

## Studies on the Chinese Lepturinae (Coleoptera, Cerambycidae) I. Genera *Nivelliomorpha* BOPPE, 1920 and *Houzhenzia* gen. nov.

Nobuo OHBAYASHI<sup>1)</sup> and Meiying LIN<sup>2)</sup>

<sup>1)</sup> Kamimiyada 1334–444, Miura City, Kanagawa, 238–0101 Japan

<sup>2)</sup> Institute of Zoology, Chinese Academy of Sciences,  
1#, Beichen West Road, Chaoyang, Beijing, 100101 China

**Abstract** The Chinese endemic genus, *Nivelliomorpha* is reconfirmed as a member of Lepturini, and *N. inequalithorax* (PIC, 1902) is newly recorded from Inner Mongolia, Ningxia and Shanxi of Chinese provinces. *Houzhenzia cheni* N. OHBAYASHI et LIN, gen. & sp. nov. is described from Shaanxi, China.

In the course of our collaborative study of Chinese cerambycid fauna, we found some remarkable taxa of Lepturinae in the collection of the National Zoological Museum of China, Institute of Zoology, Chinese Academy of Sciences. Here we would like to introduce them with taxonomic considerations as a series of “Studies on the Chinese Lepturinae”.

In the first part of the series, we treat the peculiar endemic Chinese genus *Nivelliomorpha*, and one new species under a new genus *Houzhenzia* gen. nov.

Before going into descriptive details, we wish to express our hearty thanks to Dr. Petr ŠVÁCHA of the Institute of Entomology, Czech Academy of Sciences for his useful suggestion and critical review of the manuscript. Our thanks are also due to Mr. Chang-chin CHEN of Tianjin, China, who always helps us in providing with useful specimens for our study.

Specimens examined including type materials are deposited in the following institutions or private collection (abbreviations shown in the text are as follows):

CCCC: private collection of Chang-chin CHEN, Tianjin, China.

EUMJ: Ehime University Museum, Matsuyama, Japan.

IZAS: Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

### Genus *Nivelliomorpha* BOPPE, 1920

(Figs. 1–2)

*Nivellia* (*Nivelliomorpha*) BOPPE, 1920, 86. Type species: *Leptura inequalithorax* PIC, 1902.

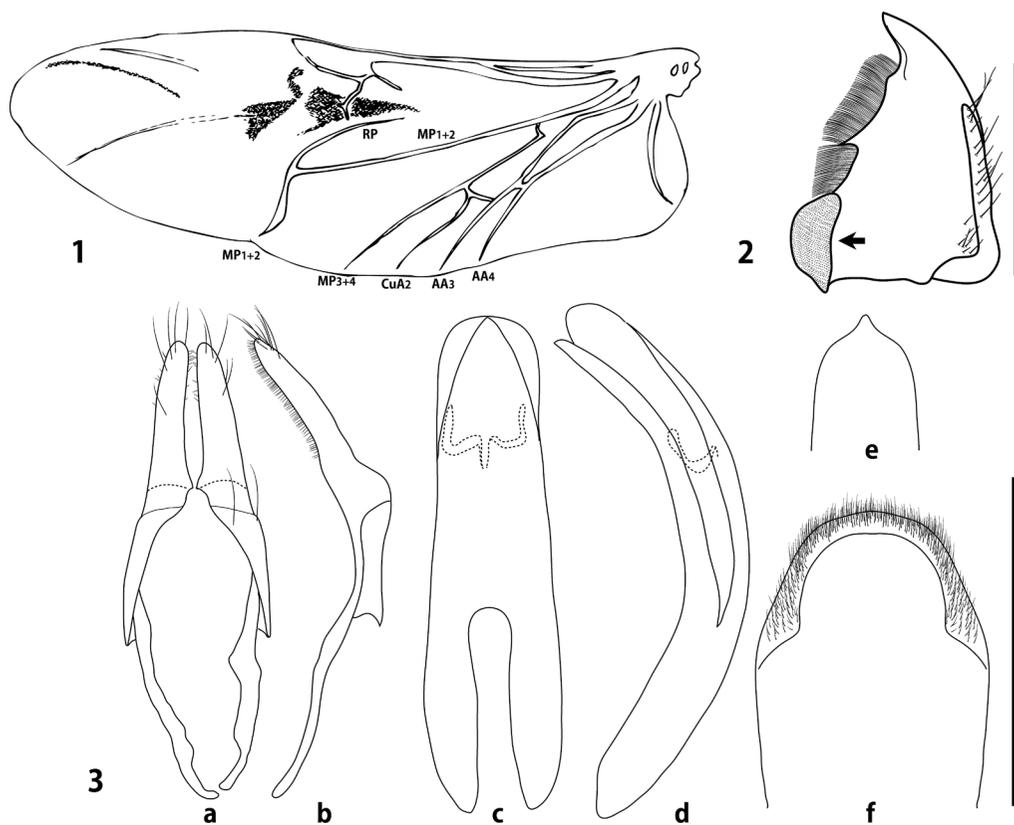
*Nivellia* (*Nivelliomorpha* [sic]): GRESSITT, 1951, 80. — LÖBL & SMETANA, 2010, 107.

