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DESCRIPTION OF NEW SPECIES OF *KLEIDOTOMA* WESTWOOD (HYMENOPTERA: FIGITIDAE) FROM INDIA ALONG WITH A LIST OF SPECIES

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ABSTRACT

The genus *Kleidotoma* is reported for the first time from India with *Kleidotoma sikkimensis* sp. nov. Akhtar. The new species is described from Sikkim, India and distinguished from *K. kraussi* Yoshimoto through malar space about 0.32x height of eye, scape 1.66x as long as broad, pronotum behind plate on each side with about 2 costate extending somewhat diagonal to margin of mesoscutum, radial cell moderate in size, apical portion of radial vein not extending beyond radial cell along the wing margin, scutellar cup not extending to the apex of the disc. A list of *Kleidotoma* is given which includes 119 species, of this 74 species from Palearctic, 16 species from Afrotropical, 4 species from Neotropic, 2 species from Oriental, 1 species each from Antarctic and Australasian, 18 species from Nearctic + Neotropic, 1 species each from Palearctic + Australasian and Palearctic + Neotropic and 1 species from Neotropic + Australasian + Nearctic region along with synonyms and distributions.

INTRODUCTION

Species of *Kleidotoma* Westwood (Figitidae: Eucoilinae) are the larval and pupal parasitoids of cyclorrhaphous Diptera in the families Canaceidae, Drosophilidae, Ephydridae, Sepsidae, Sphaeroceridae, Phoridae, Chloropidae, Anthomyiidae and Muscidae (Beardsley, 1990; Forshage and Nordlander, 2008). This genus is extremely diverse group ecologically and is of worldwide distribution.The genus *Kleidotoma* is characterized by the pronotal plate rectangular and not emarginate on dorsal margin. The majority of species have the apex of the forewing distinctly incised in females, but wings may be truncate apically in males and in females of a few species. The radial cell is completely open and the vein which forms the base of the radial cell is short and usually thickened. In most species the sides of the scutellar disc are distinctly costate or carinulate and tergite II has a hairy ring (Quinlan, 1986; Beardsley, 1989, 1990). Dalla Torre and Kieffer (1910) divided *Kleidotoma* into a series of subgenera, based primarily on the number of segments forming the club of the female antenna. The phylogenetic significance of such characters, at the generic level, has been questioned by Nordlander (1978). Subgeneric division of *Kleidotoma* is premature and poorly phylogenetically founded (usually based on brachyptery or number of female antennal club articles) and it is preferred to postpone recognition of any subgenera until after a thorough study has been completed (Forshage and Nordlander, 2008). The Indian fauna of *Kleidotoma* is completely unexplored, not a single species is reported so far. This is the first description of a *Kleidotoma* species from India. While analyzing the existing information, we concluded that it was absolutely necessary to bring together, summarize, check and compile all the existing information in a compact presentation. Therefore we compile an inventory of *Kleidotoma* species. The information from many primary and secondary sources of information material, both electronic and non-electronic *viz*. CAB Pest CD, Zoological Records, DallaTorre and Kieffer (1910), Quinlan (1974), Beardsley (1989, 1990), Biolib (2013), Gbif (2013), Discoverlife (2013), Fauna europaea (2013), Wasp web (2013) etc. were accessed.

MATERIALS AND METHODS

The morphological terminology used in the species description is that of Quinlan (1986). Line diagrams were drawn using a drawing tube attached to Leica DM 1000 microscope and low vacuum Scanning Electron Microscopy using Carl Zeiss EVO MA10. Different body part of one

paratype was mounted in Canada balsam after overnight immersion in 10% KOH and exposure to 80% and 99% ethyl alcohol. Photographs and line diagrams were edited and arranged using Adobe Photoshop Element.

RESULTS AND DISCUSSION

A. Description

Kleidotoma sikkimensis sp. nov. Akhtar (Figs. 1–19)
Holotype Female: Body length, 1.12mm. Forewing: length 1.05mm, width 0.39mm.
Colour: Body black; mouth parts, legs, antennae, wing veins, tergite I dark brown.

