller than 2. Elytra very distinctly and confusedly punctate, on apical slope almost impunctate. Aedeagus with short finger-shaped, slightly emarginate process (fig. **26**). Length 3.7-4.0 (male) to 4.3-4.7 (female). Described from S India ..... ***pacholatkoi*** Medvedev, 2003.

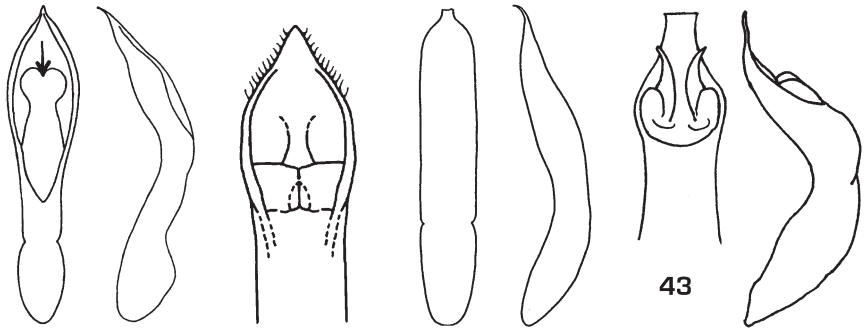



27-37 Elytral pattern in *Smaragdina fuscicornis* (after Medvedev 1984)

25. Antennomeres 2 and 3 subequal in length. Head and pronotum impunctate, primary punctures on elytra partly arranged in subregular rows. Length 3.2-4.0 mm (= *divisoides* Chûjô, 1952). Aedeagus as in **figs 38**, **39**. Described from China (Hupeh), known also from Taiwan ..... ***fulveola*** (Jacoby, 1890).
–. Antennomere 3 small and narrow, shorer than 2. Very similar to *fulveola*, but aedeagus (**figs 71, 72**) strongly differing. Here pale form. In typical form on elytra two brown stripes (see *schereri*, auxiliary group B thesis 34).
26. Smaller. Body entirely pale except for antennomeres 6-11 and tarsi pitch black. Pronotum very minutely punctate, elytral punctures doubly, consisting of strong and fine punctures Length 3.0-3.2 mm. Similar (perhaps conspecific) to *fulveola* (thesis 25), but generally more robust and with longer scutellum. Endemic to Taiwan ..... ***nomurai*** Kimoto, 1976.
–. Larger, length of body about 4.5 mm or more ..... 27.
27. Frons very broad, more than twice as broad as the transverse diameter of eye Punctation of elytra strong. Aedeagus simple, its dorsal view as in **fig. 40**. Length 5.1 mm (male) to 5.3-5.7 mm (female) (= *divisoides* Medvedev, 1988, nec Chûjô, 1952). Described from N Vietnam ..... ***sassii*** **nom**. **nov**.
–. Frons at most 1.5 times as broad as the transverse diameter of eye. Punctation of elytra fine or very fine ..... 28.
28. Outline of body normal. Head and pronotum partly finely punctate ..... 29.
–. Body very elongate, subcylindrical, thorax strongly transverse, short, laterally very minutely, sparingly punctate. Underside, antennomeres 4-11 and tibiae black, tarsi darkened. Elytral Punctation very fine, arranged in irregular rows, disappearing in apical part. Length 6.5 mm. Described from SE India (Travancore, Wallardi). Recently ranked as *Aetheodactyla* ..... ***wallardiensis*** (Jacoby, 1908).
29. Length about 6.0 mm (*flavimana* Chûjô, 1952). Primary punctation of elytra minute and irregular. Aedeagus as in **figs 41, 42**. Distributed in Japan, Ryukyu Is., China (Chekiang) and Taiwan ..... ***nipponensis*** (Chûjô, 1951).
–. Length about 4.5 mm. Externally similar to *divisa* (thesis 13), but diverges by partly punctate pronotum and very different aedeagus shape (**figs 43, 44**). Described from S Vietnam ..... ***kimotoi*** Lopatin, 2003.
30. Head black with pale clypeus, on humeral callus black or bownish spot. Underside black, femora black with pale basal part, tibiae and tarsi pale. Pronotum impunctate, elytral punctures fine. Apex of aedeagus (**figs 45, 46**) in lateral view bent ventrally, in dorsal view narrowed, transversely cut and emarginate. Length 4.4-6.1 mm (= *divisella* Medvedev, 1988). After the original description of *divisella* pygidium not covered by elytra (= *Aetheomorpha*?). Externally very similar to *divisa* (thesis 10), but differing by the shape of aedeagus and by the presence of humeral spot. Distributed in China (Yunnan), Vietnam and Laos. ..... ***diversiceps*** Pic, 1941.
–. Head black. Underside black, knees, tibiae and tarsi black. Antennomeres 5-10 strongly transverse. Fore tibiae curved, on ventral side covered vy dense setae. Fore tarsi wide. Tarsal claws with small denticle. Aedeagus as in **figs 143**, **144**. Length about 5.4 mm. General outline of body similar as in *peplopteroides* (auxiliary group B, thesis 40). Described from Yunnan ..... ***oblonga*** Lopatin, 2009.

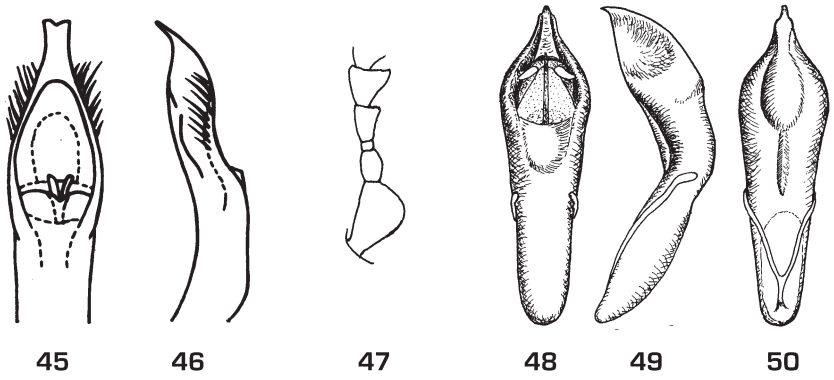
Auxiliary group **B**
(pronotum unicolorous, pale, elytra bicolored)

1. Elytra dark (black or blue) with pale apex ..... 2.
–. Elytra differently coloured ..... 9.
2. Larger species, body length at least 4.0 mm ..... 3.
–. Small species, body length at most 3.5 mm ..... 5.
3. Breast and abdomen black, elytra dark blue, their apical part yellow. Females of *ihai* key out here (antithesis 4) .
–. Breast pale, sometimes brown, rarely blackened ..... 4.
4. Fulvous; apical antennomeres black; elytra black, extreme apex fulvous. Antennae fuscous, comparatively long and slender, antennomeres 1-4 or 1-5 flavous, third conspicuously small, fourth and following triangularly widened. Pronotum about twice as broad as long, impunctate. Scutellum pale, its apex raised and thickened. Elytra sparingly and minutely punctate. Aedeagus as in **figs 47-50**. Length 4.0-4.6 mm. (= *maduraiensis* Erber et Medvedev, 1999). Described from S India (Madurai). Original descriptions show no significant differences between *flaviventris* and *longicornis* Jacoby, 1897 from Bengal, but the allospecifity of both mentioned taxa should be confirmed by a revision based on types ..... ***flaviventris*** Bryant, 1934.
–. Head, prothorax and legs yellowish brown, lustrous, scutellum shining black; elytra deep blue, strongly shining, with the apical area light yellow-brown. In male mesothorax yellow-brown sometimes blackened, metathorax and abdomen black. Antennae short and robust, serrate, antennomere 1 strongly dilated and much thicker than the others, 11 longest. Pronotum very finely and closely punctate on the whole surface coarsely and irregularly, laterobasally and nearly along all borders stronger. Elytra strongly and closely punctate, the punctures partly arranged in longitudinal rows, obsolete or weakened on the apical area. Length 4.0-4.8 (male) to 4.5-5.0 (female). Described from Ruykyu Islands (Okinawa) ..... ***ihai*** (Chûjô, 1958).



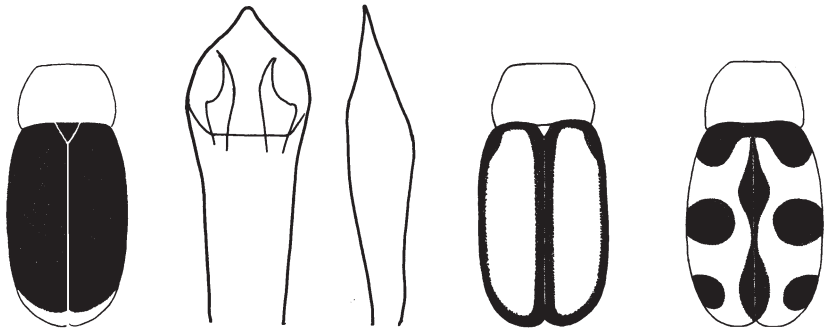

38-44. Aedeagus in dorsal and lateral view (38, 39 after Lopatin 2006, 40 after Medvedev 1988a, 41, 42 after Medvedev 19 38, 39 – *Smaragdina fulveola;* 40 – *S. sassii;* 41, 42 – *S. nipponensis*; 43, 44 – *S. kimotoi*

5. Primary punctation of elytra almost regular or subregular arranged in longitudional rows ..... 6.
–. Primary punctation of elytra more irregularly scattered, random or arranged in indistinct rows or longitudinal stripes ..... 7.
6. Primary punctation of elytra arranged in almost regular longitudinal rows, sides and apex almost impunctate. Pronotum two times or slightly more as broad as long. Abdomen pale, sternum partly blackened. Legs fulvous. Length about 3.0 mm. Described from India (Nilgiri) ..... ***frontalis*** (Jacoby, 1908).
–. Primary Punctation of elytra arranged in 11 subregular rows, their intervals covered by minute secondary punctures. Antennae robust, short, antennomeres 1-4 pale, remaining black. Pronotum about 1.6 × as broad as long. Upper side bicolored (**fig. 51**). Abdomen, meso- and metasternum black. Legs pitch black with lightened proximal part of tibiae. Aedeagus as in **figs 52, 53**. Length 3.2-3.5 mm. Described from Laos ..... ***laosensis*** Kimoto et Gressitt, 1979.
7. The smallest species. Head black. Thorax very short, more than twice as broad as long. Elytra very closely and distinctly punctate, legs pale. Length about 2.0 mm. Described from India (Bombay, Belgaum) ..... ***orientalis*** (Jacoby, 1908).
–. Somewhat larger species, body length over 2.75 mm. Head pale with two dark spots on vertex ..... 8.
8. Elytra blackish with pale apex. Underside blackish, legs yellowish brown, tibiae and tarsi infuscate. Length 2.8 mm. Known from Taiwan only ..... ..... ***apiciflava*** (Chûjô, 1952).
–. Elytra dark blue with with fulvous apex. Underside fulvous, sides of breast infuscate, legs entirely pale. Length about 3.5 mm. Described from India (Nilgiri) ..... ***apicipennis*** (Jacoby, 1908).
9. Small species, body length at most 3.5-4.2 mm ..... 10.
–. Larger species, body length at least 4.0 mm ..... 19.




45-50. – Basal antennomeres, aedeagus in dorsal, lateral and ventral view (45, 46 after Medvedev 1988a, 47 after Medvedev 1995, 48-50 after Erber et Medvedev 1999): 45, 46 – *Smaragdina diversiceps*; 47 – *Smaragdina flaviventris* – 48-50 – *S. flaviventris*

10. Body entirely pale, tarsal claws and apex of elytra black only. Pronotum almost impunctate, elytral punctures distinct, fine, partly arranged in irregular rows. Length 3.5-4.0 mm. Here *Aetheomorpha apicata* Medvedev, 1988, until 2010 known as *Smaragdina nigroapicalis* Lopatin, 2005.
–. Upper side coloured differently ..... 11.
11. Elytra pale with black sutural stripe and black lateral margins ..... 12.
–. Elytra differently coloured ..... 13.
12. Black sutural (narrower) and lateral (broader) stripes not very large (**fig. 54**). Flavous; antennomeres 3-11 or 4-11, tarsi, tibiae and breast black or blackish. Sutural stripe angularly widened anteriorly, lateral stripes gently widened at middle and at apex. Pronotum about 3× broader than long, impunctate. Elytra very finely and rather remotely punctate, here and there arranged in semiregular rows. Length about 3.0 mm. Described from India (Nilgiri) ..... ***nigrosuturalis*** (Jacoby, 1908).
–. Black stripes on elytron large; the central pale stripe does reach nor basal neither apical border. Scutellum, abdomen and legs pale, breast blackish. Punctation of elytra arranged in distinct subregular rows. Length about 3.0 mm. Described from N Vietnam ..... ***atrocincta*** (Pic, 1932).
13. On elytra characteristic black markings as in **fig. 55**. Head, underside and legs mostly blackish. Length 3.0-3.3 mm. Described from S China (Yunnan) ..... ..... ***scalaris*** (Pic, 1927).
–. Elytra differently coloured ..... 14.
14. Elytra yellowish brown with humeral and sutural areas widely brownish sheen, moreover with an elongate brownish path behind the middle Length about 3.5 mm. Here females of *variabilis* (auxiliary group G, thesis 6).
–. Elytra differently coloured ..... 15.
15. Elytra black, on each elytron two (subhumeral and preapical), rather large pale spots. Head pale with blackish genae and mandibles, legs pale with tarsi and apices of tibiae blackened. Pronotum over 2× as broad as long, impunctate and lustrous. Punctation of elytra moderately strong, confused, disappearing before apex. Apex




51-55. Aedeagus in dorsal and lateral view, elytral pattern (after Kimoto et Gressitt 1979): 51-53 – *Smaragdina laosensis;* 54 – *S. nigrosuturalis;* 55 – *S. scalaris*

of aedeagus in dorsal view triangular, in lateral view crooked down. Aedeagus as in **figs 140**, **141**. Length 3.4-3.6 mm. Described from Laos, reported also from Assam ..... ***ornatipennis*** Medvedev, 2004.

–. Elytra differently coloured ..... 16.

16. Black colour on elytra covers (broadly) basal and (more narrowly) apical area, rather narrowly lateral margin, more broadly hind part of suture and short transverse stripe just behind midlength. Breast black, legs flavous with infuscate tarsi. Aedeagus as in **fig. 56**. Length (male) 2.5 mm (= var.? *discoidalis* Pic, 1932). Distributed in Myanmar and Vietnam ..... ***crucipennis*** (Jacoby, 1908).

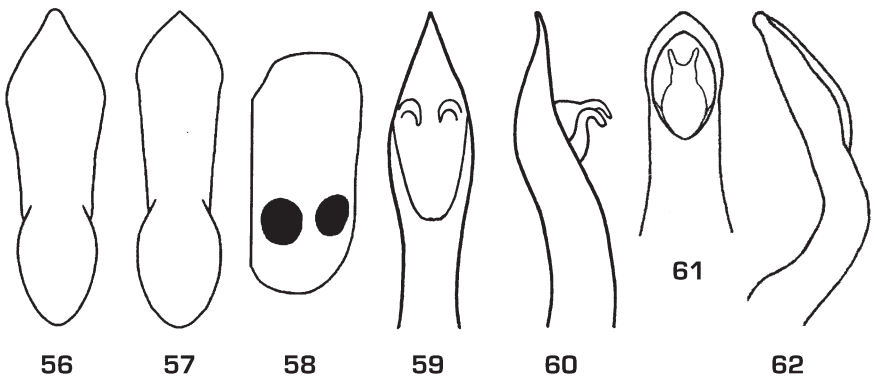
–. Black colour on each elytron forms two spots ..... 17.