*Nivelliamorpha* [sic]: HAYASHI & VILLIERS, 1985, 8; 1987, 18, text-fig. 5, pl. 3, figs. 11–12. — DANILEVSKY, 2010, 220.

*Nivelliomorpha*: JIANG & CHEN, 2001, 154.

**Notes.** *Nivelliomorpha* was established by BOPPE (1920) as a subgenus of the genus *Nivellia* to accommodate *Leptura inequalithorax* PIC, 1902. Later, GRESSITT (1951) transferred *Leptura impressicollis* PIC, 1920 to this subgenus. However it does not belong to *Nivelliomorpha*, and has been synonymized with *Acanthoptura spinipennis* FAIRMAIRE, 1894 by HAYASHI and VILLIERS (1985). As a result, this genus includes only one species.

HAYASHI and VILLIERS (1985, 1987) re-examined the PIC’s types and raised *Nivelliomorpha* to an independent genus with description of the generic features. They distinguished it from *Nivellia* by broader and shorter body, quite different structure of prothorax, features of head and elytra, etc.



Figs. 1–3. *Nivelliomorpha inequalithorax* (PIC, 1902). — 1, Left hind wing; 2, right mandible, dorsal view (arrow indicate mola); 3, male genitalia (a, tegmen, dorsal view; b, ditto, lateral view; c, median lobe, dorsal view; d, ditto, lateral view; e, ditto, antero-dorsal view; f, eighth abdominal tergite, ventral view). Scales for figs. 2 & 3 = 1 mm.

As indicated by HAYASHI and VILLIERS, the type species has few relations with the genus *Nivellia*. In addition, the abbreviated and dehiscent elytra with exposed abdominal tergites are quite anomalous in the Lepturinae. From this point of view, we examined some basic characteristics of the species. The stridulatory file of mesonotum is asymmetrically divided (the dividing line slightly slanted to left side), and  $CuA_2$  vein of hind wing venation (Fig. 1) is present though the unbranched  $MP_{3+4}$  vein is rather rare in the Lepturinae. Mandibles provided with distinct molae (Fig. 2). Head behind eyes provided with temples and distinctly constricted to form a neck. Front coxae are conical. Antennal insertion is not surrounded by eye. These features indicate that the genus surely belong to the subfamily Lepturinae. Also it belongs to the tribe Lepturini by the feature of prosternum without groove or depression in front of intercoxal projection.

The generic name, *Nivelliomorpha* has been erroneously spelled as *Nivelliamorpha* by subsequent authors except for JIANG and CHEN (2001).