Head (Figs. 3, 4, 13, 14) transverse to subquadrate, smooth, shiny and wider than thorax at tegulae, height 0.89x width. Eyes medium sized, prominent, nearly hemispherical, strongly convergent towards clypeus; transverse diameter of eye 1.67x width of malar ridge; longitudinal eye diameter 3.14x of malar ridge; front between eyes about 2.2x as wide as compound eye. Inter-tentorial line 0.5x facial line, 1.67x as long as tentori-occular line. Mandibles broad basally, uniformly narrowed towards apex, one with 2 and other with 3 teeth. Occipital area dorsally with strong, transverse costae; costate area extending forward on vertex to include region between lateral ocelli. Ocelli medium sized, forming an acute triangle, distance between lateral ocelli 1.3x of distance lateral ocellus and compound eye. Antenna (Fig. 12) filiform, 13 segmented, thickened towards apex, about as long as head, thorax and tergite I combined; antennal socket ocular line 0.83x socket diameter; scape 1.66x as long as wide, pedicel 2.00x as long as wide; flagellar segment (F) FI elongated, 3.33x as long as broad, 1.47x as long as FII; FII 2x as long as wide; F IV 1.17x longer than FIII; F IV-VIII subequal in length and subcylindrical; F IX, F X and F XI forming a club; F IX and F X equal in length; F XI longer than F X, apex sharply acuminate; Segment F IX, F X and F XI having 4, 4 and 6 rhinaria respectively.

Thorax smooth (Figs. 6, 18), shiny, sparsely hairy; length of thorax 1.50x its height and 1.59x its width. Pronotal plate (Figs. 7,15) moderately large, anterior portion distinctly transversely rugose, dorsal margin smoothly arched, dorsal and lateral margins well separated from rest of pronotum by a distinct ridge; pronotal area behind plate on each side with strong diagonal costae. Mesoscutum (Figs. 8, 16) largely smooth, shiny, longitudinally striate along lateral margins. Scutellum (Figs. 8, 17) with large basal foveae; scutellar cup elongate but not extending near to apex of disc, smoothly arched with an elongate, narrow anterior neck, posterior portion narrowly tear-shaped with a moderately large subapical pit and a pair of prominent setae and a rounded pit at posterior end. Mesopleurite smooth, shining, lower portion

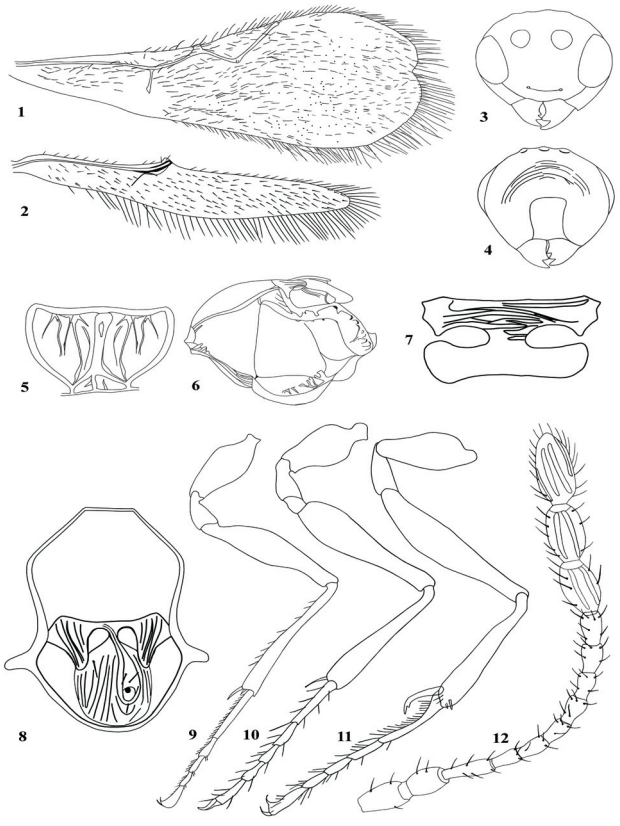

Plate I: Figure 1-12: *Kleidotoma sikkimensis* sp. nov. Akhtar. 1. fore wing, 2. hind wing, 3. head frontal, 4. head posterior, 5. propodeum, 6. thorax lateral, 7. pronotal places, 8. mesonotum, 9. fore leg, 10. mid leg, 11. hind leg, 12. antenna

