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Sawflies (Hymenoptera: Tenthredinidae) from South Vietnam

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Haris, A.: *Sawflies (Hymenoptera: Tenthredinidae) from South Vietnam.*
Abstract: Four new species are described from South Vietnam: *Eusunoxa iridissima* spec. nov., *Edenticornia albotriangularis* spec. nov., *Asiemphytus brunneus* spec. nov. and *Neothrinax devriesi* spec. nov. They are compared to *Eusunoxa semipunctata* Smith and Saini, 2003, *Edenticornia birmana* Malaise, 1944, *E. formosana* Malaise, 1944, *E. megaocula* Wei, 2005, *E. tibialis* Wei, 1997, *E. zhejiangensis* Wei & Nie, 1998, *Asiemphytus vexator* (F. Smith, 1874) and *Neothrinax excavata* Haris, 2006. Male of *Athlophorus placidus* (Konow, 1898) is described.

Keywords: Hymenoptera, Tenthredinidae, Vietnam, new species

Introduction

This is the fourth paper of the series discussing the sawfly fauna of Vietnam (Haris, 2006, 2007 and 2009). In the first part, I published 32 new species from Vietnam (Haris, 2006). In the second part, the total material of the Acterberg-expeditions was studied and completed with the description of further 4 new species. In the third part 9 new species were described and data of further 14 species were published.

Methods and material

This small sawfly material contains 36 specimens of 15 species in which 4 species are new and described here. The sawflies were collected by Prof. Dr. Cees van Achterberg and Mr. Rob de Vries, both from the Natuurhistorisch Museum (Naturalis).

The material is deposited in the Nationaal Natuurhistorisch Museum (Naturalis),

Leiden with duplicates in the Institute of Ecology & Biological Resources, Hanoi (Vietnam).

For identification the following monographs were consulted: Malaise, 1945 and Saini, 2006. Papers, species descriptions of Singh, Saini, Wei , Nie, Muche, Togashi and Xiao were also checked. Regarding the huge number of papers on the Oriental Symphyta fauna published in the last 2 decades, these papers are not listed in the Reference part.

Abbreviation: RMNH: Official abbreviation of Nationaal Natuurhistorisch Museum Naturalis, Leiden.

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Brykella tamdaoensis Haris, 2008: Dak Lak, Chu Yang Sin N. P., Krong K'Mar, 840-940 m, 2-10 vi. 2007, 3 females, 11 males.

Canonias inopinus ssp. *rufiventris* Malaise, 1947: Dak Lak, Chu Yang Sin, nr. dam, c. 750 m, 3-9. vi. 2007, 1 male.

Darjilingia vietnamensis Haris, 2006: Dak Lak, Chu Yang Sin, nr. river, c. 750 m, 1-10 vi. 2007, 1 female.

Heptamelus devriesi Haris, 2007: Dak Lak, Chu Yang Sin, nr. dam, 800-940 m, 2-10. vi. 2007, 2 females.

Neostromboceros albicomus (Konow, 1901): Dong Nai, Cat Tein N. P., Dong trail, c. 100 m., 09. iv. – 19. v. 2007, 1 female, Dong Nai, Cat Tien N. P., Dong trail, c. 100 m., Bot. Garden, 13 - 20 v. 2005, 1 female.

Neostromboceros congener (Konow, 1901): Dak Lak, Chu Yang Sin N. P., Krong K'Mar, 740-940 m, 1-10 vi. 2007, 3 females.

Neostromboceros perroti Malaise, 1944: Vinh Phuc, Tam Dao, 1050-1175 m, 14-17. vi. 2007, 1 female.

Neothrinax dejongei Haris, 2008: Dak Lak, Chu Yang Sin, nr. River, c. 750 m, 1-10 vi. 2007, 2 males.

Nepala incerta (Cameron, 1876): Vinh Phuc, Tam Dao, 1000 m, 15-16. vi. 2007, 1 female.