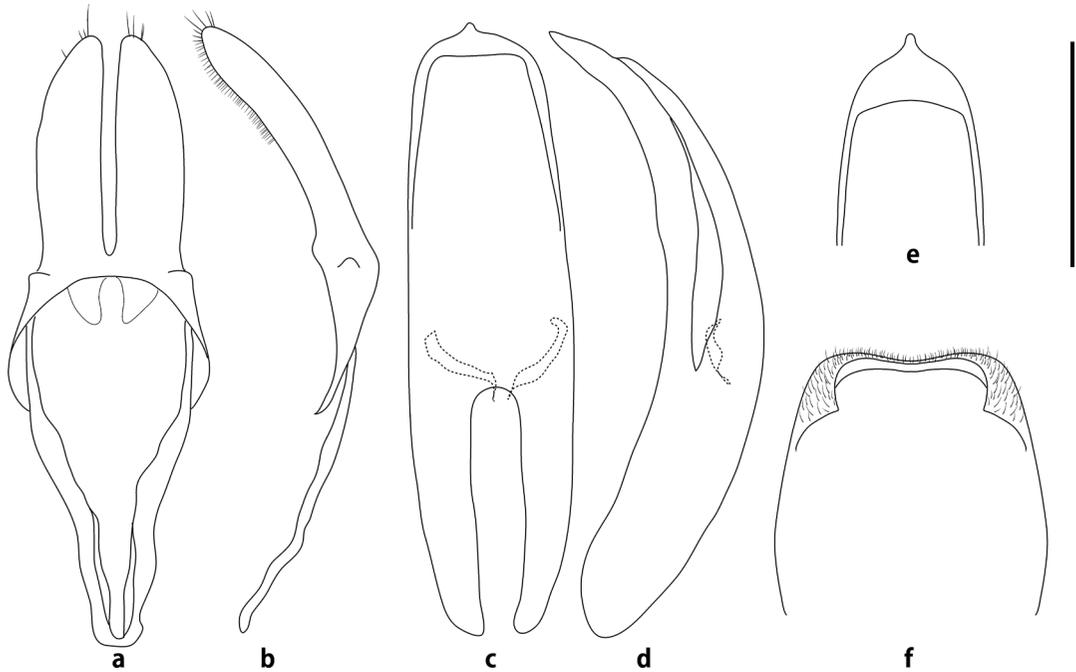


Fig. 4. Male genitalia of *Houzhenzia cheni* N. OHBAYASHI et LIN, sp. nov. — a, Tegmen, dorsal view; b, ditto, lateral view; c, median lobe, dorsal view; d, ditto, lateral view; e, ditto, antero-dorsal view; f, eighth abdominal tergite, ventral view. Scale = 1 mm.

### *Nivelliomorpha inequalithorax* (PIC, 1902)

(Figs. 3, 5–7)

*Leptura inequalithorax* PIC, 1902, 28. Type locality: Yug-Chan, China.

*Leptura inaequalithorax* [sic]: AURIVILLIUS, 1912, 221.

*Leptura inaequalithorax* [sic] var. *rufobasalis* PIC, 1939, 2.

*Nivellia* (*Nivelliomorpha*) *inaequalithorax* [sic]: BOPPE, 1920, 86. — GRESSITT, 1951, 80.

*Nivelliomorpha* [sic] *inequalithorax*: LÖBL & SMETANA, 2010, 107 (catalogue).

