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## A Revision of the Subgenus *Plastandrena* of the Genus *Andrena* of Eastern Asia (Hymenoptera: Apoidea: Andrenidae)

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The subgenus *Plastandrena* of the genus *Andrena* from eastern Asia is revised and six species are recognized. *Andrena* (*Plastandrena*) *fukaii* Cockerell is recognized as a new synonym of *A. japonica* Smith, and *A. (Plastandrena) evermanni* Radoszkowski, *A. (Plastandrena) magnipunctata* Kim et Kim and *A. (Plastandrena) transbaicalica* Popov are recorded from China for the first time. A key to East Asian species of *Plastandrena* is given.

### INTRODUCTION

The subgenus *Plastandrena* was erected by Hedicke in 1933. It is distinctly separated from the other subgenera by having the propodeal enclosure coarsely wrinkled, usually with a transverse carina posteriorly, and it also has the hind tibial spur widened and curved at the base. It is similar to the subgenus *Trachandrena* Roberston in having the coarsely sculptured propodeal enclosure and the black clypeus in male. However, it is different from *Trachandrena* which has the strongly narrowed facial fovea in the lower half and the broad inner space near the compound eyes, the normal hind tibial spur, and the sixth sternum flattened apically in male. Popov (1949) synonymized *Schizandrena* Hedicke with *Plastandrena* and he (1958) gave a key to 28 Eurasian species and subspecies in this subgenus. In Europe, Warncke (1968) synonymized two subgenera *Glyphandrena* Hedicke and *Mitsukuriella* Hirashima et LaBerge with *Plastandrena*. He included six species in this subgenus. In eastern Asia, Yasumatsu (1941) listed six species, *A. bimaculata mondaensis* Friese, *A. carbonaria* (L.), *A. evermanni* Radoszkowski, *A. fukaii* Cockerell, *A. japonica* (Smith) and *A. mongolica* Morawitz from Mongolia and Japan. Hirashima (1957) described a new species *A. (Plastandrena) astragalina* from Japan. Hirashima and LaBerge (1965) erected a new subgenus *Mitsukuriella* based on *A. japonica*. Wu (1965) recorded *A. carbonaria* from China and (1982) recorded *A. (Plastandrena) ferghanica* (= *A. mongolica*) and described a new species *A. (Plastandrena) himalayaensis* (= *A. (Andrena) himalayaensis*) from Tibet, China. In Russian Far East Osytshnjuk (1995) gave a key to three species in this subgenus, *A. (Plastandrena) dzynmanica*, *A. (Plastandrena) carboniria* and *A. (Plastandrena) transbaicalica*. Tadauchi and Matsumura (2007) described one new species from Nepal and Tadauchi (2008) recorded five species from

Central Asia. The Holarctic *Plastandrena* is represented by 26 species in Palaearctic region and six species in Nearctic region (Gusenleitner & Schwarz, 2002). In this study, we examined species deposited in the Institute of Zoology, Academia Sinica and the Entomological Laboratory, Kyushu University, and recognized six species of *Plastandrena* from eastern Asia. We synonymized *A. fukaii* Cockerell with *A. japonica* (Smith) and recorded *A. evermanni* Radoszkowski, *A. magnipunctata* Kim et Kim and *A. transbaicalica* Popov from China for the first time. Two species of *A. (Plastandrena) eoa* Popov from north China and *A. (Plastandrena) dzynnanica* Popov from east Turkestan are excluded from this study because we have no materials at hands. A key to East Asian species of *Plastandrena* is given. Specimens were borrowed from the Institute of Zoology, Academia Sinica (Beijing) and the Entomological Laboratory, Kyushu University (Fukuoka).

### Subgenus *Plastandrena* Hedicke

*Plastandrena* Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 217–218; Hirashima, 1952, Mushi, 24 (10): 63; Popov, 1958, Horae Soc. Ent. Union. Sovet., 46: 127; LaBerge, 1964, Univ. Nebraska St. Mus. Bull., 4: 297–298; Warncke, 1968, Mem. Est. Mus. Zool. Univ. Coimbra, (307): 55–56; LaBerge, 1969, Trans. Amer. ent. Soc., 95: 2–3. Type species: *Melitta tibialis* Kirby, 1802, by original designation.

