

A review of *Gongylidioides* spiders (Araneae: Linyphiidae: Erigoninae) from China

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A review of *Gongylidioides* spiders (Araneae: Linyphiidae: Erigoninae) from China. - The present paper gives a review of the spider genus *Gongylidioides* occurring in China. A total of eight species are recognized, including three new species: *Gongylidioides acmodontus* sp. n., *Gongylidioides angustus* sp. n. and *Gongylidioides kouqianensis* sp. n. Descriptions of the new species and redescriptions of the known species, except for *G. onoi* and *G. ussuricus*, are provided.

Keywords: China - Linyphiidae - Erigoninae - *Gongylidioides* - new species - taxonomy.

INTRODUCTION

The erigonine spider genus *Gongylidioides* was established by Oi (1960) for *Gongylidioides cucullatus* Oi, 1960. According to Platnick's spider catalogue (2005), the genus currently comprises ten species. They are *G. communis* Saito & Ono, 2001 (Japan), *G. cucullatus* Oi, 1960 (Japan), *G. foratus* (Ma & Zhu, 1990) (China), *G. gale-ritus* Saito & Ono, 2001 (Japan), *G. griseolineatus* (Schenkel, 1936) (Russia, China), *G. kaihotsui* Saito & Ono, 2001 (Japan), *G. onoi* Tazoe, 1994 (China, Vietnam, Japan), *G. monocornis* Saito & Ono, 2001 (Japan), *G. rimatus* (Ma & Zhu, 1990) (Russia, China) and *G. ussuricus* Eskov, 1992 (Russia, China). During our study of *Gongylidioides* material from China, three new species have been identified and are described in the present paper. With the three new species reported here, a total of eight *Gongylidioides* species are currently known from China.

MATERIAL AND METHODS

Specimens were examined and measured using an SZ11-Olympus stereomicroscope. Details were studied under an Olympus BX40 compound microscope. All illustrations were made using a drawing tube. Male palps and epigyna were examined and illustrated after being dissected and detached. Vulvae were cleared in a boiling KOH solution to dissolve non-chitinous tissue, and the embolic parts of male palps were excised by breaking the column (the membranous connection between the supratégulum and the radix). For examination of genital structures under a compound microscope, palps and epigyna were immersed in 75% alcohol solution, while embolus parts and vulvae were mounted in Hoyer's Solution.

Updated information on the distribution of each species in China is provided at the provincial level. The locality names and distribution data are given according to current Chinese standard (see Peng, Li & Rollard, 2003). The material examined is deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing, China, unless otherwise indicated. Other repository institutions are: Muséum d'histoire naturelle, Genève, Switzerland (MHNG); Jilin University, Changchun, China (JLU, formerly called Norman Bethune University of Medical Sciences); Department of Zoology, National Science Museum, Tokyo, Japan (NSMT); Swedish Museum of Natural History, Stockholm, Sweden (SMNH).

Leg measurements are given in the following sequence: Total (femur, patella + tibia, metatarsus, tarsus). All measurements are in mm. Terminology for somatic morphology and genital structures is after Hormiga (2000, 2002). Abbreviations used are as follows:

Somatic morphology. AER - anterior eye row; ALE - anterior lateral eye; AME - anterior median eye; AMEd - diameter of AME; PER - posterior eye row; PLE - posterior lateral eye; PME - posterior median eye; PMEd - diameter of PME.

Male palp. DSA - distal suprategular apophysis; DTA - dorsal tibia apophysis; E - embolus; IT - inner tooth of tibia; LC - lamella characteristica; LSA - lateral suprategular apophysis; PT - protegulum; R - radix; SPT - suprategulum; STM - suprategular membrane; TP - tailpiece of radix.

Epigyne. CD - copulatory duct; CO - opening of copulatory duct; DP - dorsal plate of epigyne; FD - fertilization duct; FO - opening of fertilization duct; S - spermatheca; VP - ventral plate of epigyne.