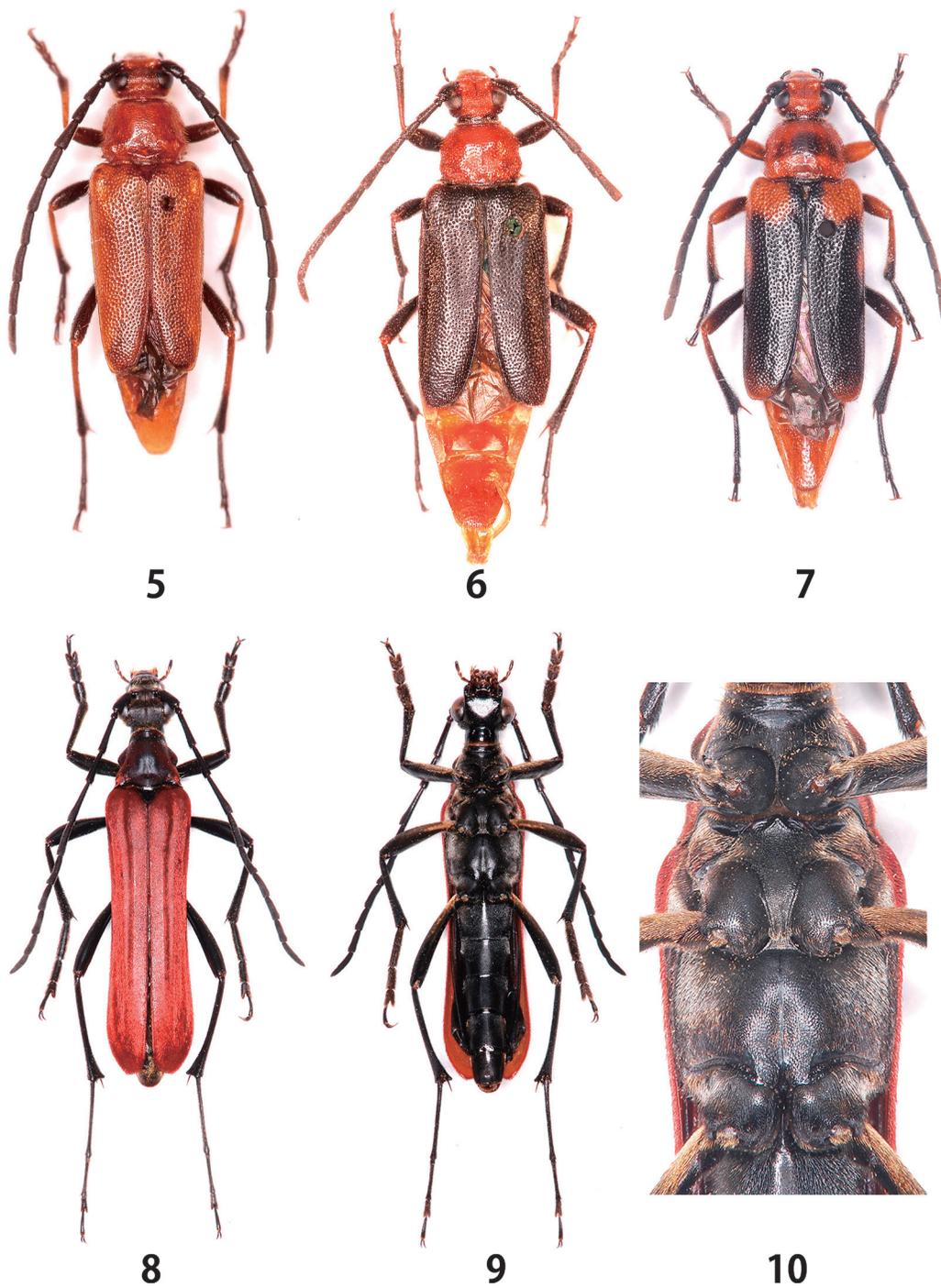
*Nivelliomorpha* [sic] *inaequalithorax* [sic]: HAYASHI & VILLIERS, 1985, 8. — HAYASHI & VILLIERS, 1987, 19, fig. 5; pl. 3, figs 11 & 12. — HUA, 2002, 219.

*Nivelliomorpha inaequalithorax* [sic]: CHIANG & CHEN, 2001, 154, fig. 87 in pl. 8, fig. 47 in pl. 14, fig. 54 in pl. 18.

Body rather small, short and wide. Color variable, head, prothorax and abdomen usually reddish; scutellum, meso- and metathorax, antennae and legs blackish; elytra red, black, or black with basal red area; pronotum sometimes darkened medially; legs usually black with partly reddish tibiae, but sometimes fore legs mostly reddish brown.

Head short, broader than long, obliquely declivous; vertex wide and gently concave between antennal insertions; tempora behind eyes roundly narrowed toward distinct neck. Antennae slightly exceeding elytral apex in male and reaching apical fourth in female; scape short and thick, as long as third segment; second segment small, as long as wide; fifth to tenth segments slightly dilated ecto-apically; relative lengths of segments as follows: male=33 : 10 : 33 : 32 : 44 : 48 : 51 : 50 : 52 : 46 : 69, female=32 : 10 : 32 : 29 : 38 : 38 : 38 : 35 : 36 : 33 : 40.