*Schizandrena* Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 218. Type species: *Andrena aulica* Morawitz, 1876 = *Melitta bimaculata* Kirby, 1802, by original designation.

*Mitsukuriella* Hirashima et LaBerge, 1965, J. Fac. Agr., Kyushu Univ., 13: 472. Type species: *Nomia japonica* Smith, 1873, by original designation.

*Mitsukuriapis* Hirashima, LaBerge et Ikudome, 1994, Bull. Kagoshima Women's Junior College, 29: 6, new name for *Mitsukuriella* Hirashima et LaBerge 1965 (nec. *Mitsukuriella* Heding et Panning, 1954).

*Glyphandrena* Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 212. Type species: *Apis carboniria* Linnaeus,

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1767, by original designation.

Diagnosis: Moderate to large-sized bees; facial quad-rangle broader than long; integument metallic or not; clypeus black; pronotum without humeral angle and ridge; propodeal enclosure coarsely wrinkled with posterior carina or not; lateral area of propodeum usually rugulated; posterior spur of hind tibia broadened and abruptly bent near base; metasomal terga punctate with apical hair bands or not. Male clypeus black in Palaearctic species, metasomal sterna with incomplete subapical fimbriae, sixth sternum with strong reflected lateral teeth.

### Key to species of the subgenus *Plastandrena* in eastern Asia

#### Female

1. Metasomal terga without hair bands or with only lateral parts ..... 2
  - Metasomal terga with hair bands ..... 4
2. Integument with pure brown to black hairs except hind femoral and tibial scopa white
  - ..... *pilipes* (Fabricius)
  - Integument at least with pale hairs ..... 3
3. Metasomal terga densely punctate, extremely reflected (1st generation), less reflected (2nd generation) apically; clypeus with median irregular impunctate space ..... *japonica* (Smith)
  - Metasomal terga sparsely and weakly punctate, posterior depression flat; clypeus without median impunctate space ..... *transbaicalica* Popov
4. Metasomal terga 1–4 with broad, decumbent white hair bands; propodeal enclosure weakly wrinkled with weak transverse posterior carina; [facial fovea white, head and thorax with abundant white hairs; clypeus closely punctate; process of labrum small, entire]
  - ..... *eversmanni* Radoszkowski
  - Metasomal terga with short yellow or white hair bands; propodeal enclosure strongly wrinkled with transverse posterior carina ..... 5
5. Metasomal terga 1–3 red in part; terga with short, erect hairs and minute punctures; clypeus dulled with or without median raised impunctate line
  - ..... *mongolica* Morawitz
  - Metasomal terga black; terga with scanty hairs and moderate punctures; clypeus shiny without impunctate space ..... *magnipunctata* Kim et Kim

#### Male

1. Metasomal terga without hair bands or with only lateral parts ..... 2
  - Metasomal terga with hair bands ..... 4
2. Head, propodeum and metasoma with pure brown to black hairs ..... *pilipes* (Fabricius)
  - Head, propodeum and metasoma at least with pale hairs ..... 3
3. Metasomal terga densely punctate, extremely reflected (1st generation), less reflected (2nd generation) apically; propodeal enclosure strongly wrinkled
  - ..... *japonica* (Smith)

- Metasomal terga sparsely and weakly punctate, posterior depression flat; propodeal enclosure weakly wrinkled ..... *transbaicalica* Popov
- 4. Metasomal terga reddened in part ..... 5
  - Metasomal terga black; [terga with scanty hairs and moderate punctures; clypeus shiny without impunctate space] ..... *magnipunctata* Kim et Kim
- 5. Propodeal enclosure weakly wrinkled with weak transverse posterior carina; metasomal terga with dense minute punctures
  - ..... *eversmanni* Radoszkowski
  - Propodeal enclosure strongly wrinkled with transverse posterior carina; metasomal terga with sparse minute punctures ..... *mongolica* Morawitz

### 1. *Andrena (Plastandrena) pilipes* (Fabricius)

*Apis pilipes* Fabricius, 1781, Spec. Insect., 1: 474 [female, Italy].

