

A Taxonomic Study on the Subgenus *Seladonia* (Hymenoptera: Halictidae: *Halictus*) in China with a Description of a New Species

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Ze-Qing Niu, Yan-Ru Wu and Da-Wei Huang (2004) A taxonomic study on the subgenus *Seladonia* (Hymenoptera: Halictidae: *Halictus*) in China with a description of a new species. *Zoological Studies* 43 (4): 647-670. In this paper, 17 species of the subgenus *Seladonia* (genus *Halictus*) from China are reported. One new species, *H. (S.) multicarinatus* sp. nov. is described. Two subspecies, *H. (S.) confusus alpinus* Alfken, *H. (S.) confusus perkinsi* Blüthgen, and 2 species, *H. (S.) semitectus* Morawitz and *H. (S.) varentzowi* Morawitz are newly recorded in China. A species checklist, a key to the species, a description of the new species, redescriptions of the newly recorded species and subspecies, and remarks for each species are given. The type specimens are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing. <http://www.sinica.edu.tw/zool/zoolstud/43.4/647.pdf>

Key words: Taxonomy, Halictidae, Halictinae, *Halictus*, *Seladonia*.

The subgenus *Seladonia* Robertson 1918 belongs to the genus *Halictus* (Hymenoptera: Halictidae). Globally, it includes about 100 species of greenish, bluish, or brassy metallic-colored, moderate to small-sized bees (body length, 4.5~10.0 mm) (Pesenko 2000). The subgenus *Seladonia* is distinguished from other subgenera by the following characters: integument of both sexes, at least head and thorax, with metallic reflections; hairless propodeal dorsal enclosure large, about as long as metanotum, area behind and lateral to propodeal dorsal enclosure usually less strongly punctate and not densely covered with hair.

Female: keel of labral process strong; T5 with longitudinal median zone, and not divided by notch or cleft; prepygidial fimbria divided; basitibial plate rounded or pointed, its anterior margin defined.

Male: gonostylus double; lower gonostylus (also named ventral gonostylus) directed to rear, sometimes reduced to a small, slender process;

upper gonostylus broad and angular, middle inner surface with cluster of long, curved, stiff setae; posterior margin of S8 lacking medial process.

The subgenus *Seladonia* (genus *Halictus*) is widespread; the regional faunas were studied by Wille and Michener (1971, Neotropical species), Sandhouse (1941, North American species), Sakagami and Ebmer (1987, Oriental species), Ebmer (1988, European species), Pesenko (2000, Polish species), Dawut and Tadauchi (2000 2001 2002, Asian species), and Janjic and Packer (2001, some new descriptions of *Seladonia* from the New World).

Several scholars, such as Morawitz (1874), Blüthgen (1923~1955), and Ebmer et al. (1972~1996) respectively published descriptions of new species collected from China. Wu (1941) and Wu and Fan (1991) studied this subgenus in China; Fan (1991) recorded 8 Chinese species (only 4 represented by both sexes) of the subgenus *Seladonia*.

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MATERIALS, METHODS, AND TERMINOLOGY

In this study, species were collected from all over China. Descriptions are based on specimens deposited in the Museum of the Institute of Zoology, Chinese Academy of Sciences, Beijing (IZCAS).

All specimens were examined with a Leica M10 (Germany) stereomicroscope. Attributes were recorded with a Nikon COOLPIX 995 (Japan) digital camera or by drawing. Male genitalia and associated sterna were anatomized directly in 10% KOH, or taken out from specimens after softening in a jar for 2 d or so, and cleared in 10% KOH for 12 h or less, then washed with water for several minutes, and drawn using a Leica M10 stereomicroscope.

The morphological terminology used in the descriptions mainly followed Michener (2000) and Sakagami and Ebmer (1987), while parts of terms followed Dawut and Tadauchi (2000). Absolute measurements, in millimeters (mm), are used for body and forewing lengths. For all other structures, relative measurements are used. Some abbreviations used in description are as follows:

1. BL (body length): measured from the base of the antennal socket to the apex of the metasoma. In individuals of the same species, shortest and longest measurements are given;

2. HL (head length): measured from the apicomedian margin of the clypeus to the upper margin of the vertex in frontal view;

3. HW (head width): measured at the widest point of the head across the compound eyes in frontal view;

4. EW (eye width): the greatest width of eye in lateral view;

5. GW (genal width): the greatest width of the gena in lateral view;

6. WL (wing length): measured in a straight line from the base of the tegula to the tip of the forewing; in individuals of the same species, shortest and longest measurements are given;

7. OOD (ocellocular distance): shortest distance between the lateral ocellus and the inner margin of the compound eye in frontal view;

8. IOD (interocellar distance): shortest distance between the inner margins of the lateral ocelli;

9. MOD (maximum interocular distance): maximum interocular distance in frontal view;

10. UOD (upper interocular distance): minimum upper interocular distance in frontal view;

11. LOD (lower interocular distance): minimum lower interocular distance in frontal view;

12. MsW (mesosomal width): measured between the outer rims of the tegulae in dorsal view;

Table 1. Checklist of Chinese *Seladonia*

Species and subspecies	Female	Male	New record	New species
<i>H. (S.) aerarius</i> Smith, 1873	√	√		
<i>H. (S.) confusus alpinus</i> Alfken, 1907	√		√	
<i>H. (S.) confusus perkinsi</i> Blüthgen, 1926		√	√	
<i>H. (S.) dorni</i> Ebmer, 1982	√	√		
<i>H. (S.) leucaheneus leucaheneus</i> Ebmer, 1972	√	√		
<i>H. (S.) magnus</i> Ebmer, 1980	√	√		
<i>H. (S.) mongolicus</i> Morawitz, 1880	√			
<i>H. (S.) pjalmensis pjalmensis</i> Strand, 1909	√	√		
<i>H. (S.) placidulus</i> Blüthgen, 1923	√			
<i>H. (S.) propinquus</i> Smith, 1853	√	√		
<i>H. (S.) seladonius</i> (Fabricius, 1794)	√			
<i>H. (S.) semitectus</i> Morawitz, 1873	√	√	√	
<i>H. (S.) subauratus subauratus</i> (Rossi, 1792)	√			
<i>H. (S.) tumulorum higashi</i> Sakagami et Ebmer, 1979	√	√		
<i>H. (S.) varentzowi</i> Morawitz, 1894	√		√	
<i>H. (S.) vicinus</i> Vachal, 1894	√	√		
<i>H. (S.) multicarinatus</i> sp. nov.		√		√
Total: 17	15	11	4	1

13. MtW (metasomal width): measured at the widest metasomal tergum in dorsal view;

14. FnL (length of flagellomere n): measured along the lower surface of the flagellomere n;

15. PP: punctures;

16. IS: interspaces of punctures, in this paper, refers to the ratio of the diameter of punctures; and

17. Floral association: means that specimens of species were collected from flowers of plant species.

The species (including subspecies) checklist of subgenus *Seladonia* of China is given in table 1.

Key to species

Male: Flagellum 11-segmented; metasoma 7-segmented; anterior part of clypeus always yellow (except for *H. (S.) multicarinatus* sp. nov.)

1. Antenna long, reaching propodeum or base of T12
- Antenna short, only reaching scutellum.....13
2. S6 flat medially.....3
- S6 with a depression behind sternal gradulus.....9
3. Metasomal terga golden green or grayish green, with strong metallic reflections.....4
- Metasomal terga darkly reddened or brownish black, without metallic reflections.....5
4. Lateral surface of pronotum with a few strong ridges; vertex lengthened and broadened; 2nd flagellomere 1.4 times as long as wide; lower gonostylus slightly broadened distally; body generally larger, length > 6.0 mm.....
-*H. (S.) aerarius* Smith
- Lateral surface of pronotum without ridges; vertex shortened; 2nd flagellomere 1.8 times as long as wide; lower gonostylus slender, sharply pointed distally; body generally smaller, < 6.0 mm.....*H. (S.) semitectus* Morawitz
5. Body large, body length > 8.5 mm.....6
- Body small, body length < 6.0 mm.....7
6. S4 weakly emarginate posteriorly, without anterolateral angles; legs yellowish brown; lower gonostylus slender, lamella-shaped, breadth 0.4 times length.....
-*H. (S.) magnus* Ebmer
- S4 strongly emarginate posteriorly, with anterolateral angles; legs completely black; lower gonostylus, broadly lamella-shaped, breadth 0.6 times length.....
-*H. (S.) multicarinatus* sp. nov.
7. Third flagellomere short, 1.5 times as long as wide.....
-*H. (S.) placidulus* Blüthgen
- Third flagellomere long, 2.0 times as long as wide.....8
8. In frontal view of head, head length greater than width.....
-*H. (S.) mongolicus* Morawitz
- In frontal view of head, head length less than width.....
-*H. (S.) varentzowi* Morawitz
9. S2 and S3 with white tomentose apical bands triangularly broadened forward medially, stylus of upper gonostylus large, greatly triangularly or roundly broadened distally.....10
- S2 and S3 with bands not as above; stylus of the upper gonostylus slender, not broadened distally.....11

10. Metasomal terga apical hair bands broad, not interrupted on T2 and T3 medially; propodeal dorsum triangular, granulate medially, stylus of upper gonostylus triangularly broadened distally.....
-*H. (S.) leucaheneus leucaheneus* Ebmer
- Metasomal terga apical hair bands narrow, broadly interrupted on T1–T4 medially; propodeal dorsum crescentic, strongly and irregularly rugose medially; stylus of upper gonostylus roundly broadened*H. (S.) dormi* Ebmer
11. Upper gonostylus roundly emarginate distally; lower gonostylus moderately and roundly broadened at distal 1/2; metasomal terga with sparse yellowish hairs apically.....
-*H. (S.) tumulorum higashi* Sakagimi and Ebmer
- Upper gonostylus straight distally; lower gonostylus greatly triangularly broadened at distal 1/2; metasomal terga with sparse whitish hairs apically.....12
12. Head shorter, its length/width ratio 1.05; clypeus less protuberant; flagellum usually pale ochre.....
-*H. (S.) confusus perkinsi* Blüthgen
- Head longer, its length/width ratio 1.1; clypeus strongly protuberant, flagellum usually dark brown to black.....
-*H. (S.) confusus alpinus* Alfken
13. Clypeus with narrow yellow band along lower margin, band less than 1/3 of clypeal length; supraclypeal area nearly flat.....
-*H. (S.) seladonius* (Fabricius)
- Clypeus with broad yellow band along lower margin, band more than 1/3 of clypeal length; supraclypeal area convex.....14
14. In dorsolateral view, lower gonostylus curved ventrally; lateral surface of pronotum below with parallel ridges.....
-*H. (S.) propinquus* Smith
- In dorsolateral view, lower gonostylus straight; lateral surface of pronotum below without parallel ridges.....15
15. Punctuation on metasomal terga sparse, 0.5–1.0 at disc of T1.....
-*H. (S.) vicinus* Vachal
- Punctuation on metasomal terga dense, 0.1–0.5 at disc of T1.....16
16. S7 bluntly round medially, without slender or pointed process, S8 with small trapezoidal process medially.....
-*H. (S.) pjalmensis pjalmensis* Strand
- S7 same as above, but S8 medially moderately projecting, apex not sharply pointed.....
-*H. (S.) subauratus subauratus* (Rossi)

Female: Flagellum 10-segmented; metasoma 6-segmented, exposed 5 segments; T5 with longitudinal median zone.

1. Metasomal terga without metallic reflections.....2
- Metasomal terga with metallic reflections.....8
2. Body smaller, length < 6.0 mm.....3
- Body moderate or larger, length > 6.0 mm.....5
3. Basilateral patch on T1 dense and large; T3 and T4 with short and dense yellowish-white hairs, completely covering surface.....
-*H. (S.) placidulus* Blüthgen
- Basilateral patch on T1 sparse, small to moderate; T3 and T4 with short hairs, but not as dense as above, not covering entire surface.....4
4. GW wider than EW in lateral view; metasomal terga reddened.....
-*H. (S.) mongolicus* Morawitz
- GW narrower than EW in lateral view; metasomal terga yellowish brown.....
-*H. (S.) varentzowi* Morawitz
5. Head longer than wide; frontal carina relatively long, usu-

- ally longer than carina-ocellus distance.....
*H. (S.) dorni* Ebmer
- Head wider than long; frontal carina short, not longer than carina-ocellus distance.....6
6. Inner hind tibial spur with 3 teeth; metasomal terga apical hair bands sparse, broadly interrupted medially on T1 and T2, becoming narrower on T3 medially.....7
- Inner hind tibial spur with 7 or 8 teeth; metasomal terga apical hair bands dense, broadly interrupted medially on T1, on T2~T4 complete.....*H. (S.) magnus* Ebmer
7. In dorsal view head, vertex narrowly rounded at posterolateral extremities; hair bands on metasomal terga ochre yellow.....*H. (S.) confusus perkinsi* Blüthgen
- In dorsal view, head, vertex wider rounded at posterolateral extremities; hair bands on metasomal terga white.....
*H. (S.) confusus alpinus* Alfken
8. Mesoscutum extended forward, with median emargination anteriorly; metasomal terga with broad dense yellowish-white apical hair bands, bands on T1~T4 complete.....
*H. (S.) leucaheneus leucaheneus* Ebmer
- Mesoscutum not extended forward, straight at anterior margin; metasomal terga apical hair bands not as above.....9
9. Propodeum longer, its dorsal surface 0.9~1.0 times as long as scutellum.....
*H. (S.) tumulorum higashi* Sakagami and Ebmer
- Propodeum shorter, its dorsal surface 0.7~0.8 times as long as scutellum.....10
10. Mesoscutum shiny or silky-shiny, nearly without pubescence; < 4 teeth on inner hind tibial spur.....11
- Mesoscutum dull, not shiny, with denser pubescence; > 4 teeth on inner hind tibial spur.....12
11. Lateral surface of pronotum without ridges; vertex shortened; inner hind tibial spur with 3 or 4 teeth; T4 covered with tomentose pubescence throughout.....
*H. (S.) semitectus* Morawitz
- Lateral surface of pronotum with a few long ridges; vertex lengthened; inner hind tibial spur with 2 teeth; T4 without the pubescence as above.....*H. (S.) aerarius* Smith
12. Shape of connection between propodeal posterior and lateral surface round.....13
- Shape of connection between propodeal posterior and lateral surface crested.....14
13. Propodeal dorsum with sagittal rugose sculpturing; inner hind tibial spur with 6 or 7 teeth.....*H. (S.) vicinus* Vachal
- Propodeal dorsum with reticulose rugose sculpturing; inner hind tibial spur with 10 or 11 teeth.....
*H. (S.) pjalmensis pjalmensis* Strand
14. Clypeus apically gradually reduced; basilateral patch on T1 large, T3 lacking basal hair band.....
*H. (S.) subauratus subauratus* (Rossi)
- Clypeus apically not reduced; basilateral patch on T1 moderate, T3 with basal hair band.....15
15. Metasomal terga bluish green; basal hair bands on T2 and T3 narrow, hair bands on T2 about 1/5 as broad as length of T2; T4 not covered with tomentum.....
*H. (S.) propinquus* Smith
- Metasomal terga golden green; T2 and T3 with broad basal hair bands, hair bands on T2 about 1/3 as broad as length of T2; T4 covered with tomentum.....
*H. (S.) seladonius* (Fabricius)

***Halictus (Seladonia) aerarius* Smith, 1873**
 (Fig. 1A-G, female; H-P, male)

- Halictus aerarius* Smith, 1873: 201, ♂. Loc. typ.: Japan, Hiogo. Type: London.
- Halictus confluens* Morawitz, 1889, 24: 368-369, ♀. Loc. typ.: China, Kansu. Type: Leningrad.
- Halictus alexoides* Strand, 1910, 54: 194, ♀. Loc. typ.: Japan. Type: Berlin.
- Halictus pseudoconfluens* Strand, 1910, 54: 199, ♀, ♂. Loc. typ.: China, Kiautschou and Tsingtau. Type: Berlin.
- Halictus nikkoensis* Cockerell, 1911, 40: 241. Loc. typ.: Japan, Nikko. Type: Washington DC.
- Halictus leucopogon* Strand, 1913, A79: 170, ♀, ♂. Loc. typ.: Taiwan, Taihorin. Type: Eberswalde, Germany.
- Halictus tsushimae* Friese, 1916, 32, ♀, ♂. Loc. typ.: Japan, Tsushima. Type: Berlin.
- Halictus eruditus* Cockerell, 1924, 14(9): 581, ♀. Loc. typ.: Sibirien, Okeanskya. Type: Washington DC.
- Halictus aerarius* Smith: Ebmer, 1978, 29: 190.
- Halictus aerarius* Smith: Michener, 1978, Univ. 51(16): 528.
- Halictus (Seladonia) aerarius* Smith: Ebmer, 1988, 68(4/6): 346.
- Halictus (Seladonia) aerarius* Smith: Fan, 1991, 34(4): 479-480, ♀, ♂.
- Halictus (Seladonia) aerarius* Smith: Dawut and Tadauchi, 2000, 40: 65-70, ♀, ♂.