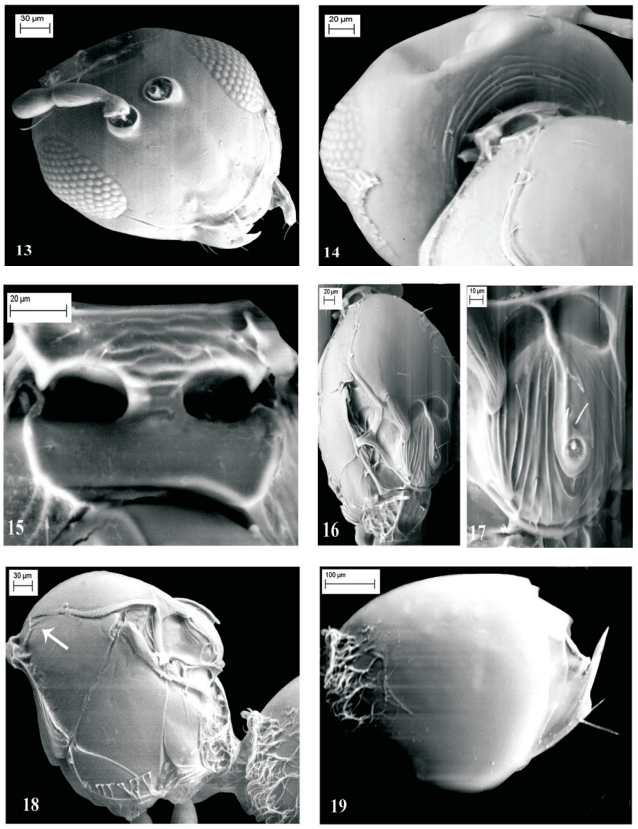

Plate II: Figure 13-19: *Kleidotoma sikkimensis* sp. nov. Akhtar. 13. head frontal, 14. head posterior, 15. pronotal places, 16. mesonotum, 17. scutellum,18. thotax lateral, 19. abdomen

with a few weak striations along the mesopleural suture. Forewing (Fig. 1) hyaline strongly incised apically, veins strongly pigmented; radial cell about 3.14x as long as wide; few setae in middle region including radial cell and base, setae elsewhere represented by vestigial setal bases (small brown dots). Hindwing (Fig. 2) hyaline, more than 5.80x as long as wide. Legs. Foreleg (Fig. 9). Femur 4.50x as long as wide, length of tibiae and femur subequal, length of tarsal segment I 2.75x remaining segments combined. Midleg (Fig. 10). Femur 4.40x as long as wide, length of tibiae 1.27x of femur, length of tarsal segment I 0.91x remaining segments combined. Hindleg (Fig. 11). Femur 5.00x as long as wide, length of tibiae 0.90x of femur, tarsal segment I slightly curved, 0.54x remaining segments combined. Propodeum (Fig. 5) 1.46x as wide as height with median longitudinal carina, some long carina present on disc. Metasoma (Fig. 19) 1.44X as long as broad. Dense woolly setae at base of tergite II.

Male. Unknown

Type material. Holotype ♀ : INDIA: Sikkim, Gangtok, Ramipul, 04.VI.2008, coll. F.R. Khan (NPIB 21-17); Paratypes: 4♀♀ with same data as holotype (some parts of one paratype are mounted in a slide) are deposited in National Pusa Collection (NPC), Indian Agricultural Research Institute, New Delhi, India.

Host. Unknown

Etymology: The species is named after the type locality, Sikkim India.

Diagnosis. *Kleidotoma sikkimensis* sp. nov. Akhtar closely resembles *K. kraussi* Yoshimoto 1963 but differs in having the following features: malar space about 0.32x height of eye (vs. 0.5x height of eyes), scape 1.66x as long as broad (vs. 2x as long as broad), pronotum behind plate on each side with about 2 costate extending somewhat diagonal to margin of mesoscutum (vs. 5 costate), radial cell moderate in size (vs. small in size), apical portion of radial vein not extending beyond radial cell along the wing margin (vs. extending beyond radial cell along the wing margin), scutellar cup not extending to the apex of the disc (vs. extending to the apex of the disc).

