



ANNOTATED CHECKLIST NON-APIS BEES OF THE GENUS *ANDRENA* (HYMENOPTERA: ANDRENIDAE) FROM INDIA

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ABSTRACT

An annotated checklist of genus *Andrena* of India is includes comprising 54 species names. Of these 45 species are placed under 23 subgenera while the affiliation of the remaining remains unclear. This study brings out an unplaced species, *Andrena peridonea* which was found to possess the characters viz., propodeal triangle coarsely rugose, carinate; hind tibial spurs basally strongly widened and pygidial plate with triangular raised area medially and hence placed under subgenus *Plastandrena*. Distribution of subgenus and species are also given and new records are asterisized.

Key words: *Andrena*, India, annotated checklist, subgenus, synonymies, distribution, *A. peridonea*, *Plastandrena*

Order Hymenoptera, comprises with more than 115000 species, of these 17000 species of bees are under the superfamily Apoidea (Michener, 2000). Bees are most diverse in arid and semiarid regions of the world such as the Mediterranean basin, Central Asia, the south western deserts of North America, arid regions of Chile and Argentina, temperate parts of Australia, and southern Africa (Michener 1979). Bees family Andrenidae belonging to short tongued ones are important pollinators of a wide range of agricultural, fodder, pulse, flowers and fruits crops. It is currently represented by 4 subfamilies, and 5 genera. To date this genus contains about 1443 valid species (Gusenleitner and Schwarz, 2002). The genus *Andrena* exhibits a widespread Holarctic distribution ranging from North America south to Panama, as well as from Western Europe including northern Africa via Asia Minor, Central Asia eastward to Korea, Japan and the Kamtschatka region (Michener, 2000). *Andrena* is completely absent in South America, main parts of Central Africa and South East Asia, as well as Australia (Michener, 2000).

The only comprehensive work on Indian bees is that of Bingham (1897) who included all the social/ non social bees under a single family Apidae and used characters like shape of the tongue and nature of pubescence on the body and integument colour for their segregation. But many revisions have been done and there are many changes in nomenclature. There is a need for revisionary studies on Indian bees. For such a study the checklists will provide geographical distribution and other necessary basic details. This will also enable

deciphering of synonymies, valid and invalid names. *Andrena* is a rare group in India, represented by 54 species names and 23 subgenera. For Indian andrenid, no checklist exists, and hence the present study.

ANNOTATED CHECKLIST

This checklist is prepared from the review of literature available at library, IARI, New Delhi, collection available at National Pusa Collection, New Delhi (India), Zoological Records (1860- 2014), catalogues, handbooks, textbooks, labels of specimens, personal collections from different parts of country, original descriptions and redescrptions. The results revealed that the genus *Andrena* in India is represented by 23 subgenera and 54 species, of which 9 species do not fall under any subgenus. The previous work done by Bingham on Apidae included only 13 species, of which four species are transferred. In this checklist subgenera are serially numbered with algebric numbers with bold italics. Valid species names are given in bold italics and synonymies, if available are given below each in unbold italics along with page number from where it is quoted. Distribution of subgenera/ species are given and new records are asterisized.

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Annotated checklist of the genus *Andrena* from India