Specimens examined: China: Beijing, Bada Ling: 8 ♀ ♀, 8 May 1961, 3 ♀ ♀, 16 May 1961, 1 ♀, 15 June 1964, Su-mei Ge coll.; Beijing, Bada Ling, Sanpu: 500 m, 8 ♀ ♀, 1 Aug. 2002, Ze-qing Niu coll., 1 ♀, 21 Aug. 1964, Qing Zhou coll., 12 ♂ ♂, 21~22 Aug. 1964, Qin Zhou coll., 6 ♂ ♂, 19 Aug. 1964, 1 ♂, 18 Sept. 1964, Su-bai Liao coll.; Beijing, Bada Ling, Juyongguan: 1 ♀, 20 Aug. 1964, Su-mei Ge coll., 1 ♂, 20 Aug. 1964, Su-bai Liao coll.; Beijing, Xiangshan, Wofosi: 8 ♀ ♀, 12 July 1961, 1 ♀, 25 June 1961, 2 ♀ ♀, 29 June 1961, 1 ♀, 3 Aug. 1961, 1 ♀, 10 Aug. 1961, 1 ♀, 20 May 1964, 1 ♀, 2 June 1964, 2 ♀ ♀, 5 June 1964, 1 ♀, 17 July 1964, 1 ♂, 29 June 1961, Su-mei Ge coll., 1 ♀, 30 Aug. 1961, 2 ♂ ♂, 25 June 1962, Shu-yong Wang coll.; Beijing, Xiangshan, Badachu: 2 ♀ ♀, 21 June 1961, 2 ♀ ♀, 7 July 1961, 1 ♀, 24 July 1961, Su-mei Ge coll., 1 ♀, 19 Aug. 1962, collector not recorded; Beijing, Wenquan: 4 ♀ ♀, 9 June 1961, Su-mei Ge coll.; Beijing, Mentougou, Xiaolongmen, Liyuanling: 1140~1250 m, 16 ♀ ♀, 1 Aug. 2002, Ze-qing Niu coll.; Beijing, Mentougou: 1 ♀, 19 July 1955, Yi-ran Zhang coll.; Beijing, Miaofengshan: 1 ♀, 25 Aug. 1972, Jin-long Mao coll.; Beijing, Shisanling: 1 ♀, 5 May 1978, Shu-fang Wang coll.; Beijing, Dongwuyuan: 1 ♀, 7 June 1955, Yi-ran Zhang coll.; Beijing, Baojiayao: 1 ♀, 23 June 1955, Yi-ran Zhang coll.; Beijing: 2 ♀ ♀, 14 May 1963, 1 ♀, 19 May 1963, 2 ♀ ♀, 23 July 1963, 1 ♀, 26 July 1963, 1 ♂, 19 Sept. 1963, Su-mei Ge coll., 1 ♀, 6 May 1963, Jing-yan Wang coll., 2 ♀ ♀, 6 May 1963, Tai-lu Cheng coll., 2 ♂ ♂, 9 Sept. 1953, Yan-ru Wu coll.; Hebei, Donling: 2 ♀ ♀, 8 July 1963, Tai-lu

Cheng coll.; Hubei, Jingzhou: 1 ♀, 25 May 1961, 1 ♂, 25 May 1961, 3 ♂♂, 3 June 1961, Xiang-lin Meng coll.; Hunan, Liuyang: 1 ♀, 6 Aug. 1984, 1 ♂, 30 Sept. 1984, Xin-wang Tong coll.; Shaanxi, Foping: 1 ♀, 7 Aug. 1973, 1 ♂, 7 Aug. 1973, Xue-zhong Zhang coll.; Jiangsu, Nantong: 3 ♀♀, 18 June 1961, Tai-lu Cheng coll.; Jiangsu, Shanghai: 2 ♀♀, summer 1943, Marist Brothers coll., 1 ♀, 20 June 1939, 4 ♂♂, 9 June 1933, O. Piel. coll., 1 ♀, 10 Aug. 1931, 1 ♀, 21 July 1931, collector not recorded; Jiangsu, Nanjing: 18 July 1918, O. Piel. coll.; Jiangsu, Haihou: 1 ♀, 14 Aug. 1926, Hai-teheou coll.; Anhui, (Ningkw) : 1 ♀, 14 July 1920, O. Piel. coll.; Shandong, Tai Shan: 35 ♀♀, 3~15 June 1973, Shu-fang Wang coll.; Shandong, 60 ♀♀, 3~10 June 1973, Yan-ru Wu coll.; Shandong, Lao

Shan: 12 ♀♀, 3, 22 June 1973, Shu-fang Wang coll.; 7 ♀♀, 3, 22 June 1973, Yan-ru Wu coll.; Shandong, Qingdao: 1 ♀, 27 June 1973, Shu-fang Wang coll.; Shandong, Taian: 1 ♀, 29 May 1963, Xiang-lin Men coll.; Shandong, Jinan (Tsinanfou, Long-tong, 500~700 m), 18 ♀♀, 2 ♂♂, date of collection and collector not recorded; Shandong: 2 ♀♀, 28 May 1958, Jin-long Mao coll.; Shanxi, Taigu: 1 ♀, 19 May 1959, collector not recorded; Heilongjiang, Harbin: 1 ♀, 20 June 1955, 1 ♀, 27 July 1974, 1 ♂, 11 Aug. 1955, collector not recorded; Heilongjiang, Shangzhi: 4 ♀♀, 5 July 1962, Tai-lu Cheng coll.; Heilongjiang, Jingpo Hu: 1 ♂, 2 Sept. 1970, collector not recorded; Jiling, Gongzhuling: 1 ♀, 9 June 1962, Tai-lu Cheng coll.; Fujian, Chong'an: 2 ♀♀, 17 Aug. 1960, Yong Zuo

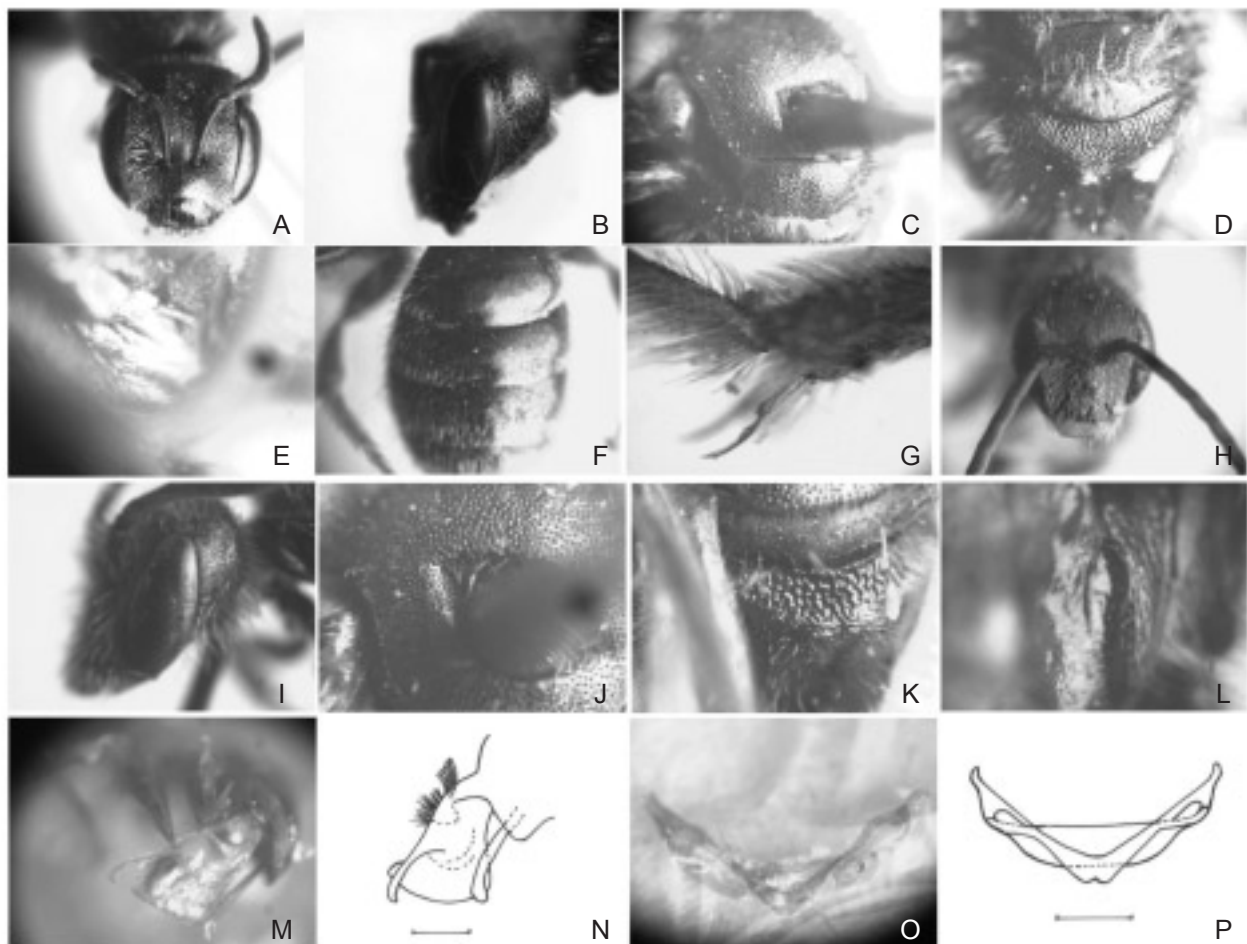


Fig. 1. *Halictus aerarius* Smith. A-G: Female. A: Frontal view of head; B: Lateral view of head; C: Dorsal view of mesoscutum; D: Dorsal view of propodeum; E: Lateral surface of pronotum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H-P: Male. H: Frontal view of head; I: Lateral view of head; J: Dorsal view of mesoscutum; K: Dorsal view of propodeum; L: Lateral surface of pronotum; M: Dorsolateral view of gonostylus; N: Drawing of gonostylus, scale line represents 0.25 mm; O: Dorsal view of S7-S8; P: Drawing of S7-S8, scale line represents 0.25 mm.

coll., 1 ♀, 21 July 1960, 1 ♂, 21 July 1960, 2 ♂ ♂, 27 July 1960, 3 ♂ ♂, 29 July 1960, 2 ♂ ♂, 30 July 1969, Yi-ran Zhang coll.; Fujian, Fuzhou: 1 ♀, 6 May 1961, Yan-ru Wu coll.; Yunnan, Jingdong: 1 ♀, 18 Sept. 1956, Ding-xi Liao coll.; Sichuan, Siping: 1100 m, 2 ♀ ♀, 25 June 1984, Jian-guo Fan coll.; Zhejiang, Lin'an: 1 ♂, Aug. 1961, collector not recorded.

Distribution: China: Anhui, Beijing, Fujian, Hebei, Heilongjiang, Jiangsu, Jiling, Shandong, Shanxi, Shaanxi, Sichuan, Yunnan, Zhejiang; Japan; Korean peninsula; Russia: Siberia; Taiwan.

Floral associations: *Alcea rosea*, *Agastache rugosa*, *Brassica chinensis*, *Cymbidium virescens*, *Cucurbita moschata*, *Helianthus annuus*, *Ixeris sonchifolia*, *Lactuca chinensis*, *Lespedeza bicolor*, *Raphanus sativus*, *Rasa xanthina*, *Rosa chinensis*, *Trifolium repens*, *Vitex negundo*, and *Zizyphus jujuba*.

Redescription: See Fan (1991), Dawut and Tadauchi (2000).

Remarks: This is the most-widespread species in China, and is also the most abundant. Both sexes have very strong golden-green reflections on the face, mesoscutum, scutellum, and metasomal terga; the pronotum has a few stronger and longer lateral ridges (Fig. 1E, L). The upper gonostylus has a slender stylus (= dorsal lobe); the lower gonostylus is slightly broadened distally (Fig. 1M, N). The description of Dawut and Tadauchi (2000) differs in that the upper gonostylus is said to lack the dorsal lobe.

***Halictus (Seladonia) confusus alpinus* Alfken, 1907 rec. nov.**

(Fig. 2A-H, female)

Halictus alpinus Alfken, 1907, 7: 205, ♀, ♂. Loc. typ.: Schweiz, Furka. Syntype: Berlin.

Halictus (Seladonia) confusus alpinus Alfken: Ebmer, 1988, 68(4/6): 368.

Halictus (Seladonia) confusus alpinus Alfken: Ebmer, 1988, Linzer Biol. Beitr. 20(2): 571.

Sealdonia confusa alpinus Alfken: Pesenko et al. 2000: 181, ♀, ♂.

Specimens examined: China: Beijing, Mentougou, Xiaolongmen, Liyuanling: 1140~1250 m, 7 ♀ ♀, 19 Apr. 2002, Ze-qing Niu coll.; Beijing, Xiangshan: 1 ♀, 27 Apr. 1973, Yan-ru Wu coll.; Shandong, Yantai: 1 ♀, 16 May 1961, Yun-ling Cheng coll.

Distribution: China: Beijing, Shandong; Poland; Switzerland; Spain.

Floral association: *Spiraea salicifolia*.

Redescription: Redescription is as follows:

Female: Body moderate, BL: 6.3~6.5 mm, WL: 4.8~5.0 mm.

Coloration: Generally paler, bluish green with metallic reflections on face, mesoscutum, and scutellum; metasomal terga reddish black, without metallic reflections; clypeus black; mandible with apical 1/2 dark blackish red, basal 1/2 black; lower surface of flagellum brownish black to black; scape and pedicel black; lateral lobe of pronotum black apically; tegulae and stigma paler yellowish brown;



Fig. 2. *Halictus confusus alpinus* Alfken. Female. A: Frontal view of head; B: Lateral view of head; C: Frontal view of clypeus; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur, scale line represents 0.25 mm.

the R of forewing blackish brown, other veins yellowish brown; all legs black, apart from mediotarsus and distitarsus dark brown; pro- and mesotibia with blackish-yellow spots basally; posterior margins of metasomal terga yellowish transparent.

