

The Tribes Ottistirini and Viticiini (Coleoptera, Curculionidae) from the Island of Lanhsu, Taiwan

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Abstract Members of the tribes Ottistirini and Viticiini are recorded from the Island of Lanhsu, off the eastern coast of Taiwan. They are *Ittostira satoi* sp. nov. and *Aviticis lanhsuensis* gen. et sp. nov. Occurrences of the Ottistirini and Viticiini from the island are beyond the previous distributional ranges and that of Ottistirini is the northernmost record of this taxon.

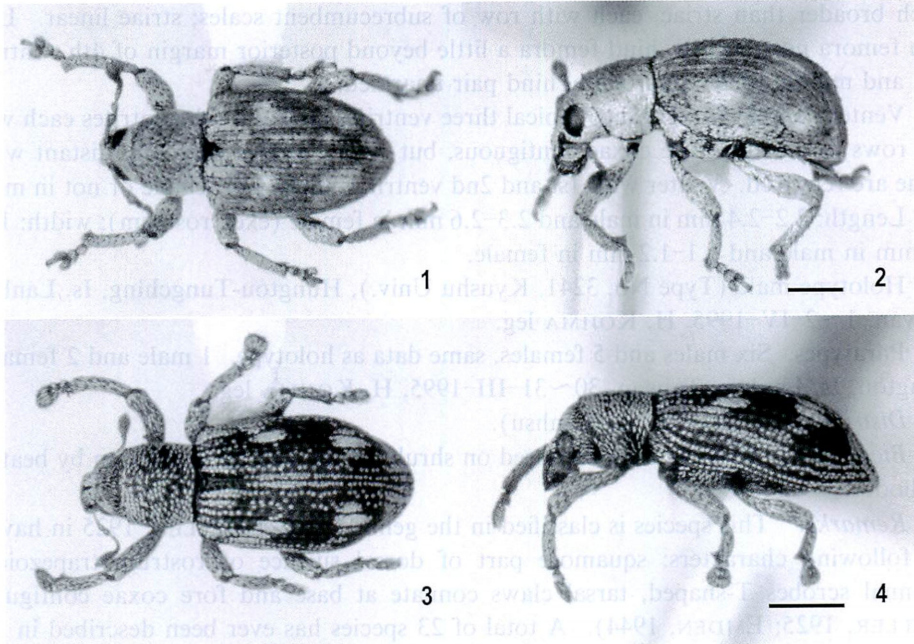
From their external similarity, *Viticis* LEA had long been classified in the Ottistirini (ZIMMERMAN, 1939; EMDEN, 1944, etc.) under the subfamily Brachyderinae until MORIMOTO (1983) recognized their essential differences. Viticiini, consisting of *Viticis* and its allied genus *Tivicis* MORIMOTO, look like broad-nosed weevils, but possesses the mouthpart and leg structures of the long-nosed weevil type. Due to the curious features, MORIMOTO (1983) distinguished them as a distinct subfamily. According to the recent catalogue, Ottistirini and Viticiini were classified in the Entiminae and Cyclominae, respectively (ALONSO-ZARAZAGA & LYAL, 1999). However, the arrangement of Viticiini as a tribe of Cyclominae are at best temporary since the present Cyclominae are rather heterogeneous and incompletely defined (KOJIMA, 2006).

Ottistirini are known to occur in the Indo-Malayan and Australo-Malayan Regions with great diversity in New Guinea except one genus known from Reunion and Mauritius islands of the Madagascar Region. Viticiini are widely known from the Pacific islands east of WALLACE'S Line except *Tivicis* known only from the Ryukyus, Japan: Guam in the north, Amboina in the west, Marquesas in the east and New Caledonia in the south.

In this paper, we will report the occurrences of the members of Ottistirini and Viticiini, which are represented as a new genus in the Island of Lanhsu, off the eastern coast of Taiwan. Discoveries of these weevils are noteworthy since the occurrences are beyond their previous distributional ranges and also interesting biogeographically featuring the island biota.