Genus *Andrena*

Type species *Andrena cineraria*, Linnaeus, 1758: 9

S. No.	Subgenus	Species	Distribution
1.	<i>Zonandrena</i> Type species: <i>Andrena flavipes</i> Panzer, 1799	<p><i>A. flavipes</i> Panzer, 1799: 20</p> <p><i>Apis sordida</i> Gmelin, 1790:31</p> <p><i>Melitta fulvicrus</i> Kirby, 1802:138</p> <p><i>Melitta contigua</i> Kirby, 1802:140</p> <p><i>Andrena fasciata</i> Imhoff, 1832:1204</p> <p><i>Andrena mactata</i> Lepeletier, 1841:251</p> <p><i>Andrena cinerascens</i> Eversmann, 1852:24</p> <p><i>Andrena capitalis</i> Smith, 1853:105</p> <p><i>Andrena interrupta</i> Schenck, 1869:300</p> <p><i>Andrena levilabris</i> Cameron, 1908:130</p> <p><i>Andrena punjaubensis</i> Cameron, 1909:308</p> <p><i>Andrena interruptula</i> Illiger, 1806:76.</p> <p>2. <i>gravidula</i> Imhoff, 1832:429</p> <p><i>Andrena picicrus</i> Schenck, 1853:233</p> <p><i>Andrena (Zonandrena) gravid rubidopilosa</i> Osytshnjuk, 1994:30</p>	Ferozepore (Punjab) North India
2.	<i>Carandrena</i> Warncke, 1968: 94 Type species: <i>Andrena aerinifrons</i> Dours, 1873	<p>1. <i>bellidoides</i> LaBerge, 1968: 97</p> <p>2. <i>cara</i> Nurse, 1904:560</p> <p><i>Andrena halictoides</i> Nurse, 1904:566.</p> <p><i>Andrena nursei</i> Cockerell, 1913:36</p> <p><i>Andrena cara minor</i> Warncke, 1975:90.</p>	Bihar, Shimla Western Ghats
3.	<i>Andrena</i> Fabricius, 1775: 376. Type species: <i>Apis helvola</i> Linnaeus, 1758	<p><i>Andrena (Carandrena) cara kurdistanica</i> Engel, 2005:179.</p> <p>1. <i>morosa</i> Cameron, 1897:119</p> <p>2. <i>praecox</i> (Scopoli, 1763): 606</p> <p><i>Apis praecox</i> Scopoli, 1763:301</p> <p><i>Melitta smithella</i> Kirby, 1802:45</p> <p><i>Andrena flavescens</i> Schenck, 1853:138</p> <p><i>Andrena clypeata</i> Smith, 1855:84</p> <p><i>Andrena torkai</i> Alfken, 1913:709</p> <p>3. <i>varians</i> (Kirby, 1802):803</p> <p><i>Melitta varians</i> Kirby, 1802:117</p> <p><i>Melitta angulosa</i> Kirby, 1802:127</p> <p><i>Andrena mesoxantha</i> Imhoff, 1834:372</p> <p><i>Andrena longula</i> Eversmann, 1852:17</p> <p><i>Andrena mixta</i> Schenck, 1853:136</p> <p><i>Andrena rectangular</i> Schenck, 1853:133</p> <p><i>Andrena varians var conjungens</i> Bluthgen, 1916:312</p> <p>4. <i>helvola</i> (Linnaeus, 1758): 925</p> <p><i>Apis helvola</i> Linnaeus, 1758: 575</p> <p><i>Melitta subdentata</i> Kirby, 1802:63</p>	Mussooree Bihar North India
			North India