B. Checklist

The present list (Table 1) reveals that *Kleidotoma* is distributed worldwide. Analysis of fauna reports 119 species, of this 74 species from Palearctic, 16 species from Afrotropical, 4 species from Neotropic, 2 species from Oriental, 1 species each from Antarctic + Australasian, 18 species from Nearctic + Neotropic, 1 species each from Palearctic + Australasian and Palearctic + Neotropic and 1 species from Neotropic + Australasian + Nearctic. Analysis of distribution shows that-Sweden is the country with the highest number of described species (29) followed by The Netherlands, United Kingdom and Zaire (21 species each). *Kleidotoma nigra* (Hartig) is found to be the most diverse species reported from 8 countries followed by *K. strigosa* Quinlan and *K. favus* Quinlan reported from 6 countries each.

Analysis of the fauna described during the different periods indicated that 26 species were known between 1876 and 1900, 25 species between 1976 and 2008 and 19 species between 1901 and 1925. Analysis made on the contributions of the different Hymenopterists indicated that Kieffer was the most significant contributor (18 species) followed by Quinlan (16 species), Cameron and Thomson (13 species each) and Ashmead (11 species).

Table 1: Checklist of *Kleidotoma* Westwood

	Kleidotoma Westwood 1833	
	Type-species: *Kleidotoma psiloides* Westwood	
	Agroscopa Förster 1869	
	Aphiloptera Förster 1869	
	Aphyoptera Förster 1869	
	Arhoptra Kieffer 1901	
	Clidotoma Westwood 1869	
	Coptereucoila Ashmead 1887	
	Heptameris Förster 1869	
	Kleidotomidea Rohwer and Fagan 1917	
	Nedinoptera Förster 1869	
	Nesokleidotoma Beardsley 1990	
	Octameris Belizin 1973	
	Pentacrita Förster 1869	
	Pentakleidota Weld 1951	
	Pentarhoptra Kieffer 1901	
	Polbourdouxia Dessart 1977	
	Rhynchacis Förster 1869	
	Schizosema Kieffer 1901	
	Tetrarhoptra Förster 1869	
	Tetratoma Cameron 1890	
	Trirhoptrasema Kieffer 1901	
1.	*adversa* Belizin 1964	Sweden
2.	*affinis* Cameron 1889	Scotland
	Kleditoma affinis Cameron 1889	
	Kleditoma (*Tetratoma*) *affinis* Cameron 1890	
	Cleidotoma (*Tetrarhoptra*) *affinis* Kieffer 1902	
3.	*alaskensis* (Ashmead 1902)	USA
	Tetrarhapta alaskensis Ashmead 1902	
4.	*albipennis* Thomson 1862	Sweden
	Pantaerita albipennis Forster 1869	
	Cleidotoma (*Pentacrita*) *albipennis* Kieffer 1902	
5.	*americana* Ashmead 1887	USA
	Trirhoptrasema ashmeadi Rohwer and Fagan 1917	
6.	*antennata* (Giraud 1860)	Austria, Sweden, Lithuania
	Eucoilia antennata Giraud 1860	
	Nedinoptera testata Belizin 1961	
7.	*arbitra* Quinlan 1986	South Africa, Uganda, Zaire, Zimbabwe
8.	*ashmeadi* Kieffer 1901	USA
	Cleidotoma ashmeadi Kieffer 1901	
9.	*atomaria* Hellén 1960	Finland
10.	*atra* Dettmer 1926	The Netherlands
11.	*avenae* (Fitch 1861)	USA
	Allotria avenae Fitch 1861	
12.	*bicolor* (Giraud 1860)	Austria, Sweden, The Netherlands
	Eucoila bicolor Giraud 1860	
	Clidotoma bicolor Forester 1869	

Table 1: Cont.....

