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On a Collection of Curculionidae (Coleoptera) from Kamchatka and the Northern Kuriles

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Abstract. A collection of the family Curculionidae from Kamchatka and the northern Kuriles made in 1996 and 1997 by the Biological Expedition of the Natural History Museum and Institute, Chiba, comprises 12 species. A list of species collected, the description of a new species, *Isochnus kamchaticus* sp. nov., and a new combination, *Lepesoma variegatus* comb. nov. from *Cyriophthalmus* or *Lepidosoma* are given.

Key words: Curculionidae, Kamchatka, the northern Kuriles, list of species, *Isochnus kamchaticus* sp. nov., *Lepesoma variegatus* comb. nov.

Weevils in the Russian Far East have been rather well surveyed by the Russian entomologists and detailed reports have been published recently by Egorov (1976), Korotyaev (1976), Korotyaev and Egorov (1977), Zherikhin and Egorov (1990), and others, and known weevils were all put together in "Egorov, Zherikhin and Korotyaev (1996): Key to the insects of Russian Far East, III, Coleoptera, Part 3, 1996".

Collections of the family Curculionidae treated in this paper were made during the Biological Expedition to the Kamchatka Peninsula and North Kuril Islands in 1996 and 1997 by the Natural History Museum and Institute, Chiba, in co-operation with the Institute of Biology and Pedology and the Institute of Marine Biology, Vladivostok. These collections comprise 12 species, of which one species is new to science and described in this paper as *Isochnus kamchaticus* sp. nov., with a key to known species of the genus. The synonymic lists are given to *Lepesoma variegatus* comb. nov. and *Sthereus ptinoides* for the arrangement of the complex treatment of their nomenclature.

Most of the material examined is preserved in the Natural History Museum and Institute, Chiba (CBM), and part is in the Entomological Laboratory, Kyushu University, Fukuoka.

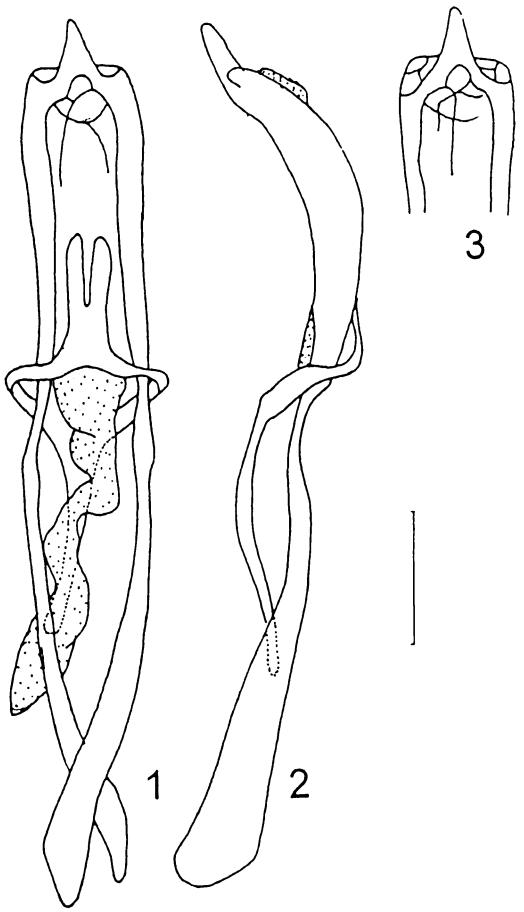
List of Collected Species

1. *Phyllobius virideaeris* (Laicharting, 1781)

Material examined. **Kamchatka:** Paratunka River, 2 exs., 8.vii.1997, A. Saito; Petropavlovsk-Kamchatskiy, 7 exs., 9–10.vii.1997, A. Saito, CBM-ZI 82691–82695; Nagornyi, near Petropavlovsk-Kamchatskiy, 15 exs., 10.vii.1997, A. Saito, CBM-ZI 82679–82691.

Distribution. Palaearctic region from Kamchatka to Europe.