Vestiture: Generally white to yellowish white; tegulae with yellowish-white hairs anteriorly; basilateral patch on T1 small; metasomal terga with apical bands of white hairs, on T1 and T2 broadly interrupted, on T3 narrower, on T4 complete and broad, covering posterior margin of T4; tergal surface with short, sparse yellowish-brown hairs; metasomal sterna with longer, sparser yellowish-brown hairs.

Structure: Head wider than long, HW: HL = 51: 49. Vertex flattened in frontal view (Fig. 2A), shiny and more or less roughened, with round PP; HW: MsW: MtW = 51: 46: 50; IOD: OOD = 7: 10. Frons slightly convex, frontal carina relatively short, shorter than carina-ocellus distance. Eyes with inner margins subparallel, MOD: UOD: LOD = 37: 34: 34. Paraocular area with epistomal angle roundly obtuse, lower margin slightly ascending laterally, with distinct round PP, IS = 0.2~1. Genal area nearly as broad as eye (Fig. 2B), GW: EW = 13: 12. Clypeus normally shaped (Fig. 2C), moderately convex, shiny, smooth, with small sparse PP, IS = 1~3. Supraclypeus nearly as high as clypeus, shiny, smooth, anterior with sparse round PP, as that of clypeus, posterior 1/2 with denser PP, IS = 0.2~0.5. Pronotum without lateral ridges, lateral surface weakly shiny and shagreened. Mesoscutum shiny, smooth, with round, deeper, scattered PP, IS = 0.2~2.0. Scutellum medially not depressed longitudinally, with denser and small PP marginally, IS = 0.2~0.5, center with sparser PP, IS = 0.5~2.0. Scutellum: metanotum: propodeal dorsum = 10: 5: 9. Propodeal dorsum with enclosure moderately depressed, with sagittal rugose sculptures both laterally and reticulosus rugose sculptures medially; connection of propodeal posterior and lateral surface crested; lateral surface of propodeum weakly shiny and shagreened, except above with small PP. Inner hind tibial spur with 3 teeth (Fig. 2G, H). Metasomal terga smooth, with small, shallower and sparse PP, IS = 0.5~2.0; metasomal sterna tessellate, S4 slightly emarginated posteriorly, without anterolateral angle.

Male has not been collected from China; for its attributes see Ebmer (1988).

Remarks: This is a new record for China. The female is characterized by the inner hind tibial spur with 3 teeth (Fig. 2G, H); sparse metasomal terga apical hair bands, broadly interrupted medially on

T1 and T2, and becoming narrower on T3 medially (Fig. 2F).

Halictus (Seladonia) confusus perkinsi
Blüthgen, 1926 rec. nov.

(Fig. 3A-L, male)

Halictus perkinsi Blüthgen, 1926, 1925: 417, nom. nov. of *H. flavipes* auctorum nec Fabricius.

Halictus (Seladonia) confusus perkinsi Blüthgen: Ebmer, 1988, 68(4/6): 368.

Halictus (Seladonia) confusus perkinsi Blüthgen: Ebmer, 1988, 20(2): 571.

Seladonia confusa perkinsi Alfken: Pesenko et al., 2000: 181, ♀, ♂.

Specimens examined: China: Xinjiang, Kuytun: 530 m, 1 ♂, 24 Aug. 2002, Ze-qing Niu coll.; Xinjiang, Jeminay (47°22'N, 85°33'E), 1080 m, 1 ♂, 28 Aug. 2002, Ze-qing Niu coll.

Distribution: China: Xinjiang; Europe (excluding the Alps).

Floral association: *Alcea rosea*.

Redescription: Redescription is as follows:

Female has not been collected from China; for its attributes see Ebmer (1988).

Male: Body moderate, BL: 7.0~7.5 mm, WL: 4.8~5.0 mm.

Coloration: Generally paler, golden green, or bluish green, with metallic reflections on face, mesoscutum, scutellum, and metasomal terga; about lower 1/2 of clypeus, labrum, median of mandible, and pronotal lateral lobe apically lemon yellow; lower surface of flagellum pale ochre or yellow, scape and pedicel black; tegulae yellowish, transparent; coxae black, femora and middle parts of tibiae yellowish brown, other parts of legs lemon yellow.

Vestiture: Generally paler, white, or grayish white. Tomentose pubescence more developed on paraocular area, on lateral surface of pronotum, and on lateral surface of propodeum; basilateral patch on T1 moderate; metasomal terga with apical bands of white tomentum, on T1~T3 broadly interrupted medially, on T4~T5 narrowly interrupted; T2~T3 also with distinct basal bands; tergal surface with short sparse yellowish-brown hairs.

Structure: Head longer than wide, HW: HL = 44: 46, HW: MsW: MtW = 44: 45: 40. Vertex round in frontal view, shiny and more or less roughened. Flagellum very long, reaching base of T1, F1~3L: F10L: F2W = 4: 9: 9: 10: 4. Clypeus rather convex, shiny and smooth, with slightly oblique spiniform PP, PP relatively larger, shallower and denser, IS = 0.2~0.5; Supraclypeus slightly higher

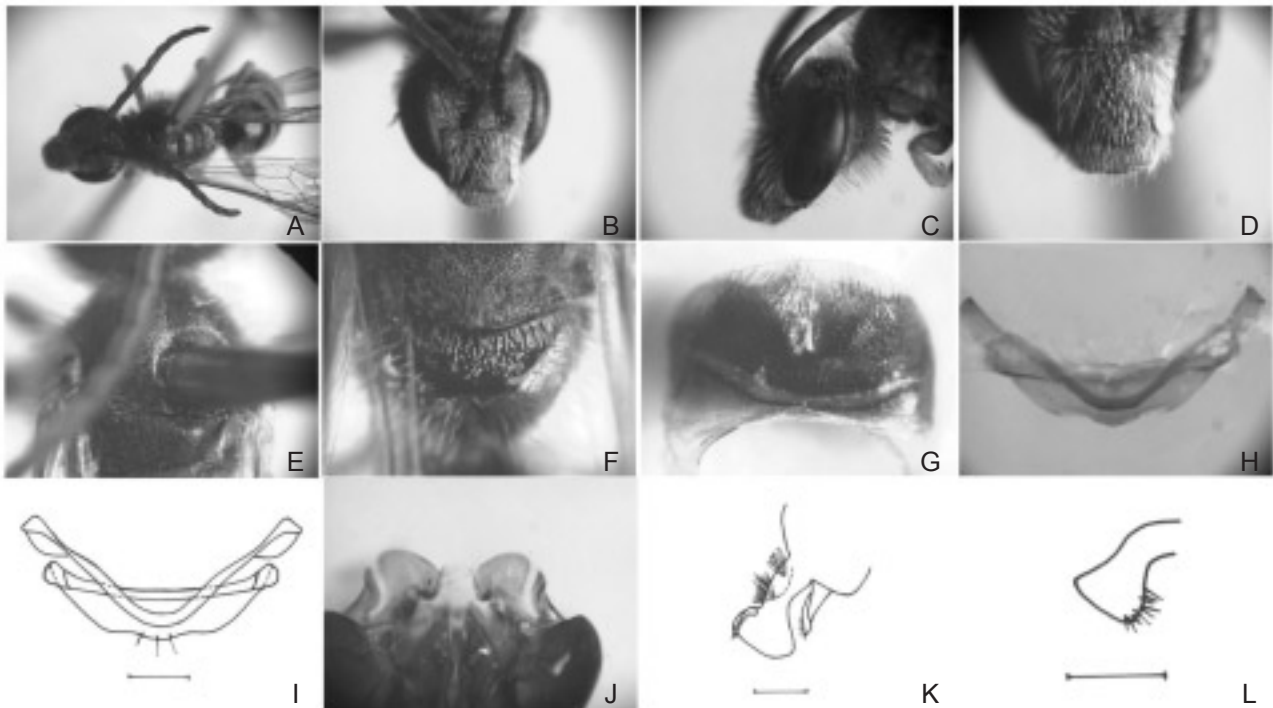


Fig. 3. *Halictus (Seladonia) confuses perkinsi* Blüthgen. Male. A: Dorsal view of whole body; B: Frontal view of head; C: Lateral view of head; D: Frontal view of clypeus; E: Dorsal view of mesoscutum; F: Dorsal view of propodeum; G: Dorsal view of S6; H: Dorsal view of S7-S8; I: Drawing of S7-S8, scale line represents 0.25 mm; J: Dorsal view of gonostylus; K: Drawing of gonostylus, scale line represents 0.25 mm; L: Drawing of lower gonostylus, scale line represents 0.25 mm.

than clypeus, shiny, smooth, with smaller, round, deeper PP, IS = 0.2; genal area obviously narrower than eye, GW: EW = 8: 14. Pronotum without lateral ridges, lateral surface weakly shiny, covered with tomentose pubescence. Mesoscutum shiny, smooth, with round and denser PP, IS = 0.5~1.0; scutellum not depressed longitudinally, shiny, smooth, with round, sparser PP, IS = 1.0~1.5. Scutellum: metanotum: propodeal dorsum = 9: 4: 9. Propodeal enclosure moderately depressed, silk-shiny, entirely covered with rugose sculpturing; lateral surface covered with tomentose pubescence except above with small and sparser PP; connection of lateral and posterior surfaces rounded; posterior surface of propodeum shiny, smooth, with rather-sparse PP, IS = 2.0~3.0. Metasomal terga shiny, smooth, with sparser PP, IS = 0.5~1.5 basally or more apically; T2~T4 with distinct transverse depressions basally; S5 strongly emarginated posteriorly; S6 with longitudinal depression behind sternal gradulus (Fig. 3G); S7 broadly flattened posteromedially; S8 slightly convex and with a few setae posteromedially (Fig. 3H, I). Upper gonostylus straight distally, with rather-small stylus

(Fig. 3J, K); lower gonostylus greatly triangularly broadened at distal 1/2 (Fig. 3L).

Remarks: This is a new record for China. The male is characteristic in that the upper gonostylus is straight distally; the lower gonostylus is greatly triangularly broadened at distal 1/2 (Fig. 3J-L); lower surface of flagellum paler yellowish-brown (Fig. 3C).

***Halictus (Seladonia) dorni* Ebmer, 1982**
(Fig. 4A-H, female; I-P, male)

Halictus dorni Ebmer, 1982, 58: 204-205, ♀. Loc. typ.: Belflache. Type: Univ. Halle.

Halictus (Seladonia) dorni Ebmer: Ebmer, 1988, 68(4/6): 362.

Halictus (Seladonia) dorni Ebmer: Fan, 1991, 34(4): 379, ♀, ♂.

Halictus (Seladonia) dorni Ebmer: Dawut and Tadauchi, 2002, 42: 143-145, ♀.

Specimens examined: China: Xinjiang, Baicheng, Tamtageshi: 2700 m, 1 ♀, 31 May 1978, 1 ♀, 2 June 1978, Xue-zhong Zhang coll.; Xinjiang, Laowuqia: 2600 m, 1 ♀, 18 June 1959, Shu-yong Wang coll.; Xinjiang, Zhaosu, Xiata: 1950 m, 2 ♂ ♂, 18 Aug. 1978, Xue-zhong Zhang coll.; Inner

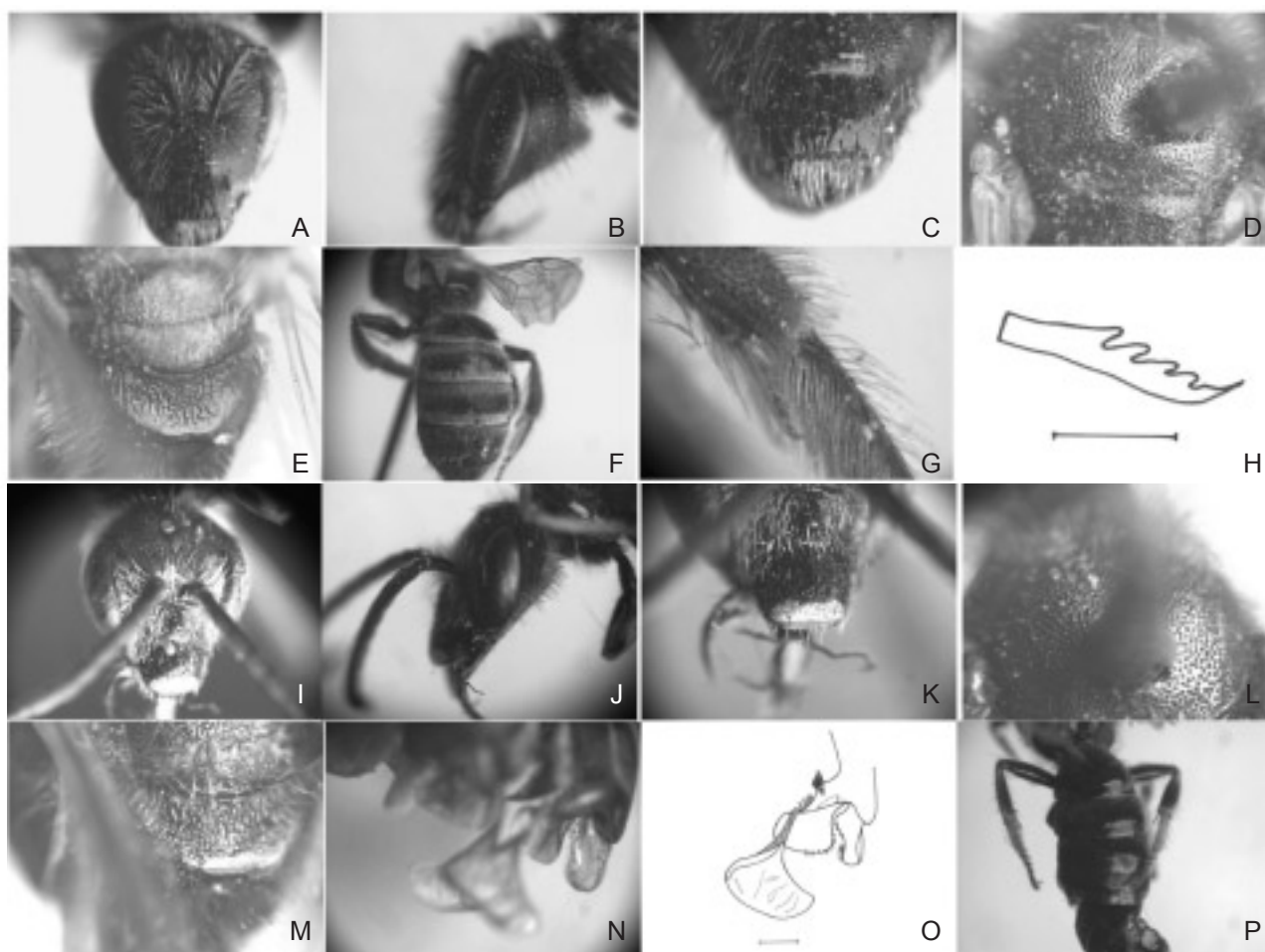


Fig. 4. *Halictus (Seladonia) dorni* Ebmer. A-H: Female. A: Frontal view of head; B: Lateral view of head; C: Frontal view of clypeus; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur, scale line represents 0.25 mm; I-P: Male. I: Frontal view of head; J: Lateral view of head; K: Frontal view of clypeus; L: Dorsal view of mesoscutum; M: Dorsal view of propodeum; N: Dorsolateral view of gonostylus; O: Drawing of gonostylus, scale line represents 0.25 mm; P: Dorsal view of metasomal terga.

Mongolia, Hinggan Meng, Jalaid Qi: 1 ♀, 19 July 1983, Long Zhang coll.

