

**NEW ADDITIONS OF GENUS *SILESIS* CANDEZE
(INSECTA: COLEOPTERA: ELATERIDAE:ADRASTINAE)
TO THE INDIAN FAUNA**

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ABSTRACT. - Four new species of genus *Silesis* Candze, *S. equalis*, *S. carinoscutellis*, *S. meghalayaensis* and *S. coactus*, are described, bringing the total to 56 species for the genus. A modified key of Platia & Schimmel (1993) is provided for the identification of the new species.

KEY WORDS. - *Silesis*, Coleoptera, Elateridae, Adrastinae, India, taxonomy.

INTRODUCTION

The genus *Silesis* was first described by Candze (1863) based on seven species. *Silesis hilaris* was designated as its type species by Hyslop (1921). While describing the species of *Silesis* Candze from the indo-chinese region, Platia & Schimmel (1991) recorded 44 species of this genus from India, out of which 30 species were new to science. Again Platia & Schimmel (1993) described four more new species from India. Vats & Chauhan (1993) also added four new species from North India. We are further adding four new species to *Silesis* Candze, which are described and illustrated. Holotypes of the new species are housed at Indian Agricultural Research Institute, Pusa National Collections, Division of Entomology, New Delhi.

All these new species can be keyed down smoothly up to couplet 60 in Platia & Schimmel's key (1991). To condense the text, use Platia & Schimmel's key partially inserting a new section after couplet 60 and by replacing couplets 61-64, which should now read as follows:

61. Antennal segments 2 and 3 equal	61a
- Antennal segments 2 and 3 not equal	61b
61a. Pronotum longer than broad; elytra at most 2.5x length of prothorax; antennae short, in both sexes not reaching posterior angles of prothorax	<i>lebischi</i> Platia & Schimmel
- Pronotum as long as broad; elytra at least 3x length of prothorax; antennae long in both sexes at least reaching posterior angles of pronotum	<i>equalis</i> , new species

- 61b. Antennal segment 2 longer than 3 62
 - Antennal segment 2 shorter than 3 *carinoscutellis*, new species
- 62. Lateral carina of pronotum complete 63
 - Lateral carina of pronotum incomplete, just visible or inapparent posteriorly 64
- 63. Antenna long, reaching posterior angles of pronotum in female but projecting beyond in male 63a
 - Antenna short, not reaching posterior angles of pronotum in both sexes *maindroni* Platia & Schimmel
- 63a. Pronotum broader than long; elytra rounded at extremity, more than 3x length of prothorax; scutellum ecarinate; posterior angles of pronotum pointed *indicus*, Fleutiaux
 - Pronotum as long as broad; elytra subpointed at extremity, at most 3x length of prothorax; scutellum carinate; posterior angles of pronotum rounded *coactus*, new species
- 64. Antennae projecting beyond posterior angles of prothorax by 3 apical segments in male and by 2 segments in female 64a
 - Antennae reaching posterior angles of prothorax in female and projecting beyond by 2 apical segments in male *bengalensis* Candeze
- 64a. Pronotum longer than broad; elytra 3x length of prothorax; head convex, head and thorax ferruginous *schawalleri*, Platia & Schimmel
 - Pronotum broader than long; elytra 3.9x length of prothorax; head flat, head and thorax piceous *meghalayaensis*, new species

SYSTEMATICS

Silesis equalis, new species

(Figs. 4, 7, 12, 15)

Material examined. - Holotype: male, Nagaland, Pfutsero, 2100 m, coll. V. Vasu, 13 May 1994.

Paratypes: 1 male, 2 females with the same data as holotype.

Description. - Colour: Body fuscus. Antenna and legs ferruginous.

Measurements. - Body: length = 4.5 mm, width = 1 mm; head: length = 0.5 mm, width = 0.65 mm; antenna = 1.5 mm; 2nd segment = 0.1 mm, 3rd segment = 0.1 mm, 4th segment = 0.15 mm, last segment = 0.2 mm; thorax: length = 1 mm, width = 1 mm; elytra = 3 mm.