17. Upper side fulvous, antennomeres 3-11 black, on each elytron before apex two transversely posed, piceous spots (**fig. 58**). Antennae very slightly serrate, antennomere 4 widened to apex but much smaller than 5. Pronotum impunctate, punctures on elytra arranged in regular rows. Aedeagus as in **fig. 57**. Length 3.0 mm. Described from Burma based on one male only ..... ***bisbipunctata*** Medvedev, 2010.

–. Not as above ..... 18.

18. Underside pale. Black colour on elytra forms two rundish (anterior) and obliquely ovale (posterior) spots. All remaining parts of body pale ochraceous. Pronotum about 1.6× broader than long, very sparsely and finely punctate, the Punctation of elytra not dense, shallow, irregular. Aedeagus as in **figs 59, 60**. Length 3.5 mm. Described based on one male only from Afghanistan, but reported later from Pakistan, N India and Nepal ..... ***minutissima*** (Lopatin, 1967).

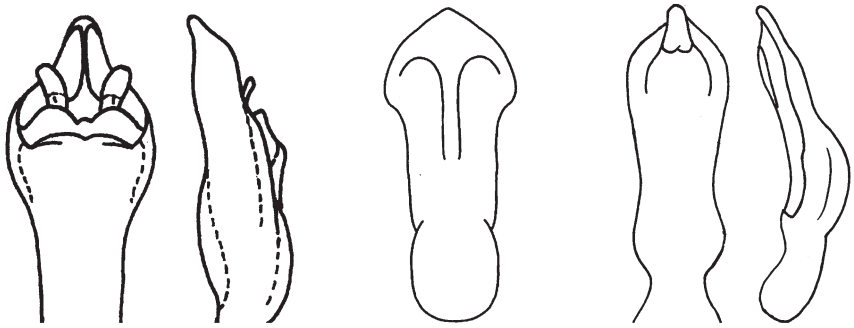
–. Underside black, abdomen with metallic luster. Upper side orange-yellowish, two spots on each elytron (at one third and behind middle) blackish. Metasternum and abdomen black. Pronotum twice as broad as long, convex, impunctate; Punctation of elytra distinct, in basal part relatively dense, in hind part shallow, here and there forming irregular rows. Aedeagus as in figs **61**, **62**. Length about 3.0 mm. Described from Yunnan ..... ***quadrimaculata*** Lopatin, 2009.




56-62. Aedeagus in dorsal and lateral view, elytral pattern (56-58 after Medvedev 2010, 59, 60 after Lopatin 1967, 61, 62 after Takizawa 1990): 56 –.*Smaragdina crucipennis*, 57, 58 – *S. bisbimaculata;*; 59, 60 – *S. minutissima;* 61, 62 – *S. quadrimaculata*

19. Elytra flavous, with broad transverse black or bluish band near apex, sometimes occupying the entire hind part ..... 20.
–. Elytra differently coloured ..... 24.
20. Underside black, legs pale ..... 21.
–. Underside and legs reddish fulvous ..... 22.
21. Upper side flavous, on elytron before apex a broad transverse bluish-black band not reaching suture or lateral margin, its outline somewhat irregularly notched. Pronotum without any trace of punctures, elytra finely but distinctly punctate. Length aobout 6.5 mm. Described from N India based on one female only ..... ..... ***duvivieri*** (Jacoby, 1908).
–. Upper side fulvous, underside black, legs pale, basal part of femora, apices of tibiae and tarsi darkened. On elytra a very broad transverse bluish-black band from before middle to near apex. In variations the blue zone on each elytron reduced to to a large bluish spot either separated from the other by pale suture, or both spots are fused in the middle. Pronotum impunctate, elytra very finely punctate. Length 5.0-6.0 mm. Possibly a paler form of *duvivieri* (thesis 21). Described from S India (Ramnad). Discussed also as *Physosmaragdina* ..... ***fabrei*** (Lefèvre, 1883).
22. Similar to *crassipes* (thesis 41) and *duvivieri* (thesis 21), but larger, broader and with very densely punctate elytra. In variations the blue colour occupies all hind part of elytra; such variations differ from *flavobasalis* (thesis 23) by bluish (not black) colour of elytral patch, by larger body and more densely punctate elytra. Aedeagus as in **figs 63, 64**. Described from Nepal, recently (Medvedev, 2010) ranked as *Physosmaragdina* ..... ***motschoulskyi*** Medvedev, 1992.
–. Not as above ..... 23.
23. Elytra divided into two zones: anterior flavous extended to near the midlength and posterior black, occupying the hind part. On the middle of pronotum a shallow, finely punctate groove. In male fore legs longer than the others, tarsi short. Length about 6.0 mm. Described from S India based on one male only; possibly conspecific with insufficiently described *terminalis* (Lefèvre, 1883) from S India (Ramnad), after Medvedev (2010) belonging probably to *Aetheodactyla* or *Physosmaragdina* ..... ***flavobasalis*** (Jacoby, 1908).
–. Elytra coloured differently ..... 24.
24. Elytra black with flavous stripe or another pale pattern on black ground ..... 25.
–. Elytra differently coloured ..... 26.
25. Elytra without any trace of punctation, smooth and shining. Body generally fulvous, elytra black, a triangularly elongate space below the scutellum and the klateral margins anteriorly more or less fulvous. Pronotum impunctate, twice as broad as long. Aedeagus as in **fig. 65**. Length 5.5 mm. Described from S. India ..... ***laevipennis*** (Jacoby, 1908).
–. Elytra distinctly punctate, punctures inequal. Ground of elytra black, in hind part an arched flavous stripe. Length about 4 mm. here the form of *crucipennis*, known as *discoidalis* (Pic, 1932), see thesis 16.
26. Elytra pale, margins and suture black ..... 27.
–. Elytra pale with black (sometimes brown) spots, stripes or bands on disc ..... 29.

27. Body entirely pale, darkened only fore tibiae, all tarsi and very narrowly suture and lateral margins of elytra. Aedeagus as in **figs 66, 67**. Punctation of elytra fine, confused. Length about 4.0 mm. Described from Cambodia ..... ***murzini*** Lopatin, 2003.
–. Not as above ..... 28.
28. Upperside, underside, antennomeres 1-3 and legs flavous, antennomeres 4-11 and scutellum black. On elytra broad sutural stripe and shorter lateral stripe, both broadened behind midlength, black. Variations of elytral pattern as in **figs 73-76**. Pronotum impunctate, elytral Punctation very fine and obsolete. Aedeagus as in **fig. 68**. Length about 4.0 mm. Described from S India (Nilgiri) ..... ***nilgiriensis*** (Jacoby, 1903).
–. Upper side flavous, impunctate, each elytron around with rather broad black bordering. Metasternum largely blackened, abdomen pale. Legs pale, outer faces o tibiae and partly tarsi darkened. Length 3.7-3.9 mm. Described from Vietnam ..... ***dalatensis*** Kimoto et Gressitt, 1979.
29. Elytra pale with black humeral spot only ..... 30.
–. Elytra differently coloured ..... 33.
30. Pygidium in female with deep, approximately arcuate, emargination. Body pale, head black, underside and tibiae partly blackened. Two variations (conspecific?) were described: legs entirely pale, humeral spot reduced or absent, head pale (ab. *hoana* Pic, 1928); underside also uniformly pale (ab. *clermonti* Pic, 1928). Described from N Vietnam (Tonkin). An insufficiently studied species, synonymized with *Aetheomorpha sodalis* (Lacordaire, 1848) later separated again as a species belonging to the genus *Smaragdina*. Male unknown ..... ***coomani*** (Pic, 1928).
–. Pygidium in female differently shaped ..... 31.
31. Scutellum pale. Fulvous, antennal segments 5-7 with black widened part, segments 8-11 black, elytra with small black humeral spot, pygidium black at least in basal half, metasternum and abdominal sternites 4 and 5 black at sides. Tarsi more or less infuscate. Pronotum 1.85× broader as long, surface glossy and impunctate. Elytra




63-67. Aedeagus in dorsal, lateral and ventral view (63, 64 after Medvedev 1992, 65 – after Medvedev 2010, 66, 67 after Lopatin 2003): 63, 64 – *Smaragdina motschulskyi*; 65 – *S. laevipennis*; 66, 67 – *S. murzini*

shining, 1.45 times as long as broad, finely and densely punctate. Aedeagus as in **fig. 69**. with very acute triangular apex and sharp ridge on basal half of underside. Length 5.3-5.7 mm Described from NE India ..... ***megalayana*** Medvedev et Kantner, 2002.

–. Scutellum black or blackish ..... 32.

32. Head black, scutellum and underside blackish. Legs black, basal 1/4 of femora and basal half of tibiae pale. Length about 6.0 mm. Here females of *Tituboea paviei*, misidentified and described as *Cyaniris bicoloripes* by Pic (1929).

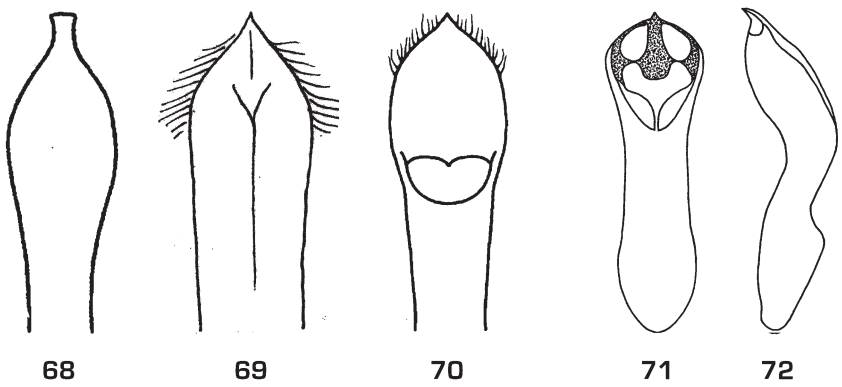
–. Head reddish with blackish vertex, antennomeres 4-11, scutellum, small humeral spot, metasternum and usually the middle of abdomen black or blackish, legs flavous, tarsi not darkened. Pronotum impunctate except a few strong punctures near base, elytral Punctation of elytra rather strong, confused, at apex faded. Aedeagus as in fig. **70**. Length 4.9-5.7 mm. Described from N India (Assam) ..... ***nigriscutis*** Medvedev, 1970.

33. Upper side rufo-flavous, head black, on elytra humeral spot, hind part of suture and apical margin (extending sometimes on hind part of lateral sides) black. Underside, antennae (except for basal antennomeres) and legs brown. In male fore legs more robust. Length about 6.0 mm. Described from China (Chekiang) ..... ***subsignata*** (Fairmaire, 1888).

–. Not as above ..... 34.

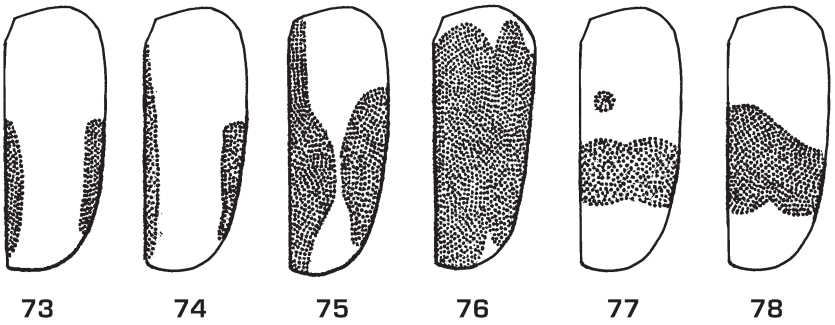
34. Upper side, except for antennomeres 5-11 and apices of mandibles pale yellowish or pale ochraceous, on each elytron two brownish longitudinal stripes (discal and preapical) often very pale or barely visible, sometimes perceptible only in transparence; on humerus and at basis of scutellum sometimes also brownish darkenings. Here keys out the typical form. In pale form all the brownish pattern is absent (see auxiliary group A, antithesis 25). Aedeagus as in **figs 71, 72**. Length 4.5 mm. Known only from China (Sichuan) ..... ***schereri*** Lopatin, 2006.

–. Not as above ..... 35.




68-72. Aedeagus in vgentral, dorsal and lateral view (68, 69 after Medvedev 1984, 70 – after Medvedev 2004, 71, 72 – after Lopatin 2006): 68 – *Smaragdina nilgiriensis*; 69 – *S. megalayana*; 70 – *S. nigriscutis;* 71,72 – *S. schereri*

35. On each elytron 4 black spots. Two anterior spots (humeral and postscutellar) obliquely, two remaining (postmedian) transversely situated ..... 36.
–. Black markings on elytra situated differently ..... 38.
36. Body generally light yellowish brown, patches on elyra dark brownish. Antennomeres and apices of mandibles infuscate. Legs robust, tarsi short, strongly widened. Pronotum impunctate and shining, Punctation of elytra distinct, with a tendency to arrange in longitudinal rows, in basal part diameter of punctures is larger than interspaces. Length 4.2-5.1 mm. Described from Pakistan ..... ..... ***mapellii*** Takizawa, 1990.
–. Patches on elytra dark. Tarsi not strongly widened ..... 37.
37. Scutellum and the major part of underside black. Length about 5.0 mm. Described from China (Fukien) ..... ***nigrosignata*** (Pic, 1954).
–. Scutellum and underside pale. After descriptions no other differences between *nigrosignata* and *nagaensis* (conspecific?) Length about 5.0 mm. Described from N India (Assam). [treated also as *Aetheomorpha*: Medvedev, 198b: 473: Medvedev, 2010: 285] ..... ***nagaensis*** (Jacoby, 1908).
38. Scutellum, breast and apex of pygidium black. On each elytron four large black spots and narrow black apical stripe ..... 39.
–. Colouration of body different ..... 40.
39. Anterior (humeral and postbasal) and postmedian spots form two transverse bands, apical stripes and inner postmedian spots fused on the suture. Pronotum on the disc impunctate, around margins finely punctate. Punctation of elytra strong, coarse and somewhat rugose. Length 4.0-5.0 mm. Described from Tibet (Xizang) ..... ***cribripennis*** Tan, 1988.
–. Discal spots on elytra free, apical stripe broader. Frons densely punctate and covered by short hairs. Pronotum sparsely, strongly and irregularly punctate. Length 4.5 mm. Described from N Vietnam, based on one female only ..... ..... ***eroshkinae*** Medvedev, 1988.
40. Body relatively large, elongate, parallel. Antennomeres 5-11, scutellum, humeral spot and a common large central on elytra black. Tarsi darkened. In dark varia-




73-78. Variations (unnamed) of elytral pattern (after Medvedev 1984): 73-76 – *Smaragdina nilgiriensis*; 77, 78 – *S. wittmeri*

tions the pale ground of elytra largely reduced and on pronotum a dark, central, somewhat blurred spot. Femora and tibiae pale or partly infuscate. Antennomere 1 larger than usually, three following antennomeres small. Length 6.0-7.5 mm (= *davidis*, Lefèvre, 1893). In the recent catalogues cited in the genus *Exomix* Weise, 1889. Distributed in China from Kansu to Sichuan and Yunnan ..... ***peplopteroides*** (Weise, 1889).

–. Not as above ..... 41.

41. Black humeral spot absent ..... 42.

–. Black humeral spot present, somewhat fused with remaining black pattern of elytra ..... 43.