Prothorax 1.28 times wider than long, roughly trapezoidal with rounded anterior angles and angulate small lateral projections near base; sides lightly constricted in front of basal elliptical tubercles



Figs. 5–10. Habitus. — 5, *Nivelliomorpha inequalithorax* (Pic, 1902), male; 6, ditto, female; 7, ditto, female; 8, *Houzhenzia cheni* N. OHBAYASHI et LIN, sp. nov., paratype male, dorsal view; 9, ditto, ventral view; 10, ditto, sternum and legs.

on pronotal disc. Prosternum with coxal cavity closed behind.

Elytra 1.32 times wider than pronotum, 1.83 times as long as humeral width, dehiscent at apical third; sides slightly convergent apicad in male and nearly parallel-sided in female; apex with outer angle angulate and inner angle rounded; apical two tergites of abdomen exposed behind elytra.

Male with eighth abdominal tergite (Fig. 3-f) widest before middle, then narrowed to rounded apex. Tegmen (Fig. 3-a, b) not roofed, nearly rhombic shaped; lateral lobes slightly curved inwards, gradually narrowed apicad with gently rounded apex; apical area provided with a few long setae on outer sides, and ventral sides with short erect hairs throughout. Median lobe (Fig. 3-c, d, e) nearly as long as tegmen, gently curved in lateral view; dorsal plate convergent to apex, almost reaching the apex of ventral plate; ventral plate with apex projected; median struts nearly one-third as long as median lobe with separated base.

*Specimens examined.* 1 ♀ (IZAS), Xiaowutaishan, Hebei, alt. 1,200 m, 13–VI–1964, HAN Yin-heng leg.; 1 ♂ (IZAS), Baihuashan, Beijing, alt. 1,200 m, 26–V–1973; 1 ♀ (IZAS, IOZ(E)1906490), Mt. Daqingshan, Huhehaote (Hohhot), Inner Mongolia, China, 26–VI–2010, LIANG Shaoguang leg.; 2 ♂♂ (IZAS), Xiaokouzi, Helanshan, Ningxia, alt. 1,500 m, 27–V–1987, Ningxia Agricultural University leg.; 1 ♂ (IZAS, IOZ(E)1858392), 3 ♀♀ (IZAS), Xi'an, Shaanxi, China, host: *Populus canadensis*, 15–V–1976, ZHANG Xuezhong, ZHANG Yudai, LIU Naiping leg.; 1 ♀ (EUMJ), Tatung (Datong), Shanxi. 20–V–1940. T. OKADA leg.

*Distribution.* China: Hebei (including Beijing), Inner Mongolia (new province record), Ningxia (new province record), Shanxi (new province record), Shaanxi.

*Notes.* This species was first described by PIC (1902) from “Yug-Chan” (interpretation uncertain), China. PIC (1939) then added one variety from Peking (=Beijing). This variety is now thought to be a color variation, not a subspecies. JIANG and CHEN (2001) redescribed this species, and added new localities from Shaanxi. In spite of some new localities being recorded in this paper, the distribution area of this species is still restricted to Northeast China. No ecological information is available except for a host record of *Populus canadensis* on labels of three specimens.

The species name also has been misspelled even by PIC himself as “*inaequalithorax*”. However the correct spelling in the original description was “*inequalithorax*” and should be maintained (ICZN 1999 Art. 32.3).

#### Genus *Houzhenzia* N. OHBAYASHI et LIN, gen. nov.

Body moderately large, elongate. Head oblique, prolonged anteriorly, abruptly constricted behind eyes; last segment of maxillary palpus obliquely truncate with dorsal depression; eyes large, finely faceted, distinctly prominent, slightly notched above. Antennae rather short, reaching apical fourth of elytra in male, fifth segment longest, sixth to tenth more or less dilated ecto-apically, last segment subdivided. Prothorax campaniform with distinct lateral knob. Elytra nearly parallel-sided with shallow medial constriction; each apex rounded to the middle and obliquely truncated at inner half. Prosternum with coxal cavity widely open behind; prosternal process very narrow with small apical dilation. Mesosternal process with apex projecting over anterior metasternal projection. Legs long and rather slender; hind tibia with apex dilated, shorter than tarsal segments combined. Procoxae conical; mesocoxae oval; each metacoxa with inner half raised and quadrangular, bearing a small projection near trochanter. Stridulatory file asymmetrically divided.