Distribution: China: Xinjiang, Inner Mongolia; Mongolia.

Floral association: Not available.

Redescription: See Ebmer (1982), Fan (1991), and Dawut and Tadauchi (2002).

Remarks: The male of this species is similar to *Halictus leucaheneus leucaheneus*. But it is recognized by the narrower and coarser apical hair bands of the metasomal terga, broadly interrupted on T1~T4 medially (Fig. 4P); crescentic propodeal dorsum, strongly and irregularly rugose medially (Fig. 4M.); and the stylus of the upper gonostylus great, roundly broadened (Fig. 4N, O).

***Halictus (Seladonia) leucaheneus leucaheneus*
Ebmer, 1972**

(Fig. 5A-F, female; G-L, male)

Halictus leucaheneus Ebmer, 1972, 48(2): 225-227, ♀. Loc. typ.: Turkistan, Balchaschess-Gebirt. Type: Berlin.

Halictus leucaheneus Ebmer: Ebmer, 1978, 29(1/3): 189, ♂.

Halictus leucaheneus Ebmer: Michener, 1978, 51(16): 528.

Halictus (Seladonia) leucaheneus leucaheneus Ebmer: Ebmer, 1988, 68(4/6): 359.

Halictus (Seladonia) leucaheneus leucaheneus Ebmer: Ebmer, 1988, 20(2): 568.

Halictus (Seladonia) leucaheneus Ebmer: Fan, 1991, 34(4): 479, ♀.

Halictus (Seladonia) leucaheneus Ebmer: Dawut and Tadauchi, 2000, 40: 70-75, ♀, ♂.

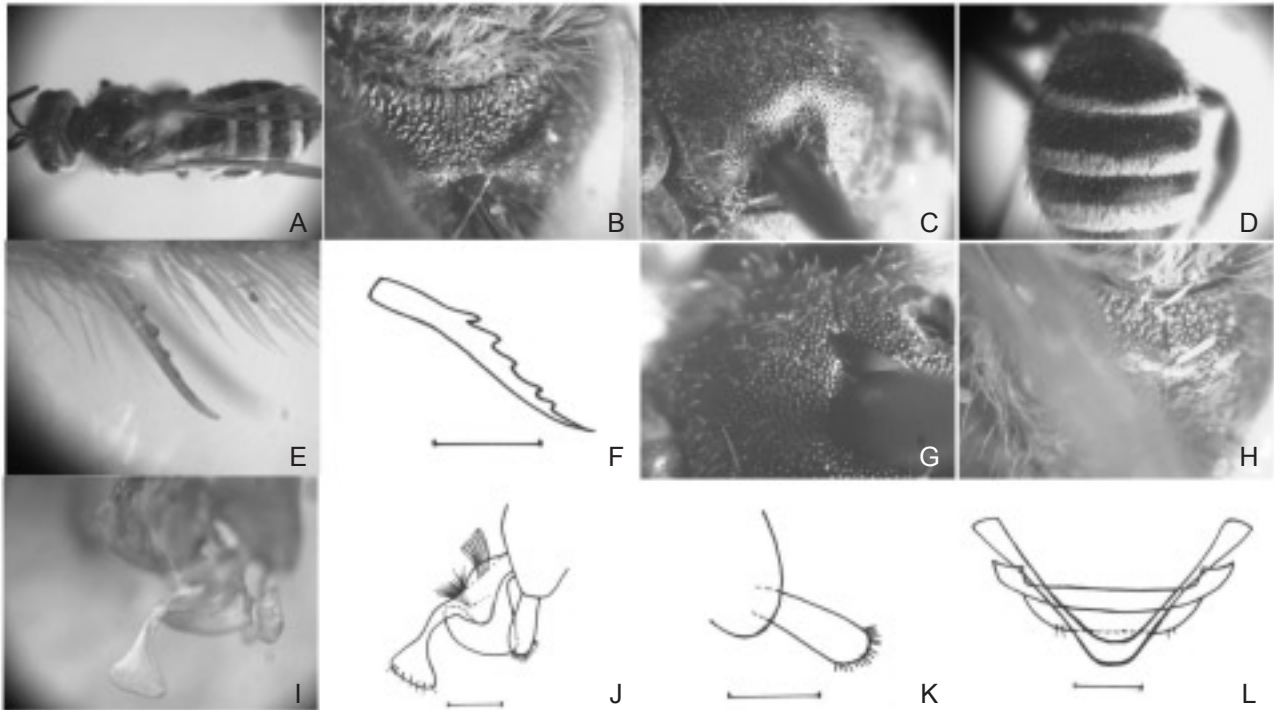


Fig. 5. *Halictus (Seladonia) leucaheneus leucaheneus* Ebmer. A-F: Female. A: Dorsal view of whole body; B: Dorsal view of propodeum; C: Dorsal view of mesoscutum; D: Dorsal view of metasomal terga; E: Lateral view of inner hind tibial spur; F: Drawing of inner hind tibial spur, scale line represents 0.25 mm; G-L: Male. G: Dorsal view of mesoscutum; H: Dorsal view of propodeum; I: Dorsolateral view of gonostylus; J: Drawing of gonostylus, scale line represents 0.25 mm; K: Drawing of lower gonostylus in lateral view, scale line represents 0.25 mm; L: Drawing of S7-S8, scale line represents 0.25 mm.

Specimens examined: China: Xinjiang, Barkol: 2300~2570 m, 3 ♀♀, 13 June 1979, Shu-fang Wang coll., 1 ♀, 9 July 1975, Yong-ling Cheng coll.; Xinjiang, Akqi: 2010 m, 2 ♀♀, 20 July 1959, Shu-yong Wang coll., 1 ♀, 20 July 1959, Guang Wang coll.; Xinjiang, Fuyun: 1200 m, 1 ♀, 14 July 1960, Shu-yong Wang coll.; Xinjiang, Aksu: 1330 m, 1 ♀, 22 July 1959, Guang Wang coll.; Xinjiang, Zhaosu: 1620 m, 7 Aug. 1957, 2 ♀♀, Guang Wang coll.; Xinjiang, Qapqal: 1620 m, 1 ♀, 29 Aug. 1955, Shi-jun Ma coll.; Xinjiang, Habahe: 500 m, 1 ♂, 1 Sept. 1960, Shu-yong Wang coll.; Xinjiang, Gongliu: 680~760 m, 1 ♂, 20 Aug. 1957, Chun-pei Hong, coll.; Xinjiang, Changji Huizu Zizhizhou, Fukang: 650 m, 2 ♂♂, 22 Aug. 2002, Ze-qing Niu coll.; Inner Mongolia, Togrog Ul: 1 ♀, 11 June 1971, collector not recorded; Inner Mongolia, Ulanqab Meng, Qahar Youyi Qianqi: 1 ♀, 28 Aug. 1986, Jie Xin coll.; Inner Mongolia, Dong Ujimqin: 2 ♂♂, 18, 19 Aug. 1971, You-wei Zhang coll.; Inner Mongolia, Hulun Buir Meng: 1 ♂, 15 July 1986, Wen-sheng Tang coll., 1 ♂, 26 Aug. 1986, Zheng-xin Wang coll.; Inner Mongolia, Xilin Gol

Meng: 2 ♀♀, 23 June 1971, You-wei Zhang coll.; Heilongjiang, Harbin: 1 ♀, 19 July 1955, collector not recorded; Hebei, Yuxiang, Baile: 920 m, 2 ♀♀, 16 June 1964.

Distribution: China: Xinjiang, Inner Mongolia, Hebei, Heilongjiang; Mongolia; Kazakhstan; Turkistan.

Floral associations: *Tamarix chinensis*, *Potentilla chinensis*.

Redescription: See Ebmer (1972 1978), Fan (1991), and Dawut and Tadauchi (2000).

Remarks: The female of this species is recognized by the mesoscutum which extends forward, the metasomal terga with broad apical bands of yellowish-white hairs, the complete bands on T1~T4 (Fig. 5D), the propodeal dorsum of the male which is triangular and granulated medially (Fig. 5H), and the stylus of the upper gonostylus which is triangularly broadened distally (Fig. 5I, J).

***Halictus (Seladonia) magnus* Ebmer, 1980**
(Fig. 6A-F, female; G-L, male)

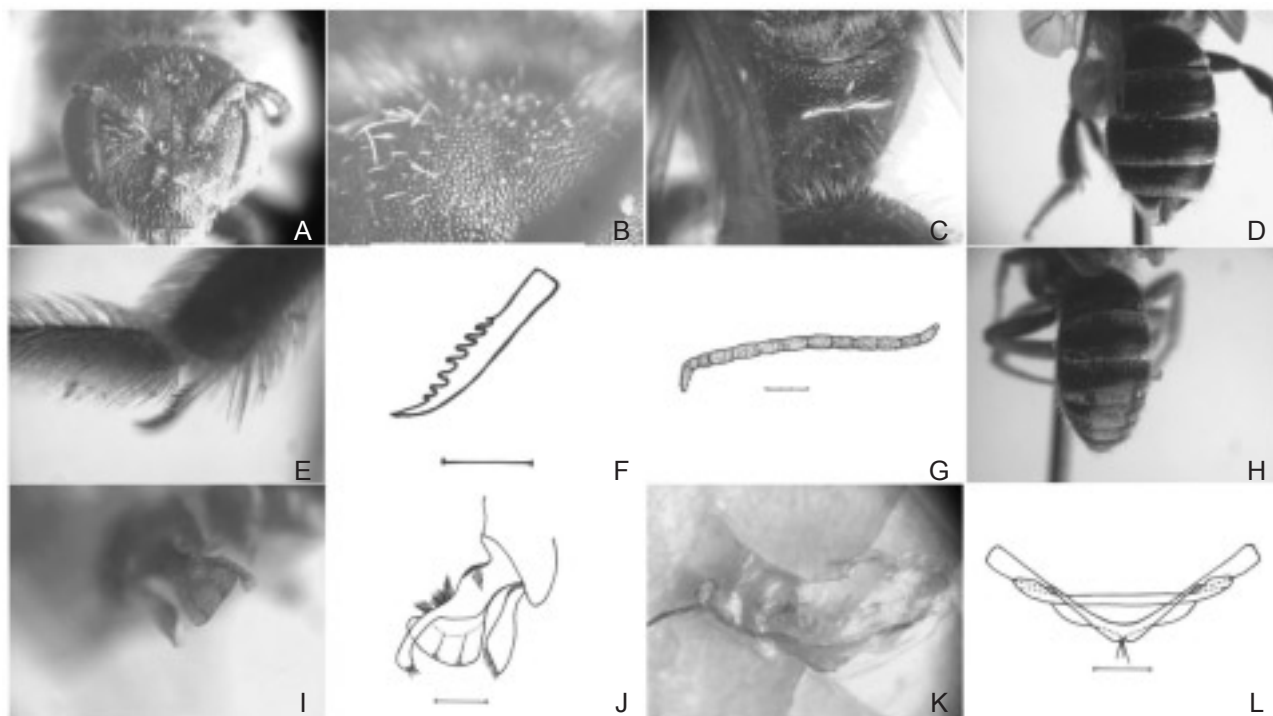


Fig. 6. *Halictus (Seladonia) magnus* Ebmer. A-F: Female. A: Frontal view of head; B: Dorsal view of mesoscutum; C: Dorsal view of propodeum; D: Dorsal view of metasomal terga; E: Lateral view of inner hind tibial spur; F: Drawing of inner hind tibial spur, scale line represents 0.25 mm; G-L: Male. G: Drawing of antenna in lateral view, scale line represents 0.6 mm; H: Dorsal view of metasomal terga; I: Dorsolateral view of gonostylus; J: Drawing of gonostylus, scale line represents 0.25 mm; K: Dorsal view of S7-S8; L: Drawing of S7-S8, scale line represents 0.25 mm.

Halictus magnus Ebmer, 1980, 12(2): 498, ♀, ♂. Loc. typ.: China, Jiangsu. Type: Stockholm.

Halictus (Seladonia) magnus Ebmer: Ebmer, 1988, 68(4/6): 345.

Halictus (Seladonia) magnus Ebmer: Fan, 1991, 34(4): 479-480, ♀, ♂.

Halictus (Seladonia) magnus Ebmer: Dawut and Tadauchi, 2000, 40: 75-79, ♀, ♂.

Specimens examined: China: Shandong, Jinan (Tsinafou): 500~700 m, 2 ♀ ♀, 2 ♂ ♂, date of collecting and collector not recorded.

Distribution: China: Xinjiang, Shandong, Jiangsu.

Floral association: Not available.

Redescription: See Ebmer (1980), Fan (1991), and Dawut and Tadauchi (2000).

Remarks: Both sexes have a large-sized body (9.0~10.0 mm), and the metasomal terga are reddish black. The inner hind tibial spur of the female has 6 or 7 teeth (Fig. 6E, F); it differs from the account by Dawut and Tadauchi (2000) indicating that the inner hind tibial spur of the female has 2 or 3 relatively long, round-tipped teeth.

***Halictus (Seladonia) mongolicus*
Morawitz, 1880**
(Fig. 7A-H, female)

Halictus mongolicus Morawitz, 1880, 26: 365-366, ♀. Loc. typ.: northwestern Mongolia. Type: Leningrad.

Halictus mongolicus Morawitz: Blüthgen, 1929, 8(1): 78-80, ♂.

Halictus mongolicus Morawitz: Michener, 1978, 51(16): 528.

Halictus mongolicus Morawitz: Ebmer, 1982, 58(2): 202.

Halictus (Seladonia) mongolicus Morawitz: Ebmer, 1988, 68(4/6): 350.

Halictus (Seladonia) mongolicus Morawitz: Fan, 1991, 34(4): 479, ♀.

Halictus (Seladonia) mongolicus Morawitz: Dawut and Tadauchi, 2002, 42: 129-135, ♀, ♂.

Specimens examined: China: Xinjiang, Turpan: 1 ♀, 29 June 1958, Chang-qing Li coll.; Xinjiang, Baicheng, Qianfo Dong: 1235 m, 1 ♀, 25 July 1959, Shu-yong Wang coll.; Xinjiang, Akqi: 2010 m, 1 ♀, 19 July 1959, Shu-yong Wang coll.

Distribution: China: Xinjiang; Mongolia; Turkistan.

Floral association: Not available from China.

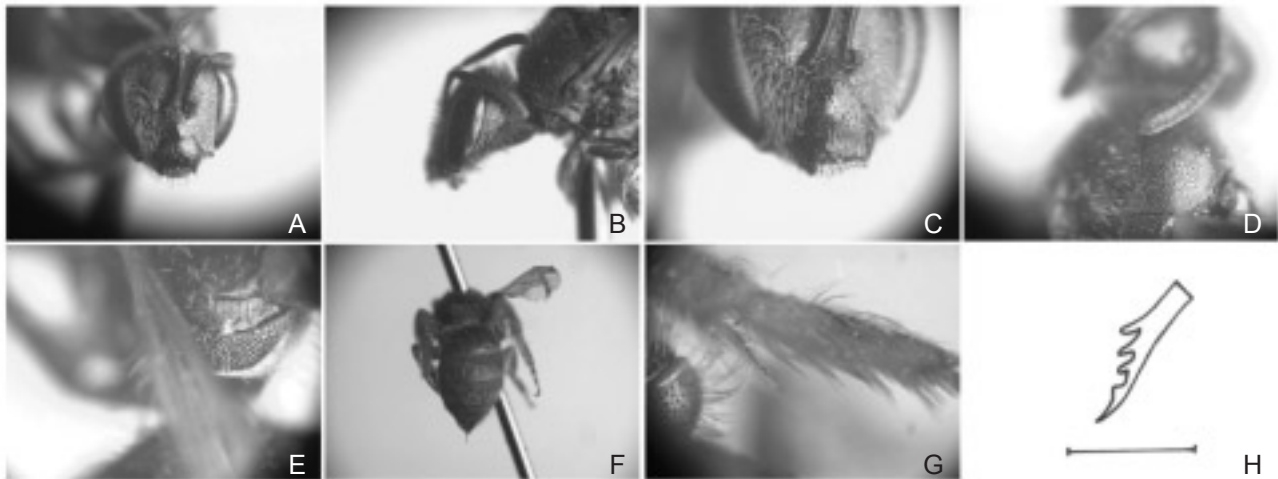


Fig. 7. *Halictus (Seladonia) mongolicus* Morawitz. Female. A: Frontal view of head; B: Lateral view of head; C: Frontal view of clypeus; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur, scale line represents 0.25 mm.