We dedicate this paper to the memory of the late Dr. Masataka SATÔ, who was an eminent Japanese coleopterologist and also devoted to clarify the beetle fauna of tropical Asia including Taiwan.

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Figs. 1-4. Habitus photographs of *Ittostira* and *Aviticis* spp. — 1, 2, *I. satoi* sp. nov.; 3, 4, *A. lanhsuensis* gen. et sp. nov. Scale: 0.5 mm.

Entiminae: Ottistirini

Ittostira satoi sp. nov.

(Figs. 1, 2, 5-16).

Male and female. Derm dark reddish brown, antennae and tarsi reddish brown, scutellum dull black; densely clothed above with yellowish to chocolate brown scales, variegated with vague patches of greyish scales on elytra, scales more or less coppery reflection, partly with faint green aeneous luster at sides, venter and legs.

Head with derm concealed by scaling; interocular area about half length of eye, nearly as broad as interscrobial area. Rostrum as long as broad, squamose part of dorsal surface subtrapezoidal, as long as broad. Antennae with scape not reaching posterior margin of eyes; funicle with 1st segment about twice as long as broad, 2nd a little shorter than 1st, 3rd to 7th subequal in length, $2/3$ times as long as 2nd; club ovate, 1.5 times as long as broad.

Prothorax a little broader than long (10 : 9), widest at middle; basal margin weakly bisinuate, a little broader than apex (6 : 5), which is weakly arcuate; dorsum densely scaled, coarsely and closely punctate, each puncture with subrecumbent scale. Scutellum pointed. Elytra 1.5 times as long as broad, broadest before middle; intervals even,

much broader than striae, each with row of subrecumbent scales; striae linear. Legs with femora not toothed, hind femora a little beyond posterior margin of 4th ventrite; fore and middle tibiae mucronate, hind pair unarmed.

Venter densely scaled except apical three ventrites, 3rd and 4th ventrites each with two rows of scales. Fore coxae contiguous, but coxal cavities narrowly distant when coxae are removed. Venter with 1st and 2nd ventrites inflated in female or not in male.

Length: 2.2–2.4 mm in male and 2.3–2.6 mm in female (excl. rostrum); width: 1.0–1.1 mm in male and 1.1–1.2 mm in female.

Holotype male (Type No. 3241, Kyushu Univ.), Hungtou-Tungching, Is. Lanhsu, Taiwan, 1~2-IV-1995, H. KOJIMA leg.

Paratypes. Six males and 5 females, same data as holotype. 1 male and 2 females, Hungtou, Is. Lanhsu, Taiwan, 30~31-III-1995, H. KOJIMA leg.

Distribution. Taiwan (Is. Lanhsu).

Bionomics. Weevils were captured on shrubs of the coastal vegetation by beating method.

Remarks. This species is classified in the genus *Ittostira* HELLER, 1925 in having the following characters: squamose part of dorsal surface of rostrum trapezoidal, antennal scrobes T-shaped, tarsal claws connate at base and fore coxae contiguous (HELLER, 1925; EMDEN, 1944). A total of 23 species has ever been described in this genus from the Philippines, the Sunda Isls. to New Guinea (HELLER, 1925; GÜNTHER, 1938). Among them, this species is similar to *I. simia* HELLER, 1925 from Luzon and *I. moluccana* HELLER, 1925 from Mysol in having the smaller sized body, less than 3 mm and the scaling partly with metallic luster, but the coloration of scales are different from each other. Scales are metallic green to yellowish green and black in *I. simia* and *I. moluccana*, whereas they are predominantly yellowish to chocolate brown with more or less coppery reflection in the present species.

Discovery of this species from the Island of Lanhsu is the northernmost record of this genus as well as the tribe.