4.	<i>Poecilandrena</i> Hedicke, 1933: 218 Type species: <i>Andrena labiata</i> Fabricius, 1781 <i>Orandrena</i> Warncke, 1968: 36 Type species: <i>Andrena oralis</i> Morawitz, 1876	1. <i>familiaris</i> Smith, 1878:2. 2. <i>leaeana</i> Cameron, 1907:17. 1. <i>oralis</i> Morawitz, 1876:177 <i>Andrena sogdtiana</i> Morawitz, 1876:177. <i>Andrena sisymbrii</i> Friese, 1887:24. 1. <i>ischedi</i> Morawitz, 1872: 366 <i>Andrena ischedi tritica</i> Warncke, 1965:36 2. <i>haemorrhhoa</i> (Fabricius, 1781): 30 <i>Apis sordida</i> Scopoli, 1763:31 <i>Apis tranquilla</i> Muller, 1776: 31 <i>Apis nebulosa</i> Gmelin, 1790:30 <i>Apis haemorrhousa</i> Gmelin, 1790:30 <i>Apis haemorrhoidalis</i> Christ, 1791:30 <i>Andrena (Trachandrena) haemorrhhoa japonibia</i> Hirashima, 1957:53 1. <i>anima</i> Cameron, 1909: 18	Punjab Ferozepore Bihar
6.	<i>Trachandrena</i> Robertson, 1902a: 187, 189 Type species: <i>Andrena rugosa</i> Robertson, 1891	1. <i>ventralis</i> , Imhoff, 1832:1206 <i>Andrena rufiventris</i> Eversmann, 1852:32 <i>Andrena mutabilis</i> Morawitz, 1866:18 <i>Apis tenella</i> Christ, 1791: 197. <i>Andrena analis</i> Fabricius, 1804: 326. 1. <i>rothmey</i> , Camton, 1897: 112. <i>Andrena simlaensis</i> Cameron, 1902: 422. 1. <i>wilkella</i> (Kirby, 1802):832 <i>Melitta wilkella</i> Kirby, 1802:145 <i>Melitta xanthura</i> Kirby, 1802: 164 <i>Melitta convexuscula</i> Kirby, 1802:166 <i>Melitta barbatula</i> Kirby, 1802:52 <i>Andrena convexa</i> Schenck, 1853:125 <i>Andrena quadristrigata</i> Schenck, 1853:125 <i>Andrena winkleyi</i> Viereck, 1907: 283 <i>Andrena beaumonti</i> Benoist, 1961:91 2. <i>ovatula</i> (Kirby, 1802):10 <i>Melitta ovatula</i> Kirby, 1802:149 <i>Andrena ovatula</i> , Stockert, 1930:936 <i>Andrena hirticeps</i> Eversmann, 1852: 17 <i>Andrena interrupta</i> Eversmann, 1852: 23 <i>Andrena (Taeniandrena) ovatula</i> ssp. <i>transcaspiensis</i> Osytshnjuk, 1994: 32 <i>Andrena (Taeniandrena) ovatula</i> , Warncke, 1967: 80	Bihar
7.	<i>Patilandrena</i> Robertson, 1902a: 187, 192 Type species: <i>Andrena erigeniae</i> Robertson, 1891		Mussooree
8.	<i>Larandrena</i> LaBerge, 1964: 304 Type species: <i>Andrena miserabilis</i> Cresson, 1872		North India
9.	<i>Oreomelissa</i> Hirashima and Tadauchi, 1975: 176 Type species: <i>Andrena mitakenis</i> Hirashima, 1963		Mussooree, Shimla
10.	<i>Taeniandrena</i> Hedicke, 1933: 219 Type species: <i>Melitta ovatula</i> Kirby, 1802		Kashmir