*Etymology.* The generic name is derived from the locality of the type species of the genus.

*Type species.* *Houzhenzia cheni* N. OHBAYASHI et LIN, sp. nov.

*Notes.* This new genus is somewhat looks like the genus *Ephies* PASCOE, but it is clearly differen-

tiated by distinct lateral knob of pronotum, not emarginated elytral apex, posteriorly opened procoxal cavity, raised and quadrangularly developed metacoxa, and so on.

*Houzhenzia cheni* N. OHBAYASHI et LIN, sp. nov.

(Figs. 4, 8–10)

**M a l e.** Length from tip of mandibles to elytral apices 17.7–18.3 mm; width at elytral humeri 3.6–3.8 mm. Body black; maxillary palpi brownish; elytra dark red.

Head almost as long as pronotum, narrower than pronotal base at across eyes; labrum semielliptic with a few foveae bearing suberect golden hairs, and apical margin densely fringed with short bristles; clypeus trapezoidal with moderately large punctures on basal 3/4; frons declivous, quadrate with shallow triangular depression, shallowly punctured, with a fine median furrow extending to occiput through vertex, provided with fine golden pubescence intermixing with long fine grayish hairs; vertex rather deeply concave; occiput densely covered with shallow, small punctures intermixing with a few large setigerous foveae, transversely depressed behind antennal insertion, with golden recumbent pubescence; genae slightly shorter than half of eye diameter, moderately clothed with recumbent golden pubescence; tempora very short, roundly constricted to the neck, bearing dense suberect to recumbent golden hairs; eyes well developed, with marginal area surrounded by golden pubescence. Antennae moderately long, reaching apical fourth of elytra, covered with sub-recumbent short black hairs on first to fourth, and with fine, short pubescence on the remaining segments; each of seventh to last segment with two adjacent dents near the apex. Relative lengths of segments as follows: 50 : 10 : 69 : 60 : 72 : 60 : 52 : 46 : 42 : 40 : 55.

Prothorax convergent from base to apex with distinct lateral knobs at apical third, slightly (0.9 times) shorter than basal width, pronotum covered with dense minute punctures combined with fine golden pubescence; disc gently convex with slight apical constriction and shallow lateral depressions near base; apical margin densely fringed with short golden hairs, distinctly margined; basal margin twice as wide as apical margin, bisinuate and finely margined, hind angles produced, sharp but not covering elytral humeri. Scutellum tongue-shaped, covered with dense black recumbent hairs.

Elytra elongate, 3.4 times as long as together wide at humeri, gradually narrowed towards basal third and widened again to apical tenth, thence roundly narrowed to obliquely truncated apices, densely and minutely punctured with fine recumbent red pubescence arranged in different directions and longitudinally corrugated; disc longitudinally depressed from base besides humeri to beyond the middle with indistinct costae on both sides of depression.

Legs rather long and slender; femora gradually and not strongly thickened, clothed with moderately dense fine golden pubescence; tibiae and tarsi densely clothed with subrecumbent short hairs; hind tibiae suddenly thickened near apices; tibial spurs rather fine, moderately long; hind tarsi very slender and distinctly longer than tibiae, with first segment as long as remaining combined, third very shallowly bilobed.

Ventral body surface clothed with moderately dense fine golden pubescence; last abdominal sternite slightly depressed medially.

Eighth abdominal tergite (Fig. 4-f) widest at basal fourth; apical margin nearly truncate but shallowly and widely emarginate. Tegmen (Fig. 4-a, b) roofed; lateral lobes with basal halves nearly parallel-sided, then outer sides convergent apicad with gently rounded apex; apical area provided with a few short setae near the apex, and ventral sides with short erect hairs on apical halves. Median lobe (Fig. 4-c, d, e) stout, nearly as long as tegmen, gently curved in lateral view; dorsal plate truncate at the apex, not reaching the apex of ventral plate; ventral plate with apex distinctly pointed; median

struts nearly two-fifths as long as median lobe with separated base.