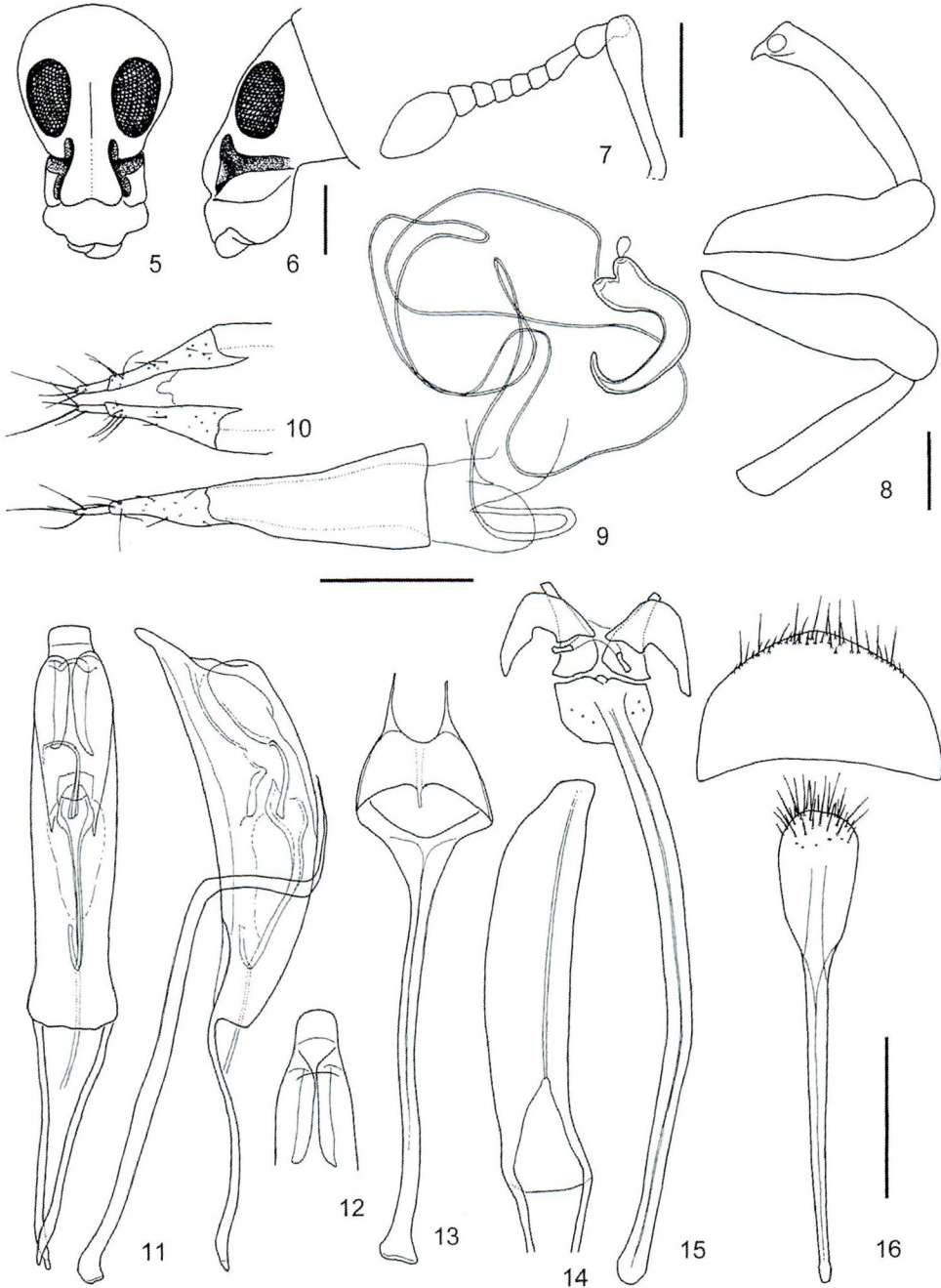
Cyclominae: Viticiini

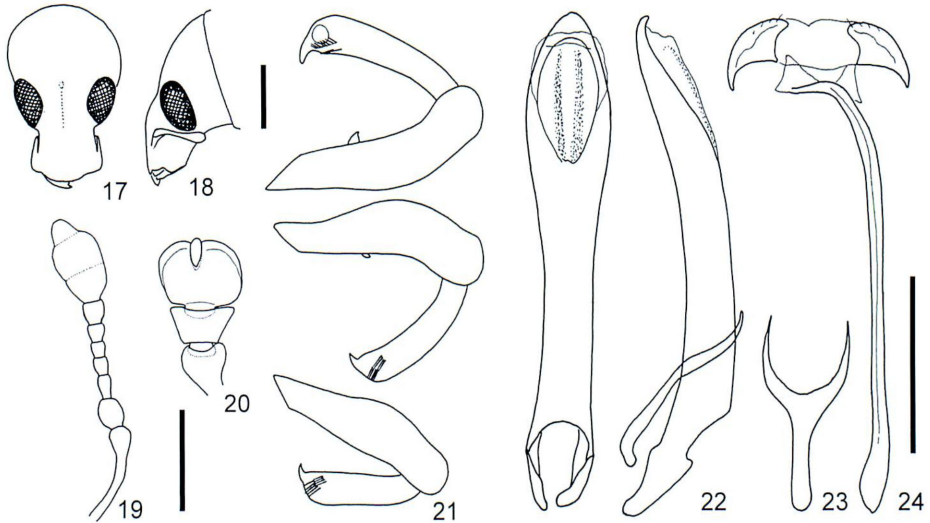
Aviticis gen. nov.

Type species: *Aviticis lanhsuensis* sp. nov.

Very similar to *Viticis* LEA and *Tivicis* MORIMOTO, but the structure of the tarsi is different and is distinguished from them by the following key:

Figs. 5–16. *Ittostira satoi* sp. nov. — 5, Head, frontal view; 6, head, lateral view; 7, antenna; 8, fore and hind femora and tibiae; 9, ovipositor, lateral; 10, distal part of ovipositor, dorsal; 11, aedeagus, dorsal and lateral views; 12, aedeagus, apex; 13, tegmen; 14, aedeagus, lateroventral view; 15, male 8th and 9th sternites; 16, female 8th and 9th sternites. Scale: 0.25 mm.





Figs. 17–24. *Aviticis lanhsuensis* gen. et sp. nov. — 17, Head, frontal view; 18, head, lateral view; 19, antenna; 20, fore tarsus; 21, femora and tibiae; 22, aedeagus, dorsal and lateral view; 23, tegmen; 24, male 8th and 9th sternites. Scale: 0.25 mm.

- 1(2) Tarsi 3-segmented, claw segment absent *Viticis* LEA.
 2(1) Tarsi visibly 4-segmented (cryptopentamerous), claw segment present.
 3(4) Claw segment distinct, exposed about half from notch of 3rd segment. Claws present, almost connate to form a single claw, but shortly furcated at apex....
 *Tivicis* MORIMOTO.
 4(3) Claw segment very small, hardly exceeding anterior margin of 3rd segment. Claw absent. *Aviticis* gen. nov.

The tarsal condition seen in the present new genus is likely an intermediate condition between those of *Tivicis* and *Viticis*. However, such a condition has never been known before in weevils and also possibly in beetles, and thus unique for this genus.

Etymology. *A* (not in Greek) + *viticis* (name of related genus).

Remarks. This genus is related to *Viticis* judging from the hypothesized character transformation series: the claw segment and the claws are complete as usual (*Tivicis*) and then derive to the condition that the claws or both of them are wanting (*Aviticis* and *Viticis*).

This genus was discovered from the intervening area of the known distribution of Vitiini between the Ryukyus (*Tivicis*) and the Pacific islands east of WALLACE'S Line including the Marianas (*Viticis*).

Aviticis lanhsuensis sp. nov.

(Figs. 3, 4, 17-24)

Derm dark brown, rostrum and legs reddish brown, antennae a little paler than legs, moderately densely scaled, with coppery to pearly luster, scales partly with greenish aeneous luster.