Structure. - Body width less than 0.25x its length. Head flat, broader than long (5:4); antenna short, just reaching posterior angle of pronotum in female and projecting beyond by 1 apical segment in male; segment 3 equal in length to 2 but shorter than segment 4 (2:3). Mandibles bifid (Fig. 15). Pronotum convex, as long as broad, lateral sides parallel, posterior margin furrowed; posterior angles rounded, carinate, carina extending beyond middle of pronotum; lateral carina complete; prosternal spine pointed, not margined, gradually narrowing at base (Fig. 7), gradually declining from its main axis at 10°. Metasternum truncate between mesocoxae, without oblique carina behind coxae. Scutellum flat, ecarinate, longer than broad (6:5), anterior margin truncate, posterior margin arcuate (Fig. 12). Elytra convex, 3x length of prothorax, subpointed at extremity. Last sternite flat, rounded. Metabasitarsus equal to following 2 joints combined.

Sculpture. - Head with simple, sparse, small, rounded punctuation; pronotum with simple, sparse, small, rounded punctuation; propleurae with simple, sparse, elongated punctuation; prosternum punctated like pronotum; elytral striae with deep, distinct, rounded punctuation, interstriae with simple, shallow, dense, rounded punctuation.

Pubescence: Body covered with simple, dense, slanting, yellowish brown pubescence.

Male genitalia (Fig. 4): Phallobase with anterior margin truncate, lateral sides constricted anteriorly. Parameres simple, with small subapical processes, outer posterolateral margin concave. Aedeagus distinctly longer than parameres, tubular, apex nipple-like; furcae short, slightly extending beyond anterior limits of parameres.

Distribution. - India: Nagaland.

Diagnosis. - *Silesis equalis* is separated from its allied species *S. lebischi* by a combination of significant characters: pronotum as long as broad (longer than broad in *lebischi*); elytra at least 3x length of prothorax (at most 2.5x in *lebischi*); antennae long, reaching in female and extending beyond in male, posterior angles of prothorax (short, not reaching in both sexes in *lebischi*) and head flat (convex in *lebischi*).

Etymology. - Species name pertains to the equal size of antennal segments 2 and 3.

***Silesis carinoscutellis*, new species**
(Figs. 2, 6, 10, 13, 16)

Material examined. - Holotype: male, Arunachal Pradesh, Dirang, 1500 m, coll. P. Garg, 11 May.1992.

Paratypes: 2 males, 3 females with the same data as holotype. 1 male, Elephant Falls (Shillong) 1450 m, Meghalaya, coll. V. Vasu, 12 May.1992. 1 female, Namchi, 1650 m, Sikkim, coll. V. Vasu, 16 May.1993.

Description. - Colour: Body black. Antenna and legs ferruginous.

Measurements: Body: length = 7.4 mm, width = 1.85 mm; head: length 0.75 mm, width = 1 mm; antenna = 3 mm, 2nd segment = 0.15 mm. 3rd segment = 0.25 mm, 4th segment = 0.3 mm, last segment = 0.4 mm; thorax: length = 1.75 mm, width = 1.85 mm; elytra = 4.8 mm.

Structure: Body width equal to 0.25x its length. Head convex, broader than long (4:3); antenna long, reaching posterior angle of pronotum in female and projecting beyond by 2 apical segment in male; segment 3 longer than 2 (5:3) but shorter than 4 (5:6). Mandibles dented (Fig. 16). Pronotum convex, broader than long, lateral sides parallel, posterior margin furrowed; posterior angles truncate, carinate, carina not reaching middle of pronotum; lateral carina obsolete posteriorly, prosternal spine rounded, margined between mesocoxae, gradually narrowing at base (Fig. 6), gradually declining from its main axis at 15° (Fig. 10). Metasternum rounded between mesocoxae, without oblique carina. Scutellum flat, with faint median longitudinal carina in its anterior 2/3 only, longer than broad (9:7), anterior margin truncate, posterior margin arcuate (Fig. 13). Elytra convex, 2.74x prothorax length, subpointed at extremity, striae distinct. Last sternite flat, rounded. Metabasitarsus longer

than following 2 joints combined (9:7).