Yuccacia phongdiensis (Haris, 2006): Dak Lak, Chu Yang Sin N. P., Krong K'Mar, 840-940 m, 2-10. vi. 2007, 1 male. Penis valve in Fig. 7.

Athlophorus placidus (Konow, 1898)

(Fig. 7C)

Description of the male. According to SAINI 2006 the male is unknown, NIE and WEI 2004 had already recorded it from China.

Material.— male. (RMNH: " S. Vietnam, Dak Lak, Chu Yang Sin N. P., nr dam 840-940 m, Mal. Traps., 2-10. vi. 2007, C. van Achterberg and R. de Vires")

Male Fig. 7C: Head black. Inner orbit white, clypeus brownish white, labrum white with brownish white middle spot. Antenna black, scape with white, narrow apical ring. Thorax black, narrow pronotal margin, hind margin of sunken part of mesonotal lateral lobes, and narrow hind margin of metanotum and metascutellum white, tegula brownish white. Legs black, white: apical fifth of front femur in ventral view, ventral side of front tibia, basal quarter of middle tibia. Abdominal sternites 1-4, small spots on middle part of hind margines of tergites 2-3, tergite 4 entirely, narrow hind margine of tergite 8 and tergite 9 white, abdomen otherwise black. Wings hyaline, radial cells entirely, entire upper margin of first and second cubital cell, and sligthly upper side of base of third cubital cell brownish infumate. Stgima brown, costa, subcosta and venation black. Vertex and temples sporadically and shallowly punctured, shiny. Frontal area densely and deeply punctured, sligthly shiny. Inner orbites with shallow undefined surface sculpture, matt. Antenna long, about as long as head and thorax combined, including propodeum. Inner margins of eyes straight and parallel. Gena linear. Clypeus widely and slightly emarginated. Clypeal emargination about 1/3x as deep as clypeal median length. Ratio of antennal segments: 10 : 7 : 25 : 21 : 16 : 13 : 10 : 9 : 8. OOL : POL : OCL: 11 : 5 : 19. Postocellar furrow reaches hind margin of head, gently arched. Vertex long, length: maximal width as 19 : 16. Postoccipital carina well developed but only below

Fig. 1: ***Eusunoxa iridissima*** **spec. nov. paratype (photo: Haris)**

Fig. 2: ***Eusunoxa iridissima*** **spec. nov. paratype, face (photo: Haris)**

Fig. 3: ***Edenticornia albotriangularis*** **spec. nov. (photo: Haris)**

Fig. 4: ***Asiemphytus brunneus*** **spec. nov. (photo: Haris)**

temples, temples, vertex without hind carina. Frontal area raised above head, not carinated. Cubital and middle cells of hind wings opened. Anal cell of hind wings petiolate, nervellus join to petiole of anal cell. Mesonotal lobes with dense, moderately deep punctures, sligthly shiny. Mesoscutellum with dense and moderately rough, rather deep punctures, hardly shiny. Mesoscutellar appendage horizontally wrinkled with central deep depression. Metascutellum with 2 deep punctures. Upper half of mesopleuron very roughly, deeply punctured, matt. Lower half moderately deeply and moderately densely punctured, shiny. Prepectus missing. Mesoscutellum blunt with blunt horizontal and longitudinal carina.Mesopleuron rather flat. Basal three abdominal tergites smooth and shiny, others with fine coriaceous surface sculpture. Ratio of hind tarsal segments: 41 : 14 : 7 : 4 : 9. Claws without basal lobe, inner tooth sligthly shorter than apical. Length: 7.9 mm.

Eusunoxa iridissima **spec. nov.**
(Figs.: 1, 2, 7D, 8C, 9C, 9F and 10C)

Material.— Holotype, male. (RMNH: " S. Vietnam, Dak Lak, Chu Yang Sin N. P., nr. River, c. 740 m, 1-10. vi. 2007, C. van Achterberg and R. de Vires"). Paratypes: 1 male Dak Lak, Chu Yang Sin N. P., nr. River, c. 740 m, 1-10. vi. 2007, C. van Achterberg and R. de Vires" in the entomological collection of Somogy County Museum), 2 males, Dak Lak, Chu Yang Sin N. P., nr. River, 740- 900 m, 2-10. vi. 2007, C. van Achterberg and R. de Vires"), 1 female, Dong Nai, Cat Tien N. P., c. 100 m., Bot. Garden, Mal. Traps.,13 - 20 v. 2005.