Head broadly concave between eyes, concavity extending to base of rostrum as longitudinal sulcus in middle; with dense punctures, each puncture with elongate, prostrate scale, scales becoming broader and more squamiform toward eyes; eyes slightly longer than shortest distance between them, separated from prothorax by distance about 2/3 of their length. Rostrum weakly expanded on sides, apex broadly and roundly projected at middle, rather closely punctate above and squamose only to slightly beyond antennae, rather densely squamose at sides along beneath scrobes. Antennae with scape nearly as long as basal five segments of funicle combined; funicle with 1st segment globose, 2nd a little shorter than 1st, 3rd to 6th subequal in length, 2/3 times as long as 2nd; club about twice as long as broad.

Prothorax somewhat broader than long (20 : 17), broadest at middle; apex slightly arcuate, base concave on either side of middle, apex nearly as broad as base; rather closely punctate, each puncture with squamose scale, which is irregularly replaced by fine seta on middle. Scutellum bare. Elytra 1.6 times as long as broad, broadest beyond middle; striae coarse, about half as broad as intervals, punctures each with fine seta; intervals gently convex; scales predominantly scattered, but condensed at sides from base beyond middle and in patches to form fascia above declivity and patch on 5th interval before middle. Legs with femora and tibiae rather densely clothed with elongate prostrate squamae; fore femora each with small tooth at basal 1/3, middle femora each with smaller tooth at basal 2/5, hind femora not toothed; tibiae uncinata, but not denticulate along inner edges, fore and middle tibiae weakly arcuate; 3rd tarsi as broad as its length and that of 2nd segment combined; claw segment recognized under high magnification, very small, not extending beyond anterior margin of 3rd tarsi, with seta at apex. Claw absent.

Venter sparsely punctate and setose except sides of meso- and metathoraces densely squamose. Prosternum with fore coxae separated about 1/3 of its width. Mesosternal process twice as wide as prosternal one.

Length: 2.1-2.2 mm (excl. rostrum); width: 0.9 mm.

Holotype, sex not determined (Type No. 3242, Kyushu Univ.), Hungtoun-Tungching, Is. Lanhsu, Taiwan, 1~2-IV-1995, H. KOJIMA leg.

Paratypes. 4 exs., same data as holotype. 1 ex., Hungtoun, 30~31-III-1995, H. KOJIMA leg.

Distribution. Taiwan (Is. Lanhsu).

Bionomics. Weevils were captured on shrubs of the coastal vegetation by beating method.

Remarks. This species resembles certain species of *Viticis* such as *V. guamae*

ZIMMERMAN, 1942 from Guam, but the fore and middle tibiae are not denticulate along the lower edge in apical half and the elytra are fasciated and patched by scales in the present new species. This species also differs from all the known *Viticis* species in having the unidentate fore and middle femora, which are bi- or tridentate at least in one pair in *Viticis* species described before.

Discussion

The Island of Lanhsu is volcanic to form part of the Luzon arc on the edge of the Philippine Sea plate with the Island of Lutaο, and geologically differs from the mainland of Taiwan on the Eurasian plate (HO, 1982, etc.). Reflecting such geological structure and possibly also ocean current, it has been pointed out that the biota of the island has a stronger influence on the biota of the Indo-Malaysian, Australo-Malaysian and Polynesian Regions, especially the Philippines than that of the Indo-Chinese Region including the mainland of Taiwan (KANO, 1935, 1936, etc.). Occurrences of the weevil tribes Pachyrhynchini and Celeuthenini, which have great diversity in the Philippines and New Guinea Regions, on the Islands of Lanhsu and Lutaο are well known as an example to feature the biota of these islands. In addition to the occurrences of such taxa, discoveries of the tribes Ottistirini and Viticiini from the Island of Lanhsu bring additional evidences featuring the aforementioned biota of the island.