**F e m a l e.** Unknown.

**Etymology.** The specific epithet is dedicated to Mr. Chang-chin CHEN who kindly offered us all the specimens examined.

**Type series.** Holotype: ♂ (IZAS, IOZ(E)1858317), 3 km West of Houzhenzi, Zhouzhi, alt. 1,336 m, (N33°50.613'; E107°48.524'), Shaanxi, 1–VII–2008, YANG Xiaodong leg.

Paratypes: 1 ♂ (EUMJ, IOZ(E)1906197), Houzhenzi, Zhouzhi County, Quinling Mts., Shaanxi, China, 15–V–2008, HUANG Hao leg.; 1 ♂ (CCCC), same data.

**Distribution.** China (Shaanxi).

## 要 約

大林延夫・林 美英：中国産ハナカミキリ亜科の研究（第1報），*Nivelliomorpha* 属と新属 *Houzhenzia*。——*Nivelliomorpha* 属は、BOPPE (1921) によって、中国から記載された *Leptura inequalithorax* PIC, 1902 を基に、*Nivellia* 属（ハナカミキリ族）の新亜属として設立された。その後、HAYASHI & VILLIERS (1985, 1987) はこれを独立属として扱った。しかし、本属はハナカミキリの仲間としては特異な形態を示すことから、その所属を再検討した。その結果、種々の形態的特徴は、本属が正しくハナカミキリ族の一員であることを示した。なお、本属は中国特産で、北京を含む河北省と陝西省から知られていたが、新たに内蒙古自治区、寧夏回族自治区および山西省から記録された。また、中国陝西省西安周至县厚畛子（秦嶺山脈）で得られた1種を新属新種 *Houzhenzia cheni* N. OHBAYASHI et LIN, gen. et sp. nov. として記載した。

## References

- AURIVILLIUS, Chr., 1912. Cerambycidae: Cerambycinae. In JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, 22. 574 pp. W. Junk, Berlin.
- BOPPE, P., 1921. Coleoptera Longicornia. Fam. Cerambycidae. Subfam. Disteniinae- Lepturinae. In WYTSMAN, P. (ed.), *Genera Insectorum*, (178), i+121 pp.+8 pls. Desmet-Verteneuil, Bruxelles.
- DANILEVSKY, M. L., 2010. Additions and corrections of the new Catalogue of Palaearctic Cerambycidae (Coleoptera) edited by I. LÖBL and A. SMETANA, 2010. *Russian Ent. J.*, **19** (3): 215–239.
- GRESSITT, J. L., 1951. Longicorn Beetles of China. *Longicornia*, **2**: 667 pp.+22 pls.
- HAYASHI, M., & A. VILLIERS, 1985. Revision of the Asian Lepturinae (Coleoptera: Cerambycidae) with special reference to the type specimens' inspection. Part. I. *Bull. Osaka Jonan Women's Jr. College.*, (19–20): 1–75+15 pls.
- & ——— 1987. Revision of the Asian Lepturinae (Coleoptera: Cerambycidae) with special reference to the type specimens' inspection. Part. II. *Ibid.*, (22): 1–20+3 pls.
- HUA L. Z., 2002. List of Chinese Insects 2. 612 pp. Zhongshan (Sun Yat-sen) University Press, Guangzhou.
- JIANG S.-N. (=CHIANG S.-N.), & L. CHEN, 2001. Coleoptera, Cerambycidae, Lepturinae. Fauna Sinica, Insecta, **21**. 296 pp., 18 pls. Science Press, Beijing.
- LÖBL, I., & A. SMETANA, 2010. Catalogue of Palaearctic Coleoptera, **6**. 924 pp. Apollo Books, Stenstrup.
- PIC, M., 1902. Espèces ou variétés nouvelles provenant de China. *Mat. Étude longic.*, **4** (1): 28–32.
- 1939. Coléoptères nouveaux principalement de China. *L'Échange*, **55** (476): 2.

Manuscript received 7 February 2012;  
revised and accepted 14 March 2012.