Ebmer (1982) recorded it from *Halymodendron*.

Redescription: See Blüthgen (1929), Fan (1991), Dawut and Tadauchi (2002).

Remarks: The male of this species was collected in Turkistan. The female of this species is similar to *Halictus varentzowi*, but it is recognized by the gena being wider than the eye in lateral view, and by the reddened metasomal terga (Fig. 7B, F).

***Halictus (Seladonia) pjalmensis pjalmensis*
Strand, 1909**

(Fig. 8A-F, female; G-P, male)

Halictus pjalmensis Strand, 1909, 75A: 47, ♂. Loc. typ.: Chinesisch Turkistan, Pjalma-Chotan. Type: Kgl. Zool., Berlin.

Halictus subauratovestitus Blüthgen, 1929, 8(1): 80, ♀. Loc. typ.: Kaschgar. Type: Berlin.

Halictus pjalmensis Strand: Hirashima, 1957, 16: 15.

Halictus pjalmensis Strand: Michener, 1978, 51(16): 528.

Halictus (Seladonia) pjalmensis pjalmensis Strand: Ebmer, 1988, 68(4/6): 345.

Halictus (Seladonia) pjalmensis Strand: Fan, 1991, 34(4): 479, ♀.

Specimens examined: China: Xinjiang, Habahe, 500 m, 1 ♀, 31 Aug. 1960, Shu-yong Wang coll.; Xinjiang, Ürümqi, 980 m, 1 ♀, 8 Apr. 1959, Chang-qing Li coll.; Xinjiang, Ürümqi, 1 ♀, 29 May 1957, Chun-pei Hong, coll.; Xinjiang, Ürümqi, Xincheng Park (44°53'N, 87°32'E): 713 m, 2 ♀ ♀, 6 Sept. 2002, Ze-qing Niu coll.; Xinjiang, Jeminay, 1015 m, 1 ♂, 27 Aug. 2002, Ze-qing Niu

coll.

Distribution: China: Xinjiang; Turkistan.

Floral association: *Celosia cristata*.

Redescription: See Strand (1909) and Fan (1991).

Remarks: The most distinctive character of the female is the inner hind tibial spur with 10 or 11 teeth (Fig. 8E, F). The male can be recognized by the short antenna, only reaching the scutellum, S7 being bluntly round medially, and without a pointed process; and S8 with a small trapezoidal process medially (Fig. 8I; J, N-P).

***Halictus (Seladonia) placidulus* Blüthgen, 1923**
(Fig. 9A-H, female)

Halictus placidulus Blüthgen, 1923, 89A: 240, ♀. Loc. typ.: China, Xinjiang. Type: Berlin.

Halictus placidulus Blüthgen: Blüthgen, 1931, 17: 395, ♂.

Halictus (Vestitohalictus) placidulus Blüthgen: Michener, 1978, 51(16): 530.

Halictus (Seladonia) placidulus Blüthgen: Ebmer, 1988, 68(4/6): 358.

Halictus (Seladonia) placidulus Blüthgen: Dawut and Tadauchi, 2002, 42: 140-143, ♀.

Specimen examined: China, Xinjiang (44°26'N, 83°58'E): 1 ♀, 26 Aug. 2002, Ze-qing Niu coll.

Distribution: China: Xinjiang; Turkmenistan: Bairam Ali.

Floral association: Not available.

Redescription: See Blüthgen (1923 1931), and Dawut and Tadauchi (2002).

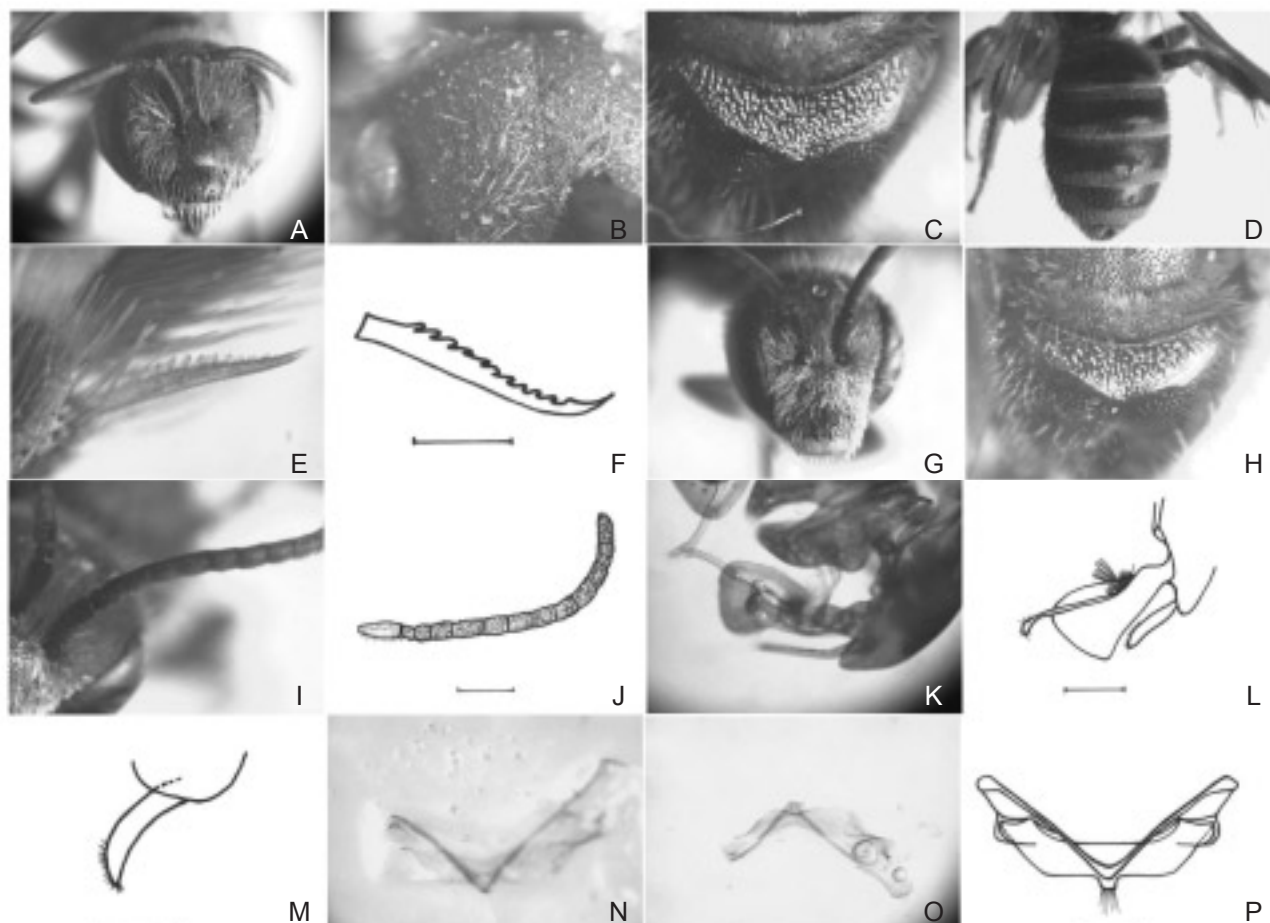


Fig. 8. *Halictus (Seladonia) pjalmensis pjalmensis* Strand. A-F: Female. A: Frontal view of head; B: Dorsal view of mesoscutum; C: Dorsal view of propodeum; D: Dorsal view of metasomal terga; E: Lateral view of inner hind tibial spur; F: Drawing of inner hind tibial spur, scale line represents 0.25 mm. G-P: Male. G: Frontal view of head; H: Dorsal view of propodeum; I: Lateral view of antenna; J: Drawing of antenna, scale line represents 0.6 mm; K: Dorsolateral view of gonostylus; L: Drawing of gonostylus, scale line represents 0.25 mm; M: Drawing of lower gonostylus in lateral view, scale line represents 0.25mm; N: Dorsal view of S7-S8; O: Ventral view of S7-S8; P: Drawing of S7-S8 in dorsal view, scale line represents 0.25 mm.



Fig. 9. *Halictus (Seladonia) placidulus* Blüthgen. Female. A: Frontal view of head; B: Lateral view of head; C: Frontal view of clypeus; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur, scale line represents 0.25 mm.

Remarks: The male of this species was collected in Turkmenistan (Bairam Ali). The female can be recognized by the dense and large basilateral patch on T1, and by the short and dense yellowish-white hairs nearly completely covering the surface of T3 and T4 (Fig. 9F).

***Halictus (Seladonia) propinquus* Smith, 1853**
(Fig. 10A-G, female; H-P, male)

Halictus propinquus Smith, 1853, 1: 60-61, ♂. Loc. typ.: North India. Type: London.

Halictus grandiceps Cameron, 1896, 41(4): 98-99, ♀. Loc. typ.: North India, Mussouri. Type: Oxford.

Halictus alexis Cameron, 1896, 41(4): 99-100, ♀. Loc. typ.: India, Barrackpore. Type: Oxford.

Halictus pinguis Vachal, 1902, 2: 230, ♀. Loc. typ.: North India, Mussoorie. Type: Krakau.

Halictus propinquus Smith: Michener, 1978, 51(16): 528.

Halictus propinquus Smith: Ebmer, 1980, 12(2): 481.

Halictus (Seladonia) propinquus Smith: Sakagami and Ebmer, 1987, 19(2): 321, ♀, ♂.

Halictus (Seladonia) propinquus Smith: Ebmer, 1988, 68(4/6): 345.

Halictus (Seladonia) propinquus Smith: Fan, 1991, 34(4): 479-480, ♀, ♂.

Halictus (Seladonia) propinquus Smith: Dawut and Tadauchi 2001, 41: 167-169, ♀, ♂.

Specimens examined: China: Guangdong, Hainan, Yinggen: 200 m, 15 ♀ ♀, 5~10 May 1960, Shuo-fu Li coll., 1 ♂, 4 May 1960, Chang-qing Li coll.; Guangdong, Hainan, Qiongzong, 400 m, 2 ♀ ♀, 14, 16 July 1960, Xue-zhong Zhang coll.; Guangdong, Hainan, Nada: 1 ♂, 14 May 1954, Tai-lu Cheng coll.; Guangdong, Hainan, Tongshi, 340

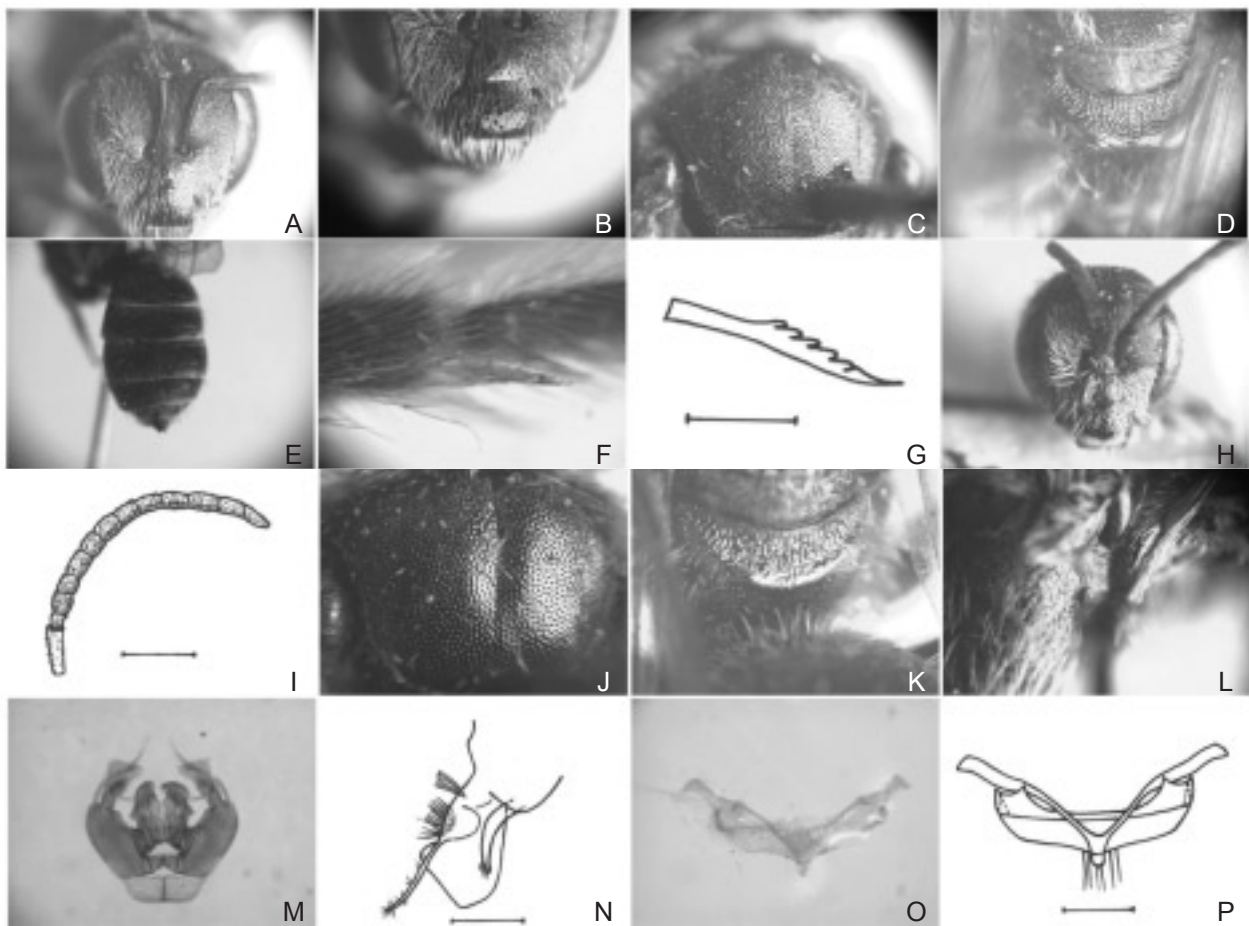


Fig. 10. *Halictus (Seladonia) propinquus* Smith. A-G: Female. A: Frontal view of head; B: Frontal view of clypeus; C: Dorsal view of mesoscutum; D: Dorsal view of propodeum; E: Dorsal view of metasomal terga; F: Lateral view on inner hind tibial spur; G: Drawing of inner hind tibial spur, scale line represents 0.25 mm. H-P: Male. H: Frontal view of head; I: Drawing of antenna in lateral view, scale line represents 0.6 mm; J: Dorsal view of mesoscutum; K: Dorsal view of propodeum; L: Lateral surface of pronotum; M: Dorsal view of genitalia; N: Drawing of gonostylus in dorsolateral view, scale line represents 0.25 mm; O: Dorsal view of S7-S8; P: Drawing of S7-S8, scale line represents 0.25 mm.

m, 3 ♀, 22~23 Apr. 1960, Chang-qing Li coll.; Guangdong, Hainan, Baoting, 80 m, 1 ♀, 7 May 1960, Xue-zhong Zhang coll.; Guangdong, Hainan, 1 ♀, 11 May 1934, Qi He coll.; Yunnan, Lijiang, Baishui, 300 m, 1 ♀, 19 July 1984, Jian-guo Fan coll.; Yunnan, Xishuangbanna, Meng'a, 1050~1080 m, 1 ♀, 11 May 1958, Shu-yong Wang, coll.