Male. Head and thorax black with strong blue and violet metallic lustre. White: labrum, clypeus, 2 spots above antennae, hind margin of pronotum, cenchri and palpi. Antenna black, scape dominantly white. Apical three antennal segments with white organs. Coxae white with basal brown spot. Trochanters white. Femora 1 and 2 dorsally brown, ventrally white. Apical 2/3 of hind femora black, basal third white. Fore tibia white, middle tibia white below and black above, hind tibia black with white basal third. Fore and middle tarsi white with brown apical ring, apical 3 segments of middle tarsus brown. Hind tarsus black. Abdomen brownish black with purplish iridescence.Wings subhyaline. Costa, subcosta, stigma and venation brownish black. Fore wing with 4 cubital cells, basalis and first recurrent vein subparalell, basalis and cubitus meets in one point on subcosta, anal cell with strongly oblique cross vein, first and second recurrent vein meets in different cells. Hind wing with closed radial and middle cells. Cubital cell opened. Anal cell of hind wing petiolate, nervulus meet petiole of anal cell. All parts of head strongly, deeply and densely punctured, narrow areas between punctures strongly shiny. Clypeus moderately densely punctured with large punctures. Labrum smooth and shiny. Eye large, inner margins of eyes gently convergent, subparalell. Gena linear. Head without postoccipital carina. Head contracted behind eyes. Anterior margin of clypeus truncate. Ratio of antennal segments: 6 : 5 : 20 : 15 : 13 : 10 : 9 : 8 : 10. OOL : POL : OCL: 4 : 4 : 5. Frontal area gently sunken (otherwise not marked). Supraantennal pits missing (not visible). Mesonotal lobes moderately densely, moderately deeply, not uniformly punctured, shiny. Mesoscutellum, mesoscutellar appendage and metascutellum moderately densely and deeply punctured, shiny. Mesopleuron very finely and densely punctured with minute punctures, shiny. Prepectus gently curved. Mesosternum sporadically punctured, nearly smooth and shiny. Mesoscutellum and mesopleuron flat. Abdominal tergites 1 and 2 smooth and shiny, other tergites with fine surface sculpture, shiny. Ratio of hind tarsal segments: 43 : 9 : 4 : 3 : 8 (without claw). Length of hind basitarsus : length of inner hind tibial spur: 43 : 12. Hind basitarsus with longitudinal white channel, not flattened. Claws without basal lobe (Fig 10C). Penis valve in Fig. 7D. Length: 5.9 mm.

Individual variations. In some specimens, spots above antennae become confluent and form a V-shaped pattern (Fig. 2). In some females, large white spots placed on both sides of triangular membraneous patch of propodeum. Area behind cecnhri, very narrow hind margin of mesothorax may also be white. Females similar to males (Fig. 1). Number of serrulae: 14, serrulae in Fig. 8C. Sawshetah in Figs 9C and 9F.

This species is unique in genus *Eusunoxa* Enslin 1911, since there is no other species with purple and blue metallic luster (SMITH and SAINI 2003, WEI 1997a) but only few undescribed Chinese species (Wei, pers. comm.). In the oriental revision of Smith and SAINI (2003) this species runs to *Eusunoxa semipunctata* Smith and Saini, 2003. *E. semipunctata* has head and thorax without any metallic lustre furtheremore females has orange thorax and abdomen. The male and female are very different, male has black head and thorax, female has black head but orange thorax. The new species has head black with strong bluish and violet metallic lustre and the female is similar to the male. The specific name refers for the metallic iridescence of head and thorax.