*Andrena pilipes*: Morawitz, 1880, Bull. Biol. Acad. Sci. St. Petersburg, 10: 479 [in list, Mongolia]; Schmiedeknecht, 1883, Apid. Europe., 1: 521–522 [female & male]; Nurse, 1904, J. Bombay nat. Hist. Soc., 15: 557 [in list, India].

*Andrena (Plastandrena) pilipes*: Gusenleitner & Schwarz, 2002, Entomofauna, (Suppl. 12): 594–597; Tadauchi, 2008, Esakia, (48): 5.

*Andrena dolorosa* Nurse, 1904, J. Bombay nat. Hist. Soc., 15: 563 [female, Pakistan].

Other synonymies: See Gusenleitner & Schwarz (2002).

Specimens examined. China: Xinjiang Uygur Autn. Region: 1 female, Alatai, 930 m, 14. viii. 1960 (S–y. Wang); 2 females, Yiwu, 21. vi. 1979 (S–f. Wang). Gansu Province: Wuwei: 1 female and 5 males, 28. iv. 1996 (S. Ikudome); 4 males (H–l. Xu); 2 females and 1 male (O. Tadauchi). 30. iv. 1996; 19 females and 2 males (H–l. Xu), 17 females and 3 males (O. Tadauchi); 13 females and 4 males (S. Ikudome), 10–11. viii. 1996; Lingtao: 1 female and 2 males (H–l. Xu); 2 females (S. Ikudome), Daban, 17. viii. 1996. Qinghai Province: Ledu: 2 females (H–l. Xu); 1 female (S. Ikudome), 16. viii. 1996. Beijing: 3 females, 1938 (K. Tsuneki). Inner Mongolia: 1 female, Apaka, 22. viii. 1939 (K. Tsuneki). Mongolia: Ostgobi aimak: 1 female, 20 km So v. Cojren, 1,200 m, 1. vii. 1963 (Z. Kaszab).

Remarks. This species has two generations a year. It can be recognized by the vestiture wholly blackish to black except the white hind femoral and tibial scopal hairs in female.

Distribution. China: (Qinghai, Xinjiang, Gansu, Inner Mongolia, Beijing); Mongolia; Pakistan; Central Asia; Europe; North Africa.

Floral associations. China: *Potentill* sp., *Brassica campestris*, *Allium tuberosum*.

### 2. *Andrena (Plastandrena) japonica* (Smith)

*Nomia japonica* Smith, 1873, Trans. Ent. Soc. London, 1873: 201 [female, Japan].

*Andrena japonica*: Meado–Waldo, 1916, Ann. Mag. nat. Hist., (8)17: 462; Yasumatsu, 1941, Peking nat. Hist.

Bull., 15: 277 [in list].

*Andrena mitsukurii* Cockerell, 1913, Ann. Mag. nat. Hist., (8)11: 186 [male, Japan]; Yasumatsu, 1941, Peking nat. Hist. Bull., 15: 278 [in list].

*Andrena (Glyphandrena) mitsukurii*: Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 213.

*Andrena (Mitsukuriiella) japonica*: Hirashima, 1965, J. Fac. Agr., Kyushu Univ., 13: 472–476; Hirashima, 1966, J. Fac. Agr., Kyushu Univ., 14: 96, 116 [female & male, in key]; Kim and Kim, 1983, Kor. J. Ent., 13: 6 [Korea]; Tadauchi, 1989, Check List Jap. Insects, 684.

*Andrena fukaii* Cockerell, 1914, Ann. Mag. nat. Hist., (8)13: 279 [female, Japan]; Yasumatsu, Peking nat. Hist. Bull., 15: 276. **New synonymy**

*Andrena (Glyphandrena) fukaii*: Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 213.

*Andrena (Mitsukuriiella) fukaii*: Hirashima, 1965, J. Fac. Agr., Kyushu Univ., 13: 476–478; Hirashima, 1966, J. Fac. Agr., Kyushu Univ., 14: 96, 116 [female & male, in key].

*Andrena (Plastandrena) japonica*: Gusenleitner & Schwarz, 2002, Entomofauna, (Suppl. 12): 378–379.

Specimens examined. A series of specimens in the Kyushu University are examined.

Remarks. This species has two generations a year. It is recognized by the metasomal terga coarsely punctate and unusually reflected apically in the 1st generation (summer form), but less reflected in the 2nd generation (spring form).