	Clidotomapsiloides var. bicolor Kieffer 1902	
13.	*bifurcata* Quinlan 1986	Zaire
14.	*bipunctata* Ashmead 1896	Grenada
15.	*brevicatillis* Dettmer 1926	The Netherlands
16.	*brevicornis* Thomson 1862	Sweden, Poland
17.	*brunnea* Ionescu 1959	Romania
18.	*bryani* Yoshimoto 1962	Hawaii
19.	*caledonica* Cameron 1888 *Kleditoma caledonica* Cameron 1888 *Cleidotoma caledonica* Kiffer 1902	Poland, UK
20.	*californica* Kieffer 1908 *Kleidotoma* (*Hexacola*) *californica* Kieffer 1908	USA
21.	*canaceivorus* Beardsley 1990	Hawaii
22.	*carolinensis* Kieffer 1910	USA
23.	*castanea* Irkutsk	Russia
24.	*ciliaris* (Zetterstedt 1838) *Figites ciliaris* Zetterstedt 1838 *Kleditoma melanopoda* Cameron 1888 *Cleidotoma* (*Arthoptra*) *melanopoda* Kiffer 1901	Sweden, UK,
25.	*conica* Quinlan 1986	Zaire
26.	*convexitas* Choi, Lee & Suh 2009	Korea
27.	*cordata* (Giraud 1860) *Eucoila cordata* Giraud 1860	Austria
28.	*costata* Beardsley 1990	Hawaii
29.	*coxalis* Ionescu 1969 *Kleidotoma fusca* Ionescu 1959 (Preoccupied)	Romania
30.	*debilifovea* Choi, Lee & Suh 2009	Korea
31.	*derzhavini* Belizin 1973	Russia
32.	*dissimilis* Vladivostok	Russia
33.	*distenda* Quinlan 1986	Nigeria, Zaire, South Africa
34.	*dolichocera* Thomson 1877 *Cleidotoma* (*Tetratoma*) *dolichocera* Cameron 1890 *Cleidotoma* (*Tetrarhoptra*) *dolichocera* Kieffer 1904 *Cleidotoma* (*Tetrarhoptra*) *carpentieri* Kieffer 1904	Denmark, Sweden, The Netherlands
35.	*eala* Quinlan 1986	Zaire
36.	*elegans* Cameron 1889 *Kleditoma elegans* Cameron 1889 *Kleditoma* (*Pentacrita*) *elegans* Cameron 1890 *Cleidotoma* (*Pentacrita*) *elegans* Kieffer 1902	UK
37.	*elongula* Quinlan 1986	Zaire, Zimbabwe, South Africa
38.	*emarginata* (Hartig 1841) *Cothonaspis emarginatum* Hartig 1841	Germany
39.	*erebus* Quinlan 1986	Zaire
40.	*favus* Quinlan 1986	Nigeria, Cameroon, Zaire, Uganda, Kenya, Zimbabwe

Table 1: Cont.....

41.	*filicornis* Cameron 1889 *Kleditoma filicornis* Cameron 1889 *Cleidotoma filicornis* Kieffer 1902	Denmark, Sweden, The Netherlands, UK
42.	*fimbriata* Quinlan 1986	Zaire
43.	*flavipes* (Ashmead 1894) *Heptameris flavipes* Ashmead 1894 *Cleidotoma* (*Heptameris*) *flavipes* Kiffer 1901	Saint Vincent
44.	*flecta* Belizin 1964	Russia
45.	*formicaria* Kieffer 1904 *Cleidotoma* (*Tetrarhoptra*) *formicaria* Kieffer1904	Sweden, The Netherlands
46.	*fossa* Kieffer 1908	USA
47.	*fusca* Dettmer 1926	The Netherlands
48.	*geniculata* (Hartig 1840) *Cothonaspis geniculata* Hartig 1840 *Eucoila geniculata* Giraud 1860 *Kleidotoma geniculata* Thomson 1862 *Cleidotoma geniculata* Kieffer 1902	Germany
49.	*gracilicornis* Cameron 1889 *Kleidotoma gracilicornis* Cameron 1889 *Kleidotoma* (*Tetratoma*) *gracilicornis* 1890 *Cleidotoma* (*Tetrarhoptra*) *gracilicornis* Kieffer 1902	UK
50.	*gracilicornis* Ionescu 1969 (substitution name formally required)	Romania
51.	*gryphus* Thomson 1862 *Cleidotoma gryphus* Kieffer 1902	Sweden
52.	*halophila* Thomson 1862	Sweden
53.	*heterotoma* Thomson 1862 *Tetrarhoptra heterotoma* Förster 1869	Sweden
54.	*hexapla* Dettmer 1926	The Netherlands
55.	*hexatoma* Thomson 1862 *Kleidotoma 6-toma* Thomson 1862	Sweden
56.	*icarus* (Quinlan 1964) *Aphiloptera icarus* Quinlan 1964	Prince Edward Islands (Antarctica)
57.	*indica* Kieffer 1906 *Kleditoma indica* Kieffer 1906	Indonesia
58.	*inermis* Kieffer 1901 *Cleidotoma* (*Heptameris*) *inermis* Kieffer 1901	Hungary
59.	*inustipennis* (Förster 1869) *Aphyoptera inustipennis* Förster 1869	Germany, Sweden
60.	*istratii* (Kieffer 1900) *Rhynchacis istratii* Kieffer 1900	Romania
61.	*japonica* Huzimatu 1940	Japan
62.	*kraussi* Yoshimoto 1963	Fiji, Hawaii
63.	*laevigata* Dettmer 1926	The Netherlands
64.	*longicornis* Cameron 1889 *Kleditoma longicornis* Cameron 1889	UK