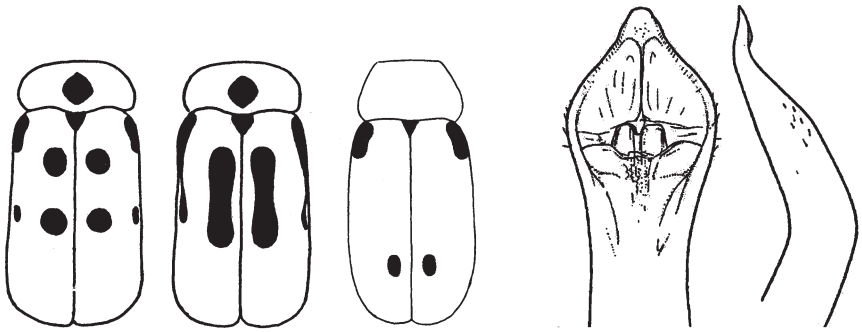
42. On each elytron a postmedian, on hind margin notched, transverse black band. In male femora thickened, tibiae and tarsi robust, fore tibiae somewhat elongate. Pronotum finely punctate troughout. Elytra punctate finely but somewhat rugosely with numerous stronger punctures scattered on whole surface. Length 6.0-7.0 mm. Described from E India ..... ***crassipes*** (Duvivier, 1891).

–. On elytra a broad bluish-black postmedian band (**figs 77, 78**) and two small spots situated before, but usually fused with this band. Antennomeres 4-11, basal half of scutellum and metasternum black. Punctation of elytra fine, confuse. Length 5.7-5.9 mm. Described from Sri Lanka. Recently ranked as *Physosmaragdina* ..... ***wittmeri*** Medvedev, 1970b.

43. In male on each elytron near suture two small black spots (pre- and postmedian), sometimes longitudinally fused (**figs 79, 80**), in female additionally also three spots situated on lateral margin: humeral (larger), posthumeral (small) and postmedian. Head and underside black, legs fulvous. Pronotum strongly transverse, impunctate. Length 5.0-5.5 mm. Distributed in Ryukyu Is. ..... ***quadratomaculata*** (Jacoby, 1896).

–. Elytra differently marked ..... 44.

44. On elytra two broad transverse black bands (basal and preapical); hind band often interrupted on suture. Vertex blackish, apical part of antennae brown, apical part




79-83. Pronotal and elytral pattern, aedeagus in dorsal and lateral view (79, 80 after Kimoto et Takizawa 1994, 81 after Kimoto et Gressitt 1979, 82, 83 after Kantner et Bezděk 2007): 79, 80 – *Smaragdina quadratomaculata*; 81 – *S. duporti*; 82, 83 – *S. kejvali*

of tibiae and whole tarsi infuscate. Remaining parts of body pale. Length 4.0-4.5 mm. Here females of *Tituboea paviei* from S Vietnam, misidentified by Pic (1929) and described as *Smaragdina bicoloriceps*.

–. Black markings of elytra different ..... 45.

45. In hind part of elytra a small black spot near suture only (**fig. 81**). Scutellum and underside blackish, legs pale, darkened on dorsoapical part of femora and along dorsal side of tibiae. Insufficiently described from N Vietnam ..... ..... ***duporti*** (Pic, 1937).

–. Elytra differently coloured ..... 46.

46. On elytron anteriorly two small black spots (humeral and postscutellar) and a postmedian transverse band, widened laterally and almost reaching suture. Pronotum smooth, impunctate, elytra rather strongly and irregularly; punctate, the punctures behind the middle much weaker. Length 5.0-5.3 mm. described from Myanmar and S Vietnam. In recent works discussed in the genus *Aetheomorpha* ..... ***cochinchinensis*** (Lefèvre, 1889).

–. Elytra differently coloured ..... 47.

47. On elytron anteriorly humeral spot only. In midlength a broad black band laterally widened and narrowed or interrupted at suture. Length about 4.5 mm. Described from India (Bengal, Konbir). Mentioned also as *Aetheomorpha* ..... ..... ***semipunctata*** (Duvivier, 1891).

–. Elytra with black pattern ..... 48.

48. Scutellum pale. Body yellowish red, apices of mandibles, last palpomeres and sometimes vertex darkened, elytral pattern, apical part of antennae black, tarsi and often external edge of tibiae blackened. The blackish colouration variable, occupying sometimes also partly the ventral surface of body. Length 4.5-5.6 mm. Aedeagus as in figs **82**, **83**. Described from W India (Maharashtra) ..... ..... ***kejvali*** Kantner et Bezděk, 2011.

–. Scutellum black. On each elytron two spots: humeral and juxtamarginal postmedian (in palest forms humeral spot only). In darkest forms on pronotum a short, dark, central transverse stripe. Pronotum minutely punctulate, elytra with two kinds of punctures, basally covered by fine hairs. Aedeagus slender, parallel, its apex rounded, with lamella. Length 6.0-6.2 mm. Described from Cambodia. Generic assignment unclear ..... ***spenceri*** Kimoto et Gressitt, 1979.

## Auxiliary group **C**

(pronotum entirely pale, elytra entirely pitch, black or metallic, at most with pale epipleura)

### Key to species

1. Smaller species, body length at most 4.3 mm ..... 2.

–. Larger species, body length at least 4.5 mm ..... 10.

2. Elytral punctures strong, arranged in fairly regular rows, interstices distinctly convex or costate, particularly in female in hind part ..... 3.

–. Elytral punctures at most partly arranged in subregular rows, interstices never costate ..... 4.

3. Pronotum about two times as broad as long, impunctate, usually with a small fovea on each side. Elytra and ventral surfaces of body, except prosternum, with deep blue metallic sheen, head, pronotum, legs and the antennomeres 1-4 testaceous, antennomeres 5-11 piceous. On head three foveae arranged in a triangle. Antennae short, not attaining the posterior margin of the pronotum. Length; 2.6-4.2 mm. Described from Tibet ..... ***costata*** Tan et Wang, 1981.

–. Pronotum very short, at least three times as broad as long. Elytra bright blue, scutellum, metasternum and abdomen black. Aedeagus as in **fig. 84**. Length about 3.0 mm. Descreibed from N India (Sikkim) ..... ***laticollis*** (Duvivier, 1892).

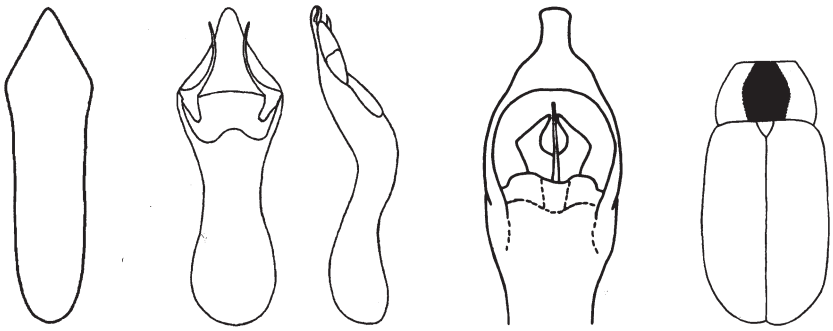
4. Pronotum transverse, 2-2.5× broader than long ..... 6.

–. Pronotum less transverse, about 1 2/3 × broader than long ..... 5.

5. Head, pronotum, antennae and legs fulvous, elytra dark metallic green, abdomen and pygidium black with greenish reflection. Head smooth; vertex with short longitudinal impression; frons near eyes weakly transversely impressed. Antennomere 3 as long as 4; antennomere 5 widened to apex, antennomeres 6-9 wider than long. Pronotum shining, extremely finely and sparsely punctate. Elytra strongly and contiguously punctate, interspaces flat, wider than punctures. In fore tarsi tarsomere 1 elongate and dilated, the second tarsomere triangular, feebly dilated. Aedeagus as in **figs 85, 86**. Length 3.4 mm. Female unknown. Described from S China (Yunnan) based on one male only ..... ***volkovitshi*** Lopatin, 2004.

–. All external features as in *volkovitshi*, but differing by larger body (length 3.8-4.0 mm). Aaedeagus not studied; possibly conspecific with the previous species. Very similar also to *laosensis* (auxiliary group B, antithesis 6), but somewhat larger and differing by uniformly dark elytra. Described from Vietnam ..... ..... ***vietnamensis*** Kimoto et Gressitt, 1979.

6. Pronotum more transverse, about 2.5× broader than long. Body black, head, pronotum, scutellum and legs fulvous; elytra black; pronotum impunctate, elytra closely




4-88. Aedeagus in dorsal and lateral view, pronotal and elytral pattern (84 after Medvedev 2010, 85, 86 after Lopatin 2004, 87 after Medvedev 1988a, 88 after Kimoto et Gressitt 1979): 84 – *Smaragdina laticollis*; 85, 86 – *S. volkovitshi*; 87, 88 – *S. jeanvoinei*

punctate. Length about 3.5 mm (= *marginata* Pic, 1938). Variation: tarsi and apices of tibiae darkened (ab. *kuatunensis* Pic, 1954). Described from Hupeh, known also from a few other south-eastern provinces of China ... ***laevicollis*** (Jacoby, 1890).

–. Pronotum about 2.0× broader than long. ..... 7.

7. Pale parts of body reddish brown. Elytra bluish with pale epipleura. Punctures on pronotum very small, elytra covered by two kinds of large and small punctures. Length 3.0-3.5 mm. Described from Taiwan ..... ***miyatakei*** Kimoto, 1976.

–. Pale parts of body fulvous. Pronotum impunctate and lustrous, elytra uniformly or almost uniformly punctate ..... 8.

8. Epipleurae of elytra pale. Black, anterior part of head, antennae, prothorax, legs, apex and lateral margin of elytra fulvous.Pronotum impunctate, Punctation of elytra moderately dense, confuse. Length 4.3-4.4 mm. Near to *minutissima* (auxiliary group B, thesis 17), but larger and differently coloured. Described from N India ..... ***occidentalis*** Medvedev, 2010.

–. Whole elytra bluish ..... 9.

9. Head fulvous with black vertex. Antennomeres 2 and 3 small and slender, almost equal. Length 3.7 mm. Male unknown. Described from Laos based on one female only ..... ***bezdeki*** Medvedev, 2010.

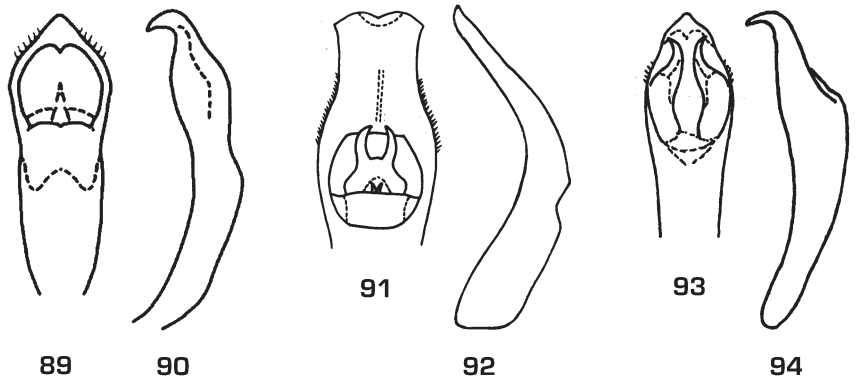
–. Head metallic blue with anterior margin of clypeus fulvous. Antennomere 3 short and slender, 4 videned to apex. Elytra strongly and densely punctate. Length 3.1-3.3 mm. Similar to East Palaearctic species *S. semiauranthiaca* (Fairmaire, 1888), but much smaller. Described from Thailand ..... ***thailandica*** Medvedev, 2010.

10. Black parts of upper side with distinct or strong green metallic sheen. Species described from continental Asia ..... 13.

–. Black parts of upper side without or with very feeble metallic sheen ..... 11.

11. Species from Taiwan and Ryu-Kyu Isl. ..... 12.

–. Body black, pronotum and basal part of antennae rusty-red. Punctation of elytra minute and spoarsely scattered. Length 5.0 mm. Insufficiently described species from Yunnan ..... ***atriceps*** (Pic, 1927).




89-94. Aedeagus in dorsal and lateral view (89-92 after Medvedev 2010, 93, 94 after Medvedev 1994): 89, 90 – *Smaragdina laboissierei*; 91, 92 – *S. bertiae*, 93, 94 – *S. centromaculata*

12. Head, pronotum aud scutellum yellowish brown, lustrous, with apices of mandibles and antennae (except the basal segments) somewhat infuscated; elytra shiny black, with basal and sutural margins piceous; underside yellowish brown to piceous or black. Legs either yellowish brown in general colour, with apices of femora, tibiae and tarsi blackish brown to black, or tarsi, hind-coxae and dorsal surfaces of tibiae and femora more or less infuscated. Pronotum strongly transverse, about 3× broader than long, extremely finely punctulate throughout. Elytra rather strongly punctate, the punctures becoming feebler posteriorly, interstices very finely punctulate together with the humeral calli which are free from the 1arger punctures. Length 5.0-6.0 mm. Described from Taiwan based on two females ..... ..... ***nigripennis*** (Chûjô, 1952).
–. Scutellum shining black; elytra deep blue-black. Head, prothorax and legs yellowish brown, lustrous. Antennae short and robust, serrate, antennomere 1 strongly dilated and much thicker than the others, 11 longest. Pronotum very finely and closely punctate on the whole surface coarsely and irregularly, laterobasally and nearly along all borders stronger. Remaining characters as in male. Length 4.5-5.0 mm. Described from Ruykyu (Okinawa). Here females of *ihai* (Chûjô, 1958), see auxiliary group B, antithesis 4.
13. Here keys out an insufficiently described species from Tibet. The whole characteristic: „Testaceous, antennae infuscate, head broadly [green], scutellum and elytra green, underside black. Punctation of pronotum minute, of elytra fine and sparse. Length about 5.0 mm". Described from Tibet, perhaps conspecific with *moutoni* (thesis 10) ..... ***semiviridis*** (Pic, 1922).
–. Descriptions more detailed ..... 14.
14. Mouth parts and labrum, basal antennomeres, pronotum and legs dark yellow or pale orange-ochraceous, tarsal claws darkened. Elytra steely-blue black, often with weak purplish sheen laterally. Underside in darker specimens black, in paler or not definitively sclerotized specimens brown, paler laterally, with greenish sheen on metasternum and on central part of abdomen. Pronotum more than 2× broader than long, almost impunctate, with some fine but distinct punctures scattered near base. Punctation of elytra entirely irregular, fine, being weaker on apical part. Length 5.5-6.2 mm (= *mandarina* Lefèvre, 1892, nec Weise, 1889). Distributed in China (Kiangsu, Kiangsi, Hunan, Sichuan) ..... ***moutoni*** (Pic, 1897).
–. Labrum piceous, general hue of black parts not bluish, but greenish, pronotum somewhat longer, 2× broader than long, remaining characters as in *moutoni*. Length 4.9-5.4 (male) to 5.7-6.6 (female). Described from China (Sichuan) and Russian Far East ..... ***potanini*** Medvedev, 1970.

## Auxiliary group **D**
(pronotum bicolored, elytra pale)

### Key to species

1. Head black. Along the middle of pronotum runs a broad, black stripe. Sutural edge and lateral margins of elytra very narrowly blackened, tarsi and apical part of

tibiae blackish. Here paler coloured specimens of *imitans*, see auxiliary group E, thesis 6).

–. Colouration of upper side as above, but elytra uniformly pale ..... 2.

2. Excavation on head not bifurcate, Punctation of elytra finer. Legs largely darkened. Colouration of upper side as in **fig. 88**. Aedeagus as in **fig. 87**. Length 6.5-7.0 mm. Variation: legs almost entirely pale (ab. *binhana* Pic, 1928) ..... ..... ***jeanvoinei*** (Pic, 1932).