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu); Korea.

Floral association. See Hirashima (1965).

### 3. *Andrena (Plastandrena) transbaicalica* Popov

*Andrena (Plastandrena) transbaicalica* Popov, 1949, Ent. Rev. USSR., 30: 398 [female, Siberia]; Popov, 1958, Horae. Soc. Ent. Union. Soviet., 46: 135 [female in key]; Osytsnjuk, 1995, Key Insects Russian Far East, Vol. IV, part 1, 493, 518 [female & male, in key, Russian Far East]; Gusenleitner & Schwarz, 2002, Entomofauna, (Suppl. 12): 772–773.

*Andrena (Plastandrena) astragalina* Hirashima, 1957, Mushi, 30: 51 [female & male, Japan]; 1965, J. Fac. Agr., Kyushu. Univ., 13: 488; Hirashima, 1966, J. Fac. Agr., Kyushu. Univ., 14: 96, 104, 116 [female & male, in key]. Tadauchi and Lee, 1992, Esakia, (32): 56 [Korea].

Other synonymies. See Gusenleitner & Schwarz (2002).

Specimens examined. China: Heilongjiang Province: 1 female and 4 males, Jingpo Lake, Mudanjiang, 23–24. v. 1993 (O. Tadauchi).

Remarks. This species is similar to *Andrena tibialis* (Kirby) in having sparse punctures on metasomal terga, but it differs by the entire process of labrum and the metasomal terga with scanty hairs in female.

Distribution. China (new record, Heilongjiang Prov.);

Japan (Hokkaido, Honshu, Kyushu); Korea (central Korea); Russia (middle Siberia, Far East area).

Floral association. China: *Taraxacum* sp.

### 4. *Andrena (Plastandrena) eversmanni* Radoszkowski

*Andrena eversmanni* Radoszkowski, 1868, Horae Soc. ent. Ross., 5: 74–75 [female & male, central Asia]; Schmiedeknecht, 1883, Apid. Europe., 1: 434, 475 [female & male]; Morawitz, 1890, Horae Soc. ent. Ross., 24: 357 [in list, Mongolia]; Yasumatsu, 1941, Peking nat. Hist. Bull., 15: 280 [in list].

*Andrena (Plastandrena) eversmanni*: Popov, 1958, Horae Soc. ent. Union. Soviet., 46: 131, 140 [female & male, in key]; Xu and Tadauchi, 1997, J. Fac. Agr., Kyushu Univ., 41: 172–175 [redescription]; Gusenleitner & Schwarz, 2002, Entomofauna, (Suppl. 12): 257–258; ; Tadauchi, 2008, Esakia, (48): 2–3.

Specimens examined. China: Gansu Province: Nanhu, Dunhuang, 7. v. 1996: 3 females and 2 males (H–I. Xu); 2 females and 2 males (O. Tadauchi); 5 females and 7 males (S. Ikudome). Mongolia: Bejanchongor Aimak, 2 females, 24–29. vi. 1967 (Z, Kaszab).

Remarks. This species is separated from the other members of *Plastandrena* by hairs on the body abundant, white, the facial fovea white, the mesoscutum and suctellum with subvelvety hairs and the metasomal terga with broad, decumbent hair bands in female.

Distribution. China (new record, Gansu Prov.); Mongolia; Central Asia.

Floral association. *Salix* sp.

### 5. *Andrena (Plastandrena) mongolica* Morawitz

*Andrena mongolica* Morawitz, 1880, Bull. Acad. Sci. St. Petersburg, 26: 360 [female, Mongolia]; Yasumatsu, 1941, Peking nat. Hist. Bull., 15: 278 [in list].

*Andrena (Plastandrena) mongolica*: Popov, 1949, Ent. Obozr., 30: 393 [female & male, Russia]; Popov, 1958, Horae Soc. ent. Union. Soviet., 46: 133, 141 [female & male, in key]. Xu and Tadauchi, 1997, J. Fac. Agr., Kyushu Univ., 41: 175–176 [redescription]; Gusenleitner & Schwarz, 2002, Entomofauna, (Suppl. 12): 490; ; Tadauchi, 2008, Esakia, (48): 3–5.