Sculpture: Head with simple, dense, small, hexagonal punctuation; pronotum punctated like head; propleurae with simple, dense, large, elongated punctuation; prosternum with simple, dense, small, rounded punctuation; elytral striae with deep, distinct, dense, rounded punctuation, interstriae with dense, fine, rounded punctuation.

Pubescence: Body covered with simple, dense, slanting, yellowish brown pubescence.

Male genitalia (Fig. 2): Phallobase with anterior margin truncate, lateral sides straight. Parameres simple, without subapical processes, gradually narrowing into subpointed tip. Aedeagus slightly longer than parameres, tubular, gradually narrowing into pointed tip; furcae short, just reaching anterior limits of parameres.

Distribution. - India: Arunachal Pradesh, Meghalaya and Sikkim.

Diagnosis. - A combination of the following significant characters separate it from all the Oriental species described under this genus: lateral sides of propleurae without any vestige of alutaceous area; elytra unicoloured; antennal segment 2 shorter than 3; lateral carina of propleura obsolete posteriorly; elytra subpointed at extremity and less than 3x length of prothorax.

Etymology. - Species is named after its carinate scutellum.

***Silesis coactus*, new species**
(Figs. 3, 8)

Material examined. - Holotype: male, Mirik 1700m, West Bengal, coll. V. Vasu, 11 May.1993.

Paratypes: 1 male with same data as holotype. 2 females, Gangtok, 1700m, Sikkim, coll P. Garg, 13 May.1993.

Description. - Colour: Body black. Antenna and legs fuscous.

Measurements: Body: length = 5.5 mm, width = 1.12 mm; head: length = 0.5 mm, width = 0.5 mm; antenna = 1.4 mm, 2nd segment = 0.1 mm, 3rd segment = 0.05 mm, 4th segment = 0.15 mm, last segment = 0.15 mm; thorax: length = 1.12 mm, width = 1.12 mm; elytra = 3.5 mm.

Structure: Body width less than 0.25x its length. Head convex, as long as broad; antennae short, reaching posterior angle of pronotum in female, and projecting beyond by 1 apical segment in male; segment 3 shorter than 2 (1:2) but also distinctly shorter than 4 (1:3). Mandibles dented (Fig. 14). Pronotum convex, as long as broad, lateral sides parallel, posterior margin furrowed; posterior angles rounded, carinate, carina not reaching middle of pronotum; lateral carina complete; prosternal spine rounded, margined entirely, gradually narrowing at base, gradually declining from its main axis at 10°. Metasternum truncate between mesocoxae, with oblique carina. Scutellum flat with median longitudinal carina in its 2/3, longer than broad (6:4), anterior margin truncate, posterior margin arcuate (Fig. 13). Elytra convex, 3x prothorax length, subpointed at extremity (Fig. 8). Last sternite flat, rounded. Metabasitarsus longer than following 2 joints combined (6:4).

Sculpture: Head with simple, dense, moderate, hexagonal punctuation; pronotum, propleurae and prosternum punctated like head; elytral striae with deep, distinct, dense, rounded punctuation, interstriae with dense, minute, rounded punctuation.

Pubescence: Body covered with simple dense, slanting, yellowish white pubescence.

Male genitalia (Fig. 3): Phallobase with anterior margin emarginate, lateral sides straight. Parameres simple, with indistinctly indicated small subapical processes, outer posterolateral sides convex. Aedeagus slightly longer than parameres, constricted at anterior part, bulbous, and broadly conical posteriorly.

Distribution. - India: West Bengal and Sikkim.