Distribution: China: Guangdong, Yunnan; India; Myanmar; Nepal; Thailand.

Floral association: Not available.

Redescription: See Sakagami and Ebmer (1987) and Fan (1991).

Remarks: All specimens were collected from Guangdong and Yunnan; both sexes are characterized by bluish-green reflections on the face, mesoscutum, scutellum, and metasomal terga; the male antenna is short, only reaching the scutellum; S7 is slightly pointed medially, with a longer process, S8 is round medially and with narrower hairs posteromedially; the female has a crested connection of the propodeal posterior and lateral surfaces; basilateral path on T1 moderate; basal hair bands narrower; and T4 not covered with a tomentum.

Halictus (Seladonia) seladonius (Fabricius, 1794)

(Fig. 11A-H, female)

Apis seladonius Fabricius, 1794, 4: 460, ♀. Loc. typ.: Italy.

Lectotype: Copenhagen.

Halictus geminotus Pérez, 1903, 42; Proc. 58: 209, ♀, ♂. Loc.

typ.: France: Coueron. Lectotype: Paris.

Halictus (Seladonia) seladonius (Fabricius): Michener, 1978, 51(16): 528.

Halictus (Seladonia) seladonius (Fabricius): Ebmer, 1978, 10(1): 23.

Halictus (Seladonia) seladonius (Fabricius): Ebmer, 1980, 12(2): 473.

Halictus (Seladonia) seladonius (Fabricius): Ebmer, 1988, 68(4/6): 340-341.

Halictus (Seladonia) seladonius (Fabricius): Ebmer, 1988, 20(2): 565.

Seladonia seladonia (Fabricius): Pesenko et al., 2000: 170, ♀, ♂.

Halictus (Seladonia) seladonius Fabricius: Dawut and Tadauchi, 2001, Esakia 41: 161-167, ♀, ♂.

Specimens examined: China: Xinjiang, Tacheng, 1 ♀, 26 June 1955, Shi-jun Ma coll.; Inner Mongolia, Banjiegou, 1 ♀, 17 July 1983, collector not recorded.

Distribution: China: Xinjiang, Inner Mongolia; Kyrgyzstan; Tajikistan; Uzbekistan; Afghanistan; Iran; European Russia; Hungary; Romania; Greece; former Yugoslavia; Austria; Slovakia; Switzerland; Italy; France; Spain; Portugal; Poland; N. Africa (Tunis).

Floral association: pasture.

Redescription: See Dawut and Tadauchi (2001).

Remarks: The male of this species was collected in France. The female is separated from the other Chinese species of *Seladonia* by the golden-green metasomal terga, the moderate basilateral patch on T1, T2 and T3 with broader basal

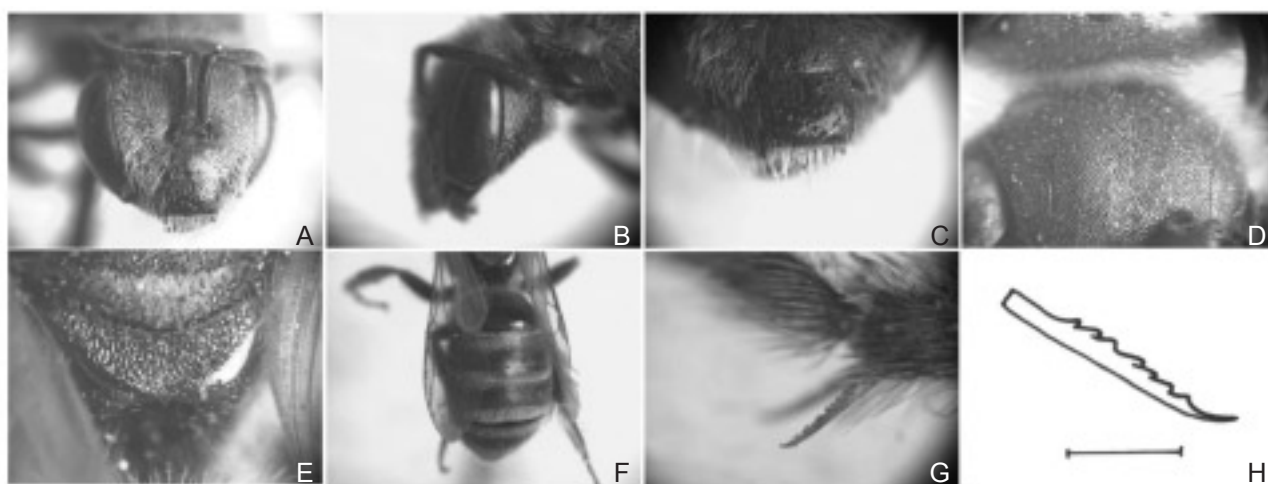


Fig. 11. *Halictus (Seladonia) seladonius* (Fabricius). Female. A: Frontal view of head; B: Lateral view of head; C: Frontal view of clypeus; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur, scale line represents 0.25 mm.

hair bands, T4 covered throughout with a tomentum (Fig. 11F), and the inner hind tibial spur with 6 or 7 teeth (Fig. 11G, H).

***Halictus (Seladonia) semitectus* Morawitz, 1873
rec. nov.**

(Fig. 12A-G, female; H-P, male)

Halictus semitectus Morawitz, 1873, 10(1874): 172-173, ♀, ♂.

Loc. typ.: Caucasus, Derbent. Type: Leningrad.

Halictus semitectus Morawitz: Dalla Torre, 1896, 10: 82.

Halictus semitectus Morawitz: Blüthgen, 1934, 27A (13): 3.

Halictus (Seladonia) semitectus Morawitz: Michener, 1978, 51(16): 528.

Halictus (Seladonia) semitectus Morawitz: Ebmer, 1982, 58(2): 202.

Halictus (Seladonia) semitectus Morawitz: Ebmer, 1988, 68(4/6): 350-351.

Halictus (Seladonia) semitectus Morawitz: Ebmer, 1988, 20(2): 567.

Seladonia semitecta Morawitz: Pesenko et al., 2000: 170, ♀, ♂.

Halictus (Seladonia) semitectus Morawitz: Dawut and Tadauchi, 2002, 42: 127-129, ♀.

Specimens examined: China: Hebei, Yangyuan, Nihewan: 1000 m, 2 ♀ ♀, 11 Apr. 2002, Ze-qing Niu coll.; Xinjiang, Ürümqi, Xincheng Park (44°53'N, 87°32'E): 713 m, 2 ♀ ♀, 5 Sept. 2002, 19 ♂ ♂, 1~6 Sept. 2002, Ze-qing Niu coll.; Xinjiang, Shihezi: 590 m, 1 ♂, 23 Aug. 1959, Chang-qing Li coll.

Distribution: China: Hebei, Xinjiang; Mongolia;

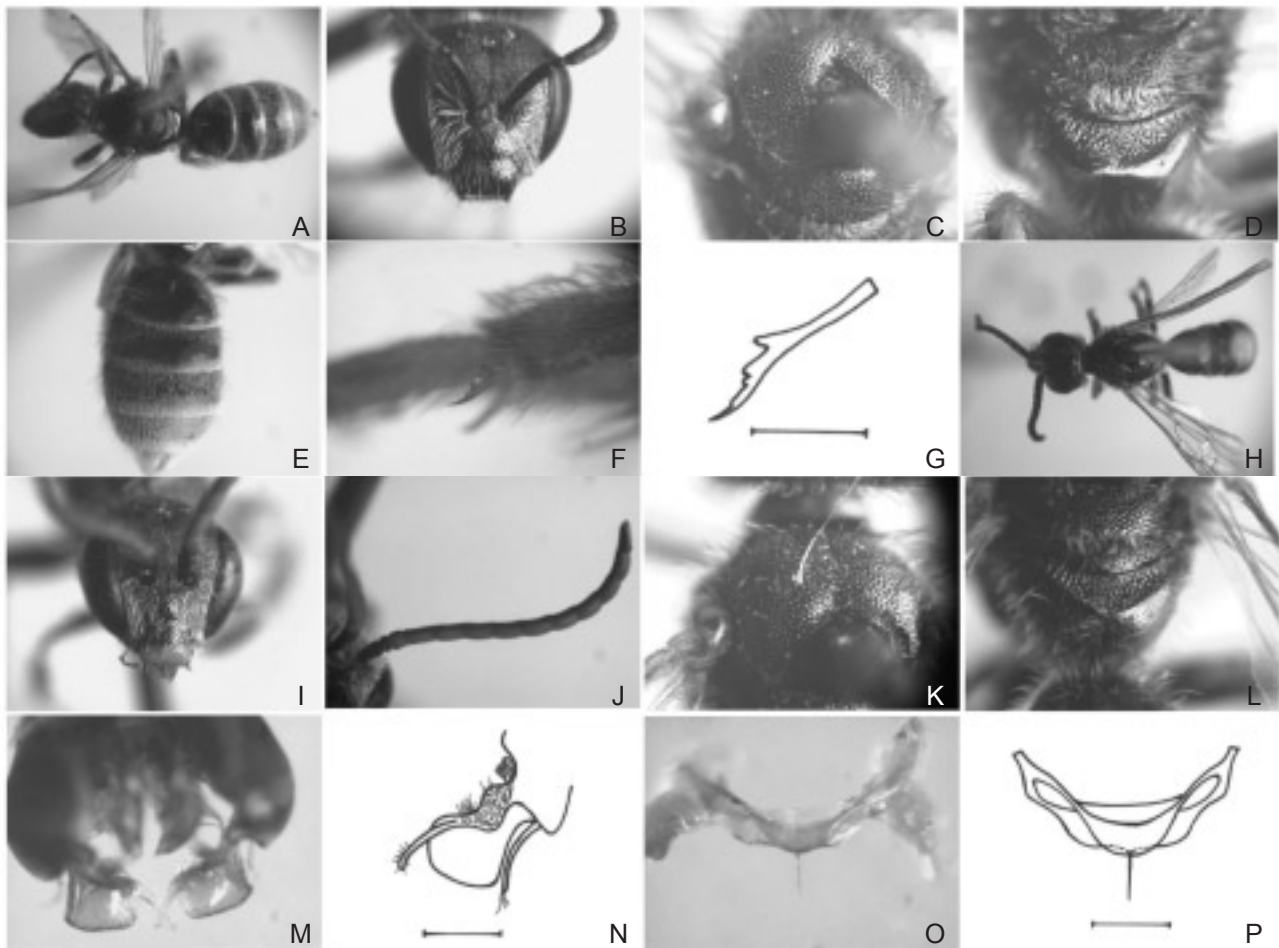


Fig. 12. *Halictus (Seladonia) semitectus* Morawitz. A-G: Female. A: Dorsal view of whole body; B: Frontal view of head; C: Dorsal view of mesoscutum; D: Dorsal view of propodeum; E: Dorsal view of metasomal terga; F: Lateral view of inner hind tibial spur; G: Drawing of inner hind tibial spur, scale line represents 0.25 mm. H-P: Male. H: Dorsal view of whole body; I: Frontal view of head; J: Lateral view of antenna; K: Dorsal view of mesoscutum; L: Dorsal view of propodeum; M: Dorsolateral view of gonostylus; N: Drawing of gonostylus in dorsolateral view, scale line represents 0.25 mm; O: Dorsal view of S7-S8; P: Drawing of S7-S8 in dorsal view, scale line represents 0.25 mm.

Afghanistan; Armenia; Ukraine; European Russia; Poland; Hungary; Austria; Germany.

Floral association: *Celosia cristata*.

Redescription: Female: see Dawut and Tadauchi (2002).

Male: Body small, BL: 4.8~5.5 mm, WL: 3.8~4.0 mm.

Coloration: Relatively clear, golden green, with rather strong metallic reflections on face, mesoscutum, scutellum, and metasomal terga; about 1/2 of clypeus apically, labrum, and most parts of mandible lemon yellow, apical part of mandible reddish brown; lower surface of flagellum yellow, scape and pedicel black; lateral lobe of pronotum lemon yellow apically; forewings yellowish white, transparent, tegulae yellowish brown, transparent, C and R blackish brown, other veins yellowish brown; posterior margins of metasomal terga blackish brown, not transparent; all tarsi, protibia, most parts of mesotibia and metatibia, and apices of femora lemon yellow, medilateral parts of mesotibia and metatibia with blackish brown marks, other parts of legs black.

Vestiture: Generally sparse, yellowish or grayish white; tomentose pubescence only developed on paraocular area; basilateral patch on T1 very small and sparse; apical grayish-white hair bands on metasomal terga rather sparse, completely interrupted on T1~T4; tergal surface with sparser and longer yellowish-brown hairs.

Structure: Head longer than wide, HW: HL = 39: 43, HW: MsW: MtW = 39: 40: 35. Vertex round in frontal view, shiny and smooth, with sparse PP, IS = 0.2~1. Flagellum very long, reaching the basis of T1, F1~3L: F10L: F2W = 4: 7: 7: 9: 4. Clypeus mildly convex, shiny, and smooth with round, denser PP, IS = 0.2~0.5. Supraclypeus slightly higher than clypeus, shiny and smooth, with similar PP to that of clypeus. Frons and paraocular area with PP slightly larger than that of clypeus, PP dense, IS = 0.2. Genal area nearly as wide as eye, GW: EW = 11: 12. Pronotum without lateral ridges, lateral surface shiny and shagreened. Mesoscutum shiny and smooth, with PP similar to that of frons, IS = 0.5~1.5. Scutellum without depression longitudinally, shiny and smooth, with PP similar to that of mesoscutum. Scutellum: metanotum: propodeal dorsum = 8: 5: 8. Propodeal dorsum enclosure more strongly depressed, silky shiny, with oblique sagittal rugose sculpturing both laterally and reticulosus rugose sculpturing medially; the connection of posterior and lateral surface of propodeum rounded; lateral

surface throughout shiny and smooth, with round and deeper PP, IS = 1~3 above and 0.5 below; posterior surface shiny and smooth, with slightly smaller PP, IS = 1~2. Mesepisternum and metepisternum rather roughened, with large and more deeply irregular PP. Metasomal terga shiny and smooth, with distinctly smaller PP, IS = 2~5 apically and 0.5~1.5 basally; T2-T3 with distinct transverse depression basally; S5 slightly emarginated posteriorly; S6 flattened; S7 round and slightly convex posteromedially; S8 with only 1 seta posteromedially (Fig. 12O, P). Stylus of upper gonostylus slender and longer, lower gonostylus slender, sharply pointed distally (Fig. 12M, N).

Remarks: This species is a new record in China. It is distinguished from the other Chinese species of *Seladonia* by both sexes with smaller-sized body (4.8~5.5 mm), metasomal terga with strong metallic reflections; male vertex shorter, 2nd flagellomere 1.8 times as long as wide (Fig. 12J), lower gonostylus slender, sharply pointed distally (Fig. 12M, N); female metasomal terga silky shiny, nearly without pubescence, inner hind tibial spur with 3 or 4 teeth (Fig. 12F, G), T4 covered with tomentose pubescence throughout (Fig. 12E).