–. Excavation on head bifurcate, punctation of elytra stronger. Two species differing by shape of aedeagus ..... 3.

3. Smaller. Apical process of aedeagus triangular, acute, strongly curved downwards (figs **89**, **90**). Length 4.5–4.8 mm. Described from Vietnam ..... ..... ***laboissierei*** (Pic, 1928).

–. Larger. Apex of aedeagus widened and shallowly incised (**figs 91, 92**). Length 5.3-7.5 mm Described from Vietnam ..... ***bertiae*** Medvedev, 1992b.

## Auxiliary group **E**
(pronotum bicolored, elytra bicolored)

### Key to species

1. Upper side pitch or black with brownish shine, on pronotum and elytra indistinct, blurred lightenings. See *variabilis* (auxiliary group G, thesis 6).

–. Not as above ..... 2.

2. Black pattern on pronotum formed as one large central spot or patch, often as median, broad longitudinal band, lateral sides pale, rarely (in *signaticollis*) with a small additional spot on each side ..... 3.

–. Black pattern on pronotum situated transversely and consists of 2-4, sometimes irregular, spots, formed as transverse band or at least distinctly formed as a transverse spot ..... 16.

3. Length of body at most 3.5 mm ..... 4.

–. Length of body over 4.0 mm ..... 10.

4. Elytra margined with black ..... 5.

–. Elytra differently coloured ..... 7.

5. Hind part of head flavous, vertex crossed by a black transverse band. A spot on anterior part of pronotum, scutellum, margins of elytra and breast black. Pronotum with surface impunctate, transversely before scutellum, a large black patch on the middle of the anterior margin extending downwards nearly to the base. Legs and abdomen flavous. Antenna black, basal four joints flavous, fifth aud following joints strongly transverse. Elytra not perceptibly punctate. Length 2.5 mm. Described from S India (Nilgiri) ..... ***planifrons*** (Jacoby, 1908).

–. Vertex, breast and tarsi black, thorax with a very large central black spot, three basal antennomeres flavous, fourth and following strongly transverse ..... 6.

6. Pronotum more than twice as broad as long, impunctate. Elytra narrow and parallel, suture narrowIy, sides more broadly black. Aedeagus not studied. Length about

3.0 mm. Described from S India (Nilgiri). The descriptions do not allow distinguishing *imitans* from the previous species (*planifrons*); perhaps conspecific with it ..... ***imitans*** (JACOBY, 1903).

–. Pronotum not fully twice as broad as long, narrowed anteriad. Elytra narrow and parallel, sutural and lateral black borders moderately broad. Abdomen dark. Aedeagus as in **fig**. **141**. Length 2.4 mm. Described from Vietnam based on one male ..... ***regularis*** MEDVEDEV, 1985.

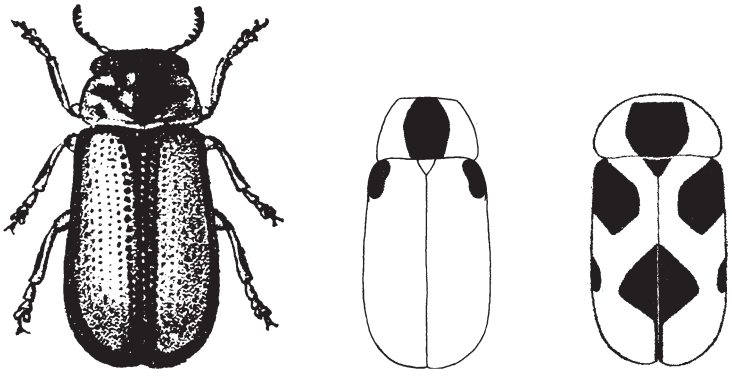
7. Elytra black with bluish sheen, their apex fulvous, the apical spot rounded, fulvous, or ivory coloured. Head with fulvous spot. Pronotum flavous with bluish black central band. Antennae comparatively robust, extending slightly beyond the thorax. Thorax twice as broad as long, cylindrical, impunctate, very shining, the central band of regular shape. Elytra very finely aud rather regularly punctate in rows. Legs and tarsi rather long and slender, first tarsomere as long as the folowing two joints united. Legth about 3.0 mm. Described from S India (Nilgiri) ..... ***delesserti*** (LACORDAIRE, 1848).

–. Elytra coloured differently ..... 8.

8. Elytra flavous, with black broad lateral stripe widened basally almost to scutellum, apical part, common spot on suture just behind the middle, and suture between this spot and apex. Aedeagus as in **fig. 93, 94**. From *crucipennis* (auxiliary group B, thesis 16) differs only by the presence of brown, somewhat cordifom spot on pronotum. Very probably a colour variation of this species. In some works discussed as *Aetheomorpha*. Length 2.8-3.0 mm. Described from China (Yunnan) ..... ***centromaculata*** MEDVEDEV. 1995.

–. Elytra coloured differently ..... 9.

9. Elytra black with blurred patch behind middle. Fulvous, vertex, 4-11 segments of antennae, middle of pronotum, scutellum, apices of tibiae and tarsi black. Elytra black with poorly delimited pale flavous patch in hind part. Female coloured



95 96 97

95-97 Pattern on upper side (95 after JACOBY, 1908, 96 after KIMOTO et GRESSITT, 1979, 97 after TAN, 1988):): 95 – *Smaragdina striatipennis;* 96 – *S. guillebeaui;* 97 – *S. symmetria*

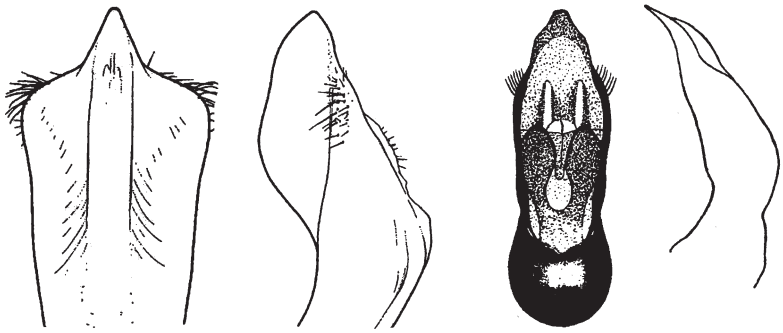
similarly, but spot of pronotum sometimes enlarged, breast, pygidium and legs more or less black, elytra mostly with additional small and poorly delimited patch behind base. Antennae distinctiy serrate from the 4th segment, which is triangular and almost as large as 5th; segments 5-10 transverse, subquadrangular. Pronotum two times as wide as long, practically impunctate except a few punctures at anterior margin and base. Elytra extremely finely indistinctly punctate. Length 3.5 mm (male) to, of (female) 3.4-4.2 mm. Described from Sumatra and Perak ..... ..... ***flavovariegata*** Medvedev, 1999.

–. Elytra pale with suture and lateral margins black with greenish sheen. Head metallic green; antennomeres 4-11 and breast black; pronotum fulvous with central greenish patch, strongly ointed at base, scutellum metallic green; abdomen and legs flavous, femora in the middle and tibiae at apex greenish. Pronotum impunctate with an anterior and posterior transverse sulcus. Elytral punctures arranged in regular rows. Tarsi rather slender, first tarsomere twice as long as the second. General view as in **fig. 95**. Female: pronotal patch larger, subquadrate, elytra entirely greenish (see auxiliary group F, thesis 5), punctation of elytra finer. Described from S India (Nilgiri). Length 3.0-4.0 mm ..... ***striatipennis*** (Jacoby, 1903).

10. Elytra pale with black humeral spot only (**fig. 96**). Pronotum in the middle black, laterally pale. Length about 5.0 mm. Very insufficiently described from S China (Yunnan ..... ***guillebeaui*** (Pic, 1927).

–. Elytra differently coloured ..... 11.

11. On each elytron four black spots situated obliquely. Body black; pronotum fulvous with black spots; labrum, palpi, antennomeres 1-4 and legs entirely fulvous. Antennomeres 4-10 distinctly widened to apex, transverse. Pronotum 1.9 times as broad as long, surface smooth. Scutellum coarsely wrinkled. Elytra distinctly and confusedly punctate, with punctures diminishing apically. Pygidium at apex with short emargination. Meso- and metathorax finely rugose. Length of body 4.8 mm. Aedeagus as in **figs 138**, **139**. Female unknown. Described from S China (Yunnan) ..... ***tani*** Lopatin, 2004.




98-101. Aedeagus in ventral, lateral and dorsal view (98, 99 after Kantner et Bezděk 1997, 100, 101 after Lopatin 2004): 98, 99 – *Smaragdina maharasthra*; 100, 101 – S. *virgata*

–. Elytra differently coloured ..... 12.

12. On elytra a large spot at base, and a broad band at middle, apex and apical part of suture black. Female: body black; pronotum flavous, a central broad band and a spot at sides black. Elytra flavous, a large spot at base, a broad band at middle, posterior part of suture and apex black. Antennae slender extending to the base of pronotum, basal joint pale fulvous. Pronotum twice as broad as long, very regularly cylindrical, surface very smooth. Scutellum black. Elytra very finely and superficially punctate. Legs black, first tarsomere of fore tarsi longer than second. Length 4.5 mm. Male unknown. Described from N India (Kashmir). After Medvedev (2010) supposedly conspecific with *Miochira nepalica* Medvedev, 1998 ..... ***signaticollis*** (Redtenbacher, 1846).

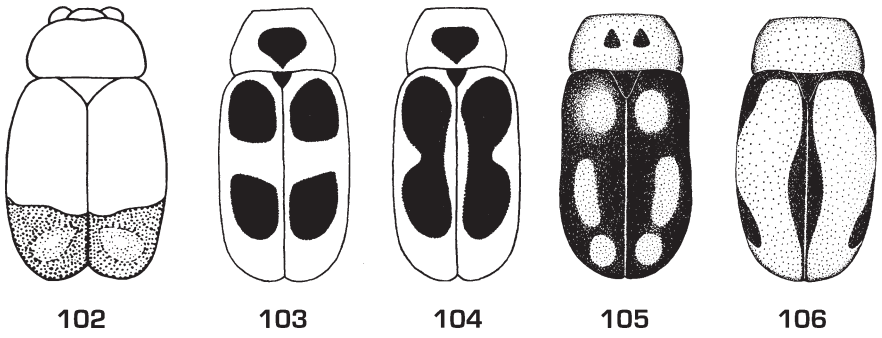
–. Elytra differently coloured ..... 13.

13. On elytra a common rhomboidal spot behind middle, and on each two further spots: a large humeral and a small lateral just behind midlength; apical part of suture blackened (**fig. 97**). Scutellum black, legs yellow. Pronotum two times as broad as long, impunctate. Elytral punctation fine, arranged in irregular stripes or rows. Length 4.5-5.3 mm. Variation: the rhomboidal spot on elytra enlarged, connected with the lateral spot (unnamed). Described from Tibet (Xizang) ..... ..... ***symmetria*** Tan, 1988.

–. Not as above ..... 14.

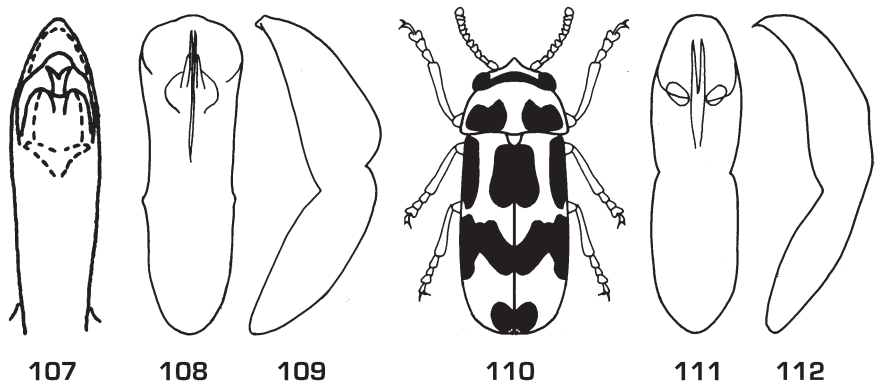
14. On each elytron two large transverse bands. On pronotum the central spot sometimes reduced to a irregular patch. Underside and pygidium black, legs yellowish, with mid and hind femora somewhat darkened. Hind angles of pronotum obtusely and moderately broadly rounded. Externally rather similar to *tonkinensis*, (antithesis 15) but *tonkinensis* is smaller (under 4.2 mm) and its hind angles of pronotum are obtusely but rather weakly rounded. Aedeagus as in **fig. 98, 99**. Length 5.0-6.1 mm. Described from W India (Maharashtra) ..... ..... ***maharashtra*** Kantner et Bezděk, 2007.

–. Elytra differently coloured ..... 14.




102-106 Pronotal and elytral pattern (102 after Medvedev 1988; 103, 104 after Kimoto et Gressitt 1979, 105, 106 after Kimoto 1976): 102-104 – *Smaragdina tonkinensis;* 105, 106 – *S. miyakei*: 105 – female, 106 – male

15. On elytra humeral spots and two transverse ragged bands fused with sutural stripe and with broad lateral stripe encroaching also on apex. Head, scutellum, suture, humeral spot and two dentate bands, fused with sutural stripe and with broad lateral stripe encroaching also on apex alike entire underside black. Pronotum orange with a pitch brown blurred spot at base near scutellum. Two basal antennomeres and legs except for apices of tarsi rusty-yellowish. Pronotum covered by sparse, fine punctures, almost disappearing laterally. Punctures on elytra distinct and deep, at suture in hind part arranged in close rows, on remaining part of surface random. Aedeagus as in **figs 100, 101**. Length 4.5 mm (male, holotypus) to 5.3 mm (female, paratypus). From *scalaris* differs by two, not three, transverse bands on elytra and by punctation. Described from S. China (Yunnan) ..... ***virgata*** Lopatin, 2004.
–. On each elytron two roundish spots: a roundish one below base and one postmedian. The colouration of upper side differently defined by different authors (**figs 102-104**). Venter black; above fulvous, vertex black. Pronotum with central black spot pointed posteriorly. Legs fulvous. Antennae fuscous, basal three antennomeres flavous, antennomeres 4-11 transversely widened. Pronotum impunctate, two and a half times as broad as long, with two punctate small fovea at the base before scutellum; disc, with a tniangular black spot at middle. Scutellum black. Elytra finely and closely punctate, at apex nearly impunctate. First tarsomere of posterior tarsi longer than second. Length about 4.0 mm (= *mungphuensis* Jacoby, 1908, *brancuccii* Medvedev, 1988: 472). Distributed in India (Sikkim) and Indochina (N Vietnam). Discussed also in the genus *Physosmaragdina* Medvedev, 1971, as synonymous with *Ph. subdivisa* Jacoby, 1900 ..... ***tonkinensis*** (Lefèvre, 1891).
16. Smaller species, body length at most 4.2 mm ..... 17.
–. Larger species, body length at least 4.5 mm ..... 20.
17. Testaceous. Vertex with an obscure blackck spot at the base. Pronotum with four obsolete spots. On each elytron five black spots: three anteriorly (postbasal, humeral and lateral) and two median. Suture very narrowly and hind part of lateral margin,




107-112. Aedeagus in dorsal and in lateral view, pronotal and elytral pattern (107 after Medvedev 1995, 108, 109, 111, 112 after Kimoto 1984, 110 after Jacoby 1908, simplified): 107 – *Smaragdina micheli*; 108, 109 – *S. kurosui*; 110 – *S. cornuta*, 111, 112 – *S. kuromon*

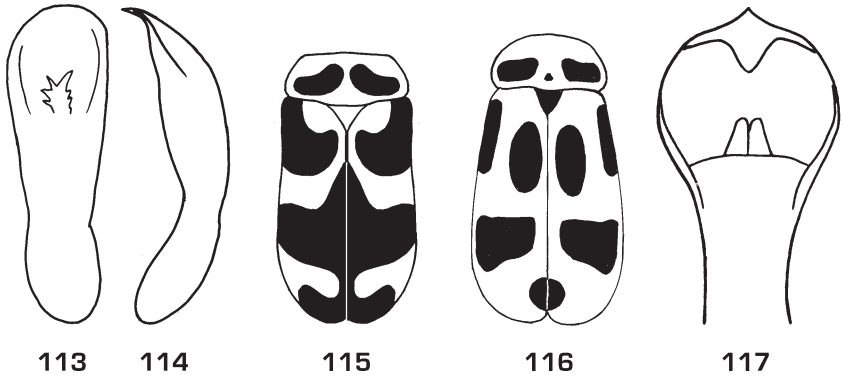
apex of the pygidium and the last abdominal segment partly, black. Antennae with terminal joints fuscous. Legs testaceous, tarsi fuscous. Antennomeres 4-11 strongly transversely serrate, Pronotum impunctate, Elytra subquadrately oblong, strongly and c1osely punctate anteriorly, very finely and much more distinctly so towards the middle. First tarsomere slightly 1onger than any of the following joints. Length about 4.0 mm. Described from N India (Assam). [Recently treated also as *Aetheomorpha* and than, because of a secondary homonymy, under the replacing name *jacobyi* MEDVEDEV, 1988b: 473] ..... ***assamensis*** (JACOBY, 1908).

