

New species and new records of hover-flies of the genus *Cheilosia* Mg. from China (Diptera: Syrphidae)

A.V. Barkalov & X. Cheng

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Six new species of the genus *Cheilosia* (*Ch. distincta* sp. n., *Ch. egregia* sp. n., *Ch. sini* sp. n., *Ch. certa* sp. n., *Ch. suspecta* sp. n. and *Ch. lucida* sp. n.) are described. Five more species are recorded from China for the first time.

A.V. Barkalov, Zoological Museum of the Institute of Animal Systematics and Ecology, ul. Frunze 11, Novosibirsk 630091, Russia.

Cheng Xinyue, Department of Plant Protection, Beijing Agricultural University, Beijing 1000094, China.

In the course of determination of material of the genus *Cheilosia* from the Beijing Agricultural University (BAU) and the Zoological Institute of the Russian Academy of Sciences, St.Peterburg (ZISP), six new species were discovered and five species recorded from China for the first time. Holotypes and paratypes of new species are preserved at the BAU, a paratype of *Ch. distincta* sp. n. is preserved at the ZISP.

Cheilosia distincta sp. n.

(Figs 1-7)

Holotype. ♂, China, Sichuan, Xiangcheng, 3000 m, 21.VI.1982 (Zhang Xiezhong).

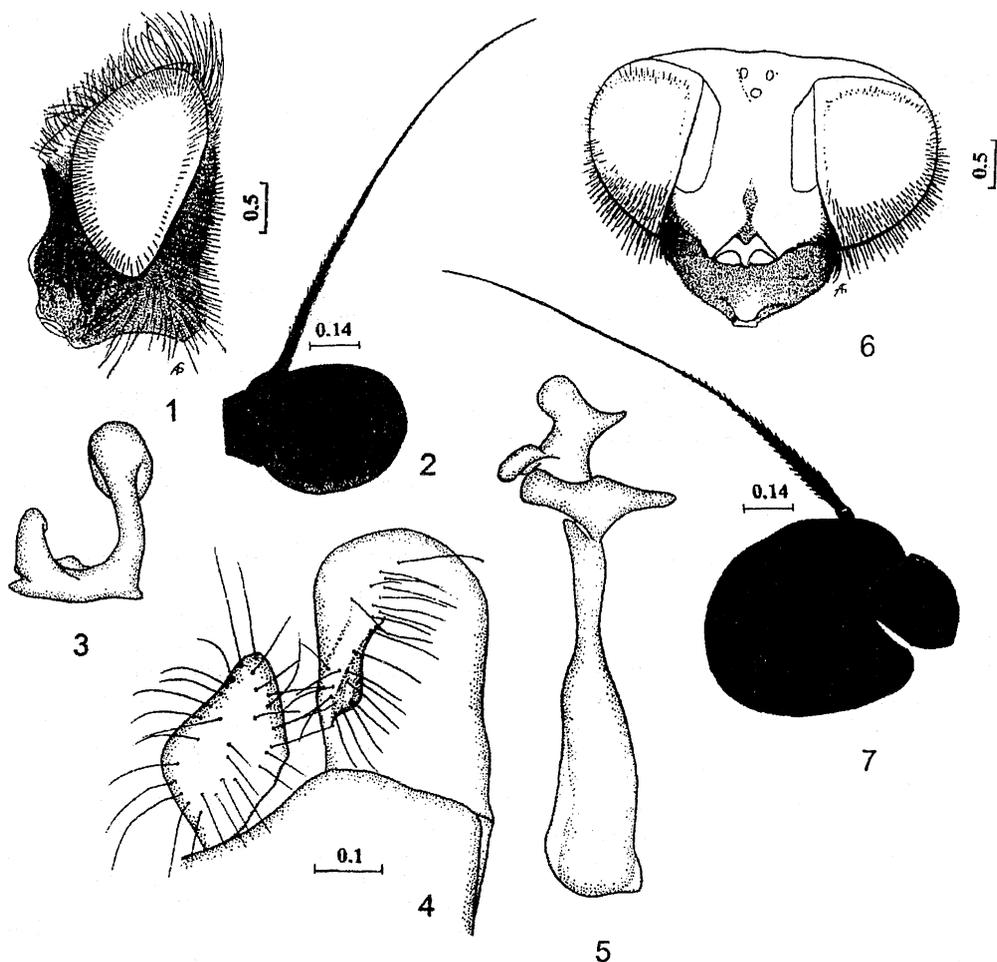
Paratypes. China, Sichuan: 1 ♀, Tatzinlu [= Kangding], 26.VI.1893 (Potanin); 1 ♀, Batang, 3300 m, 16.VIII.1982 (Zhang Xiezhong) 1 ♀, Batang, 3200 m, 6.VII.1983 (Zhang Xiezhong).