11. *Simandrena* Pérez, 1890: 174
Type species: *Melitta dorsata* Kirby, 1802, by designation of Hedicke, 1933: 218.
12. *Chlorandrena*, Pérez, 1890: 172
Type species: *Andrena humilis* Imhoff, 1832: 211.
13. *Agandrena* Warncke, 1968: 56
Type species: *Apis aglissima* Scopoli, 1770
14. *Lucandrena* Hedicke, 1933: 215
Type species: *Apis sericea* Christ, 1791;
15. *Plastandrena* Hedicke, 1933: 217
Type species: *Melitta tibialis* Kirby, 1802
1. *dorsata* (Kirby, 1802):206
Apis transfiga Christ, 1791: 169
Melitta dorsata Kirby, 1802:144
Melitta lewinella Kirby, 1802:149
Melitta collinsonana Kirby, 1802:153
Melitta nudiuscula Kirby, 1802:155
Melitta subincana Kirby, 1802: 158
Andrena propinqua Schenck, 1853: 134
Andrena cognata Schenck, 1853:45
Andrena thomsoni Aurivillius, 1903:204
1. *taraxaci* Giraud, 1861:459
Andrena curtivahvis Morice, 1899: 252.
Andrena truncatiformis Cockerell, 1922: 243
Andrena humilis var *orienticola* Strand, 1915:72
Andrena (*Chlorandrena*) *taraxaci chikuzenensis* Hirashima, 1957:53
1. *aglissima* (Scopoli, 1770):443
Apis aglissima Scopoli, 1770:56
Andrena aglissima italica Warncke, 1967:225
1. *barbilabris* (Kirby, 1802): 2
Apis sericea Christ, 1791:2
Hylaenus similis Fabricius, 1793: 32
Melitta barbilabris Kirby, 1802: 151
Melitta albicus Kirby, 1802:2
Andrena alboincisa Zetterstedt, 1838:460
Andrena barbatula Zetterstedt, 1838:461
Andrena parumpunctata Schenck, 1853:236
Andrena angustipes Schenck, 1866:326
Andrena ciliata Schenck, 1869:375
Andrena sericea var *malaisei* Alfken, 1929:5.
1. *bimaculata* (Kirby, 1802):66
Melitta bimaculata Kirby, 1802:115
Andrena (*Plastandrena*) *bimaculata*: Warncke, 1967: 56
Andrena decorata Smith, 1847:1667.
Andrena conjuncta Smith, 1847:73.
Andrena articulata Smith, 1847:1750.
Andrena vitrea Smith, 1847:1737.
Andrena consobrina Eversmann, 1852:30
Andrena intermedia Morawitz, 1871:321
Andrena morawitzi Thomson, 1872:25
Andrena atrorubricata Dours, 1872:358
Andrena aulica Morawitz, 1876:187
Andrena comparata Morawitz, 1876: 188
Andrena melanura Morawitz, 1877:82
- North India
- North India, Bihar
- North India
- Bihar
- Bihar

- Andrena germatica* Radoszkowski, 1893:56
Andrena bimaculata var *mondaensis* Friese, 1922:210
Andrena bimaculata var *serotinella* Friese, 1922: 210
Andrena morawitzi var *hirtella* Friese, 1922: 211
Andrena tibialis var *tricolorata* Friese, 1922: 212
Andrena bimaculata *lichata* Warncke, 1967:230
 2. *pilipes* Fabricius, 1781:479.
Apis atra Muller, 1776: 165.
Apis pilipes Fabricius, 1781: 474.
Andrena atra Smith, 1847:1734.
Andrena dolorosa Nurse, 1904:563.
Andrena carbonaria var *autumnalis* Friese, 1922:210
Andrena carbonaria var *claripennis* Friese, 1922: 210
Andrena (Plastandrena) carbonaria imamiana Osytshnjuk, 1994:35
 3. *tibialis* (Kirby, 1802):19
Melitta tibialis Kirby, 1802:107
Melitta mouffellei Kirby, 1802:53
Melitta atriceps Kirby, 1802:114
Andrena fulvitaris Eversmann, 1852:14
Andrena ambigua Eversmann, 1852:16
Andrena subfuscata Schenck, 1853:232
Andrena vindobonensis Stoeckert, 1950:288
Andrena tibialis coryna Warncke, 1967:230
Andrena tibialis concreta Warncke, 1975:46
Andrena tibialis porzana Warncke, 1975:46
 1. *rosae* Panzer, 1801:74
Melitta zonalis Kirby, 1802:87
Andrena stragulata Illiger, 1806:62
Andrena postica Imhoff, 1832:1200
Andrena coarctata Imhoff, 1832:1200
Andrena eximia Smith, 1847:70
Andrena austriaca var *incompta* Schmiedeknecht, 1883:677
Andrena teutonica Alfken, 1911:82
Andrena rosae var *alfkeni* Friese, 1914:228
Andrena opimigera eximia var *tiroloensis* Friese, 1922:212
Andrena (Hoplandrena) rosae alfkeni Friese 1914:228
Andrena (Hoplandrena) rosae Warncke, 1967: 94
 2. *subspinigera* Cockerell, 1917:284.