*Andrena (Plastandrena) apiformis mongolica*: Warncke, 1967, Eos, 43: 289.

*Andrena (Plastandrena) ferghanica*: Wu, 1982, Insects of Xizhang, P. 381 [nec *A. mongolica* Morawitz, 1880].

Specimens examined. China: Xinjiang Uygur Autn. Region: 1 female, Shache, 26. v. 1955 (S–j. Ma); 1 female, Atushi, 1,350 m, 22. vi. 1987 (X–z. Zhang); 1 female, Aketao, 2950 m, 10. vii. 1989 (X–z. Zhang); 1 male, Hezhen, 1,300 m, 3. vi. 1959 (S–y. Wang). Gansu Province: 1 male, Xishuichi, Zhangye, 2. v. 1996 (H–I. Xu); 4 males, Jiuquan, 3. v. 1996 (S. Ikudome); 4 males (H–I. Xu); 2 females and 1 male (O. Tadauchi); 2 females and 1 male (S. Ikudome), Yumen, Jiayuguan, 4. v. 1996.

Remarks. Wu (1982) misidentified this species as *A. (Plastandrena) ferghanica* Morawitz from Tibet. This

species is similar to *Andrena cypricola* Mavromoutakis from Europe, but it can be easily separated from *cypricola* by the longer flag segmental 3, the coarsely punctate clypeus, the longer malar space and hair bands on the metasomal terga.

Distribution. China (Gansu, Xinjiang, Xizang Provs.); Mongolia; Russia; Central Asia.

Floral association. *Prunus* sp.

### 6. *Andrena (Plastandrena) magnipunctata* Kim et Kim

*Andrena (Plastandrena) magnipunctata* Kim et Kim, 1989, *Kor. J. Ent.*, 19: 201–202 [female, Korea]; Tadauchi *et al.*, 1997, *Esakia*, (37): 195–196 [male, Korea]; Gusenleitner & Schwarz, 2002, *Entomofauna*, (Suppl. 12): 452.

Specimens examined. China: Beijing: 1 female, 17. v. 1962 (S–y. Wang); 2 females, 7–28. iv. 1964 (S–m. Gee); 2 females, 4–20. v. 1964 (S–m. Gee); 1 female, 26. iv. 1974 (S–f. Wang); 1 female, 25. viii. 1981 (Q. Zhou). Heilongjiang Province: 2 females, Harbin, 10–20. viii. 1955; 1 female, Jingpo Lake, Mudanjiang, 26. v. 1993 (O. Tadauchi).

Remarks. This species is similar to *Andrena transbaicalica*, the female can be separated from that of *transbaicalica* by the metasomal terga with close punctures and white hair bands.

Distribution. China (new record, Beijing, Heilongjiang Prov.); Korea.

Floral association. Not available.

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### REFERENCES

Cockerell, T. D. A. 1913 Descriptions and records of bees. XLIX. *Ann. Mag. Nat. Hist.*, **11**(8): 185–195  
 Cockerell, T. D. A. 1914 Descriptions and records of bees. LVII. *Ann. Mag. Nat. Hist.*, **13**(8): 277–286  
 Gusenleitner, F. and M. Schwarz 2002 Weltweite Checkliste der Bienengattung *Andrena* mit Bemerkungen und Ergänzungen zu paläarktischen Arten (Hymenoptera, Apidae, Andreninae, *Andrena*). *Entomofauna, Suppl.*, **12**: 1–1280 (In German)  
 Hedicke, H. 1933 Beiträge zur Systematic der Gattung *Andrena* F.