Edenticornia albotriangularis **spec. nov.**
(Figs. 3, 8B, 9A, 9D and 10A)

Material.— Holotype, female. (RMNH: " S. Vietnam, Dak Lak, Chu Yang Sin N. P., nr dam 840-940 m, Mal. Traps., 2-10. vi. 2007, C. van Achterberg and R. de Vires").

Female (Fig. 3). Head black (withouth bluish or metallic lustre) including palpi and mandible. Clypeus and labrum white. Antenna black, scape with narrow white ring. Thorax black, white: dorsal margin of pronotum, parapterum and cenchri. Coxae, femora and tarsi entirely black. Trochanters white, tibiae white with longitudinal, apically widening black line from base to apex of tibiae. Abdomen black, first tergite (propodeum) with wide apical white margin (about 1/3x as wide as length of propodeum), second abdominal tergite with large white triangle standing on hind margin and reaching anterior margin, 3rd tergite with small white triangle reaching middle of segment, 7-9 tergites with white, longitudinal, wide spot forming a continuous central band on these segments. Stigma, costa, subcosta and venation dark brown, wings subinfumate. Head densely and moderaterly deeply punctured all over (including frons, temples and vertex), moderately shiny. Supraantennal pits missing, frontal area not marked. Postoccipital carina visible only behind genae. Malar space extremly narrow, linear. Head narrowed behind eyes. Clypeus widely and very slightly emarginated, clypeal emargination about 0.2x as deep as clypeal median length. Ratio of antennal segments: 10 : 8 : 29 : 25 : 20 : 15 : 12 : 11 : 13. OOL : POL : OCL: 12 : 7 : 21. Vertex longer than wide as 4: 3. Eyes large, inner margins straight and parallel. Mesonotum densely, moderately deeply punctured, moderately shiny. Mesoscutellum moderately densely and moderately deeply punctured, shiny. Mesoscutellar appendage smooth and shiny. Metascutellum shiny with few, moderately deep punctures. Mesopleuron finely and very densely punctured, matt. Mesosternum with small, dense punctures, shiny. Abdominal tergites 1-3 smooth and shiny, others with fine coriaceous surface sculpture, shiny. Ratio of hind tarsal segments: 33 : 13 : 7 : 3 : 9. Inner tooth of claws smaller than apical (Fig. 10A). Number of serrulae 9. Each serrulae with one outstanding large tooth. Serrulae 4-6 in Fig. 8B. Sawsheath in Figs. 9A and 9D. Length: 8.0 mm.

Six species are known in this genus, namely, *Edenticornia birmana* Malaise, 1944, *E. formosana* Malaise, 1944, *E. megaocul*a Wei, 2005, *E. tibialis* Wei, 1997 and *E. zhejian-*

Fig. 5: ***Neothrinax devriesi*** **spec. nov. in lateral view (photo: Haris)**

Fig. 6: ***Neothrinax devriesi*** **spec. nov. in dorsal view (photo: Haris)**

gensis Wei & Nie, 1998. (MALAISE 1944, WEI and LIN 2005, WEI 1997, WEI and NIE 1998). Differences:

E. birmana Malaise has head behind the eyes parallel, only the first tergite with triangular membraneous blotch, only base of tibiae are white, tarsi are partly white, clypeus and labrum are black. The new species has head clearly but moderately contracted behind eyes, tergites 2 and 3 with triangular membraneous spot, tibiae are dominantly white, tarsi are entirely black, clypeus and labrum are entirely white.

E. formosana Mal. has head strongly contracted behind eyes, 3rd and 4th tergites without triangular spot only with white margin, sternites with broad white band, basal ¾ of all femora are white. In the new species, head only moderately contracted behind eyes, abdominal tergites 2-3 with large white triangular spot, femora are entirely black, sternites without broad white margin.

E. megocula Wei has only 7 serrulae, teeth of serrulae small without prominent, large frontal tooth. The new species has 9 serrulae, each serrulae with outstanding, large tooth.