–. Not as above ..... 18.

18. Ground of elytra bluish black, each elytron with an ill-defined longitudinal brownish stripe, usually divided in two weakly separated parts. Head bluish black with frons and mouth part reddish brown. Black pattern in female as in **fig. 105**, in male as in **fig. 106**. Antennae short, robust, with third segment small, hardly thickened apically. Prothorax, nearly twice as wide as long, distinctly but not closely punctate. Elytra strongly and thickly punctate.
Length: 2.8-3.8 mm. Described from Taiwan ..... ***miyakei*** KIMOTO, 1976.

–. Ground of elytra pale ..... 19.

19. On elytra very narrow sutural stripe and humeral spot black only. Fulvous; pronotum usually with 4 spots in a transverse row and often with an additional small spot before scutellum; sometimes all spots connected in a serrate transverse band which reaches to neither basal nor lateral margin. Prothorax 1.8 times as broad as long, impunctate except a few punctures on short basal lobe. On elytra inner part with distinct punctures arranged in irregular rows, laterally and apically punctures very feeble or disappearing. Tarsi thin, tarsomere 1 of anterior tarsi narrow and elongate, about twice as long as broad in both sexes. Aedeagus as in **fig. 107**. Length of male 2.8-2.9 mm,(male) to 3.4-3.8 mm (female). Described from SW China (Sichuan) ..... ***micheli*** MEDVEDEV, 1995.




113-117. Aedeagus in dorsal and in lateral view, pronotal and elytral pattern (113, 114 after KIMOTO et TAKIZAWA 1994, 115 after TAN 1992, 116 after TAN 1988, 117 after MEDVEDEV 1995): 113, 114 – *Smaragdina octomaculata;* 115 – *S. impressicollis*; 116 – *S. bothrionota;* 117 – *S. taynguensis*

–. Elytron reddish with two discal longitudinal stripes black. Head black with mouth parts reddish, pronotum reddish brown with a transverse medio-basal and a pair of lateral markinga black, scutellum pitch black; elytron reddish brown, with two discal longitudinal stripes black; underside black; legs reddish brown with dorsal surfaces of femora and tibiae and entire tarsi biack. Antenna short, robust. Pronotum nearly 2.75 times as wide as long, sparsely impressed by small punctures. Elytra strongly and thickly punctate. Aedeagus as in **figs 108, 109**. Length 3.6-4.2 mm. Described from Taiwan ..... ***kurosuji*** KIMOTO, 1984.

20. In male between the eyes a horn-like projection. Body very large. On elytra characteristic black pattern as in **fig. 110**. Thorax nearly tbree times as broad as long, impunctate. Elytra very finely and rather closely punctate. Base of femora and abdominal segments more or less fulvous; anterior legs and the metatarsus rather elongate. Length 6.0-8.0 mm. Variations: humeral spot prolonged along lateral margin to apex (unnamed); humeral spot brown, all other markings absent (unnamed). Described from India (Kanara, Belgaum). Recently discussed also as a separate genus *Ceroclytra* MEDVEDEV ..... ***cornuta*** (JACOBY, 1895).

–. Not as above ..... 21.

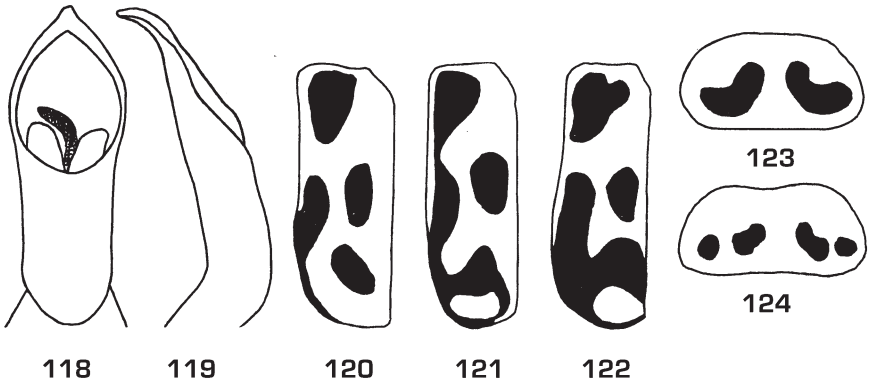
21. Larger species, body length 5.0-7.5 mm ..... 22.

–. Body length 4.5-5.0 mm..... 25.

22. Elytra reddish brown, anterior and postmedian spots on elytra situated transversely. Head entirely black, pronotum reddish brown with a large marking black, scutellum entirely pitch black; antenna pitch black with three or four basal antennomeres somewhat paler; ventral surfaces black; legs reddish brown with dorsal surfaces of femora and tibiae and entire tarsi black. Antenna short and robust. Pronotum sparsely impressed by small punctures. Elytron distinctly but rather not closely punctate. Aedeagus as in **figs 111, 112**. Length 5.3-5.5 mm. Described from Taiwan ..... ***kuromon*** KIMOTO, 1984.

–. Elytra coloured differently ..... 23.

23. On each elytron four black spots (2:2) ..... 24.




118-124. *Smaragdina nigroguttata* (after LOPATIN 2003): 118, 119 – aedeagus in dorsal and in lateral view; 120-122 – elytral pattern; 123, 124 – pronotal pattern

–. On elytra a large humerobasal spot reaching black scutellum, hind 2/5 black with pale transverse fulvous area in the middle. Pronotum fulvous, on hind part a broad transverse black band shortened laterally. Labrum, anterior part of pronotum. basal antennomeres ground of elytra and abdomen fulvous, breast and legs blackish, ventral side of femora lightened. Antennae very feebly broadened, antennomere 4 almost cylindrical, antennomeres 5-10 as broad as long or barely broader. Length 5.5 mm. Male unknown. Described from Vietnam based on one female only ..... ***kimshona*** MEDVEDEV, 1988a.

24. Pronotum in hind part with two pitch black markings placed transversely, sometimes fused into a transverse blackish band. Head black, antennomeres 5-11, meso- and metathorax piceous or black. Scutellum black. On each elytron four black spots (humeral, postbasal and two in midlength situated somewhat obliquely). Upper surfaces of tibiae partly or nearly entirely blackish brown to black; tarsi dark yellowish brown to blackish brown. Pronotum finely but not thickly punctulate througout. Elytra rather thickly punctate, in hind part more finely and shallowly, partly arranged in longitudinal rows, interspaces very finely and thickly punctulate throughout together, also on the humeral calli. In male last abdominal sternite with apical magin strongly and widely ernarginate. Aedeagus as in **figs 113, 114**. Length 5.0-7.0 mm. One variation is described: on pronotum a great spot, elytral markings enlarged, abdomen black (ab. *melania* CHÛJÔ, 1952). Distributed in Taiwan ..... ***octomaculata*** (CHÛJÔ, 1952).

–. Pronotum with two well separated transverse sinuous bands at the base. Hind part of head black. Elytra with four small bluish black spots on each, two small spots placed transversely immediately below the base and two behind the middle. Breast and abdomen stained with black, abdomen more or less blackish. Antennomeres 5-11 broadly triangularly dilated. Pronotum twice as broad as long in tbe male, still broader in the female, impunctate. Scutellum black (male) or fulvous (female). Eytra extremely closely and distintly punctate, the pygidium exposed (*Aetheomorpha*?), Legs black in male, flavous in female, tarsi rather short and broad. Length 6.0-7.5 mm. Variation: on elytra basal spots present only (unnamed). Described from S India ..... ***bohemani*** (JACOBY, 1908).

25. Body rusty-yellowish. On pronotum two semilunar black spots, sometimes interrupted (**figs 123, 124**), their convexity posed posteriad. On each elytron four large black spots (**figs 120-122**), sometimes partly fused. Head and underside, except for prosternum, black. Disc of pronotum mirror-smooth, impunctate, some shallow punctures before scutellum only. Punctation of elytra rather strong and deep, here and there arranged in irregular longitudinal rows or stripes. Aedeagus as in **figs 118, 119**. Length 3.5 mm (male), to 4.5-4.8 mm (female). Described from SW China (Sichuan) ..... ***nigroguttata*** LOPATIN, 2002.

–. Not as above .....26.

26. On pronotum black spots arranged in a transverse row, inner spot smaller than both outer. Vertex and scutellum black ..... 28.

–. Pattern on pronotum not as above ..... 27.

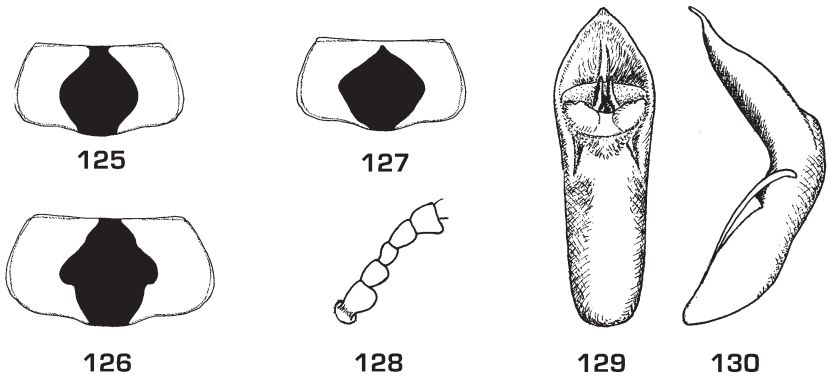
27. On pronotum a prebasal, broad, transverse band. Ground of upper side ochraceous,

head and scutellum black, on each elytron a longitudinal posthumeral spot, one ovale premedian spot near suture and before apex a transverse band, not reaching suture. Underside mainly black. Dorsal surface of femora, most part of tibiae and tarsi blakish. Pronotum minutely and sparsely punctate, more distinctly punctate along basal margin. Punctation of elytra distinct, dense, moderately strong. Length 4.5-4.8 mm (= *fasciata* Medvedev, 1988b?). Described from Nepal, ranked also as *Aetheanta* ..... ***higuchii*** Kimoto et Takizawa, 1981.

–. On pronotum two prebasal transverse spots, usually connected by a short transverse black band just before scutellum. On each elytron a humero-basal transverse band and apex black (**fig. 115**). Body black, antennomeres 1-4 brownish. Inner surface of femora and tibiae and the last tarsomere brownish, the remaining parts black. Pronotum about three times as broad as long largely glabrous, only minutely punctate on black patches. Elytra rugged, very coarsely punctate, and with the interspaces strongly raised. The first joint of hind tarsi about as long as the following two joints combined. Length 5 mm. Described from S China (Yunnan) ..... ***impressicollis*** Tan, 1992.

28. On elytra an elongate spot on shoulder, a common rhomboidal spot occupying the middle portion of the suture and two small spots in middle near lateral margin; sometimes an small addiotional spot behind shoulders and on either side of the rhomboidal spot. Ventral surfaces of body (usually partly blackened) and legs reddish brown. Antenne relatively short. Pronotal disc smooth and shining, elytra covered by fine punctures arranged in irregular rows. Length 5.1-5.6mm. Described from Tibet (Xizang) ..... ***mangkamensis*** Tan et Wang, 1981.

–. Elytral pattern (**fig**. **116**) different, rather similarly shaped as in *cornuta* (thesis 19). Scutellum, tarsi and distal part of all tibiae black. Thorax nearly tbree times as broad as long, impunctate, with two pairs short, transverse, shallow furrows. Male unknown. Length 4.5-5.3 mm. Described from Tibet (Xizang) ..... ..... ***bothrionota*** Tan, 1987.

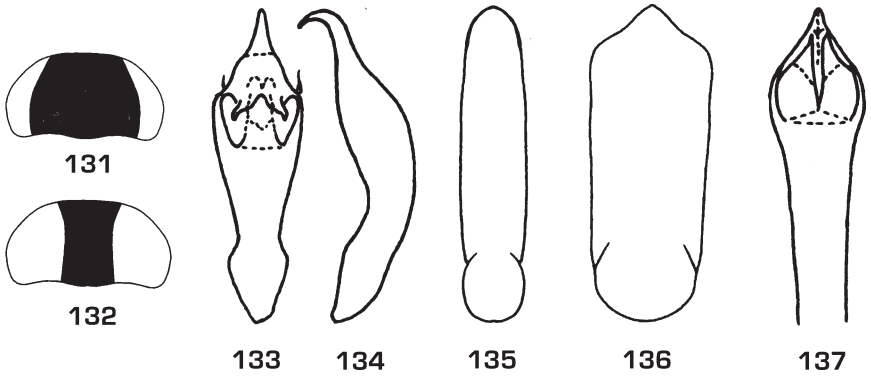



125-130. *Smaragdina nigrosternum* (after Medvedev 1999): 125-127 – pronotal pattern; 128 – basal antennomeres; 129, 130 – aedeagus in dorsal and lateral view

## Auxiliary group **F**
(pronotum bicolored, elytra entirely blackish, black or metallic)

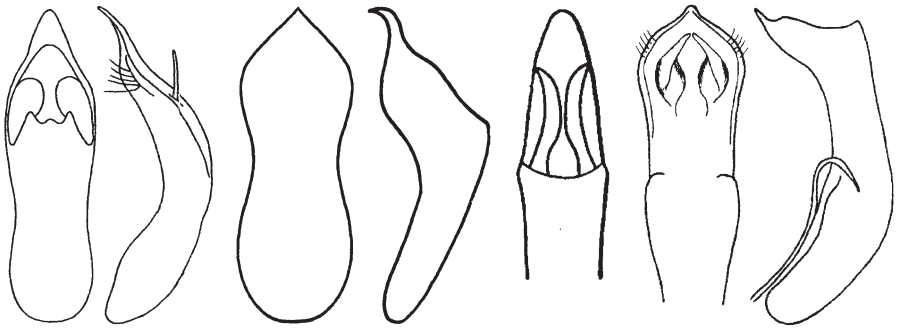
### Key to species

1. Body larger, length about 5.0 mm ..... 2.
–. Body smaller, at most 4.5 mm ..... 5.
2. Legs entirely black. Hind angles of pronotum well-marked, elytra distinctly narrowed posteriad. Body black, lateral sides of pronotum pale. Elytra black with violaceous tinge, finely, irregularly punctate. Length about 5.0 mm. Species insufficiently described from S China (Yunnan) ..... ***subacuminata*** (Pic, 1927).
–. Legs pale or somewhat darkened on dorsal side ..... 3.
3. Legs pale, tarsi partly darkened. Hind angles of pronotum broadly rounded, elytra not distinctly narrowed posteriad. Elytra rather strongly and sparsely punctate. Species (insufficiently) described from China ..... ***viridipennis*** (Pic, 1937).
–. Legs pale, on dorsal side of femora and tibiae darker, tarsi entirely darkened. Head pale rusty-reddish, vertex bluish black. Two externally similar species, differing by shape of aedeagus and other form of pronotal pattern ..... 4.
4. Pronotum rusty-reddish with central pitch spot, elytra entirely metallic blue, underside black. Pronotum very minutely and sparsely punctate. Elytral Punctation moderately strong, dense, interstices minutely punctulate. Apical part of aedeagus strongly widened, roundish (**fig**. **117)**. Length 4.7-5.6 mm. Similar to *vietnamensis* (auxiliary group C, antithesis 5), but differing by irregularly punctate elytra and by the dark spot on pronortum. Described from Vietnam ..... ..... ***taynguensis*** Medvedev, 1985.
–. On pronotum central black stripe, sometimes very broad (**figs 131**, **132**). Aedeagus in dorsal view almost parallel, its apex rounded with lamella. Described from NE India ..... ***himalayana*** Medvedev, 2010.