Description. Male. Face broad, covered with dense, very short white hairs. Central knob small and narrow (Fig. 1). Eye margins broad, densely covered with very long white-yellow hairs and tomentum. Cheeks high (Fig. 1), covered with dense white hairs and sparse tomentum. Frons very broad, moderately swollen, covered with dusting near eyes and furnished with long, black and white hairs. Lunula brown; antennal pits separated by anterior process of lunula. Antennae black; 3rd segment with dense grey dusting; arista black, almost naked (Fig. 2). Eyes completely covered with long, dense yellow

hairs; line of their contact approximately as long as frons. Vertex flat; ocellar triangle equilateral. Mesonotum shining, except sides, covered with yellow hairs, with some black hairs in hind part and on scutellum. Scutellum mainly shining, but with dusting on rim, its hind margin with long yellow hairs. Pleura densely pollinose, covered with long yellow hairs. Legs: femora black, with narrowly yellow apices; front and middle tibiae yellow, with darkened apical third; hind tibia yellow in basal third and darkened in apical 2/3; tarsi black, except yellowish middle metatarsus. Pilosity of legs long, white. Wings narrowly yellowish in basal half. Halteres yellow with blackish knob. Abdomen oval, black, shiny, covered with erect yellowish hairs, with a band of black hairs on III tergite. Sternites densely grey-dusted, with long erect hairs. Genitalia as in Figs. 3-5. Length: body 10 mm, wing 8.8 mm.

Female. Face, eye margins and cheeks as in male. Frons broad, covered with long, erect, yellow and some black hairs (Fig. 6). Antennae brownish or black, 3rd segment rather large (Fig. 7). Otherwise as male, except white hairs on abdomen. Length: body 10-11 mm, wing 7.5-8.6 mm.

Diagnosis. The new species belongs to the subgenus *Cheilosia* s. str., but there is no species similar to *Ch. distincta* in Palaearctic. The structure of the male genitalia in some features is similar to that of *illustrata* species group, but differs in some details.



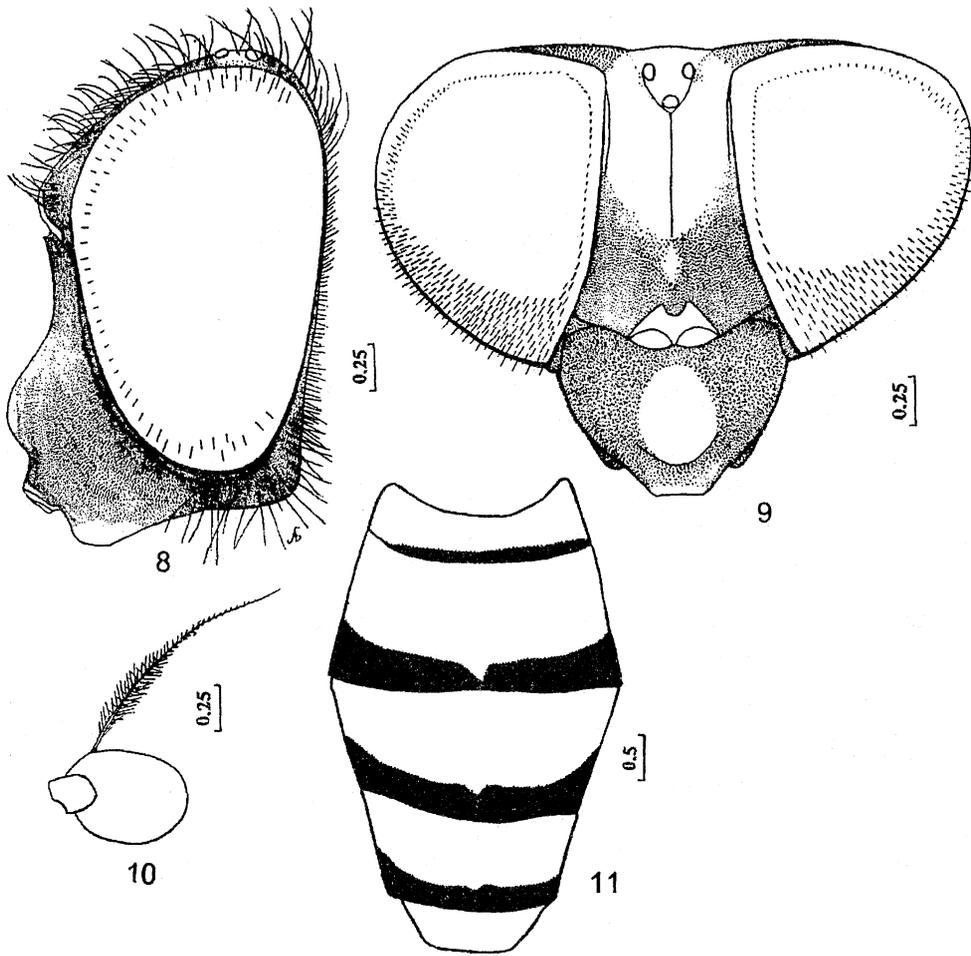
Figs 1-7. *Cheilosia distincta* sp. n. (1-5, ♂; 6-7, ♀): 1, head, lateral view; 2, 2nd and 3rd antennal segments, lateral view; 3, superior lobe of hypandrium, lateral view; 4, surstylus and cercus, lateral view; 5, aedeagus and apodema, lateral view; 6, head, dorsal view; 7, 2nd and 3rd antennal segments, lateral view.