(Hym. Apid.). *Mitt. Zool. Mus. Berlin*, **19**: 199–220 (In German)  
 Hirashima, Y. 1957 Descriptions and records of bees of the genus *Andrena* from Eastern Asia. III (Hymenoptera, Andrenidae). *Mushi*, **30**: 49–57  
 Hirashima, Y. 1965 Systematic and biological studies of the family Andrenidae of Japan (Hymenoptera, Apoidea) Part 2. Systematics 5. *J. Fac. Agr., Kyushu Univ.*, **13**(3): 461–491  
 Hirashima, Y. 1966 Systematic and biological studies of the family Andrenidae of Japan (Hymenoptera, Apoidea) Part 2. Systematics 7. *J. Fac. Agr., Kyushu Univ.*, **14**(1): 89–131  
 Kim, M–I. and C–w. Kim 1983 On the 9 unrecorded Andrenidae from Korea (Hymenoptera: Apoidea). *Kor. J. Entomol.*, **13**(1): 5–9  
 Kim, M–I. and C–w. Kim 1989 Systematic study of Andrenidae from Korea (Hymenoptera: Apoidea) (On the three new species and one new subspecies). *Kor. J. Entomol.*, **19**(3): 199–206  
 Morawitz, F. 1880 Ein Beitrag zur bienen–fauna Mittel–Asiens. *Bull. Acad. Impér. Sci. St–Pétersbourg*, **26**: 337–389  
 Nurse, C. G. 1904 New species of Indian Hymenoptera. Apidae. *J. Bombay Nat. Hist. Soc.*, **15**: 557–585  
 Osytsnjuk, A. Z. 1977 Bees–Andrenidae. *Fauna Ukraini*, **12**(5): 1–328 (In Ukrainian)  
 Osytsnjuk, A. Z. 1995 *Andrena*. In “Key to the insects of Russian Far East in six volumes. vol. 4, Neuropteroidea, Mecoptera, Hymenoptera, Part 1” ed. by P. A. Lehr, 606 pp, St. Petersburg, Nauka, pp. 489–527 (In Russian)  
 Popov V. B. 1949 Subgenus *Plastandrena* Hedicke and its new species (Hymenoptera, Apoidea). *Entomol. Obozr.*, **30**: 389–404 (In Russian)  
 Popov V. B. 1958 On three subgenera of the genus *Andrena* (Hymenoptera, Andrenidae). *Hor. Soc. Union. Sovet.*, **46**: 109–161 (In Russian)  
 Radoszkowski, O. 1868 Matériaux pour servir à l'étude des insectes de la Russie, IV. Notes sur quelques Hyménoptères de la tribu des Apides. *Hor. Soc. Entomol. Ross.*, **5**: 73–90  
 Smith, F. 1873 Descriptions of Aculeate Hymenoptera of Japan, collected by Mr. George Lewis at Nagasaki and Hiogo. *Trans. Entomol. Soc. Lond.*, **1873**: 181–206  
 Tadauchi, O. 2008 The genus *Andrena* from Kazakhstan and Kyrgyzstan (Hymenoptera, Andrenidae) (2). *Esakia*, (48): 1–18  
 Tadauchi, O. and C–e. Lee 1992 The family Andrenidae of Korea (Hymenoptera, Apoidea). 1. *Esakia*, (32): 47–58  
 Tadauchi, O. and T. Matsumura 2007 The genus *Andrena* collected from Nepal (Hymenoptera, Andrenidae) with redescrptions of some types of *Andrena* described from North India. *Esakia*, (47): 1–20  
 Tadauchi, O., H–I. Xu, and J–c. Paik 1997 The family Andrenidae of Korea (Hymenoptera, Apoidea) II. *Esakia*, (37): 187–202  
 Warncke, K. 1968 Die Untergattungen der westpaläarktischen bienen–gattung *Andrena* F. *Mem. Est. Mus. Zool. Univ. Coimbra*, (307): 1–111 (In German)  
 Wu Y–r. 1965 *Economic Insect Fauna of China. Fasc. 9, Hymenoptera: Apoidea*. Science Press, Beijing, 83 pp  
 Wu Y–r. 1982 Hymenoptera: Apoidea. In “*Insects of Xizang Vol. II*”. Ed. By F. S. Huang, Science Press, Beijing, pp. 379–426  
 Xu, H–I. and O. Tadauchi 1997 Subgeneric positions and redescrptions of East Asian *Andrena* preserved in the Zoological Institute, Russian Academy of Sciences, St. Petersburg (Hymenoptera, Andrenidae). *J. Fac. Agr., Kyushu Univ.*, **41**(3–4): 165–178  
 Yasumatsu, K. 1941 A list of the Far Eastern species of the genus *Andrena* (Hym., Apoidea). *Peking Nat. Hist. Bull.*, **15**(4): 273–284