Kashmir

Bihar

Bihar

Central India

17.	<i>Melandrena</i> Perez, 1890: 170 Type species: <i>Apis thoracica</i> Fabricius, 1775, by designation of Michener, 1997: 36.	Bihar, North India
	1. <i>limata</i> Smith, 1853:110 <i>Andrena lucida</i> Lepeletier, 1841:241 <i>Andrena pectoralis</i> Schmiedeknecht, 1883:526 <i>Andrena batesiae</i> Cockerell, 1910:248 <i>Andrena thoracica</i> var <i>secunda</i> Friese, 1922:211 <i>Andrena nitida</i> var <i>aestivialis</i> Friese, 1922:211 <i>Andrena nitida</i> var <i>hispaniola</i> Warncke, 1967:277 <i>Andrena limata mixtura</i> Warncke, 1967:214 2. <i>cussariensis</i> Morawitz, 1886:61. <i>Andrena cussariensis kohatensis</i> Cockerell, 1917:283 <i>Andrena (Melandrena) cussariensis</i> Warncke, 1967: 82. 3. <i>cineraria</i> Linnaeus, 1758: 9 <i>Apis cineraria</i> Linnaeus, 1758:575. <i>Apis atra</i> Scopoli, 1763:299 <i>Andrena cineraria</i> var <i>nigrifacies</i> Alfken, 1913:84 <i>Andrena danuvia</i> Stoeckert, 1950:287 <i>Andrena transcasica</i> Radoszkowski, 1893:56 <i>Andrena radoszkowskii</i> Dalla Torre, 1896:149 <i>Andrena ducis</i> Cockerell, 1907:50 4. <i>nitida</i> (Muller, 1776):18 <i>Andrena pubescens</i> Olivier, 1789:136 <i>Apis nigriventris</i> Gmelin, 1790: 2789 <i>Andrena velutina</i> Lepeletier, 1841: 240 <i>Andrena consimilis</i> Smith, 1847: 2214 <i>Andrena nitens</i> Schenck, 1869: 30 5. <i>patella</i> Nurse, 1903:542. 6. <i>induta</i> Morawitz, 1895:62. <i>Andrena brunneipennis</i> Bingham, 1908: 362. 7. <i>nigroaenea</i> (Kirby, 1802): 21 <i>Melitta nigroaenea</i> Kirby, 1802:109 <i>Andrena splendens</i> Imhoff, 1832:1203 <i>Andrena bipartita</i> Lepeletier, 1841:246 <i>Andrena serotina</i> DeStefani, 1889:204 <i>Andrena nigroaenea</i> var <i>tergestensis</i> Graeffe, 1902:130 1. <i>savignyi</i> Spinola, 1838:512 <i>Andrena ferozeporensis</i> Cameron, 1909:131. <i>Andrena ilerda</i> Cameron, 1907:1001. <i>Andrena ilerda inglisi</i> Cockerell, 1920:133. 1. <i>scita</i> Eversmann, 1852:28 <i>Andrena transcasica</i> Radoszkowski, 1886:56 <i>Andrena mesopyrrha</i> Dours, 1872:353 <i>Andrena scita</i> var <i>nigra</i> Friese, 1914:386 <i>Andrena scita</i> var <i>nigrofasciata</i> Friese, 1914:230	Kohtak, Mussooree, Shimla, Punjab Kashmir, Uttrakhand
		Bihar
		Kashmir Shimla (Himachal Pradesh) Bihar
18.	<i>Sauandrena</i> Warncke, 1968: 52 Type species: <i>Andrena suerinensis</i> Friese, 1884	Gujrat, Punjab, Rajasthan*, Delhi*, Uttrakhand*
19.	<i>Scitandrena</i> Warncke, 1968: 51 Type species: <i>Andrena scita</i> Eversmann, 1852	Bihar, Punjab