Diagnosis. - Though broad key characters such as lateral sides of propleurae without alutaceous area, elytra unicoloured, antennal segment 2 longer than 3, lateral carina of pronotum complete, bring *S. coactus* close to *S. indicus*, still a combination of some other characters keep it far apart from the latter. These characters are: elytra subpointed at extremity (rounded in *indicus*), scutellum carinate (ecarinate in *indicus*), posterior angles rounded (pointed in *indicus*), elytra at most 3x prothorax length (more than 3x in *indicus*) and pronotum as long as broad (broader than long in *indicus*).

Etymology. - Species name pertains to the small size of its body.

***Silesis meghalayaensis*, new species**

(Figs. 1, 5, 9, 11, 14)

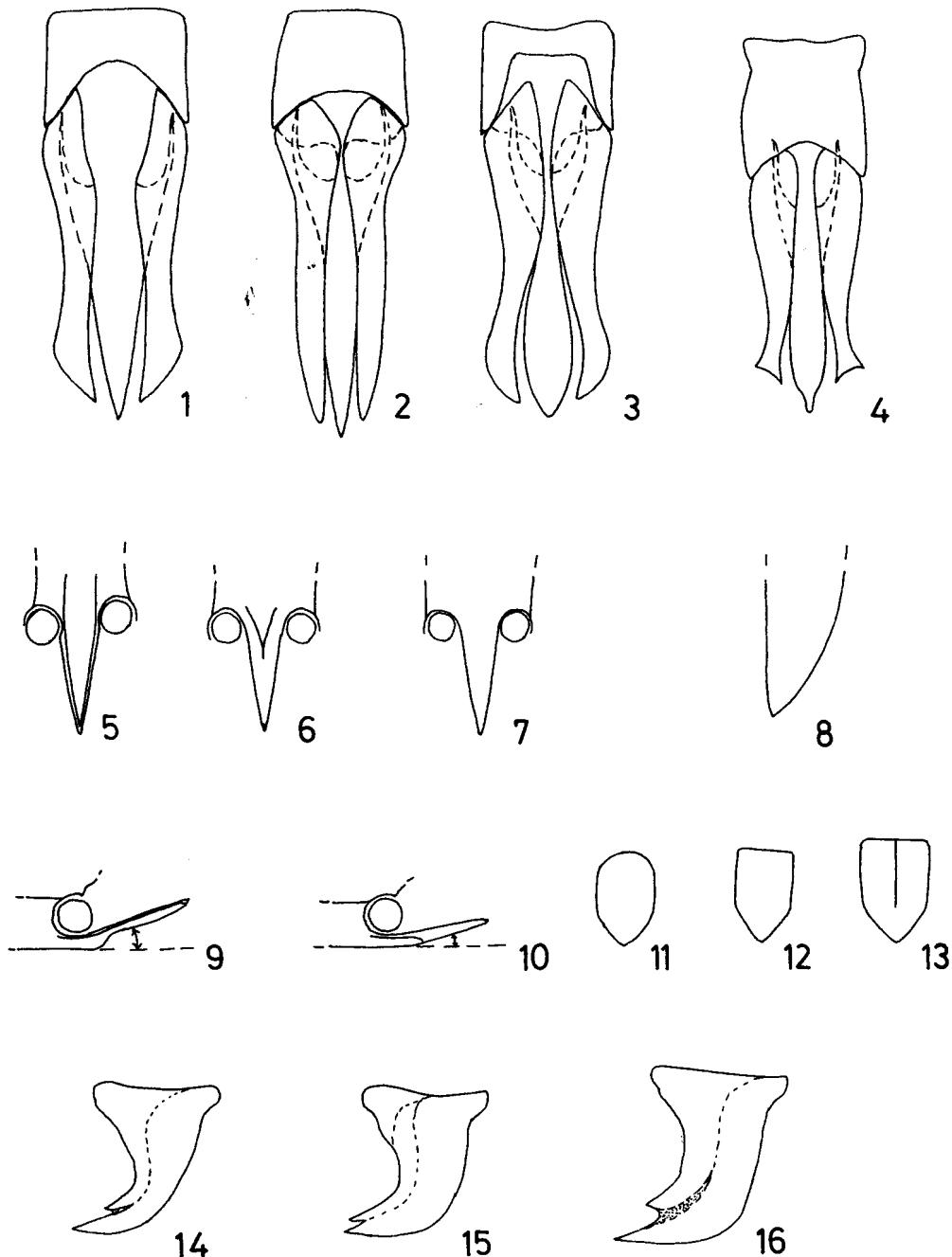
Material examined. - Holotype: Male, Elephant falls (Shillong) 1450m, Meghalaya, coll. V. Vasu, 12 May.1992.