Table 1: Cont.....

65.	*longicornis* (Kieffer 1904) *Schizosema longicornis* Kieffer 1904 (substitution name formally required)	France, Sweden
66.	*longipennis* Cameron 1889 *Kleditoma longipennis* Cameron 1889 *Kleditoma* (*Pentacrita*) *longipennis* Cameron 1890 *Cleidotoma* (*Pentacrita*) *longipennis* Kiffer 1902	UK
67.	*longirudis* Choi, Lee & Suh 2009	Korea
68.	*lugens* Kieffer 1908	USA
69.	*marginalis* Ashmead 1896	Grenada
70.	*marginata* (Gillette 1891) *Coptereucoila marginata* Gillette 1891 *Marginata glabra* Kieffer 1908 *Kleidotoma marginata* var. *glabra* Kieffer 1908	USA
71.	*maritima* Thomson 1862	Sweden
72.	*marshalli* Cameron 1889 *Kleditoma marshalli* Cameron 1889 *Cleidotoma marshalli* Kieffer 1902 *Kleidotoma antecella* Belizin 1964 *Cleidotoma marshalli* *grandiclava* Kiffer 1904	Kazakhstan, France, Sweden, The Netherlands, UK
73.	*micuisa* Belizin 1966	Sweden
74.	*miroscutellaris* (Dessart 1977) *Polbourdouxia* *miroscutellaris* Dessart1977	France
75.	*montana* Quinlan 1986	Rwanda
76.	*morsum* Quinlan 1986	Zaire, South Africa
77.	*myrmecophila* Kieffer 1908	Denmark, Sweden, UK
78.	*nana* Ashmead 1896	Grenada
79.	*nigra* (Hartig 1840) *Cothonaspis nigra* Hartig 1840 *Kleidotoma crassiclava* Cameron 1888 *Kleidotoma nigripes* Cameron 1888 *Rhynchasis brevicornis* Kieffer 1904 *Rhynchasis tetramora* Kieffer 1904	Andorra, UK, Denmark, France, Germany, Spain, Sweden, Brazil
80.	*nigrans* Quinlan 1986	Zaire
81.	*nitida* (Kieffer 1901) *Rhynchacis nitida* Kieffer 1901	France
82.	*nitidiuscula* Quinlan 1986	Zaire
83.	*norma* Quinlan 1986	Zimbabwe

Table 1: Cont.....