***Cheilosia egregia* sp. n.**
(Figs 8-11)

Holotype. ♀, **China, Sichuan**, Emeishan, 3000-3200 m, 25.VI.1957 (Huang Keren).

Description. Female. Face moderately wide, slightly widened downwards, black, except top of central knob covered with dense, yellow-grey dusting. Eye-margins narrow, with short white hairs (Fig. 8). Cheeks low, covered with long yellow hairs and yellowish dusting. Frons comparatively narrow, with distinct middle groove, in front third with dense grey dusting, covered with short, semiadpressed, yellow and longer, erect, black hairs. Lunula dark brown; its

anterior process only touching upper part of face but not confluent with it (Fig. 9). Antennae dark yellow; 1st segment brownish; 3rd segment large, oval (Fig. 10). Arista long, narrow, black, covered with long hairs. Eyes covered with rather short, sparse, white hairs. Ocellar triangle equilateral. Occiput with dense grey dusting, covered with shorter yellow and longer black hairs. Mesonotum black, with green reflection and with grey-yellow dusting, covered with erect yellow hairs, on side margins with strong, long, black bristles. Humeral calli yellow. Scutellum yellow, with darkened anterior 1/4, on hind margin with 6 strong black bristles. Pleura, except lower part of ster-



Figs 8-11. *Cheilosia egregia* sp. n., ♀: 8, head, lateral view; 9, the same, dorsal view; 10, 2nd and 3rd antennal segments, lateral view; 11, abdomen, dorsal view.

nopleura, with grey dusting and yellow hairs; dorso-posterior corner of mesopleuron with long yellow hairs and one strong black bristle. Legs mainly yellow; middle and hind coxae black; hind femora with slightly darkened upper part; hind tibiae with black ring in the middle part; hind metatarsi and 5th segments of all tarsi dorsally black. Wings slightly brownish, internal angle between M_1 and R_{4+5} almost equal to 90° . Halteres yellow. Abdomen mainly orange, with narrow black bands on hind margins of I-IV tergites (Fig. 11). I-II tergites covered with long, erect, yellow hairs on sides and short, adpressed hairs in the middle. Sides of III-V tergites with yellow hairs on yellow parts and short black hairs on black parts; middle

parts of tergites with short, adpressed, black hairs. Length: body 9.5 mm, wing 8.8 mm.