Note. The present species is variable and Korotyaev (1976) and Korotyaev and Egorov (1977) synonymized *P. brevicollis* Boheman, 1943 (type locality: China borealis), *P. chloris* Boheman, 1843 (type locality: Kamchatka), *P. carinicollis* Motschulsky, 1860 (type locality: Irkutsk), *P. pacificus* Motschulsky, 1860 (type locality: Amur), *P. latithorax* Desbrochers, 1873 (type locality: Siberie) and *P. muchei* Voss, 1968 (type locality: Mongolei) with this species. The femora are unarmed or often armed with small, but sharp teeth. The head of present material is weakly expanded laterally immediately behind the eyes, then slightly attenuate posteriorly as described in *R. chloris* by Desbrochers (1873), or indefinitely and slightly constricted between the eyes and the base. The male aedeagus (Figs. 1–3) is identical with the figures of Korotyaev and Egorov (1977). The specific name was origi-



Figs. 1–3. *Phyllobius virideaeris* from Nagornyi, male aedeagus. 1, dorsal view; 2, lateral view; 3, apex, dorsal. (Scale: 0.1 mm)

nally spelled as *virideaeris* and *viridiaeris* is the subsequent unjustified emendation.

2. *Sitona lineellus* (Bonsdorf, 1785)

Material examined. **Kamchatka**: 30 km southwest of Milkovo, 1 ex., 8.vii.1996, R. B. Kuranishi; Inlet small stream, Azhabach'ye Lake (left side), 2 exs., 13.vii.1996, R. B. Kuranishi, CBM-ZI 82698, 82699.

Distribution. Palaearctic region from Kamchatka to Europe, Japan (Hokkaido), North America (introduced).

3. *Lepesoma variegatus* (Motschulsky, 1845), comb. nov.

Leposoma variegatus Motschuskly, 1845: 379. (Kamchatka).

Lepidosoma variegatum: Gemminger and Harold, 1871: 2299. (spelling of generic name emend.).-Winkler, 1932: 1459. (Phyllobiini).-Lona, 1938: 502. (Phyllobiini).

Cyriophthalmus inquinatus Faust, 1887: 167 (Nikolajefsk; Alophinae).-Schenkling and Marshall, 1931: 32. (Eremninae).-Winkler, 1932: 1502. (Eremninae).-Klima, 1935: 11. (Alophinae).

Cyriophthalmus variegatus: Korotyaev, 1976a: 44. (=*C. inquinatus*).

Material examined. **Kamchatka**: Mt. Vachkazhets, upper part of Takhkoloch River, 8 exs., 1 & 4.viii.1997, A. Saito, CBM-ZI 82654–82659.

Distribution. Russian Far East.

Note. The genera *Lepesoma*, *Leposoma*, *Lepidosoma*, *Cyriophthalmus*, *Dyslobus* and the present species had been classified variously in the Phyllobiini, Alophinae, or Ereminae as seen in the synonymic list given above. O'Brien and Wibmer (1982) resurrected *Lepesoma* as the senior synonym of the above-mentioned genera except *Cyriophthalmus* and placed them in the Leptopiini. Korotyaev (1976) synonymized *Dyslobus* with *Cyriophthalmus* and *C. inquinatus* with *L. variegatus*, respectively. When tested in the key to genera of Kissinger (1964), this species goes to the genus *Dyslobus* as treated by Korotyaev (1976a).

4. *Byrsopages villosus* Boheman, 1842

Material examined. **Kamchatka**: 5 km west of Mt. Vilyuchinsky, 1 ex., 7.vii.1997, A. Saito.

North Kurile Islands: Matrosskaya River, near Severo-Kuril'sk, Paramushir I., 32 exs., 11–12.vii.1997, A. Saito, CBM-ZI 82707–82736; Shelekhovo, Paramushir I., 1 ex., 19.vii.1997, A. Saito; Mt. Ebeko, alt. 200–960 m, Paramushir I., 1 ex., 14.vii.1997, A. Saito, CBM-ZI 82737; 4 km north of Seveno-Kril'sk, Paramushir I., 3 exs., 24.vii.1997, A. Saito; Lake Bol'shoye, Shumshu I., 2 exs., 22.vii.1997, A. Saito, CBM-ZI 82738–82739.

Distribution. Kamchatka, Kurile Islands, Japan (Hokkaido), Alaska.