要 約

小島弘昭・森本 桂: 台湾紅頭嶼産の Ottistirini 族とチビクチプトゾウムシ族。—— 紅頭嶼から Ottistirini 族の新種とチビクチプトゾウムシ族の新属新種が見つかったのでそれぞれ *Ittostira satoi* sp. nov. および *Aviticis lanhsuensis* gen. et sp. nov. として命名記載した。紅頭嶼からの *Ittostira* 属ならびに Ottistirini 族の発見は、分布の最北限記録となる。また、新属とした *Aviticis* 属は、チビクチプトゾウムシ族の既知の分布域の空白地帯から発見された。*Aviticis* 属は、付節第 5 節が認められるが爪を欠き、付節が隠 5 節である同族の *Tivicis* 属から、第 5 節と爪を欠き付節が 3 節となる *Viticis* 属への移行段階にあるような状態を示し、ゾウムシのみならず、おそらく甲虫においてもこれまで知られていなかった特徴を有する。

紅頭嶼や緑島は、地質的にも台湾本土とは異なり、フィリピン海プレート上にあることから、生物相も、とくにフィリピンをはじめ、マレー諸島、ニューギニア、ミクロネシアなどの地域の影響を強く受けていることが知られている。また、これらの島におけるカタゾウムシ族やヒメカタゾウムシ族の分布は、その特徴をよく示す例として有名である。今回の Ottistirini 族やチビクチプトゾウムシ族の紅頭嶼からの発見は、この特徴をさらに裏付ける根拠となる。

References

- ALONSO-ZARAZAGA, M. A., & C. H. C. LYAL, 1999. A World Catalogue of Families and Genera of Curculionidea (Insecta: Coleoptera) (excepting Scolytidae and Platypodidae). 315 pp. Entomopraxis, S.

C. P., Barcelona.

- EMDEN, F. VAN, 1944. A key to the genera of Brachyderinae of the World. *Ann. Mag. nat. Hist.*, (11), 11: 503–532, 559–586.
- GÜNTHER, K., 1938. Die von Prof. WOLTERECK auf den Nanoesa-, Talaud- und Sanghir-Inseln und auf Celebes gesammelten Rüsselkäfer mit zoogeographischen und faunenhistorischen Studien über die Stellung der Nanoesa-, Talaud- und Sanghir-Inseln, sowie über die Verbreitung einiger Curculionidentribus in der Wallacea. *Int. Rev. Hydrobiol. Hydrograph.*, 38: 1–53.
- HELLER, K. M., 1925. 4. Bestimmungsschlüssel aussereuropäischer Käfer. Curculionidae, Tribus n.: Ottistirini. *Wien. ent. Ztg.*, 42: 55–91, Taf. 1.
- HO, C. S., 1982. Tectonic Evolution of Taiwan: Explanatory Text of the Tectonic Map of Taiwan. 126 pp. Ministry of Economic Affairs, Republic of China, Taipei. (In Chinese.)
- KANO, T., 1935–'36. Some problems concerning the biogeography of Kôtôsho, near Formosa. *Geograph. Rev. Japan*, 11: 950–959, 1027–1055 (1935), 12: 33–46, 154–177, 911–935, 997–1020, 1107–1133 (1936). (In Japanese, with English summary.)
- KOJIMA, H., 2006. Association of Viticiini (Coleoptera: Curculionidae: Cyclominae) with *Ficus* (Moraceae). *Coleopt. Bull.*, 60: 42.
- MORIMOTO, K., 1983. The family Curculionidae of Japan. II. Viticiinae, subfam. nov. *Esakia, Fukuoka*, 20: 55–62.
- ZIMMERMAN, E. C., 1939. Revision of the Fijian Ottistirini (Coleoptera, Curculionidae). *Occ. Pap. B. P. Bishop Mus.*, 14: 301–312.
- 1942. Curculionidae of Guam. *B. P. Bishop Mus. Bull.*, (172): 73–146, 7 pls.
- 1963. Marquesas Island *Vitidis* (Coleoptera: Curculionidae, Brachyderinae). *Pacif. Ins.*, 5: 899–903.