E. tibialis Wei has base of femora white, head strongly narrowed behind the eyes, lancet with 6 serrulae, basal tergites without triangular spots, serrulae without large prominent tooth. In the new species, head moderately contracted behind eyes, abdominal tergites 2-3 with large white triangular spot, femora entirely black, lancet with 9 serrulae, each serrulae with outstanding, large tooth.

E. zhejiangensis Wei and Nie has serrulae minute, without large prominent tooth, The new species has each serrulae with outstanding, large tooth.

The densely punctured head and thorax, the very short occipital carina and serrulae make the species distinct from other known species of the genus.

Asiemphytus brunneus **spec. nov.**
(Figs.: 4, 7B and 10D)

Material.— Holotype, male. (RMNH: " S. Vietnam, Dak Lak, Chu Yang Sin N. P., nr. river, c. 740 m, 1-10. vi. 2007, C. van Achterberg and R. de Vires")

Male (Fig. 4). Head including labrum, clypeus and antenna black. Mandible and palpi brown. Apical four antennal segments witish brown in ventral view. Thorax black, anterior parts of middle and lateral lobes with large, shiny brown spot. Pronotum shiny brown. Cenchri yellowish white. Four anterior coxae brown with white apex. Trochanters white with small brown spots. Fore femora brown, apical quarter in ventral view white. Fore tibia brown above and white below. Middle femur dark brown. Middle and hind tibia black with white basal third. All tarsi black. Hind femur black. Abdomen shiny dark brown. Wings hyaline, costa, subcosta, stigma and veins dark brown. Number of cubital cells 3, basalis and cubital veins meet at subcosta in one point. Basalis and first recurrent vein parallel. Anal cell with perpendicular crossvein. Hind wing with closed radial cell without marginal vein, cubital cell opened, middle cell closed. Anal cell petiolate, nervellus reaches petiole. Head very minutely, very shallowly punctured all over, strongly shiny. Clypeus minutely and very densely punctured, matt. Frontal area rounded, slightly oval, bordered by deep furrows all around. Postocellar furrows short, deep and parallel not reaching hind margin of head. Head behind eyes subparallel. Postoccipital carina missing. Ratio of antennal segments: 7 : 9 : 21 : 16 : 15 : 10 : 9 : 8 : 9. Antennal segments sligthly compressed, apically gently dilated. Antennal length subequal with