Paratypes: 1 male, 3 females with same data as holotype.

Description. - Colour: Piceous are: head, pronotum except extreme anterior and posterior margins. Fuscoferruginous are: elytra and antenna.

Measurements: Body: length = 8 mm, width = 1.6 mm; head: length = 0.75 mm, width = 0.75 mm; antenna = 2.7 mm, 2nd segment = 0.25 mm, 3rd segment = 0.2 mm, 4th segment = 0.3 mm, last segment = 0.3 mm; thorax: length = 1.4 mm, width = 1.6 mm; elytra = 5.5 mm.

Structure: Body width less than 0.25x its length. Head flat, as long as broad; antenna long, projecting beyond posterior angle of pronotum by 3 apical segments in male and by 2 segments in female; segment 3 shorter than 2 (4:5) but distinctly shorter than 4 (2:3). Mandibles dented (Fig. 14). Pronotum convex, with shallow median depression in its posterior 1/3, broader than long (8:7), lateral sides parallel, posterior margin furrowed; lateral carina obsolete posteriorly; posterior angles pointed, carinate, carina reaching middle of pronotum; prosternal spine pointed, margined entirely, gradually narrowing at base (Fig. 5), abruptly declining from its main axis at 20° (Fig. 11). Elytra convex, 3.92x prothorax length, subpointed at extremity. Last sternite flat, rounded. Metabasitarsus longer than following 2 joints combined (5:4).



Figs. 1-16. *Silesis carinoscutellis* - Figs. 2, 6, 10, 13, 16. *Silesis coactus* - Figs. 3, 8. *Silesis equalis* - Figs. 4, 7, 12, 15. *Silesis meghalayaensis* - Figs. 1, 5, 9, 11, 14. Figures showing some key characters of four new North-East Indian species of *Silesis* Candeze: 1-4, male genitalia; 5-7, Prosternal spine; 8, elytra (posterior part); 9-10, Prosternal spine (lateral view); 11-13, Scutellum; 14-16, Mandible.

Sculpture: Head with simple, dense, small, hexagonal punctuation; pronotum with simple, dense, minute, hexagonal punctuation; propleurae with simple dense, elongated punctuation; prosternum with simple, dense, large, rounded punctuation; elytral striae with deep, distinct, dense, rounded punctuation, interstriae with simple, shallow, dense, minute, rounded punctuation.

Pubescence: Body covered with simple, dense, slanting, yellowish brown pubescence.

Male genitalia (Fig. 1): Phallobase with anterior margin truncate, lateral sides straight. Parameres simple with long subapical processes, outer posterolateral sides convex. Aedeagus slightly longer than parameres, broad at base and gradually narrowing into pointed tip; furcae short, slightly falling short of anterior limits of parameres.

Distribution. - India: Meghalaya.

Diagnosis. - *Silesis meghalayaensis* is separated from its closest ally, *S. schawalleri*, by the following key characters: pronotum broader than long (longer than broad in latter), elytra 3.9x prothorax length (3x in latter), head flat (convex in latter), colour of head and thorax piceous (ferruginous in latter).

Etymology. - Species name is based on Meghalaya, the North-east Indian state to which its type locality belongs.

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