20. *Melanaspis* Cameron, 1902a: 420
Type species: *Melanaspis violaceipennis* Cameron, 1902
Ferozepur, Ludhiana
1. *fuscosa* Erichson, 1835:103
Andrena rutila Spinola, 1838:510
Andrena ephippium Spinola, 1838:511
Andrena dorsalis Lepelletier, 1841: 235
Andrena lepeletieri Lucas, 1849:171
Andrena atrocoerulea Giraud, 1863: 29
Andrena dagestanica Radoszkowski, 1867:76
Andrena turcestanica Morawitz, 1876:192
Andrena lepeletieri var *aschabadensis* Radoszkowski, 1893:56
Andrena ephippium var *cleopatra* Friese, 1899:232
Melanaspis violaceipennis Cameron, 1902:422
Melanaspis rufifrons Nurse, 1904:576
Andrena cyprica Cockerell, 1910: 247
Andrena ephippium var *flavipennis* Friese, 1914:232
Andrena ephippium var *pallipes* Friese, 1914:231
Andrena ephippium var *rufocincta* Friese, 1914:232
Andrena rutila ab *carnea* Lebedev, 1933:67
Andrena rutila ab *zonaria* Lebedev, 1933:67
Andrena (Melanapis) fuscosa: Warncke, 1967: 55
1. *bicolor*: Fabricius, 1775:376
Apis tetrica Christ, 1791:30
Apis fuliginosa Christ, 1791:29
Andrena lucida Panzer, 1798:1
Melitta picicornis Kirby, 1802:73
Melitta pilosula Kirby, 1802:164
Melitta gwynana Kirby, 1802:120
Andrena oraniensis Lepelletier, 1841:245
Andrena proxima Smith, 1847:146
Andrena nigrifrons Eversmann, 1852:3
Andrena laeviuscula Schenck, 1853: 234
Andrena fuscohirta Schenck, 1853:235
Andrena distinguenda Schenck, 1853:256
Andrena violascens Thomson, 1870:151
Andrena gwynana: Schmiedeknecht, 1883: 588
Andrena croatica Friese, 1887:23
Andrena phanromelas Cockerell, 1929:396
Andrena baleina Cockerell, 1929:399
Andrena bicolor apricaria Warncke, 1975:110
1. *aegyptiaca* Friese, 1899:212
Andrena aegyptiaca cannabina Warncke, 1968:67
Andrena comberina beharica Cockerell, 1911
21. *Euandrena*, Hedicke, 1933: 213
Type species: *Andrena bicolor* Fabricius, 1775,
Punjab, North India
22. *Chrysandrena* Hedicke, 1933: 211.
Type species: *Apis fulvago* Christ, 1791
Mussooree, Bihar

23.	<p><i>Poliandrena</i> Warncke, 1968: 71 Type species: <i>Andrena polita</i> Smith, 1847</p>	North India	
24.	Undetermined	<p>1. <i>flore</i> Fabricius, 1793:32 <i>Andrena austriaca</i> Panzer, 1798:19 <i>Andrena rubricata</i> Smith, 1847:1666 <i>Andrena florea anhing</i>a Warncke, 1975:99 <i>Andrena florea corsica</i> Warncke, 1975:135 1. <i>mephistophelica</i>, Camron, 1897:443. 2. <i>gracillima</i>, Cameron, 1897:118. 3. <i>anonyma</i>, Cameron, 1897: 122. 4. <i>floridula</i>, Smith, 1878:2. 5. <i>cameroni</i> Cameron, 1909:249. 6. <i>peridonea</i> Cockerell, 1920:134. 7. <i>burkelli</i> Bingham, 1908: 363. 8. <i>rupshuensis</i> Cockerell, 1911:243. 9. <i>argada</i> Cameron, 1909:130. 10. <i>communis</i> Smith, 1879:50. <i>Andrena maligna</i> Cameron, 1897.</p>	<p>Mussooree Mussooree, Darjeeling, Calcutta Mussooree Dras, Kargil and Leh, Ladhakh Shimla North India North India Ladakh, Central India Ferozepur Central and Western India, Mussooree</p>

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(Manuscript Received: April, 2019; Revised: August, 2019;
Accepted: August, 2019; Online Published: August, 2019)

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