84.	*obliqua* Dettmer 1926	The Netherlands
85.	*oscinidis* (Ashmead) 1893 *Heptameris oscinidis* Ashmead 1893 *Cleidotoma* (*Heptameris*) *oscinidis* Kieffer 1901	USA
86.	*parydrae* Beardsley 1993	USA
87.	*pentatoma* Thomson 1862 *Pentacrita pentatoma* Förster 1869 *Kleditoma* (*Pentacrita*) *pentatoma* Cameron 1890 *Cleidotoma* (*Pentacrita*) *pentatoma* Kieffer 1902 *Kleditoma albipennis* Cameron 1886	Iceland, Sweden
88.	*philippinensis* Ashmead 1905	Philippines
89.	*piceicornis* Dettmer 1926	The Netherlands
90.	*picipes* Cameron 1886 *Kleditoma picipes* Cameron 1886 *Kleditoma* (*Arthoptra*) *picipes* Cameron 1890 *Cleidotoma* (*Arthoptra*) *picipes* Kiffer 1901	Scotland
91.	*pilosalis* Weld 1951 *Kleidotoma pilosa* Dettmer 1926 (Preoccupied)	The Netherlands
92.	*pomaria* Belizin 1966	Moldova
93.	*psiloides* Westwood 1833 *Kleditoma psiloides* Cameron 1890 *Cleidotoma psiloides* Kieffer 1902	Denmark, Malta, Poland, Sweden, UK
94.	*pulchrinis* Choi 2008	Korea
95.	*pygidialis* Ashmead 1896	Grenada
96.	*pygmaea* (Dahlbom 1842) *Eucoila pygmaea* Dahlbom 1842 *Kleidotoma pygmaea* Thomson 1862 *Heptameris pygmaea* Forster 1869 *Kleditoma* (*Heptameris*) *pygmaea* Cameron 1890	Sweden
97.	*retusa* (Hartig 1841) *Cothonaspis retusa* Hartig 1841 *Pentacrita retusa* Förster 1869 *Cleidotoma* (*Pentacrita*) *retusa* Kieffer 1901	Germany
98.	*ruficornis* Thomson 1862 *Cleidotoma ruficornis* Kieffer 1902	Sweden
99.	*rufipes* (Ashmead 1894) *Heptameris rufipes* Ashmead 1894 *Cleidotoma* (*Heptameris*) *rufipes* Kieffer 1901	Saint Vincent
100.	*rufitarsis* (Ashmead 1888) *Coptereucoilia* (!) *rufitarsis* Ashmead 1888	USA
101.	*scutellaris* Thomson 1862	Sweden
102.	*striata* Cameron 1886 *Kleditoma striata*	Scotland

Table 1: Cont.....

	Cameron 1886	
103.	*striatella* Kieffer 1904 *Cleidotoma* (*Heptameris*) *striatella* Kieffer 1904	France
104.	*striaticollis* Cameron 1888	Korea, Scotland
105.	*strigosa* Quinlan 1986	Nigeria, Cameroon, Zaire, Uganda, Kenya, Zimbabwe
106.	*subantarcticana* Yoshimoto 1964	New Zealand
107.	*subaptera* (Walker 1834) *Figites subaptera* Walker 1834 *Agroscopa helgolandica* Förster 1869	Czech Republic, Denmark, Sweden, UK
108.	*subintegra* Kieffer 1917	UK, The Netherlands
109.	*subtruncata* Kieffer 1901 *Cleidotoma* (*Pentacrita*) *subtruncata* Kieffer1901	Hungary, New Zealand
110	*swezeyi* Yoshimoto 1962	Hawaii
111	*tetratoma* (Hartig) Germany, *Cothonapis tetratoma* Hartig	Denmark, Sweden
112	*tetratoma* Thomson 1862 *Clodotoma tetratoma* Förster 1869 *Cleidotoma* (*Tetratoma*) *tetratoma* Cameron 1890 *Cleidotoma* (*Tetrarhoptra*) *dolichocera* Kieffer 1904	Sweden
113	*tomentosa* (Giraud 1860) *Eucoila tomentosa* Giraud 1860 *Aphiloptera anisomera* Förster 1869 *Kleidotoma erythropa* Thomson 1877 *Cleidotoma* (*Pentacrita*) *erythropa* Kieffer 1901	Austria, Germany, Sweden
114	*tristis* Kieffer 1908	USA
115	*trjapitzini* Belizin 1973	Russia
116	*truncata* Cameron 1889 *Kleditoma truncata* Cameron 1889 *Kleditoma* (*Pentacrita*) *truncate* Cameron 1890 *Cleidotoma* (*Pentacrita*) *truncate* Kieffer 1902	UK, Scotland
117	*ventosus* Quinlan 1986	Ethiopia, Zaire, South Africa
118	*wasmanni* (Kieffer 1904) *Rhynchacis wasmanni* Kieffer 1904	Luxembourg
119	*williamsi* Beardsley 1990	Hawaii

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