5. *Sthereus ptinoides* (Germar, 1824)

Trachodes ptinoides Germar, 1824: 327. (Alaska: Unalaschka).

Sthereus ptinoides-Buchaman, 1936: 178. (Alaska to British Colombia).-Korotyaev, 1976a: 45 (Kamchatka).-Morimoto, 1984: 325. (Japan: Hokkaido).

Philostratus ptinoides-Zimmerman, 1964: 30. (Northern California to the Aleutian Is., Alaska, Kamchatka).

See Zimmerman (1964) and O'Brien and Wibmer (1982) for synonymy.

Material examined. **North Kurile Islands**: Lake Bol'shoye, Shumshu I., 32 exs., 22–23. vii. 1997, A. Saito, CBM-ZI 82628–82651; Shelekhovo to Medvezhiy Waterfall, Paramushir Is., 1ex., 18. vii. 1997, A. Saito, CBM-ZI 82652; Shelekhovo, Paramushir I., 1 ex., 20. vii. 1997, A. Saito, CBM-ZI 82653.

Distribution. California to Alaska, the Aleutian, Kamchatka, Kuriles, Japan (Hokkaido)

6. *Hypera viciae* (Gyllenhal, 1813)

Material examined. **Kamchatka**: Mt. Vachkazhets, upper part of Takhkoloch River, 1 ex., 4. viii, A. Saito, CBM-ZI 82697.

Distribution. Europe to Russian Far East, Kamchatka (new record), Japan (Hokkaido, Honshu).

7. *Acalyptus carpini* (Herbst, 1795)

Material examined. **Kamchatka**: 5 km south of Paratunka, 1 ex., 7. vii. 1997, A. Saito, CBM-ZI 82696.

Distribution. Holarctic region.

8. *Notaris bimaculatus* (Fabricius, 1787)

Material examined. **Kamchatka**: Paratunka River, 1 ex. 8. vii. 1997, A. Saito, CBM-ZI 82670.

North Kurile Islands: Lake Bot'shoye, Shumshu I., 1 ex., 21. vii. 1997, R. B. Kuranishi, CBM-ZI 82671.

Distribution. Holarctic region.

9. *Dorytomus leucophyllus* (Motschulsky, 1845)

Material examined. **North Kurile Islands**: Shelekhovo to Simoyur River, Paramushir I., 12 exs., 17. vii. 1997, A. Saito, CBM-ZI 82660–82667.

Distribution. Russian Far East, Kamchatka, North America, Japan (Hokkaido).

10. *Dorytomus rufulus kamtchaticus* Korotyaev, 1976

Material examined. **Kamchatka**: 5 km south of Paratunka, 1 ex., 7. vii. 1997, A. Saito, CBM-ZI 82669.

Distribution. Kamchatka.

11. *Dorytomus* sp.

Material examined. Kamchatka: Bystraya River, 2 exs., 10. vii. 1997, A. Saito, CBM-ZI 82668.

Note. This is close to *D. luridus* Mannerheim from Alaska, but not yet determined.

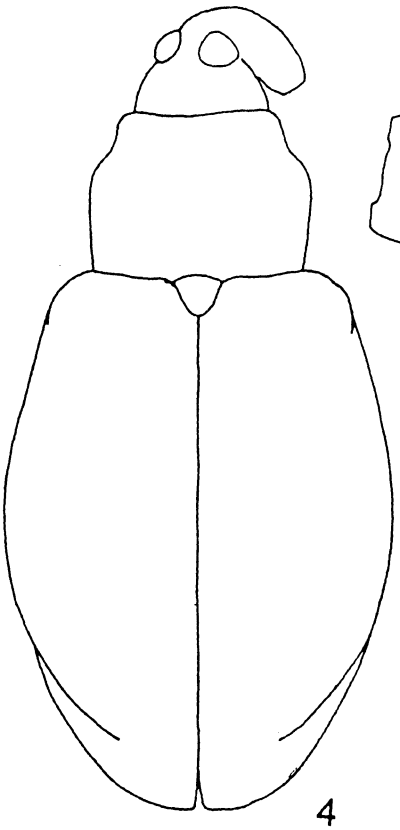
12. *Isochnus kamchaticus* sp. nov.