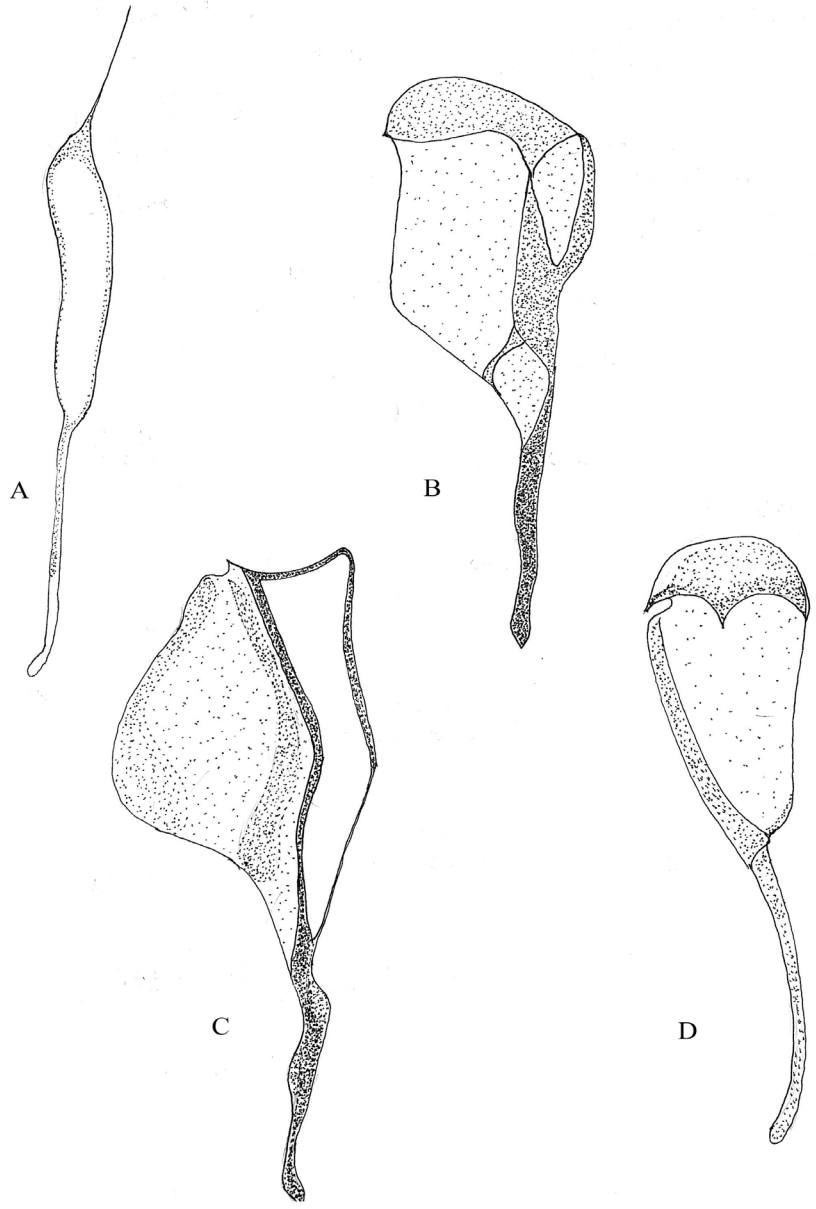

Fig. 7: Penis valve of *Yuccacia phongdiensis* (Haris, 2006) (A), *Asiemphytus brunneus* spec. nov. (B), *Athlophorus placidus* (Konow, 1898) (C), *Eusunoxa iridissima* spec. nov. (D)

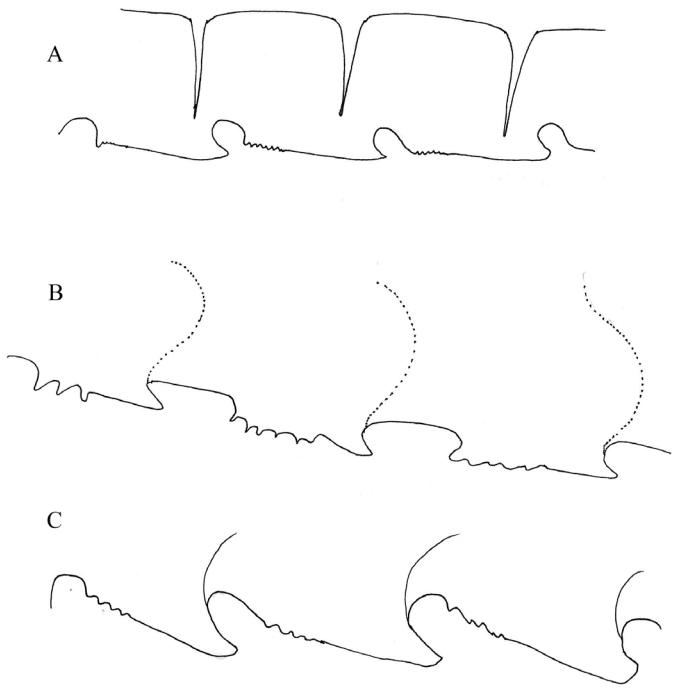

Fig. 8: Serrulae 4-6 of *Neothrinax devriesi* spec. nov. (A), serrulae 4-6 of *Edenticornia albotriangularis* spec. nov. (B), serrulae 5-7 of *Eusunoxa iridissima* spec. nov. (C)