TAXONOMIC DESCRIPTIONS

Gongylidioides Oi, 1960

Gongylidioides Oi, 1960: 172. Type species *Gongylidioides cucullatus* Oi, 1960, by monotypy.

Diagnosis. Males of *Gongylidioides* can be recognized by the thumb-like distal process of the paracymbium, the triangular lateral suprategular apophysis (LSA), the plate-shaped distal suprategular apophysis (DSA) and the U-shaped lamella characteristica (LC); females are characterized by the bisection of the ventral plate partly covering the anterior part of the well-developed dorsal plate.

Description. Total length: 1.93-3.3. Carapace of both sexes similar in general appearance, cephalic portion slightly convex behind ocular area, bearing several hairs on it. Ocular area black, AME usually smaller than other (subequal) eyes. AER recurved, intervals between anterior eyes about AMEd; PER straight, intervals of posterior eyes about PMEd or slightly longer; ALE and PLE juxtaposed. Chelicerae brown. Fang groove with five to six promarginal and three to five retromarginal teeth. Tibial spines: 2-2-1-1; Tm I: 0.59- 0.82; Tm IV present.

Male palp. Tibia short and wide, with one or two well-developed dorsal apophyses (DTA) and two smaller ventral apophyses and usually with a tooth (IT) on inner surface of dorsal apophysis. Two tibial trichobothria present, one prodorsally and one retrodorsally. Paracymbium U-shaped, covered with long hairs, apical part with distally situated thumb-like process. Protegulum (PT) present as a less sclerotized extension of the tegulum. Suprategulum with a triangular lateral apophysis (LSA) in pro-

lateral view and a plate-shaped, transparent distal apophysis (DSA) in retrolateral view. Suprategular membrane (STM) thin and translucent, projecting forwards from apical margin of distal suprategular apophysis. Embolic parts dominated by large, strongly sclerotized, U-shaped lamella characteristica (LC), its longer prolateral arm furnished with scale-like teeth on outer surface and inner part membranous, its shorter ectal arm with various modifications apically. Embolus projecting from beneath lamella characteristica. Radix with handle-shaped tailpiece (TP).

Epigyne. Well-developed dorsal plate (DP) slightly convex ventrally, extending to posterior margin. Bisection of ventral plate (VP) of various shapes, partly covering anterior part of dorsal plate. Copulatory ducts short, with conspicuous anterior turning and opening below divided ventral plate anteriorly.

Distribution. China (Gansu, Hubei, Hunan, Jilin, Shaanxi, Taiwan and Zhejiang), Japan, Russia and Vietnam.

***Gongylidioides acmodontus* sp. n.**

Fig. 1

Type material examined. ♂ holotype, Anghekou, Mt Erlangshan National Forest Park, Tianquan County, Sichuan Province, China, coll. Lihong Tu, 8 July 2004; 2♂1♀ paratypes, same data as for holotype; 1♂ paratype, same data as for holotype (MHNG); 1♀ paratype, Qingshi Town, Tianquan County, Sichuan Province, China, coll. Zhengtian Zhang, 11 July 2004 (MHNG); 1♀ paratype, Jintang Nature Reserve, Kangding County, Sichuan Province, China, coll. Lihong Tu, 18 July 2004.

Diagnosis. The male of *G. acmodontus* can be distinguished by a long, sharp dorsal apophysis (DTA) and a pointed inner tooth (IT) on the palpal tibia; the female by the bisection of the ventral plate with arced margins.