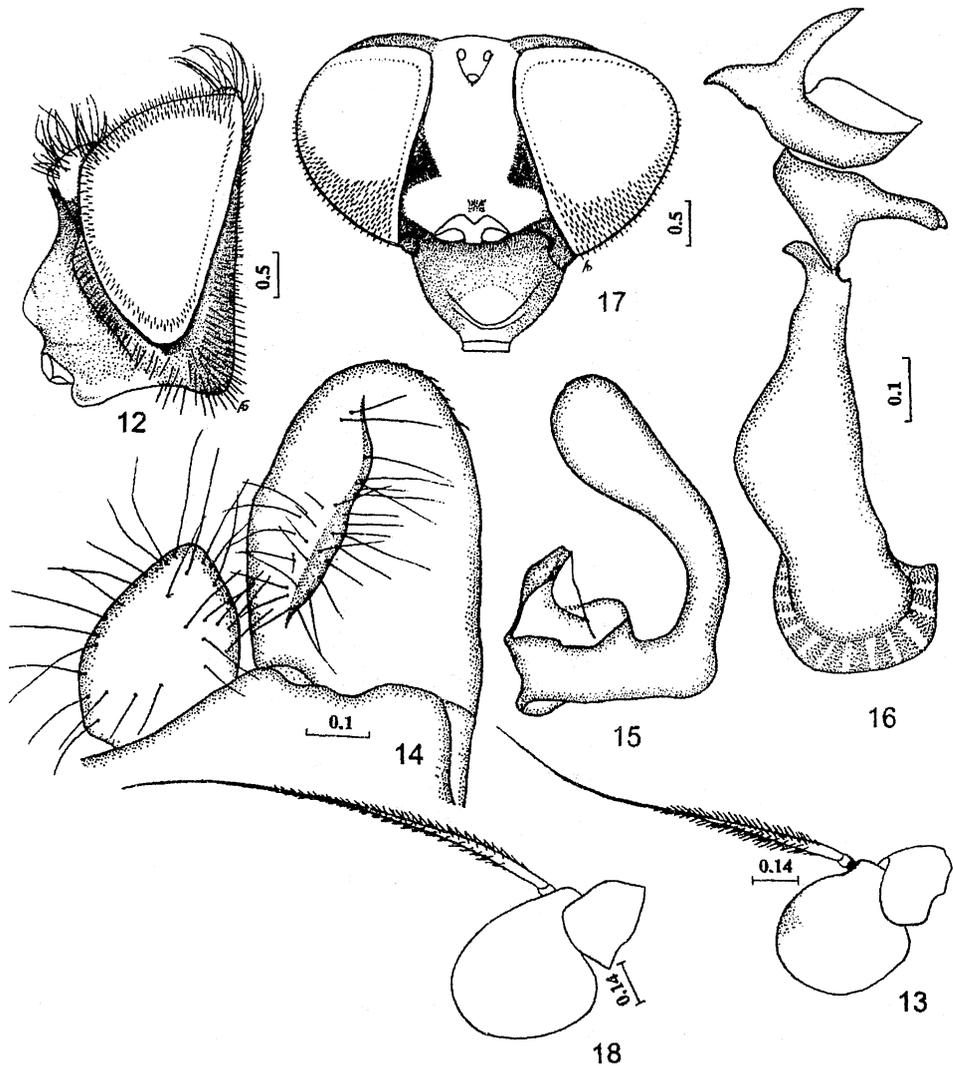
Male unknown.

Diagnosis. The new species belongs to the subgenus *Cheilosia* s. str. This is the third *Cheilosia* with yellow marks on abdomen known from the Palaearctic region. One of these (*Ch. rufiventris* Peck) inhabits the mountains of Middle Asia, the other (*Ch. distinguenda* Shir.) is known from Japan. *Ch. egregia* differs from both species in the colour of abdomen.

***Cheilosia sini* sp. n.**

(Figs 12-18)

Holotype. ♂, China, Sichuan, Emeishan, 800-1000 m, 23.IV.1957 (Zhu Fuxing).



Figs 12-18. *Cheilosia sini* sp. n. (12-16, ♂; 17-18, ♀): 12, head, lateral view; 13, 2nd and 3rd antennal segment, lateral view; 14, surstylus and cercus, lateral view; 15, superior lobe of hypandrium, lateral view; 16, aedeagus and apodema, lateral view; 17, head, dorsal view; 18, 2nd and 3rd antennal segments, lateral view.

Paratype. ♀, as holotype, but 20.IV.1957 (Huang Keren).

Description. Male. Face comparatively narrow, black, with grey dusting; central knob large and broad (Fig. 12). Eye-margins broad, in upper and lower parts with small brownish spots, covered with grey dusting and short white hairs. Cheeks shining, with sparse grey dusting and yellow hairs. Frons broad, slightly convex, shining, with black hairs. Angle approximation of eyes slightly more than 90° . Lunula yellow, distinctly connected with upper part of face. Antennae

yellow; 1st and 2nd segments slightly darkened; 3rd segment rounded, with distinctly haired arista (Fig. 13). Eyes covered with dense, comparatively short, dark brown hairs; line of their contact distinctly longer than frons. Mesonotum and scutellum black, with bluish reflection, covered with dense, erect, yellow hairs; sides of mesonotum in anterior third with grey dusting. Hind margin of scutellum with yellow hairs. Humeral callus yellow. Pleura with grey dusting and yellow hairs. Legs: trochanters mainly black, but yellow in upper part; femora yellow

basally and apically and black in the middle; tibiae yellow, with brownish smooth ring in upper half; two basal segments of anterior tarsi yellow; 3rd-5th segments black; middle tarsi yellow, except 5th segment; upper part of hind tarsi black, with yellow extreme top of each segment. Long hairs of femora yellow, only inner part of hind femora with short black hairs. Wings slightly brownish, internal angle between R_{4+5} and M_1 equal to 90° . Squamae white; halteres yellow, with black hairs. Abdomen almost parallel-sided, with middle part covered with brown dusting and with shining side margins; furnished with erect yellow hairs. Sternites with grey dusting. Genitalia as in Figs 14-16. Length: body 12.5 mm, wing 11.5 mm.