131-137. Pronotal pattern, aedeagus in dorsal and in lateral view (131, 132, 138 after Medvedev 2010, 133, 134, 137 after Medvedev 1995, 135 after Medvedev 2004): 131, 132 – *Smaragdina himalayana* ;133, 134 *S. emarginata*; 135 – *S. nigricollis;* 136 – *S. dohertyi;* 137 – *S. yunnana*

5. Punctation of elytra strong, arranged in regular or almost regular rows. Head metallic green; antennae (except for 3 basal antennomeres) and breast black; pronotum fulvous, central greenish patch, strongly pointed at base. Elytra greenish, legs flavous, femora in the middie and tibiae at apex greenish. Length 3.0-4.0 mm. Here females of *striatipennis* (see auxiliary group E, antithesis 8).
–. Punctation of elytra irregurar or arranged in indistinct longitudinal rows .... 6.
6. Elytra strongly and thickly punctate, the puntures tending to form longitudinal rows aud becoming feebler posteriorly ..... 7.
–. Punctation of elytra fine or at most moderately strong ..... 9.
7. Pronotum reddish yellow with large, black, approximately rhomboidal patch (**figs 125-127**)). Head and elytra dark metallic. Basal antennomeres as in **fig. 128**. Underside and legs black, knees and underside of tibiae somewhat lightened. Punctation of pronotum of two kinds, sparse stronger and more densely scattered minute. Punctation of elytra strong and dense. Aedeagus as in **figs 129, 130**. Length 3.7-4.5 mm. Described from China (Sichuan) ..... ***nigrosternum*** Medvedev, 1999.
–. Black patch on pronotum not rhomboidal, head at least partly pale ..... 8.
8. Pronotum 2.2 times as broad as long, hind angles broadly rounded; surface without any impressions, impunctate except a short transverse punctate impression on short basal lobe. Punctation of elytra deep and coarse. Head testaceous, vertex bluish black, scutellum and underside black; pronotum fulvous with broad parallel-sided central stripe black; elytra dark violaceous; legs fulvous with tarsi weakly darkened. Antenna short; Elytron 4 times as long as broad, on apicał slope punctures smaller and more sparsely scattered; interstices much smaler than diameter of punctures. Length 4.0 mm. Described from S China (Yunnan) ..... ..... ***nigroviolacea*** Lopatin, 2004.
–. Pronotum extremely finely punctulate throughout, coarsely and irregularly punctate before and behind the middle. Legs yellowish brown, with tarsi and partly infuscate. Pronotum yellowish brown, with a large blackish marking on the middle, breast blackened. Antennae short, rather robust, with third antennomere slightly shorter




138-144 Aedeagus in dorsal and in lateral view (138, 139 after Lopatin, 2004, 140, 141 after Medvedev 2004, 142 after Medvedev 1985, 143, 144 after Lopatin et Konstantinov, 2009): 138, 139 – *Smaragdina tani*; 140, 141 – *S. ornatipennis*; 142 – *S. regularis;* 143, 144 – *S. oblonga*

and much narrower than the 4th. Length male 3.0 mm (male), 3.75 mm (female). Described from Taiwan ..... ***maculicollis*** (Chûjô, 1952).

9. Elytra covered by extremely fine punctation. Black central stripe on pronotum occupies about 1/3 of the breadth. Legs fulvous. Aedeagus as in **fig. 133, 134**. Length 3.5-3.9 mm (male) to about 4.2 (female). Described from S China (Yunnan) ..... ***emarginata*** Medvedev, 1995.

–. Elytra not extremely finely punctate ..... 10.

10. Larger. Length of body at least 4.0 mm. Legs pale testaceous, claws darkened. Prothorax testaceous with broad central portion (more than 1/3 of area) pitch black. Scutellum piceous. Elytron greenish blue strongly at apex tinged with purplish brown. Ventral surface except for prosternum, brown. Pronotum nearly impunctate Elytron broadly rounded apically, fairly deep irregular punctate. Pygidium finely and closely punctate. Legs slender hind tarsomere 1 nearly as long as 2+3. Male unknown. Length 4.0-4.4 mm Described from China (Sikang) ..... ..... ***flavifrons*** (Gressitt and Kimoto, 1961.

–. Smaller. Length of body at most 3.8 mm. Legs black. Body black; labrum, antennomeres 1-3 rusty. On pronotum in anterior half of lateral sides with two blurred, two similar but smaller spots at scutellum, a small arched spot behind midlength and a roundish spot at apex; all mentioned spots somewhat indistinct, upperside at first glance black. Pronotum finely and sparsely punctate, only the depression before hind margin more distinctly punctate. Punctation of elytra moderately strong, in apical part fading. Female unknown. Length 3.4 mm. Described from China (Yunnan) ..... ***aethiops*** Lopatin, 2004.

## Auxiliary group **G**
(pronotum entirely black or metallic)

### Key to species

1. Elytra entirely pale, antennomerers 1-3 and abdomen except for anal sternite flavous, labrum lightened, remaining parts of body black. Pronotum shining and impunctate, Punctation of elytra dense, confused. Aedeagus (**fig. 135**) with regularly rounded apex. Length 4.3-4.4 mm. Described from Laos ..... ..... ***nigricollis*** Medevedev, 2004.

–. Elytra, similarly as pronotum, entirely black or metallic ..... 2.

2. Large species, length about 7.0 mm Underside pale, tibiae darkened at apex. Vertex impunctate. Thorax rather more than twice as broad as long, Hind angles distinct. First tarsomere of hind tarsi longer than the second. Described from Myanmar ..... ***coerulea*** (Jacoby, 1892).

–. Smaller species, length at most 5.5 mm ..... 3.

3. Smaller species, length always under 4.0 mm ..... 4.

–. Larger species, length always over 4.4 mm ..... 7.

4. Length under 3.2 mm. Black, head and prothorax with very feeble metallic tint, elytra dark greenish blue, basal segments of antennae and sometimes also basal

half of fore tibiae dark fulvous. Very similar to *yunnana* (antithesis 6), but differs by on average smaller size, not widened antennomere 1 and fore tarsomere 1 in male, aedeagus not distinctly widened in apical part. Length 2.4-3.1 mm (male) to 2.8-3.1 mm (female) (= *minuta* Medvedev, 1995, nec Jacoby 1895). Described from S China (Yunnan) ..... ***levi*** Lopatin, 2004.

–. Not as above ..... 5.

5. Body parallel, slender, vertex smooth, shining. Upprer side metallic blue, underside, legs and antennae entirely black. Frons broad, about twice as broad as transverse diameter of eye. Punctation of elytra in anterior part strong, confuse, in hind part gradually finer. Length 3.9 mm. Described from Sri Lanka, based on one female only ..... ***medvedevi*** Medvedev, 1984.

–. Body not distinctly parallel and slender, vertex punctate ..... 6.

6. General colour black, somewhat lustrous, with a strong greenish brownish sheen on the head and a feeble brownish sheen on the pronotum, scutellum and elytra. Antennae, mouthparts and lateral areas of pronotum more or less stained with dark brown to piceous; elytra with long brownish stripe approached to suture. Head strongly punctate. Somewhat similar to *striatipennis* (auxiliary group E, antithesis 8), but differing by confused punctation of elytra, brownish (not greenish) sheen of blackish parts, somewhat smaller body and strongly punctate head. Length 2.75-3.5 mm. Described from Taiwan ..... ***variabilis*** (Chûjô, 1952).

–. Length 3.4-3.6 mm]. Body narrow, elongate, dark blue, underside black, antennae black with fulvous basal segments, legs pitch black, sometimes more or less dark fulvous, especially the anterior ones. Antennae short, antennomeres 5-10 distinctly serrate. Prothorax about 1.85 times as broad as long, covered by sparse fine punctures, very often almost impunctate in the center, especially in female; males usually with stronger punctures, mainly along margins, but sometimes also in the middle. Elytra about 1.5 - 1.6 times as long as broad, with deep and strong confused punctures, interspaces as broad as punctures, extremely finely punctate. In male tarsomere 1 of fore tarsi widened. Aedeagus as in **fig. 137**. Length 2.7 - 3.3 mm (male) to 3.4 - 3.8 mm (female). [Probably here belongs the somewhat larger *szechuana* Medvedev, 1995, described from Sichuan. All characters, including the shape of aedeagus, but except for the colouration of legs (fulvous and not rather dark with lightenings) as in *yunnana*]. Described from S China (Yunnan) ..... ***yunnana*** Medvedev, 1995.

7. All legs, including coxae, flavous. Blackish blue; mouthparts, clypeus and all legs, including coxae flavous. Antennae dark brown with fulvous basal segments. Prothorax usually almost black, elytra much more metallic. Head distinctly punctate. Antennomeres 5-11 serrate, antennomeres 3 and 4 very small. Pronotum 2,2 times as broad as long, narrowed anteriorly, with hind angles broadly rounded. Surface shining, with small and sparse, sometimes indistinct punctures, mostly near anterior margin and hind angles. Elytra densely and deeply punctate, more feebly behind. Proepisterna smooth, without any punctures or pubescense. Length 4.4-4.5 mm. Described from Sichuan ..... ***flavicoxis*** Medvedev, 1992.

–. Legs dark, at most fore tibiae or hind femora partly pale ..... 8.

8. Larger. Body black, upper side with greenish sheen, hind femora partly pale. Punctation of elytra fine, partly arranged in regular rows. Length 5.5 mm. Insufficiently described species from China ..... ***compressipennis*** (Pic, 1927).
–. Smaller. Legs dark, black or pitch, at most basal part of fore tibiae pale. Elongate and parallel sided, black, basal joints of the antennae and base af tibiae fulvous, elytra metallic dark blue. Scutellum blackish. antennomeres 4-11 black, second antennomere small, third elongately subtriangular, the following antennomeres transverse. Pronotum entirely impunctate. Elytra elongate very closely and finely punctate in irregular rows. Aedeagus as in **fig. 136**. Length 4.5 mm. Described from N India (Asssam) ..... ***dohertyi*** (Jacoby, 1908).

## LIST OF SPECIES

### *Smaragdina aethiops* Lopatin, 2004

*Smaragdina aethiops* Lopatin, 2004b: 188.

Locus typicus: ad Lijiang, Julongxue Shan mountains, Yunnan, China.

### *Smaragdina apiciflava* (Chûjô, 1952)

*Gynandrophthalma apiciflava* Chûjô, 1952a: 49.

Locus typicus: Tompo, Niitaka-Gun, Taiwan.

### *Smaragdina apicipennis* (Jacoby, 1908)

*Gynandrophthalma apicipennis* Jacoby, 1908: 105.

Terra typica: Nilgiri, India.

### *Smaragdina assamensis* (Jacoby, 1908)

*Gynandrophthalma assamensis* Jacoby, 1908: 111.

Terra typica: Nilgiri, India.

### *Smaragdina atriceps* (Pic, 1927)

*Cyaniris atriceps* Pic, 1927: 28.
*Cyaniris rufithorax* Pic, 1927: 28.
*rufithorax* = *atriceps*: Medvedev, 2010

Terra typica (pro *rufithorax*): China.
Terra typica (pro *atriceps*): Yunnan, China.

### *Smaragdina atrocincta* (Pic, 1932)

*Cyaniris atrocincta* Pic, 1932: 14.

Terra typica: Vietnam sept. (Tonkin).

### *Smaragdina atropyga* (Pic, 1941)
(not included in the key)

*Cyaniris atropyga* Pic, 1941: 15.

Terra typica: Vietnam sept. (Tonkin).

### *Smaragdina bertiae* Medvedev, 1992b

*Smaragdina bertiae* Medvedev, 1992b: 24.

Locus typicus: Mont Maison, Vietnam.

### *Smaragdina bezdeki* Medvedev, 2010

*Smaragdina bezdeki* Medvedev, 2010: 260.

Locus typicus: Ban Saluei, montes Phu Phan, prov. Hua Phan, Laos.

### *Smaragdina bicoloriceps* (Pic, 1929)

*Cyaniris bicoloriceps* (Pic, 1929): 36.

Terra typica: Vietnam merid. (Cochinchine).

### *Smaragdina bisbipunctata* Medvedev, 2010

*Smaragdina bisbipunctata* Medvedev, 2010: 270.

Terra typica: Mandalay, Burma (Myanmar).

### *Smaragdina bohemani* (Jacoby, 1908)

*Gynandrophthalma bohemani* Jacoby, 1908: 107.

Terra typica: India merid.

### *Smaragdina bothrionota* Tan, 1987

*Smaragdina bothrionota* Tan, 1987: 42.

Locus typicus: Zhangmu, Xizang, Tibet, China.

### *Smaragdina centromaculata* Medvedev, 1995

*Smaragdina centromaculata* Medvedev, 1995: 90.

Terra typica: mts Weishan, Yunnan, China.

### *Smaragdina chrysomeloides* (Lacordaire, 1848)

*Clythra chrysomeloides* Lacordaire, 1848: 268.
*Gynandrophthalma citrinella* Jacoby, 1908: 115.
*citrinella* = *chrysomelidoides*: Medvedev, 2010: 270.

Terra typica (pro *chrysomelidoides*): India sept.
Terra typica (pro *citrinella*): India sept.

### *Smaragdina chrysomeloides* subsp. *rufocapitis* Medvedev et Kantner, 2002

*Smaragdina chrysomeloides rufocapitis* Medvedev et Kantner, 2002:264.

Locus typicus: Ban Sanpakia, Chiang Mai prov., N Thailand.

### *Smaragdina cochinchinensis* (Lefèvre, 1889)

*Gynandrophthalma cochinchinensis* Lefèvre, 1889: 290.
*Diapromorpha birmanica* Jacoby, 1892.
*birmanica* = *cochinchinensis*: Medvedev, 2010.

Locus typicus (pro *cochinchinensis*): Saigon, Vietnam merid.
Locus typicus (pro *birmanica*): Palon, Burma..

### *Smaragdina coerulea* (Jacoby, 1892)

*Diapromorpha coerulea* Jacoby, 1892: 877.

Terra typica: Karen Hills (Carin Chibà), Burma.