distance from head till cenchri (little shorter than head and thorax combined). OOL : POL : OCL: 11 : 5 : 13. Clypeus roundly and very deeply emarginated. Clypeal emargination 0.7x as deep as middle length of clypeus. Inner margines of eyes straigth, sligthly convergent. Pronotum, mesonotum, mesopleuron and mesoscutellum very shallowly, minutely and moderately densely punctured, shiny. Separation of mesoscutellar appendage hardly visible, these 2 parts are rather confluent. Metascutellum shiny with few deep punctures. Prepectus absent, mesoscutellum flat. Propodeum and anterior 2/3 of second abdominal tergite smooth and shiny. Other tergites with dense, moderately large and moderately deep punctures, moderately shiny. Apex of inner anterior tibial spur bifurcate (visible only in larger magnification). Ratio of hind tarsal segments: 28 : 8 : 4 : 2 : 10 (without claw). Length of hind basitarsus: length of inner hind tibial spur: 28 : 6. Claw with very small basal lobe. Inner tooth smaller than apical (Fig. 10D). Front claw simple. Penis valve in Fig. 7B. Length: 6.7 mm.

The closest species is *Asiemphytus vexator* (F. Smith, 1874) having pedicell longer than wide (TAKEUCHI 1929). However, *A. vexator* has apical antennal segments white, legs black, abdomen black and larger, 10-11 mm, the new species has antenna without white apex, legs richly coloured with white, abdomen brown and smaller, only 6.7 mm. Genus *Asiemphytus* are knwon from Japan (TAKEUCHI 1929), Taiwan (TAKEUCHI 1933), Russia (CONDE 1935) and China (WEI1997b,c, WEI and HUANG 2000).

Neothrinax devriesi **spec. nov.**
(Figs.: 5, 6, 8A, 9B, 9E and 10B)

Material.— Holotype, female. (RMNH: " S. Vietnam, Dong Nai, Cat Tien N. P., c. 1000 m, 13-20. v. 2005, Bot. Garden, Mal. Traps 14-19., C. van Achterberg and R. de Vires")

Female (Figs. 5 and 6). Antennal flagellum black, scape white with small basal brown spot, basal half of pedicel white, apical black. Head black, clypeus, labrum, basal spot of mandible white, mandible and palpi brown. Thorax black, white: V-shaped lateral margin of mesonotal anterior lobe, most of pronotum except one lateral irregular brown spot, elongated spot on hind margin of mesopleuron, wide hind longitudinal margin of katepimeron. Legs black, white: apices of coxae, hind trochanter, ventral 2/3 of anterior femur, apices of middle and hind femora, anterior and middle tibiae (except black longitudinal line on ventral side), basal third of hind tibia in dorsal view. Abdomen fulvous, basal 2 abdominal segment black with narrow white margin, third abdominal tergite with middle basal black spot. Ovipositor fulvous, Basal part with black spot, apex black. Wings hyaline, stigma, costa, subcosta and veins brownish black. Thorax dominantly smooth and shiny, head, mesonotal lobes and mesopleuron with sporadic, minute and shallow punctures, shiny. Prepectus missing. Abdominal tergites 1-3 smooth and shiny, other tergites with shallow, coriaceous surface sculpture, shiny. First cubital crossvein missing, number of cubital cells 3. Basalis and first recurrent veins convergent. Basalis and cubital veins reach subcosta close to each other. Hind cubital and middle cells closed. Anal cell of hind wing with very short petiole, nervellus reach apex of anal cell. Ratio of antennal segments: 8 : 8 : 22 : 16 : 13 : 9 : 9 : 7 : 10. Antenna about as long as