Female. Face and antennae as in male (Fig. 18). Frons moderately wide, shining, with triangular yellow spots of dusting in anterior half (Fig. 17), covered with erect yellow and some black hairs, on dusted parts with short adpressed hairs. Mesonotum, wings and pleura as in male. Halteres completely yellow. Otherwise as in male. Abdomen broader than mesonotum, covered with yellow erect hairs and with some black hairs on the middle. Length: body 12.8 mm, wing 10.7 mm.

Diagnosis. The new species belongs to the subgenus *Cheilosia* s. str. It is closest to *Ch. japonica* H.-B., but differs in the yellow humeral callus, absence of grey stripes of dusting on mesonotum (these are present in *Ch. japonica*) and the male genitalia.

***Cheilosia certa* sp. n.**
(Figs 19-23)

Holotype. ♂, China, Qinghai, Baitang, 4200 m, 16.VI.1964 (Wang Shuyong).

Description. Male. Face distinctly widened downwards, black, except central knob and mouth edge, covered with grey dusting; central knob distinctly prominent (Fig. 19). Eye-margins broad, in broadest part equal to width of 3rd antennal segment, covered with dense, yellow-grey dusting and light yellow hairs. Cheeks low, covered with fine grey dusting and white hairs. Frons flat, mainly shining, but on front part and near eyes with grey dusting, covered with black and yellow hairs. Lunula narrow, yellow, its anterior process distinctly confluent with upper part of face. Angle approximation of eyes equals to 90° . Antennae black, with small lighter spots on 2nd and 3rd segments; arista yellow, with some small hairs (Fig.

20). Eyes completely covered with dense black-brown hairs; line of their contact distinctly longer than frons. Vertex finely swollen, covered with yellow hairs; ocellar triangle equilateral. Mesonotum and scutellum shiny, black, with dense and comparatively long, erect, yellow hairs. Hind margin of scutellum without bristles. Humeral and postalar calli slightly yellowish. Pleura black, with fine grey dusting and yellow, waving on ends hairs. Metasternum with golden hairs. Legs: trochanters reddish; femora mainly black, only basal parts near trochanters and apical parts (especially on internal sides) yellowish; tibiae yellow, with indistinct black rim in upper part; tarsi yellow ventrally, except apical segments; dorsal side of anterior and middle tarsi yellow on 2nd-4th segments and brownish on basitarsi and 5th segment, of hind tarsi black with reddish tops of each segment. Long pilosity of all femora yellow; hind femora ventrally in apical 1/3 with short black hairs. Wings with brownish basal half; internal angle between M_1 and R_{4+5} more than 90° . Abdomen oval, shiny black, with bluish reflection, covered with erect yellow hairs. Genitalia as in Figs 21-23. Length: body 13 mm, wing 10 mm.

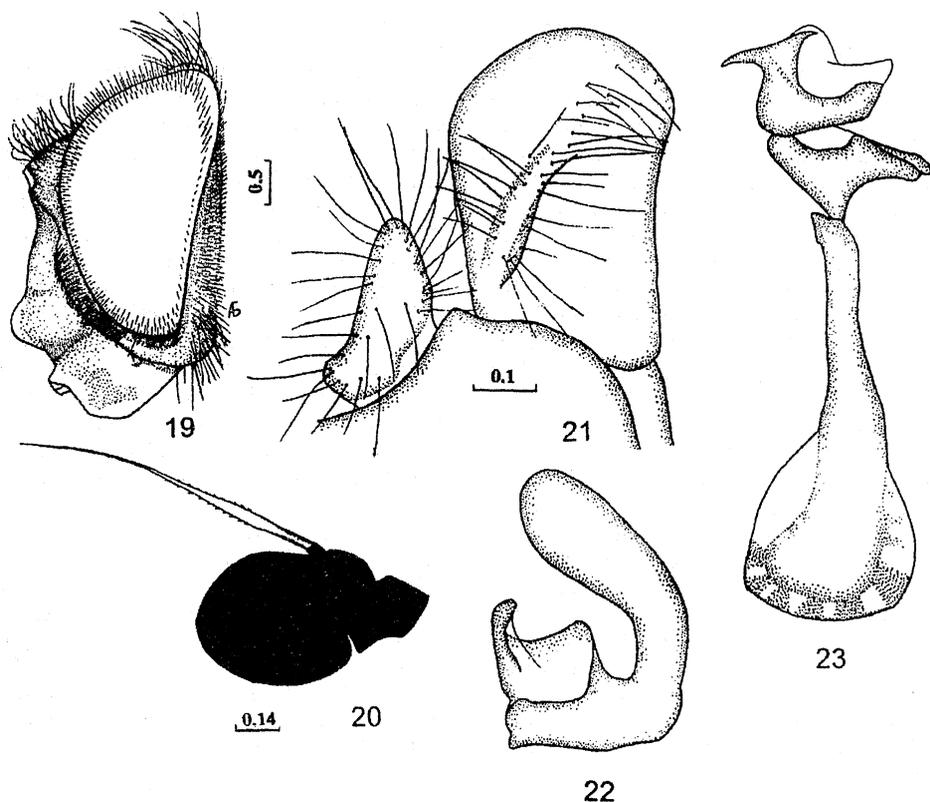
Female unknown.