Halictus (Seladonia) subauratus subauratus
(Rossi, 1792)

(Fig. 13A-H, female)

- Apis subaurata* Rossi, 1792, 144, ♀. Loc. typ.: Italy: Pisa
Halictus virescens Lepeletier, 1841, 2: 279-280, ♀. Loc. typ.:
Umgebung Paris. Syntype; Paris.
Halictus gramineus Smith, 1849, 7, App.: 58, ♀, ♂. Loc. typ.:
England. Type: Oxford.
Halictus meridionalis Morawitz, 1873, 10(1874): 170, ♀, ♂. Loc.
typ.: Caucasus, Derbent. Syntype: St. Petersburg.
Halictus subauratus syrius Blüthgen, 1933: 72, ♀. Loc. typ.:
North Lebanon: Becharré. Type: Wien.
Halictus subauratus (Rossi): Blüthgen, 1955, (B) 5: 16.
Halictus (Seladonia) subauratus (Rossi): Michener, 1978,
51(16): 528.
Halictus (Seladonia) subauratus (Rossi): Ebmer, 1983, 75: 322.
Halictus subauratus (Rossi): Wu, 1985: 139.
Halictus (Seladonia) subauratus subauratus (Rossi): Ebmer,
1988, 68(4/6): 341-344.
Halictus (Seladonia) subauratus subauratus (Rossi): Ebmer,
1988, 20(2): 565.
Seladonia subaurata (Rossi): Pesenko et al., 2000: 170, ♀, ♂.
Halictus (Seladonia) subauratus (Rossi): Dawut and Tadauchi,
2001, 41: 169-177, ♀, ♂.

Specimens examined: China: Beijing, Bada Ling, Sanpu: 500 m, 18 ♀ ♀, 27 Apr. 2002, Ze-qing Niu coll.

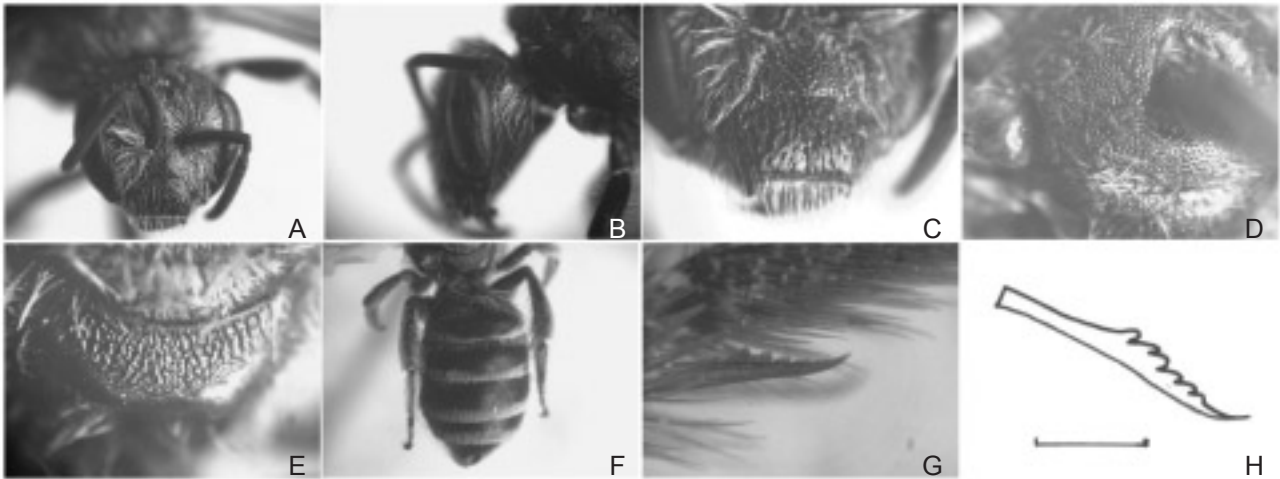


Fig. 13. *Halictus (Seladonia) subauratus subauratus* (ROSSI). Female. A: Frontal view of head; B: Lateral view of head; C: Frontal view of clypeus; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur in lateral view, scale line represents 0.25 mm.

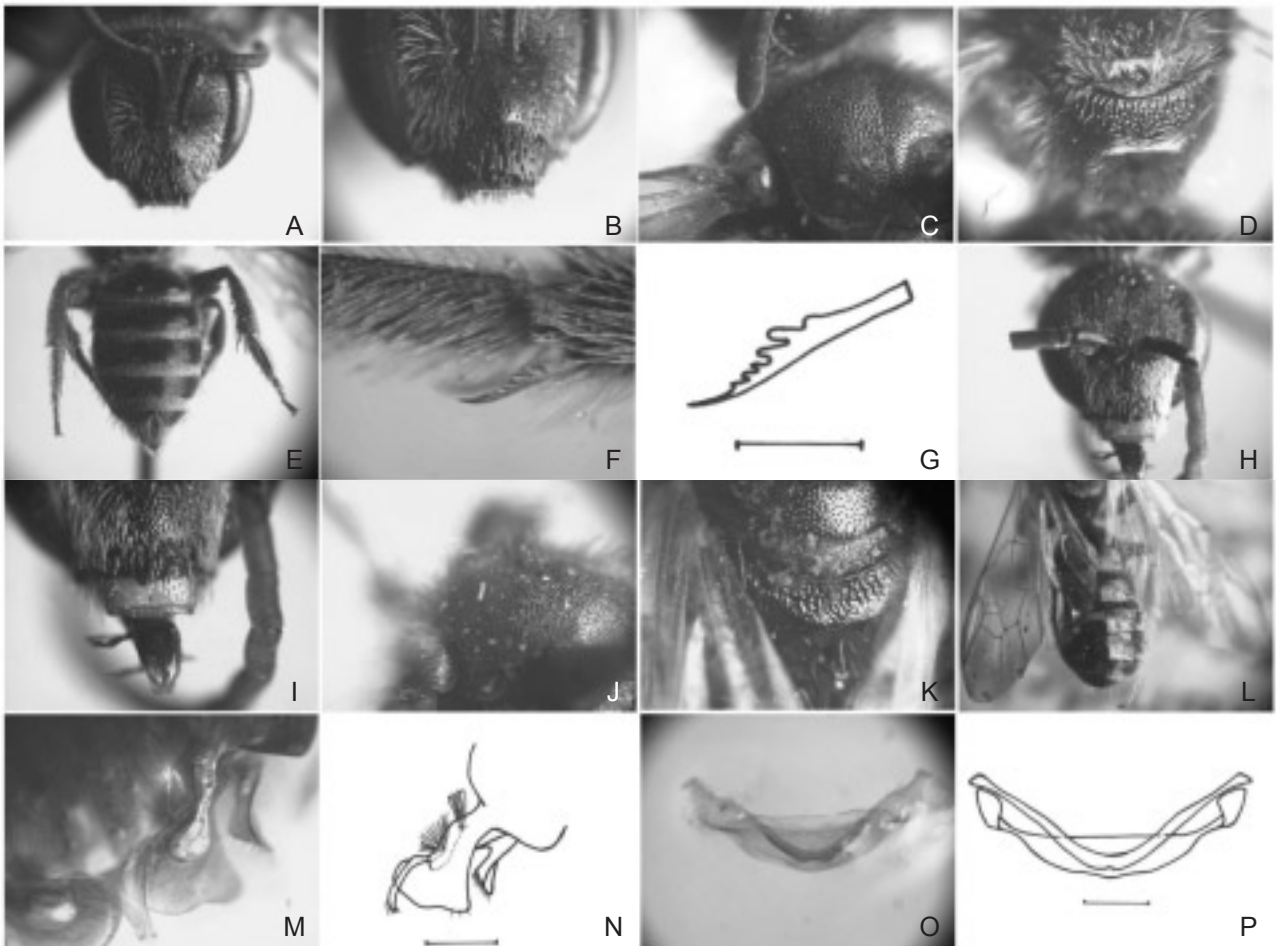


Fig. 14. *Halictus (Seladonia) tumulorum higashi* Sakagimi et Ebmer. A-G: Female. A: Frontal view of head; B: Frontal view of clypeus; C: Dorsal view of mesoscutum; D: Dorsal view of propodeum; E: Dorsal view of metasomal terga; F: Lateral view of inner hind tibial spur; G: Drawing of inner hind tibial spur in lateral view, scale line represents 0.25 mm. H-P: Male. H: Frontal view of head; I: Frontal view of clypeus; J: Dorsal view of mesoscutum; K: Dorsal view of propodeum; L: Dorsal view of metasomal terga; M: Dorsolateral view of gonostylus; N: Drawing of gonostylus in dorsolateral view, scale line represents 0.25 mm; O: Dorsal view of S7-S8; P: Drawing of S7-S8 in dorsal view, scale line represents 0.25 mm.

Distribution: China: Beijing, Xinjiang; Austria; Belgium; Bulgaria; Czech Republic; India; Iran; Italy; England; France; Germany; Greece; Morocco; Poland; Portugal; Romania; Russia; Siberia, European area; Spain; Turkistan; Turkey.

Floral association: Not available.

Redescription: See Dawut and Tadauchi (2001).

Remarks: The male of this species has not been collected from China. The female is similar to *Halictus seladonius*, but its vestiture is more deeply colored, brownish-yellow, clypeus apically gradually reduced (Fig. 13C), and basilateral patch on T1 larger and denser (Fig. 13F).

***Halictus (Seladonia) tumulorum higashi*
Sakagami et Ebmer, 1979**
(Fig. 14A-G, female; H-P, male)

Halictus tumulorum higashi Sakagami and Ebmer, 1979, 47: 543-549, ♀, ♂. Loc. typ.: Japan, Sapporo. Type: Sapporo.

Halictus tumulorum higashi Sakagami et Ebmer: Ebmer, 1982, 58(2): 204.

Halictus (Seladonia) tumulorum higashi Sakagami et Ebmer: Ebmer, 1988, 20(2): 570.

Halictus (Seladonia) tumulorum higashi Sakagami et Ebmer: Fan, 1991, 34(4): 479, ♀.

Halictus tumulorum higashi Sakagami et Ebmer: Ebmer, 1996, 28: 269.

Halictus (Seladonia) tumulorum higashi Sakagami et Ebmer: Dawut and Tadauchi, 2002, 42: 145-150, ♀, ♂.

Specimens examined: China: Jilin, Erdao-baihe: 17 ♀, 24 July~2 Aug 1981, 1 ♂, 31 July 1981, Yan-ru Wu coll.; Jilin, Baihe: 800 m, 1 ♀, 28 July 1981, Yan-ru Wu coll.; Jilin, Gaolingzi (Kirin, Kao-lin-tze), 1 ♂, 21 Aug. 1939, M. Volkoff coll.; Heilongjiang, Harbin: 3 ♀, 6 June 1954, 2 ♀, 20 June 1954, collector not recorded; Inner Mongolia, Hinggan Meng: 1 ♀, 23 June 1983, Guiyong Huang coll.; 1 ♀, 26 June 1983, Gang Sun coll.

Distribution: China: Jilin, Heilongjiang, Inner Mongolia; Japan; Mongolia; North Korea; Russia; Far East area.

Floral associations: *Melilotus officinalis*, *Potentilla chinensis*, *Solidago virgaurea*, *Vicia unijuga*.

Redescription: See Sakagami and Ebmer (1979), Fan (1991), and Dawut and Tadauchi (2002).

Remarks: This subspecies is only found in Northeast China. It can be distinguished from the nominate subspecies by the more-developed apical hair bands of the female metasomal terga (Fig.

14E), and the larger, shallower, and sparser punctures on the head, behind the mesoscutum, and scutellum in the male (Fig. 14H, J, K).

***Halictus (Seladonia) varentzowi* Morawitz, 1894**
rec. nov.
(Fig. 15A-H, female)

Halictus varentzowi Morawitz, 1894, 29(1895): 67, ♀, ♂. Loc. typ.: Turkistan, Dort-kuju and Cherabad. Syntype: Leningrad.

Halictus pseudaraxanus Blüthgen, 1929, 8(1): 70, ♀. Loc. typ.: Baigakum. Type: Berlin.

Halictus (Seladonia) varentzowi Morawitz: Michener, 1978, 51(16): 529.

Halictus (Seladonia) varentzowi Morawitz: Ebmer, 1988, 68(4/6): 358.

Halictus (Seladonia) varentzowi Morawitz: Dawut and Tadauchi, 2002, 42: 138-140, ♀.

Specimen examined: China: Hebei, Yangyuan, Nihewan: 1000 m, 1 ♀, 11 Apr. 2002, Ze-qing Niu coll.

Distribution: China: Hebei; Turkistan; Turkmenistan.

Floral association: Not available.

Redescription: See Dawut and Tadauchi (2002).

Remarks: This is a new record for China. The male of this species was collected in Turkistan. The female is similar to *Halictus mongolicus*, but it is recognized by the gena being narrower than eye in lateral view (Fig. 15C.), and the yellowish-brown metasomal terga (Fig. 15F).

***Halictus (Seladonia) vicinus* Vachal, 1894**
(Fig. 16A-F, female; G-P, male)

Halictus vicinus Vachal, 1894, 24: 431-432, ♀. Loc. typ.: Burma: Bhamo. Type: Genoa.

Halictus abuensis Cameron, 1908, 18: 310-311, ♀. Loc. typ.: India: Abu. Type: London.

Halictus propinquus var. *silvatica* Blüthgen, 1926, 51: 677, ♀. Loc. typ.: Burma: Tenasserim-Thandanny. Type: Berlin.

Halictus daturae Cockerell, 1929, 4: 585, ♀. Loc. typ.: Siam: Nan. Type: NY.

Halictus daturae var. *laosina* Cockerell, 1929, 4: 585, ♀. Loc. typ.: Siam: Nan. Type: London.

Halictus speculiferus Cockerell, 1929, 4: 585, ♀. Loc. typ.: Siam: Nan. Type: London.

Halictus umbrosus Cockerell, 1929, 4: 588-589, ♀. Loc. typ.: Siam: Nan. Type: London.

Halictus vicinus Vachal: Michener, 1978, 51(16): 529.

Halictus vicinus Vachal: Ebmer, 1980, 12(2): 481.

Halictus vicinus Vachal: Sakagami and Ebmer, 1987, 19(2): 345-349, ♀, ♂.

Halictus (Seladonia) vicinus Vachal: Ebmer, 1988, 68(4/6): 346.

Halictus (Seladonia) vicinus Vachal: Fan, 1991, 34(4): 479, ♀.