Material examined. **Kamchatka**: Lotonaya River (riverside) near Azhabach'ya Lake, male (holotype), 2 males and 5 females (paratypes), 12. vii. 1996, R. B. Kuranishi leg.

The holotype will be preserved in the Institute of Biology and Pedology, Far East Branch of Russian Academy of Science. Five of the seven paratypes are preserved in the Natural History Museum and Institute, Chiba (CBM-ZI 82701–82705), and the two paratypes are in the Entomological Laboratory, Kyushu University.

Description. Derm black, scapes and funicles of antennae yellowish brown, clubs brownish, legs with tibiae and tarsi yellowish brown, femora variously infuscate, fore and middle femora excepting apex and base brownish to dark brownish, hind femora excepting base blackish; pubescence sparse, greyish brown, white scales dense on scutellum, lateral pieces of meso- and metathoraces, mesosternum and lateral and anterior areas of metasternum.

Head coriaceous, with reticulate punctures on vertex, obliquely wrinkled punctate behind eyes, forehead between eyes coriaceous (male) or shiny (female), with distant punctures in pair of rows along inner margin of eye, 0.8–1.2 times as broad as apex of scape; rostrum 2.2 (male) or 2.5–2.6 (female) times as long as broad, evenly arcuate, shiny, with a punctured stria on each dorso-lateral margin behind middle, continued basally to stria of punctures on frons, with oblong punctures on basal area, becoming sparser and finer apically, often with an indefinite shal-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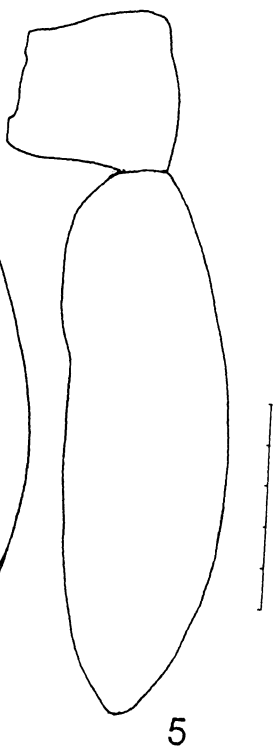
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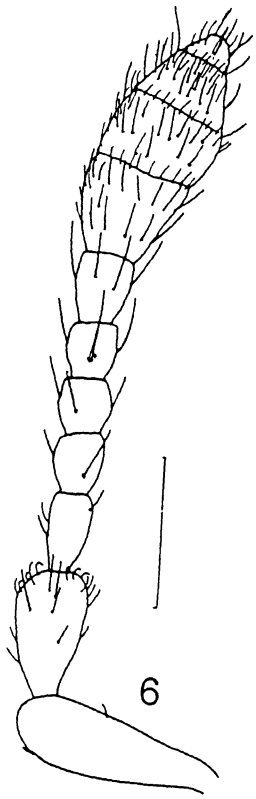
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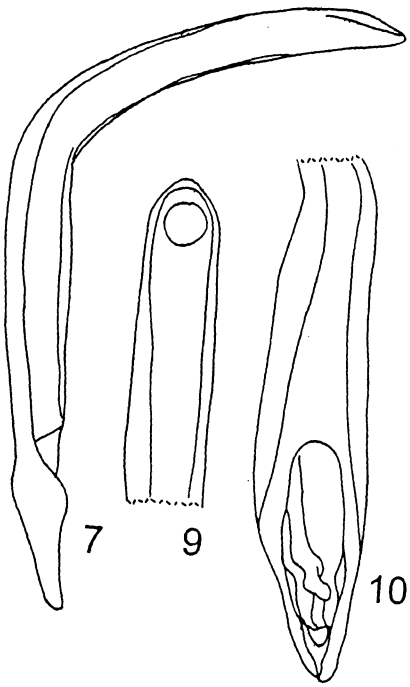
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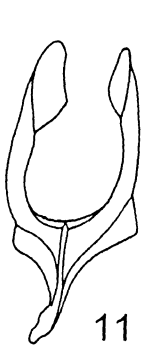
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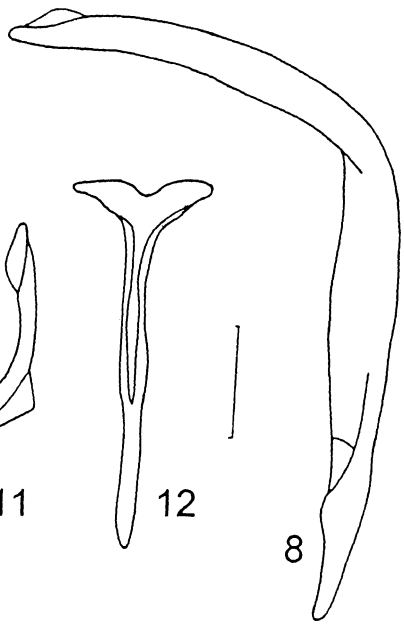
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low depression between antennal sockets; antennae inserted behind the middle (male) or at the basal third (female), rather robust, funicle with third to sixth segments barrel-shaped, thickest at about middle to apical third, sixth segment distinctly longer and larger than preceding, relative length (width) of segments from scape to club as: 70 (22): 40 (25): 27 (15): 20 (16): 18 (18): 20 (17): 23 (19): 85 (34).