Diagnosis. The new species belongs to the subgenus *Cheilosia* s. str. There is no species in Palaearctic close to the described species. By some characters it is closer to *Ch. canicularis* (Panz.) but in other characters it is closer to *Ch. urakawensis* (Shir.) and *Ch. yesonica* Mats., and from all species *Ch. certa* differs in the described combination of characters, and especially in the structure of genitalia.

***Cheilosia suspecta* sp. n.**
(Figs 24-28)

Holotype. ♂, China, Sichuan, Xiangcheng, 3900 m, 4.VII.1982 (Zhang Xiezhong).

Description. Male. Face narrow, almost parallel-sided, black, except top of central knob and mouth margin, covered with grey dusting; central knob narrow (Fig. 24). Eye-margins moderately wide, covered with dense grey dusting and short white hairs. Cheeks low, covered with fine grey dusting and yellow hairs. Frons flat, covered with dense grey dusting and black hairs. Angle approximation of eyes equal to 90° . Lunula brownish, its anterior process distinctly connected with upper portion of face. 1st and 2nd antennal segments black; 3rd segment



Figs 19-23. *Cheilosia certa* sp. n., ♂: 19, head, lateral view; 20, 2nd and 3rd antennal segment, lateral view; 21, surstylus and cercus, lateral view; 22, superior lobe of hypandrium, lateral view; 23, aedeagus and apodema, lateral view.

orange, with darkened upper part (Fig. 25); arista black, with very short hairs in basal 1/3. Eyes densely covered with comparatively long, yellow hairs; line of their contact distinctly longer than frons. Vertex flat, covered with black hairs. Ocellar triangle isosceles. Mesonotum black, with greenish reflection, covered with fine grey dusting and erect, short, yellow and 2-3 times as long black hairs. Humeral callus black, with grey dusting. Hind margin of scutellum with long black hairs and bristles. Pleura black, with grey dusting and black and yellow hairs. Legs practically black, only extreme tops of femora and basal 1/3 of tibiae dark brown. Femora with long black and yellow hairs. Squamae and halteres yellow. Wings translucent; internal angle between M_1 and R_{4+5} less than 90° . Abdomen parallel-sided, black mat, with grey-brown dusting, covered with yellow hairs, which are longer and erect on sides and shorter, semiadpressed on the middle of abdomen; IV tergite with short, ad-

pressed, black hairs on the middle. Genitalia as in Figs 26-28. Length: body 7.6 mm, wing 7.7 mm.

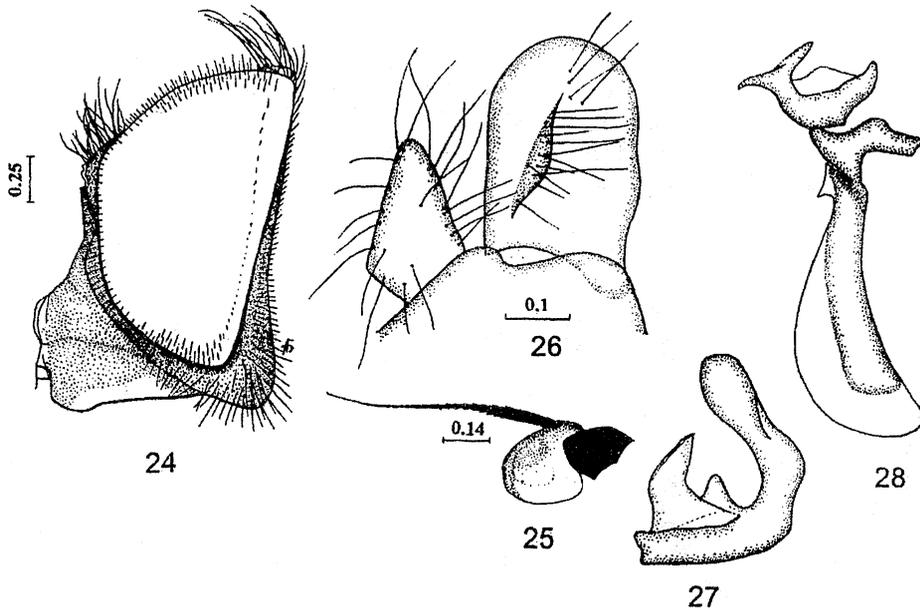
Female unknown.