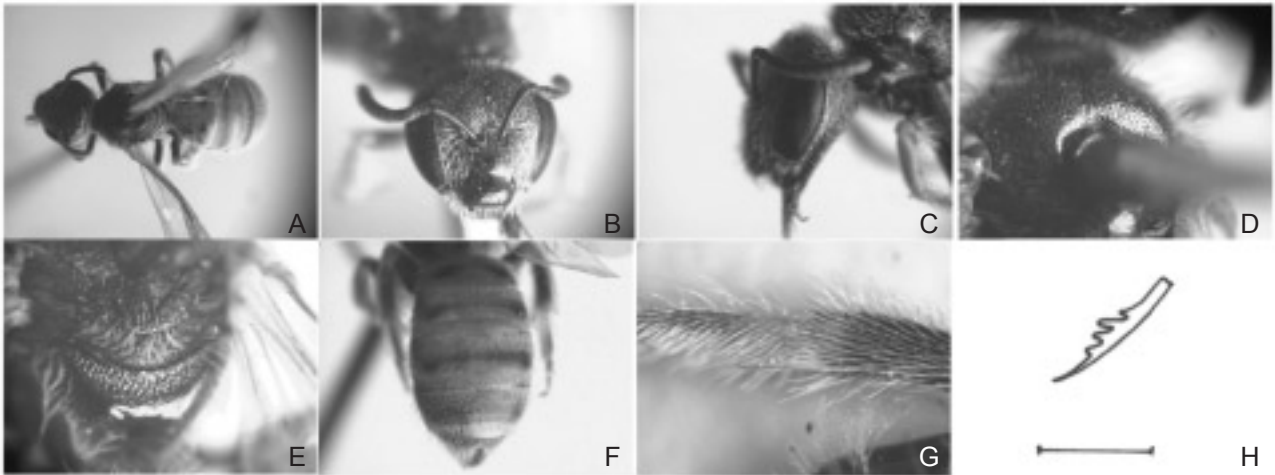


Fig. 15. *Halictus (Seladonia) varentzowi* Morawitz. Female. A: Dorsal view of whole body; B: Frontal view of head; C: Lateral view of head; D: Dorsal view of mesoscutum; E: Dorsal view of propodeum; F: Dorsal view of metasomal terga; G: Lateral view of inner hind tibial spur; H: Drawing of inner hind tibial spur in later view, scale line represents 0.25 mm.

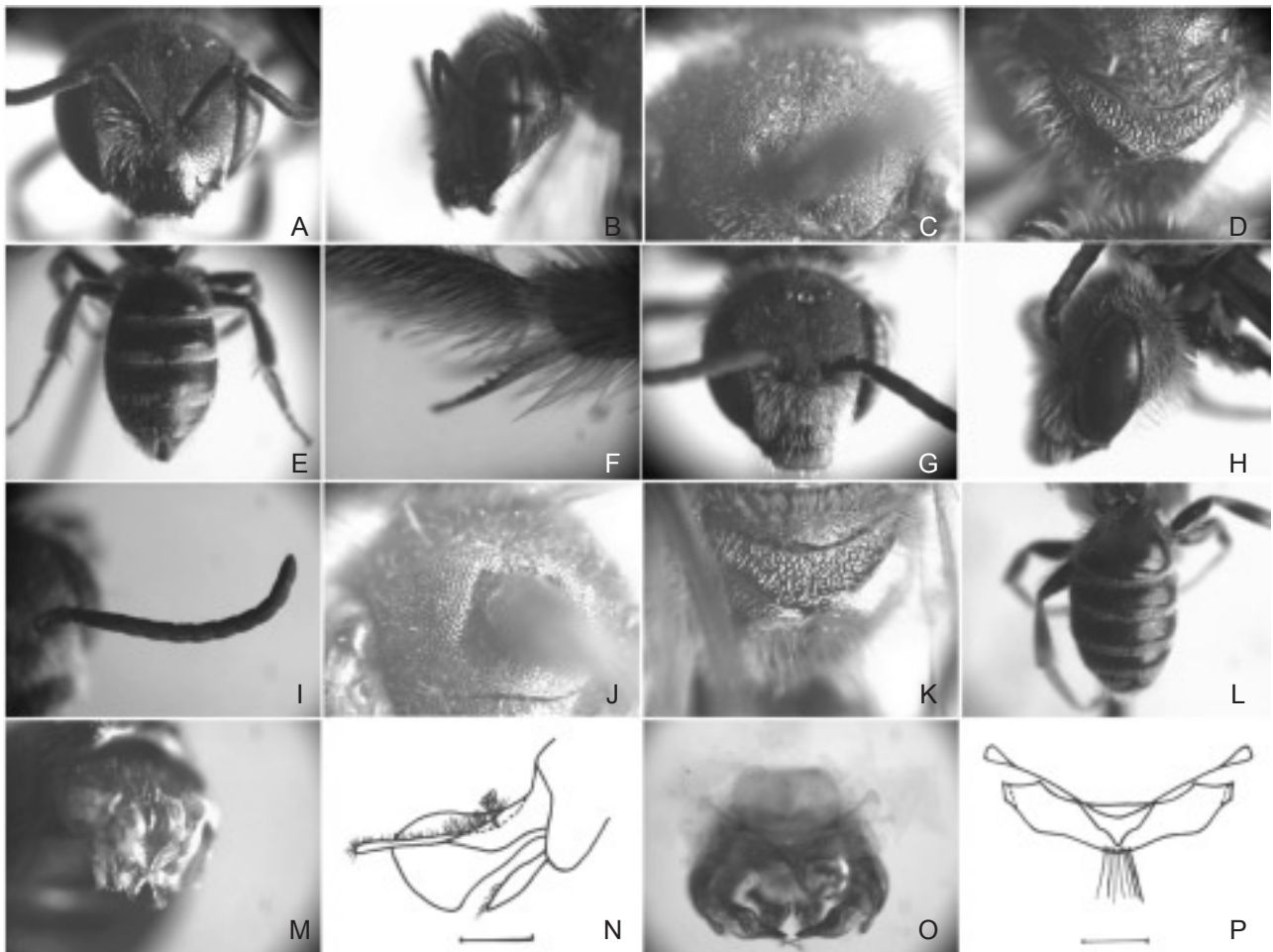


Fig. 16. *Halictus (Seladonia) vicinus* Vachal. A-F: Female. A: Frontal view of head; B: Lateral view of head; C: Dorsal view of mesoscutum; D: Dorsal view of propodeum; E: Dorsal view of metasomal terga; F: Lateral view of inner hind tibial spur. G-P: Male. G: Frontal view of head; H: Lateral view of head; I: Lateral view of antenna; J: Dorsal view of mesoscutum; K: Dorsal view of propodeum; L: Dorsal view of metasomal terga; M: Dorsolateral view of gonostylus; N: Drawing of gonostylus in dorsolateral view, scale line represents 0.25 mm; O: Ventral view of genitalia, showing S7-S8; P: Drawing of S7-S8 in dorsal view, scale line represents 0.25 mm.

Halictus (Seladonia) vicinus Vachal: Dawut and Tadauchi, 2001, 41: 180, ♀, ♂.

Specimens examined: China: Xinjiang, Huocheng, Qingshuihe: 780 m, 1 ♂, 25 Aug. 2002, Ze-qing Niu coll.; Xinjiang, Shihezi: 590 m, 1 ♂, 25 Aug. 1959, Chang-qing Li coll.; Xinjiang, Wulabai: 1 ♀, 2 June 1957, Chun-pei Hong coll.; Xinjiang, Ürümqi: 2 ♀ ♀, 29 May 1957, Chun-pei Hong, coll.; Xinjiang, Ürümqi, Xincheng Park (44°53'N 87°32'E): 713 m, 3 ♀ ♀, 5~6 Sept. 2002, 23 ♂ ♂, 1~6 Sept. 2002, Ze-qing Niu coll.

Distribution: China: Xinjiang; India; Myanmar; Thailand.

Floral association: *Celosia cristata*.

Redescription: See Sakagami and Ebmer (1987), Fan (1991), and Dawut and Tadauchi (2001).

Remarks: As all specimens collected from Xinjiang, it is not an Oriental species as mentioned by Sakagami and Ebmer (1987), Dawut and Tadauchi (2001).

***Halictus (Seladonia) multicarinatus* sp. nov.**
(Fig. 17A-O, male)

Description: Description is as follows:

Male: Body larger, BL = 8.5~10.0 mm, WL = 6.0~6.2 mm.

Coloration: Generally paler, weakly bluish green with metallic reflections on face, mesoscutum, and scutellum; metasomal terga black, without metallic reflections; clypeus black; mandible black; lower surface of flagellum brownish black, scape and pedicel black; lateral lobe of pronotum black apically; forewing paler, yellowish brown and transparent, R vein blackish, other veins yellowish brown; tegulae yellowish brown, transparent; all legs black, except mediotarsi and distitarsi brownish black.

Vestiture: Pubescence of most surfaces of body white or grayish white, relatively long and sparse. Tomentose pubescence less developed; basilateral patch on T1 small and sparse; metasomal terga with sparse apical bands of white hairs, on T1-T4 broadly interrupted.

Structure: Head longer than wide, HW: HL = 64: 70 (Fig. 17B), HW: MsW: MtW = 64: 60: 62. Vertex relatively longer, round in frontal view; postocellar area distinctly depressed; flagellum longer, reaching propodeum, F1L: F2L: F3L: F10L: F2W = 5: 8: 9: 12: 5 (Fig. 17E); frons obviously convex; clypeus flat, shiny and smooth, with round and homogeneous PP, IS = 1.0 (Fig. 17D); supra-

clypeus slightly higher than clypeus, shiny and smooth, with PP similar to that of clypeus, IS = 0.5~1.0; frons and paraocular area weakly shiny and smooth, with round, deeper, and denser PP, IS = 0.2; genal area wider than eye, GW: EW = 19: 16 (Fig. 17C); lateral surface of pronotum weakly shiny, with many parallel ridges sublongitudinally (Fig. 17H); mesoscutum shiny and smooth, with round PP, IS = 0.5 (Fig. 17F); scutellum medially not depressed longitudinally, shiny and smooth, with PP similar to that of mesoscutum, but IS = 0.5~1.0 medially and IS = 0.2 marginally; scutellum : metanotum : propodeal: dorsum = 14: 9: 11; propodeal dorsum with enclosure mildly depressed, enclosure silky shiny, with oblique sagittal rugose sculpturing both laterally, and finer reticulosus rugose sculpturing medially (Fig. 17G); connection between posterior and lateral surfaces of propodeum round; lateral surface shiny and smooth throughout, with round and deeper PP, IS = 0.5~3 above and 0.2 below; posterior surface shiny and smooth, with slightly smaller PP, IS = 0.2~0.5. Mesepisternum and metepisternum rather roughened, with large and more deeply irregular PP (Fig. 17I). Metasomal terga shiny and smooth, with distinctly smaller PP, IS = 1.5~2 apically and 0.5~1.0 basally (Fig. 17K); T2-T4 with distinct transverse depression basally (Fig. 17L); S4 strongly emarginate posteriorly, with anterolateral angle; S5 slightly emarginate posteriorly (Fig. 17M); S6 flattened. Upper gonostylus without stylus; lower gonostylus broadly lamella-shaped, 0.6 times as broad as long (Fig. 17N, O).

Female: unknown.

Specimens examined: Holotype: ♂: China: Sichuan, Barkam, 2500 m, 20 Aug. 1983, Shuyong Wang coll.; Paratypes: 1 ♂, same data as for holotype; 1 ♂, Yunnan, Lijiang, Yuhu, 2750 m, 22 July 1984, Jian-guo Fan coll.

Distribution: China: Sichuan, Yunnan.

Floral association: Not available.

Etymology: The specific name is derived from the Latin *multi* (=many) and *carina* (=ridge) for the lateral surface of the pronotum with many parallel ridges sublongitudinally.

Remarks: The male is similar to *Halictus magnus* in body size, but it is recognized by the lateral surface of the pronotum with many parallel ridges, the black legs, the upper gonostylus without a stylus, and the lower gonostylus being broadly lamella shaped.

Acknowledgments: This project was supported by the National Natural Science Foundation of

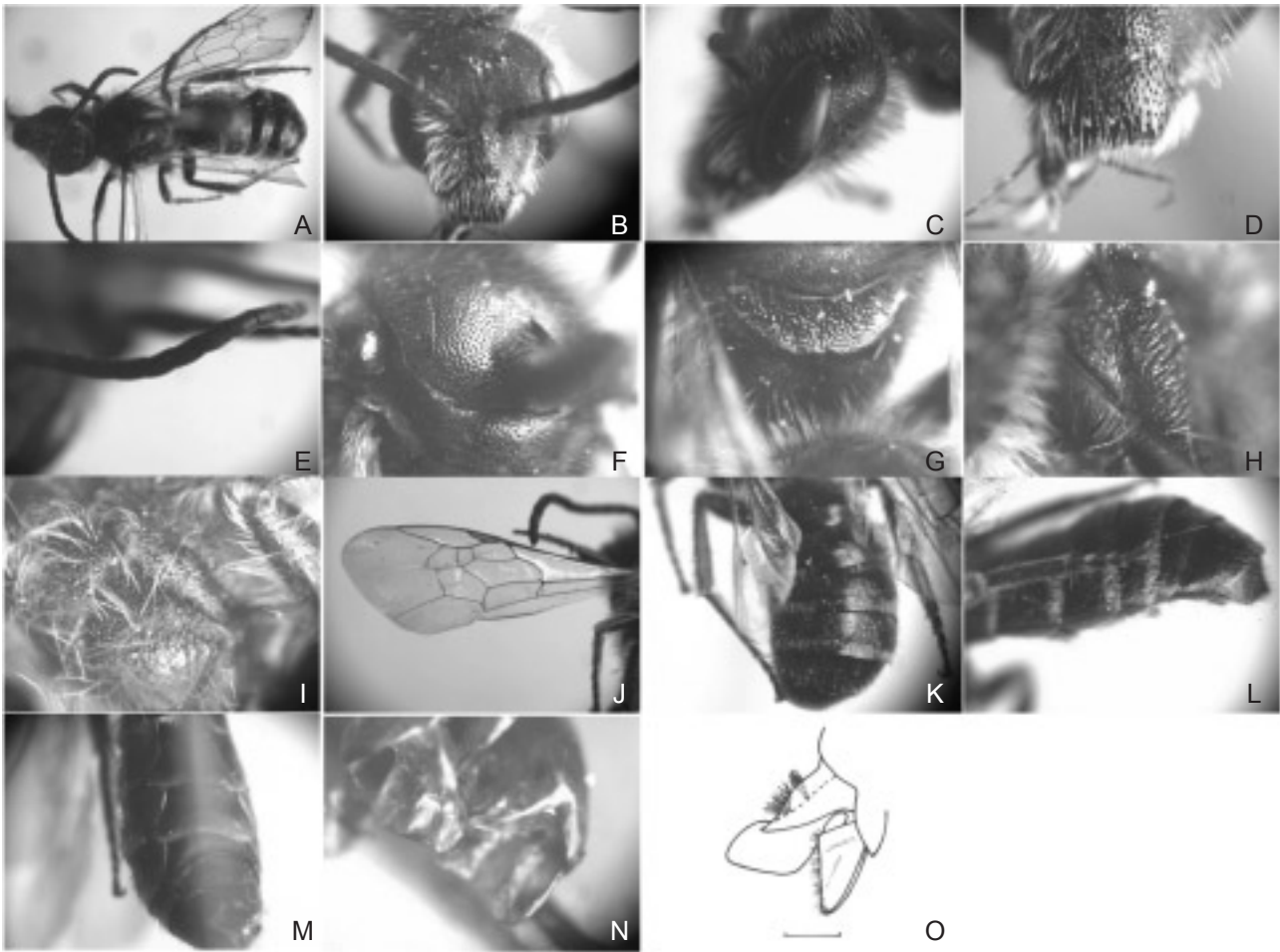


Fig. 17. *Halictus (Seladonia) multicarinatus* sp. nov. Male. A: Dorsal view of whole body; B: Frontal view of head; C: Lateral view of head; D: Frontal view of clypeus; E: Lateral view of antenna; F: Dorsal view of mesoscutum; G: Dorsal view of propodeum; H: Lateral surface of pronotum; I: Lateral view of mesosoma; J: Right forewing; K: Dorsal view of metasomal terga; L: Lateral view of metasoma; M: Frontal view of metasomal sterna; N: Dorsolateral view of gonostylus; O: Drawing of gonostylus in dorsolateral view, scale line represents 0.25 mm.

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