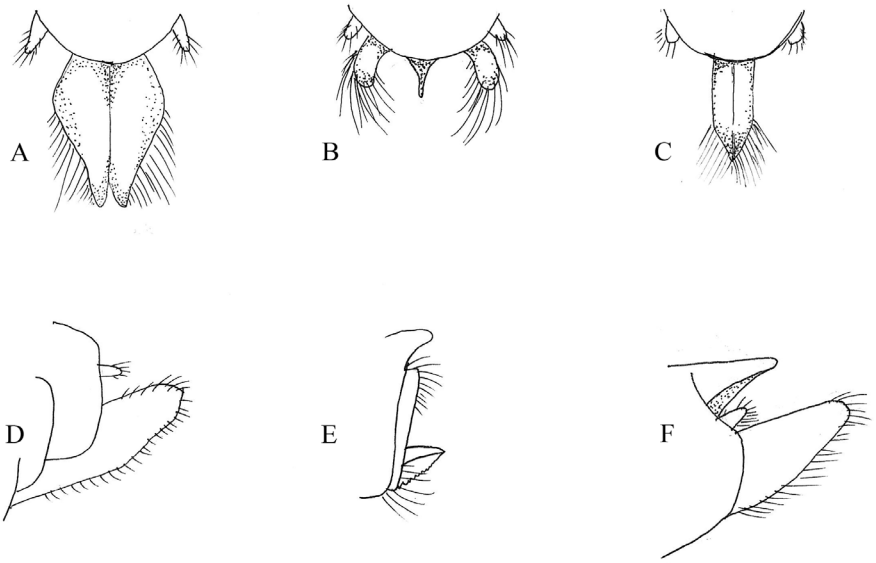

Fig. 9: Sawsheath in dorsal view of *Edenticornia albotriangularis* spec. nov. (A), *Neothrinax devriesi* spec. nov. (B), *Eusunoxa iridissima* spec. nov. (C), sawsheath in lateral view of *Edenticornia albotriangularis* spec. nov. (D), *Neothrinax devriesi* spec. nov. (E), *Eusunoxa iridissima* spec. nov. (F)

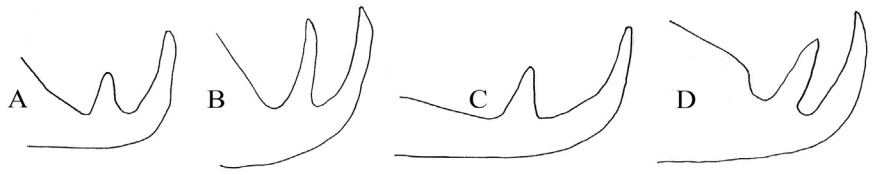

Fig. 10: Claws of *Edenticornia albotriangularis* spec. nov. (A), *Neothrinax devriesi* spec. nov. (B), *Eusunoxa iridissima* spec. nov. (C), *Asiemphytus brunneus* spec. nov. (D)

head and thorax combined (without propodeum). OOL : POL : OCL: 11 : 10 : 14. Occipital carina very short, restricted to behind gena. Frontal area opened above, slightly sunkened, outlined with blunt crests, supraantennal pits large rounded. Eyes large, gena linear, hind orbit narrow. Inner margin of eyes nearly straight, slightly convergent, nearly parallel. Clypeus widely, roundly-subacutelly emarginated. Clypeal emargination about 1/3x as deep as clypeal median length. Ratios of hind tarsal segments: 30 : 10 : 5 : 3 : 9. Length of hind basitarsus : length of inner hind tibial spur: 30 : 9. Inner tooth of claw about as long as apical, basal lobe minute (Fig. 10B). Sawsheath very deeply emarginated (Figs. 9B and 9E). Number of serrulae 12. Serrulae 4-6 in Fig. 8A. Length: 7.8 mm.

In the key of HARIS 2006, the new species runs to *Neothrinax excavata* Haris, 2006 described from Borneo. Both species are unique in genus *Neothrinax* Enslin, 1912 having extremely deeply emarginated sawsheath. *Neothrinax excavata* Haris, 2006 has 3rd-7th tergites brown, abdomen otherwise dirty white. The new species has abdomen fulvous, basal 2 abdominal segment black with narrow white margin, third abdominal tergite with middle basal black spot. Furthermore, in *N. excavata*, mesonotal lobes are moderately densely punctured, in the new species it is very sporadically punctured with small shallow punctures, nearly smooth and shiny. *N. excavata* is larger, 10.5 mm.

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