Diagnosis. The new species belongs to the subgenus *Cheilosia* s. str. It is closest to *Ch. parafasciata* Bark., but differs in the low cheeks, black legs and dusted abdomen. *Ch. parafasciata* has high cheeks, yellow basal 1/3 and tops of tibiae, and abdomen with grey spots of dusting.

***Cheilosia lucida* sp. n.**
(Figs 29-35)

Holotype. ♂, China, Sichuan, Emeishan, 1800-2000 m, 30.VIII.1957 (Lu Youcai).

Description. Male. Face moderately wide, slightly widened downwards, black, except top of central knob, covered with grey-yellow dusting; central knob large and broad (Fig. 29). Eye-margins very narrow, covered with dense grey dusting and very short,



Figs 24-28. *Cheilosia suspecta* sp. n., ♂: 24, head, lateral view; 25, 2nd and 3rd antennal segments, lateral view; 26, surstylus and cercus, lateral view; 27, superior lobe of hypandrium, lateral view; 28, aedeagus and apodema, lateral view.

white hairs; cheeks comparatively low, covered with fine dusting and white hairs. Frons slightly swollen, covered with grey-yellow dusting and black and yellow hairs. Angle approximation of eyes distinctly less than 90°. Lunula dark brown; its anterior process broadly connected with upper part of face. Antennae (Fig. 30) yellow; 3rd antennal segment elongate; arista missing. Eyes with short yellow hairs; facets in upper half distinctly larger than in lower half. Line of contact of eyes distinctly longer than frons. Vertex swollen, covered with grey dusting and variously coloured hairs: yellow in basal part and black in apical part. Ocellar triangle isosceles. Mesonotum and scutellum green, shiny, covered with dense yellow dusting and yellow hairs; mesonotum with 5-6 strong, long, black bristles on sides; hind margin of scutellum with 6 strong, long, black bristles. Pleura black, with green reflection, covered with yellow hairs; mesopleuron with yellow borders, on postero-dorsal corner with long black bristle. Legs, except two apical segments of tarsi, yellow, with yellow hairs. Squamae and halteres yellow. Wings yellowish in basal half and brownish in apical third (Fig. 31). Abdomen elongate, black, with green reflection, covered with yellow

hairs. Genitalia as in Figs 32-35. Length: body 9.3 mm, wing 9.4 mm.

Female unknown.

Diagnosis. The new species is closest to *Ch. abbreviata* Shir., but differs in the presence of dusting and colour of mesonotum (in *Ch. abbreviata*, mesonotum black, without dusting). Genitalia of these two species are also very similar, but there are some differences in the left process of superior lobe of hypandrium and the shape of surstylus (Figs 36-39).