Pronotum 0.73–0.95 times as long as broad, rather angulately rounded and broadest just before middle, thence almost straight and slightly narrowed to base; dorsal contour in lateral view slightly and evenly arcuate dorsally, dorsum with punctures larger than those on vertex, interstices coriaceous, each puncture bearing pubescence directed internally, punctures along basal margin each filled with plumose scale. Scutellum subtriangular with rounded apex, densely covered with white scales.

Elytra ovate, broadest at middle, combined length of scutellum and suture 1.35–1.39 times as long as breadth, dosal contour in lateral view evenly and weakly arcuate dorsally from scutellum to apex, slightly depressed transversely behind base; striae with large punctures on basal quarter, becoming narrower towards apex, intervals coriaceous, each with row of punctures, rugose on basal quarter.

Sterna with large punctures, metasternum behind middle between hind coxae almost bare, transversely wrinkled. Venter with first ventrite as punctate as metasternum, second to fifth ventrites with dense punctures and coriaceous at side and caudal margins.

Male aedeagus twisted in middle, thence weakly arcuate to apex in lateral view, almost parallel-sided to ostium, triangular at apex with rounded tip in dorsal view.

Hind wings reduced, about as long as elytra.

Length to base of rostrum: 1.8–2.0 mm.

Etymology. The present new species is named after the locality.

Comparison. The ramphine genus *Isochnus* comprises eight species on record from the Holarctic region and the ninth species is described in this paper. They are all small and very similar to each other, but are clearly identified by difference in the male aedeagus as stated by Palmén (1944), Smreczynski (1976), Tempère and Péricart (1989), and Anderson (1989), and the antennae also have good features for their taxonomic distinction as noted in the following key.

Isochnus kamchaticus sp. nov. is close to *I. flagellum* and *I. rufipes* in general shape, but is distinguished by the ovate elytra, straight sides of pronotum behind the angulated widest point, larger sixth segment of the antennal funicle, barrel-shaped segments in the funicle, and the male aedeagus is twisted in the middle.

A key is prepared based on my recent observations of six species in combination of the previous data noted by the above mentioned authors, though *Isochnus arcticus* and *I. goniophallus* are unknown to me. An unnamed species from Hokkaido is included in the key for convenience, which will be described elsewhere before long.

Key to Species of the Genus *Isochnus*

1(2) Antennal funicle with seven segments.
Isochnus foliorum (Müller, 1776)

2(1) Antennal funicle with six segments.

3(4) Elytra with humeri rounded, hind wings markedly reduced.
Isochnus arcticus (Korotyaev, 1976)

4(3) Elytra with humeri moderately prominent to prominent, hind wings about as long as elytra.

5(6) Aedeagus in lateral view markedly bent ventrally at apical one-fifth.
Isochnus goniophallus Anderson, 1989

6(5) Aedeagus in lateral view almost straight to slightly arcuate ventrally at least on apical half.

7(14) Antennal funicle with third to sixth segments subconical, each thickest at apex in general.