### *Smaragdina compressipennis* (Pic, 1927)

*Cyaniris compressipennis* Pic, 1927: 28.

Terra typica: China.

### *Smaragdina constrictifrons* Medvedev, 2010

*Smaragdina constrictifrons* Medvedev, 2010: 267.

Locus typicus: Mae Hong Son, Huai Tua Sao distr., Thailand.

### *Smaragdina coomani* (Pic, 1928)

*Cyaniris Coomani* Pic, 1928: 35.
*Cyaniris Coomani* var. *hoana* Pic, 1928: 35
*Cyaniris Coomani* var. *Clermonti* Pic, 1928: 35.
*coomani* = *Aetheomorpha sodalis* Lacordaire, 1848: 313: Medvedev, 1970b: 284.
*coomani* = *Smaragdina coomani* bona species: Medvedev, 1988a: 30.

T e r r a t y p i c a : N Vietnam (Tonkin).

### *Smaragdina cornuta* (Jacoby, 1895)

*Tituboea cornuta* Jacoby, 1895: 259.

T e r r a t y p i c a : Kanara, India merid.

### *Smaragdina costata* Tan et Wang, 1981

*Smaragdina costata* Tan et Wang, 1981: 448 [455].

L o c u s t y p i c u s : Honglhashan, distr. Mangkam, Tibet orient., China.

### *Smaragdina crassipes* (Duvivier, 1891)

*Gynandrophthalma crassipes* Duvivier, 1891: 31.

L o c u s t y p i c u s : Konbir, Jharkhant, O India.

### *Smaragdina cribripennis* Tan, 1988

*Smaragdina cribripenne* Tan, 1988: 322 [332].

L o c u s t y p i c u s : Manyeweng, distr. Medog, Tibet orient., China.

### *Smaragdina crucipennis* (Jacoby, 1908)

*Gynandrophthalma crucipennis* Jacoby, 1908: 118.
*Cyaniris discoidalis* Pic, 1932: 14.
*discoidalis* = *crucipennis*: Medvedev, 1995: 90.
*discoidalis* = bona species: Medvedev, 2010: 283.

L o c u s t y p i c u s (pro *crucipennis*: Ruby Mines, Burma.
L o c u s t y p i c u s (pro *discoidalis*): Cha Pa, Lao-Kai prov, Vietnam sept.

### *Smaragdina daklaka* Medvedev, 2010

*Smaragdina daklaka* Medvedev, 2010: 266.

L o c u s t y p i c u s : ad Eakao lake, Daklak prov., Vietnam.

### *Smaragdina dalatensis* Kimoto et Gressitt, 1979

*Smaragdina dalatensis* Kimoto et Gressitt, 1979: 318.

Locus typicus: Dà Lạt, Lâm Đồng prov., Vietnam merid.

### *Smaragdina delesserti* (Lacordaire, 1848)

*Clythra Delesserti* Lacordaire, 1848: 267.

Terra typica: Nilgiri, India merid.

### *Smaragdina diversesignata* (Pic, 1946)
(not included in the key)

*Cyaniris diversesignata* Pic, 1946: 4.

Terra typica: S India.

### *Smaragdina diversiceps* (Pic, 1941)

*Cyaniris diversiceps* Pic, 1941: 15.
*Smaragdina divisella* Medvedev, 1988a: 33.
*divisella* = *diversiceps*: Medvedev, 1992b:24.

Terra typica: (pro *diversiceps*): N Vietnam.
Locus typicus: (pro *divisella*:): Kaziranga, Assam, India sept.

### *Smaragdina divisa* (Jacoby, 1889)

*Gynandrophthalma divisa* Jacoby, 1889: 156.
*Gynandrophthalma indica* Jacoby, 1895: 203.
*indica* = *divisa*: Weise, 1910: 26.

Locus typicus (pro *divisa*): Bhamo, Burma.
Locus typicus (pro *indica*): Belgaum, India merid.-occid.

### *Smaragdina divisomima* Medvedev, 2010

*Smaragdina divisomima* Medvedev, 2010: 266.

Locus typicus: Mae Hong Son, Bon Huoi Po distr., Thailand.

### *Smaragdina dohertyi* (Jacoby, 1908)

*Gynandrophthalma dohertyi* Jacoby, 1908: 107.

Terra typica: montes Patkai, Assam, India.

### *Smaragdina duporti* (Pic, 1937)

*Smaragdina Duporti* Pic, 1937: 19.

L o c u s t y p i c u s : Cho-Ganh (Cho-Ghanh), distr. Nam-Dinh, Vietnam sept.

### *Smaragdina duvivieri* (Jacoby, 1908)

*Clytra duvivieri* Jacoby, 1908: 155.

T e r r a t y p i c a : India sept.

### *Smaragdina emarginata* Medvedev, 1995

*Smaragdina emarginata* Medvedev, 1995: 88.

L o c u s t y p i c u s : ad Lijiang, Yunnan sept., China.

### *Smaragdina eroshkinae* Medvedev, 1988

*Smaragdina eroshkinae* Medvedev, 1988: 28.

L o c u s t y p i c u s : Tam Dao, prov. Vinh Phu, Vietnam..

### *Smaragdina fabrei* (Lefèvre, 1883)

*Gynandrophthalma fabrei* Lefèvre, 1883: 111.

L o c u s t y p i c u s : Ramnad, Tamil Nadu prov., India merid.

### *Smaragdina flavicoxis* Medvedev, 1992a

*Smaragdina flavicoxis* Medvedev, 1992a: 382.

L o c u s t y p i c u s : mont Emei, Sichuan, China.

### *Smaragdina flavifrons* Gressitt et Kimoto, 1961

*Smaragdina flavifrons* Gressitt et Kimoto, 1961: 103.

L o c u s t y p i c u s : ad Muping, Sikang, China.

### *Smaragdina flavilabris* (Breit, 1917)

(E Palaearctic species, not included in the key)

*Cyaniris flavilabris* Breit, 1917: 66.

L o c u s t y p i c u s : vicinity of lake Kuku-Nor, Tibet.

### *Smaragdina flaviventris* (Jacoby, 1908)

*Gynandrophthalma flaviventris* Bryant, 1934: 226.
*Smaragdina* (*Smaragdinella*) *maduraiensis* Erber et Medvedev, 1999: 8.
*maduraiensis* = *flaviventris*: Medvedev, 2010: 262.

Locus typicus: (pro *flaviventris*): Javalgiri, North Salem, India.
Locus typicus (pro *maduraiensis*): Shembaganur (Madurai), India merid.

### *Smaragdina flavobasalis* (Jacoby, 1908)

*Gynandrophthalma flavobasalis* Jacoby, 1908: 121.

Terra typica: India merid.

### *Smaragdina flavovariegata* Medvedev, 1999

*Smaragdina flavovariegata* Medvedev, 1999: 67.

Terra typica: Parapat (Simalungun), Sumatra sept., Indonesia.

### *Smaragdina frontalis* (Jacoby, 1908)

*Gynandrophthalma frontalis* Jacoby, 1908: 104.

Terra typica: Nilgiri, India.

### *Smaragdina fulveola* (Jacoby, 1890)

*Gynandrophthalma fulveola* Jacoby, 1890: 86.
*Gynandrophthalma divisoides* Chûjô, 1952: 48.
*divisoides* = *fulveola*: Kimoto et Takizawa, 1997: 347.

Terra typica (pro *fulveola*): distr. Changyang, Hupeh prov., China.
Locus typicus (pro *divisoides*): Musya, Nôkô-Gun, Taityû-Syô, Taiwan.

### *Smaragdina fulvitarsis* Medvedev, 1992a

*Smaragdina fulvitarsis* Medvedev, 1992a: 380.

Locus typicus: Magghal Dhara, Darjeeling, India.

### *Smaragdina fuscicornis* (Lacordaire, 1848)

*Clythra fuscicornis* Lacordaire, 1848: 386.

Locus typicus: India orient.

### *Smaragdina fuscitarsis* (Jacoby, 1900)

*Damia fuscitarsis* Jacoby, 1900: 99.

Terra typica: Burma.

### *Smaragdina guillebeaui* (Pic, 1927)

*Cyaniris Guillebeaui* Pic, 1927: 27.

Terra typica:Yunnan, China.

### *Smaragdina higuchii* Kimoto et Takizawa, 1981

*Smaragdina higuchii* Kimoto et Takizawa, 1981: 53.
? *Aetheanta fasciata* Medvedev, 1988b: 476.
*higuchii* = *Aetheanta*: Medvedev, 2010: 286.

Locus typicus (pro *higuchii*): Sheopuri, Nepal.
Locus typicus (pro *fasciata*): Cherrapunji, Khast Hills, Assam, India.

### *Smaragdina himalayana* Medvedev, 2010

*Smaragdina himalayana* Medvedev, 2010: 261.

Locus typicus: 9 km ad Joval, prov. Megalaya, India.

### *Smaragdina ihai* (Chûjô, 1958)

*Smaragdina ihai* Chûjô, 1958: 2.

Locus typicus: Nakasone isl., Okinawa, Japan.

### *Smaragdina imitans* (Jacoby, 1903)

*Gynandrophthalma imitans* Jacoby, 1903: 84.

Terra typica: India.

### *Smaragdina impressicollis* Tan, 1992

*Smaragdina impressicollis* Tan, 1992: 779.

Locus typicus: Yongsheng, Yunnan, China.

### *Smaragdina insulana* Medvedev, 1992c

*Smaragdina insulana* Medvedev, 1992c: 73.

Terra typica: Isl. Tjam, Vietnam.

### *Smaragdina jeanvoinei* (Pic, 1932)

*Cyaniris Jeanvoinei* Pic, 1932: 13.

L o c u s t y p i c u s : Chapa (Sa-Pa), Vietnam sept.

### *Smaragdina kejvali* Kantner et Bezděk, 2007

*Smaragdina kejvali* Kantner et Bezděk, 2007: 252.

L o c u s t y p i c u s : 4 km S ad Leonavala, Bhushi Dam env, Maharashtra, India occ.

### *Smaragdina kimotoi* Lopatin, 2003

*Smaragdina kimotoi* Lopatin, 2003: 301.

L o c u s t y p i c u s : ad Hoshimin, distr. Kat-Tsen, Vietnam merid.

### *Smaragdina kimshona* Medvedev, 1988

*Smaragdina kimshona* Medvedev, 1988a: 28.

L o c u s t y p i c u s : Kim-Son, Vin-Phu prov., N Vietnam.

### *Smaragdina kuromon* Kimoto, 1984

*Smaragdina kuromon* Kimoto, 1984: 43.

L o c u s t y p i c u s : Fenchihu, Chiayi Hsien, Taiwan.

### *Smaragdina kurosuji* Kimoto, 1984

*Smaragdina kurosuji* Kimoto, 1984: 42.

L o c u s t y p i c u s : Tungpu Spa, Nantou Hsien, Taiwan.

### *Smaragdina laboissierei* (Pic, 1928)

*Cyaniris Laboissierei* Pic, 1928: 34.
*Cyaniris Laboissierei* var. *binhana* Pic, 1928: 34.

T e r r a t y p i c a : Vietnam sept. (Tonkin).

### *Smaragdina laevicollis* (Jacoby, 1890)

*Gynandrophthalma fulveola* Jacoby, 1890: 86.

T e r r a t y p i c a : distr. Changyang, Hupeh prov., China.

### *Smaragdina laevipennis* (Jacoby, 1908)

*Gynandrophthalma laevipennis* Jacoby, 1908: 122.

Terra typica: India merid.

### *Smaragdina laosensis* Kimoto et Gressitt, 1979

*Smaragdina laosensis* Kimoto et Gressitt, 1979: 320.

Locus typicus: Sedone, Paksong prov., Laos.

### *Smaragdina latemedionotata* (Pic, 1946)
(not included in the key)

*Cyaniris latemedionotata* Pic, 1946: 3.

Terra typica: Malakka.

### *Smaragdina laticollis* (Duvivier, 1892)

*Gynandrophthalma laticollis* Duvivier, 1892: 399.

Terra typica: plateau Chota Nagpur (Chotah-Nagpore), India.

### *Smaragdina levi* Lopatin, 2004

*Smaragdina minuta* Medvedev, 1995: 88, nec Jacoby, 1908: 115.
*Smaragdina levi* Lopatin, 2004a: 31.
*levi* nom. nov. pro *minuta*: Lopatin, 2004a: 31.

Locus typicus: Lijiang, Yunnan sept., China.

### *Smaragdina longicornis* (Jacoby, 1897)

*Damia longicornis* Jacoby, 1897: 422.

Locus typicus: Mandar, India occid.

### *Smaragdina maculicollis* (Chûjô, 1952)

*Gynandrophthalma maculicollis* Chûjô, 1952b: 73.

Locus typicus: Musya, Nökö-Gun, Taiwan.

### *Smaragdina maharashtra* Kantner et Bezděk, 2007

*Smaragdina maharashtra* Kantner et Bezděk, 2007: 254.

Locus typicus: 5 km S ad Lonavala, Bhushi Dam env., Marahasthra, India occ.

### *Smaragdina malakkana* Medvedev, 2010

*Smaragdina malakkana* Medvedev, 2010: 270.

Terra typica: Malakka.

### *Smaragdina mangkamensis* Tan et Wang, 1981

*Smaragdina mangkamensis* Tan et Wang, 1981: 448 [455].

Terra typica: India sept.-orient.

### *Smaragdina mapellii* Takizawa, 1990

*Smaragdina mapellii* Takizawa, 1990: 759.

Locus typicus: Dhanjuri, Dinajpur distr., Pakistan.

### *Smaragdina medvedevi* Medvedev, 1984

*Smaragdina medvedevi* Medvedev, 1984: 104.

Locus typicus: 38 km SO of Anuradhapura, Sri Lanka.

### *Smaragdina megalayana* Medvedev et Kantner, 2002

*Smaragdina megalayana* Medvedev et Kantner, 2002: 265.

Terra typica: India sept.-orient.

### *Smaragdina micheli* Medvedev, 1995

*Smaragdina micheli* Medvedev, 1995: 89.

Locus typicus: ad Maowen, Sichuan sept.-occid., China.

### *Smaragdina minuta* (Jacoby, 1908)

*Gynandrophthalma minuta* Jacoby, 1908: 115.

Locus typicus: Belgaum, India merid.-occid.

### *Smaragdina minutissima* (Lopatin, 1967)

*Antipa minutissima* Lopatin, 1967: 437.

Locus typicus: ad Barikot, Nuristan, Afghanistan.

### *Smaragdina miyakei* Kimoto, 1976

*Smaragdina miyakei* Kimoto, 1976: 1.

L o c u s t y p i c u s : Jiuyuehtan, Nantou Hsien, Taiwan.

### *Smaragdina miyatakei* Kimoto, 1976

*Smaragdina miyatakei* Kimoto, 1976: 3.

L o c u s t y p i c u s : Taotsua ad Hotso, Nantou Hsien, Taiwan.

### *Smaragdina montana* Medvedev, 1988

*Smaragdina montana* Medvedev, 1988a: 30.

L o c u s t y p i c u s : Tam-Dao, Vietnam sept.

### *Smaragdina motschulskyi* Medvedev, 1992a

*Smaragdina motschulskyi* Medvedev, 1992a: 382.
*Smaragdina motschoulskyi* [sic!] Medvedev, 2010: 283.
*motschoulskyi* = *Physosmaragdina*: Medvedev, 2010: 283.

L o c u s t y p i c u s : Bhandar, Nepal orient.