***Cheilosia latigena* Barkalov & Peck, 1994**

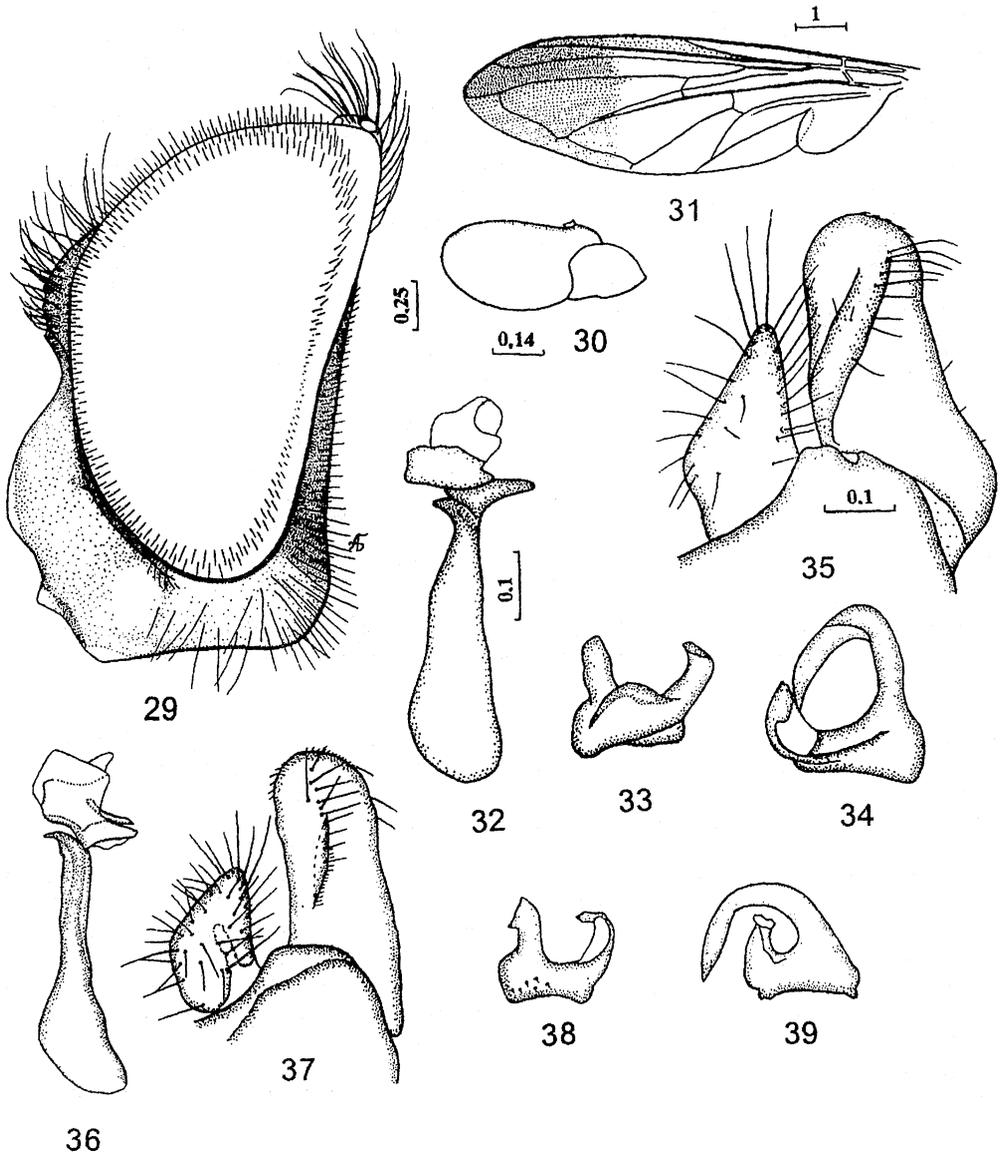
Material. China, Xinjiang: 1 ♀, Tian Shan, 19.VII.1957 (Wang Guang).

The species was known only from the Tien Shan Mountains of Kirgizia (Barkalov & Peck, 1997), it is recorded from China for the first time.

***Cheilosia longula* (Zetterstedt, 1838)**

Material. China, Sichuan: 1 ♂, Barkam, 3230 m, 12.VII.1961 (Li Suofu).

The species is distributed in Palaearctic from England to Japan and from Norway to Mongolia, it is recorded from China for the first time.



Figs 29-39. *Cheilosia*, ♂. 29-35, *Ch. lucida* sp. n.: 29, head, lateral view; 30, 2nd and 3rd antennal segment, lateral view; 31, wing; 32, aedeagus and surstylus, lateral view; 33, 34, superior lobes of hypandrium, lateral view; 35, surstylus and cercus, lateral view. 36-39, *Ch. abbreviata* Shir.: 36, aedeagus and apodema, lateral view; 37, surstylus and cercus, lateral view; 38, 39, superior lobes of hypandrium, lateral view.

***Cheilosia versicolor* Curran, 1929**

Material. China, Sichuan: 1 ♂, 2 ♀, Emeishan, 3000-3200 m, 24.V.1957 (Zhu Fuxing & Huang Keren).

The species was only known from the type material from Sichuan Province.

***Cheilosia velutina* Loew, 1840**

Material. China: Jilin: 1 ♂, Changbaishan, 21.VII.1996 (Cheng Xinyue); *Sichuan:* 1 ♂, 1 ♀, Ganzi, 3300 m, 30.VI, 11.VII.1983 (Zhang Xiezhong).

The species is distributed in the temperate zone of Palearctic from British Islands to

Kamchatka, it is recorded from China for the first time.

Cheilosia josankeiana (Shiraki, 1930)

Material. **China**, Gansu: 1 ♂, Dangchang, 2190 m, 8.VII.1996 (Cheng Xinyue).

The species was known from the southern part of Russian Far East and Japan, it is recorded from China for the first time.

Cheilosia okinawae Shiraki, 1968

Material. **China**, Zhejiang: 1 ♀, Chusan [= Zhou-shan Is.], 25.VI.1935.

The species was known only from the South-West Islands of Japan (Okinawa, Amami), it is recorded from China for the first time.

Cheilosia motodomariensis Matsumura, 1916

Chilosia unicolor Sack, 1941: 189.

Material. **China**, Jilin: 1 ♀, Kao-lin-tze, 20.VII.1940; 1 ♀, Changbaishan, 850 m, 21.VII.1996 (Cheng Xinyue).

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