Figs. 4–12. *Isochnus kamchaticus* sp. nov., paratype, male. 4, dorsal view; 5, pronotum and elytra showing convexity, lateral view; 6, antenna; 7, 8, aedeagus, lateral views from left and right sides; 9, aedeagus, apical half, dorsal view; 10, aedeagus, basal half, dorsal view; 11, tegmen; 12, spiculum gastrale. (Scales: 0.5 mm for 4 and 5; 0.1 mm for 6–12).

8(9) Elytra elongate-oval, broadest at apical third, combined length of scutellum and suture 1.5–1.6 times as great as maximum width of elytra, flattened on basal two-thirds, dorsal contour in lateral view almost straight from pronotum to top of declivity on elytra; body 1.9–2.5 mm in length; male aedeagus parallel-sided to sides of gonopore, then triangularly tapered apically to narrow rounded tip.

Isochnus populicola (Silfverberg, 1977)

9(8) Elytra ovate, combined length of scutellum and suture not more than 1.4 times maximum width of elytra, broadest at or just behind middle, slightly to weakly convex dorsally, dorsal contour in lateral view evenly arcuate in entire length.

10(11) Antennal club 2.0–2.5 times as long as broad, second segment of funicle slightly longer than third; pronotum 0.75–0.81 times as long as broad; body 1.3–1.7 mm in length; male aedeagus gradually and weakly narrowed to sides of gonopore, then subtriangular at apex with weakly arcuate sides and narrowly rounded tip.

Isochnus angustifrons (West, 1916)

11(10) Antennal club 2.6–3.0 times as long as broad, second segment of funicle much longer than third; male aedeagus rounded at tip.

12(13) Pronotum more transverse, 0.60–0.75 times as long as broad; male aedeagus moderately laterally symmetrically expanded at about midlength, apex more or less tapered to narrowly rounded point

Isochnus rufipes (LeConte, 1876)

13(12) Pronotum less transverse, 0.75–0.75 times as long as broad; male aedeagus evenly and weakly narrowing apically from midlength, continuously and broadly rounded at apex. (Japan: Hokkaido)

Isochnus sp.

14(7) Antennal funicle with third to sixth segments barrel-shaped, second segment clavate, each thickest at midway between apex and middle.

15(16) Antennae with first segment of funicle slender, 2.7–3.0 times as long as broad, twice as long as second; femora variously infuscate with black; male aedeagus twisted at basal third, then slightly arcuate to apex in lateral view, almost of same width throughout or slightly narrowed apically, with broadly rounded apex in dorsal view.

Isochnus flagellum (Erichson, 1902)

16(15) Antennae with first segment of funicle clavate, less than twice as long as broad, about 1.7 times as long as second.

17(18) Pronotum rather angulately rounded and broadest just before middle, thence almost straight and slightly narrowed to base; fore and middle femora excepting bases dark brownish, hind femora excepting basal quarter blackish; male aedeagus weakly twisted at middle, then slightly vent ventrally to apex in lateral view, almost parallel-sided to ostium, then evenly attenuated and narrowly rounded at apex in dorsal view.

Isochnus kamchaticus sp. nov.

18(17) Pronotum evenly or slightly rounded at sides and broadest in or behind middle; femora entirely reddish brown; male aedeagus weakly twisted at basal third, then slightly arcuate to apex in lateral view, weakly narrowed apically from middle, triangular at apex in dorsal view.

Isochnus sorbi (Morimoto, 1984)

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カムチャッカと北千島で採集されたゾウムシ科甲虫

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千葉県立中央博物館が1996年と1997年に行ったカムチャッカと北千島の調査で採集したゾウムシ科甲虫は12種で，うち1種は未同定，9種は極東ロシアなどに広く分布するもの，1種はカムチャッカ特産亜種，1種はノミゾウムシ亜科の新種で *Isochnus kamchaticus* sp. nov. として記載し，この属に含まれる種の検索表を作成した．また，従来族や属の所属で混乱していた *Lepidosoma* または *Cyriophthalmus variegatus* を Leptopiini の *Lepesoma* に移し，*Lepesoma variegatus* comb. nov. とした．