### *Smaragdina moutoni* (Pic, 1897)

*Gynandrophthalma mandarina* Lefèvre, 1892: XCIV, nec Weise, 1889: 579.
*Gynandrophthalma moutoni* Pic, 1897: 86.
*moutoni* nom.nov. pro *mandarina* Lefèvre: Pic, 1897: 86.

T e r r a t y p i c a : China.

### *Smaragdina murzini* Lopatin, 2003

*Smaragdina murzini* Lopatin, 2003: 302.

L o c u s t y p i c u s : res. nat. Phnom-Bokor, Cambodia.

### *Smaragdina nagaensis* (Jacoby, 1908)

*Gynandrophthalma nagaensis* Jacoby, 1908: 112.
*nagaensis* = *Aetheomorpha*: Medvedev, 2010: 285.

T e r r a t y p i c a : montes Naga Hills, Assam, India.

### *Smaragdina nigricollis* Medvedev, 2004

*Smaragdina nigricollis* Medvedev, 2004: 301.

L o c u s t y p i c u s : ad Phongsaly, Phongsaly prov., Laos.

### *Smaragdina nigripennis* (Chûjô, 1952)

*Gynandrophthalma nigripennis* (Chûjô, 1952b: 77).

Locus typicus: Kôsyun, Kôsyun-Gun, Taiwan.

### *Smaragdina nigriscutis* Medvedev, 1970

*Smaragdina nigriscutis* Medvedev, 1970a: 187.

Terra typica: Mikir Hills in nat. res. Kaziranga, Assam, India.

### *Smaragdina nigroguttata* Lopatin, 2002

*Smaragdina nigroguttata* Lopatin, 2002: 874.

Locus typicus: Kandin, Sichuan, China.

### *Smaragdina nigropygidialis* (Pic, 1946)
(insufficiently studied, not included in the key)

*Cyaniris nigropygidialis* Pic, 1946: 3.

Terra typica: S India.

### *Smaragdina nigrosignata* Pic, 1954

*Cyaniris nigrosignatus* Pic, 1954: 53.

Terra typica: China.

### *Smaragdina nigrosternum* Erber et Medvedev, 1999

*Smaragdina nigrosternum* Erber et Medvedev, 1999: 6.

Locus typicus: ad Zhangla, Sichuan, China.

### *Smaragdina nigrosuturalis* (Jacoby, 1908)

*Gynandrophthalma nigrosuturalis* Jacoby, 1908: 118.

Terra typica: Nilgiri, India.

### *Smaragdina nigrotibialis* (Jacoby, 1908)

*Gynandrophthalma nigrotibialis* Jacoby, 1908: 116.

Terra typica: Nilgiri, India.

### *Smaragdina nigroviolacea* Lopatin, 2004

*Smaragdina nigroviolacea* Lopatin, 2004a: 30.

Locus typicus: Xiagung, Dacan, Yunnan.

### *Smaragdina nilgiriensis* (Jacoby, 1903)

*Gynandrophthalma nilgiriensis* Jacoby, 1903: 85.

Terra typica:Nilgiri, India.

### *Smaragdina nipponensis* (Chûjô, 1951)

*Gynandrophthalma nipponensis* Chûjô, 1951: 33.
*Gynandrophthalma flavimana* Chûjô, 1952: 76.
*Gynandrophthalma chrysomeloides* Lacordaire, 1848: 268 sensu.Baly, 1873: 81 [misidentification]
*Cyaniris fuscitarsis* (Jacoby, 1900): Chûjô, 1935:71 [misidentification].
*flavimana* = *nipponensis*: Kimoto et Takizawa, 1994: 278.
*chrysomeloides* sensu Baly = *nipponensis*: Chûjô et Kimoto, 1961: 130
*fuscitarsis* sensu Chûjô, 1935 = *nipponensis*: Kimoto et Takizawa, 1994: 278.

Locus typicus (pro *nipponensis*): Tarumi-cho, Shikoku, Japan.
Locus typicus (pro *flavimana*): Tipon, Taitô-Gun, Taiwan.
Locus typicus (pro *chrysomeloides* Baly): Kawachi, Hokkaido, Japan.
Terra typica (pro *fuscitarsis* sensu Chûjô, 1935): Ryu-Kyu Isl., Japan.

### *Smaragdina nomurai* Kimoto, 1976

*Smaragdina nomurai* Kimoto, 1976: 2**.**

Locus typicus: Nanshanchi, Nantou Hsien, Taiwan.

### *Smaragdina oblonga* Lopatin, 2009.

*Smaragdina oblongum* Lopatin, 2009: 3.

Locus typicus: Tiger Leaping Gorge, ad Lijang, Yunnan, China.

### *Smaragdina octomaculata* (Chûjô, 1952)

*Gynandrophthalma octomaculata* Chûjô, 1952: 81.
*Gynandrophthalma octomaculata* var. *melania* Chûjô, 1952: 81).

Locus typicus (pro *octomaculata*): Hori, Nôkô-Gun, Taiwan.
Locus typicus (pro *melania*): Rara-san, Bunzan Gun, Taiwan.

### *Smaragdina oculata* Medvedev, 1988

*Smaragdina oculata* Medvedev, 1988b: 471.

Locus typicus: Kaziranga, Asssam, India.

### *Smaragdina occidentalis* Medvedev, 2010.

*Smaragdina occidentalis* Medvedev, 2010: 262.

Locus typicus: Yourdu, Jammu and Kashmir, India.

### *Smaragdina orientalis* (Jacoby, 1908)

*Gynandrophthalma orientalis* Jacoby, 1908: 105.

Locus typicus: Mumbai (Bombay), India.

### *Smaragdina ornatipennis* Medvedev, 2004

*Smaragdina ornatipennis* Medvedev, 2004: 300.

Locus typicus: ad Phongsaly, Phongsaly prov., Laos.

### *Smaragdina pacholatkoi* Medvedev, 2003

*Smaragdina pacholatkoi* Medvedev, 2003: 290.

Locus typicus: Kunchappanai, Nilgiri Hills, Tamil Nadu, India.

### *Smaragdina pakistanica* Medvedev, 2010

*Smaragdina pakistanica* Medvedev, 2010: 261.

Locus typicus: Changa Manga forest, 70 km ad Lahore, Punjab, Pakistan.

### *Smaragdina peplopteroides* (Weise, 1889)

*Exomis peplopteroides* Weise, 1889: 577.

Terra typica: Kansu, China.

### *Smaragdina piceifrons* (Pic, 1941)
(not included in the key)

*Cyaniris piceifrons* Pic, 1941: 15.

Terra typica: India.

### *Smaragdina planifrons* (Jacoby, 1908)

*Gynandrophthalma planifrons* Jacoby, 1908: 113.

Terra typica: montes Nilgiri, India orient.

### *Smaragdina potanini* Medvedev 1970

*Smaragdina potanini* Medvedev 1970a: 187.

Locus typicus: Da-dzjan-lu, Sichuanj, China.

### *Smaragdina quadrimaculata* Lopatin, 2009

*Gynandrophthalma quadrimaculata* Lopatin, 2009: 2.

Locus typicus: Tiger Leaping Gorge, ad Lijang, Yunnan, China.

### *Smaragdina quadratomaculata* (Jacoby, 1896)

*Gynandrophthalma quadratomaculata* Jacoby, 1896: 5.

Terra typica: Ryu-Kyu (Loo-Choo) Isl.

### *Smaragdina reductelineata* (Pic, 1946)
(not included in the key)

*Cyaniris reductelineata* Pic, 1946: 3.

Terra typica: S India.

### *Smaragdina regalini* Medvedev et Kantner, 2002

*Smaragdina regalini* Medvedev et Kantner, 2002: 264.

Terra typica: India sept.

### *Smaragdina regularis* Medvedev, 1985

*Smaragdina regularis* Medvedev, 1985: 99.

Locus typicus: Buon Loi, prov. Kon Tum, Vietnam.

### *Smaragdina salemensis* (Pic, 1946)
(not included in the key)

*Cyaniris salemensis* Pic, 1946: 4.

Terra typica: S India.

### *Smaragdina sassii* nom. nov.

*Smaragdina divisoides* Medvedev, 1988a: 33, nec *Gynandrophthalma divisoides* Chûjô, 1952: 48.

Locus typicus: ad Thai-Nguyen, Bak-Thai prov., N Vietnam.

### *Smaragdina scalaris* (Pic, 1927)

*Cyaniris scalaris* Pic, 1927: 27.

Terra typica: Yunnan, China.

### *Smaragdina schereri* Lopatin, 2006

*Smaragdina schereri* Lopatin, 2006: 593.

Locus typicus: Guanyongshang, NE of Danba, Sichuan, China.

### *Smaragdina semiauranthiaca* (Fairmaire, 1888)

*Gynandrophthalma semiauranthiaca* Fairmaire, 1888b: 150.

Locus typicus: Beijing (Pékin), China.

### *Smaragdina semipunctata* (Duvivier, 1891)

*Gynandrophthalma semipunctata* Duvivier, 1891: 31.

Terra typica: plateau Chota Nagpur (Chotah-Nagpore), India.

### *Smaragdina semiviridis* (Pic, 1922)

*Cyaniris semiviridis* Pic, 1922: 27.

Terra typica: Tibet, China.

### *Smaragdina signaticollis* (Redtenbacher, 1848)

*Coptocephala signaticollis* Redtenbacher, 1848: 561.
*signaticollis* = (?) *Miochira nepalica*: Medvedev, 2010: 284.

Terra typica: Kashmir.

### *Smaragdina sikkimia* (Jacoby, 1903)

*Gynandrophthalma sikkimia* Jacoby, 1903: 85.

Terra typica: Sikkim, India sept.

### *Smaragdina spenceri* KIMOTO et GRESSITT, 1979

*Smaragdina spenceri* KIMOTO et GRESSITT, 1979: 320.

Locus typicus: Kirirom, Kampong Speu prov, Cambodia.

### *Smaragdina sprecherae* MEDVEDEV, 2002

*Smaragdina sprecherae* MEDVEWDEV, 2002: 246.

Locus typicus: ad Tura, Meghalaya, E India.

### *Smaragdina striatipennis* (JACOBY, 1903)

*Gynandrophthalma striatipennis* JACOBY, 1903: 85.

Terra typica: India.

### *Smaragdina subacuminata* (PIC, 1927)

*Cyaniris subacuminata* PIC, 1927: 28.

Terra typica: China.

### *Smaragdina subdivisa* (JACOBY, 1900)

*Gynandrophthalma subdivisa* JACOBY, 1900: 98.

Locus typicus: Shillong, Meghalaya prov., India sept.-orient.

### *Smaragdina subsignata* (FAIRMAIRE, 1888)

*Gynandrophthalma subsignata* FAIRMAIRE, 1888a, 32: 36.

Terra typica: Chekiang, China.

### *Smaragdina symmetria* TAN, 1988

*Smaragdina symmetria* TAN, 1988: 323.

Locus typicus: pass Gelongla, Medog prov., Tibet, China.

### *Smaragdina szechuana* MEDVEDEV, 1995

*Smaragdina szechuana* MEDVEDEV, 1995: 87.

Locus typicus: Dadzjan-lu, Sichuan, China.

### *Smaragdina tamdaoana* Medvedev, 2010

*Smaragdina tamdaoana* Medvedev, 2010: 266.

L o c u s t y p i c u s : Tam Dao, Vietnam.

### *Smaragdina tani* Lopatin, 2004

*Smaragdina tani* Lopatin, 2004a: 30.

L o c u s t y p i c u s : Binchuan Co, ad Zhouchengzen, Yunnan, China.

### *Smaragdina taynguensis* Medvedev, 1985

*Smaragdina taynguensis* Medvedev, 1985: 99.

L o c u s t y p i c u s : Konhanung, distr. Thai Nguyen, Vietnam sept.

### *Smaragdina terminalis* (Lefèvre, 1883)

*Gynandrophthalma terminalis* Lefèvre, 1883: 112.
*terminalis* = (?) *Aetheodactyla* aut (?) *Physosmaragdina*: Medvedev, 2010: 284.

L o c u s t y p i c u s : Ramnad, prov. Tamil Nadu, India merid.

### *Smaragdina thailandica* Medvedev, 2010

*Smaragdina thailandica* Medvedev, 2010: 260.

L o c u s t y p i c u s : Dui Suthep-pui, Thailand.

### *Smaragdina tonkinensis* (Lefèvre, 1891)

*Damia tonkinensis* Lefèvre, 1891: 254.
*Gynandrophthalma apicalis* Lefèvre, 1893: 114.
*Gynandrophthalma mungphuensis* Jacoby, 1908: 109.
*Gynandrophthalma subdivisa* Jacoby, 1908: 121.
*Smaragdina brancuccii* Medvedev, 1988b: 472.
*apicalis* = *tonkinensis*: Clavareau, 1913: 66.
*subdivisa* = *tonkinensis*: Medvedev, 2010: 286.
*mungphuensis* = *tonkinensis*: Kimoto, 1970: 413
*subdivisa* = *tonkinensis*: Medvedev, 2010: 286..
*brancuccii* = *tonkinensis*: Medvedev et Sprecher-Uebersachs, 1998: 211.

L o c u s t y p i c u s (pro *apicalis*: Tonkin, Vietnam.
T e r r a t y p i c a (pro *tonkinensis*): N Vietnam.
L o c u s t y p i c u s (pro *mungphuensis*): Mungphu, Sikkim, N India.
L o c u s t y p i c u s (pro *brancuccii*): Gangani, Uttar Pradesh, India.

### *Smaragdina trimaculaticeps* (Pic, 1946)

(not included in the key)

*Cyaniris trimaculaticeps* Pic, 1946: 4.

Terra typica: S India.

### *Smaragdina variabilis* (Chûjô, 1952)

*Gynandrophthalma variabilis* Chûjô, 1952: 74.

Locus typicus: Baibara, Nôkô-Gun, Taiwan.

### *Smaragdina vietnamensis* Kimoto et Gressitt, 1979

*Smaragdina vietnamiensis* Kimoto et Gressitt, 1979: 321.

Locus typicus: Đăk Song, Đắk Nông prov., Vietnam.

### *Smaragdina vinula* (Weise, 1903)

*Aetheomorpha vinula* Weise, 1903: 29.
*Gynandrophthalma ceylonica* Jacoby, 1908: 113.
*ceylonica* = *vinula*: Medvedev, 1984: 103.
*vinula* = *Ceratobasis*: Medvedev, 2010: 286.

Locus typicus (pro *vinula*): Kandy, Sri Lanka.
Locus typicus (pro *ceylonica*): Kanara, India merid.

### *Smaragdina virgata* Lopatin, 2004

*Smaragdina virgata* Lopatin, 2004b: 187.

Locus typicus: ad Lijiang, Yunnan, China.

### *Smaragdina viridipennis* (Pic, 1937)

*Cyaniris viridipennis* Pic, 1937: 19.

Terra typica: China.

### *Smaragdina volkovitshi* Lopatin, 2004

*Smaragdina volkovitshi* Lopatin, 2004a: 29.

Locus typicus: ad Lijian, Yunnan.

### *Smaragdina wallardiensis* (Jacoby, 1908)

*Gynandrophthalma wallardiensis* Jacoby, 1908: 116.

Locus typicus: Wallardi (Wallardie), Travancore, India merid.

### *Smaragdina wittmeri* (Medvedev, 1970)

*Cyaniris wittmeri* Medvedev, 1970b: 282.

Locus typicus: Tissamaharama, South Prov., Sri Lanka.

### *Smaragdina yunnana* Medvedev, 1995

*Smaragdina yunnana* Medvedev, 1995: 87.

Locus typicus: Baishui, montes Yulongshan, Yunnan, China.

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