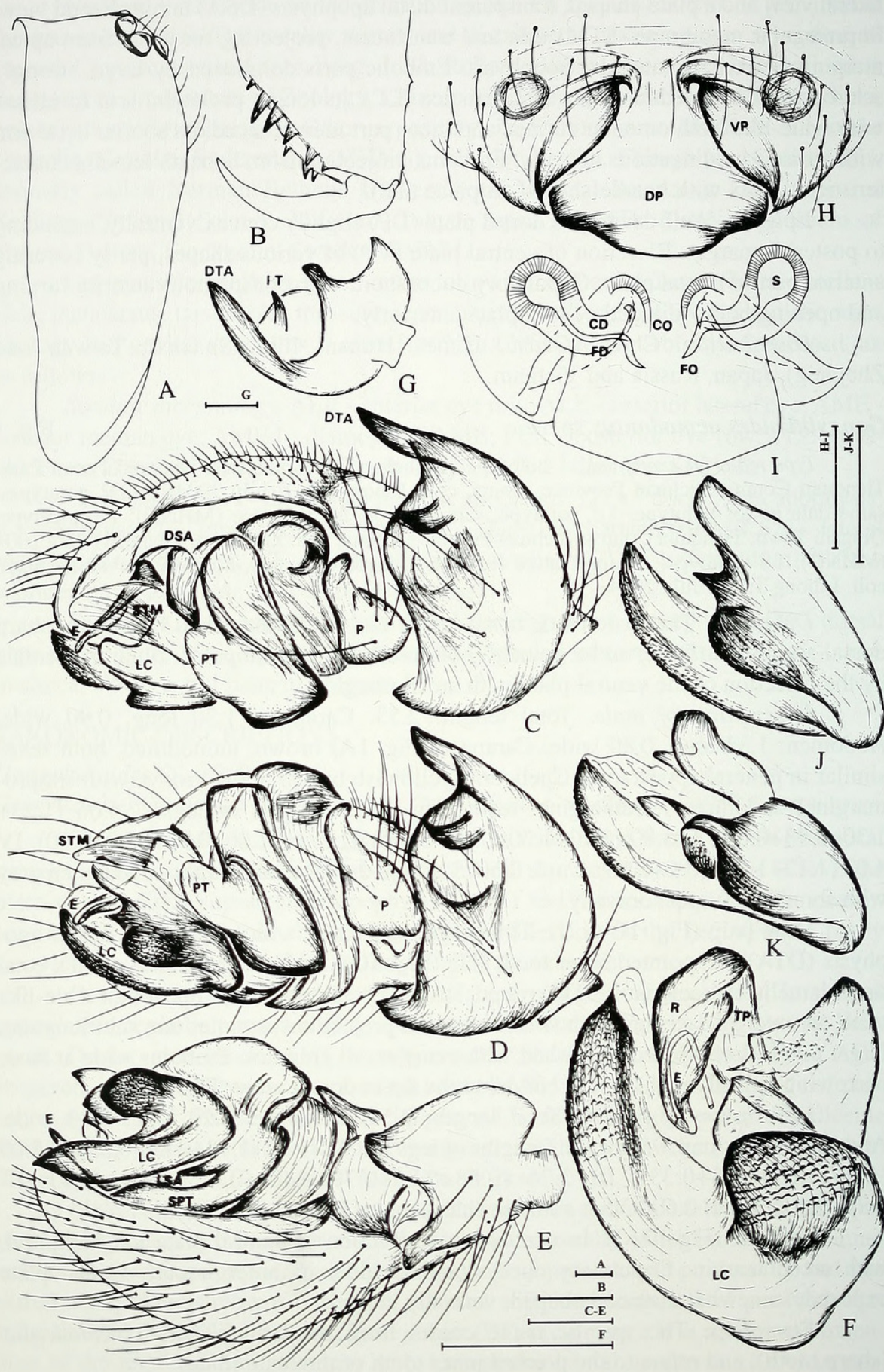
Description of male. Total length: 2.53. Carapace: 1.30 long, 0.90 wide. Abdomen: 1.33 long, 0.80 wide. Carapace (Fig. 1A) brown, unmodified, both sexes similar in general appearance. Chelicerae yellowish brown. Fang groove with six pro-marginal and three retromarginal teeth (Fig. 1B). Lengths of legs: I 4.06 (1.23+1.30+0.93+0.60), II 3.80 (1.10+1.20+0.90+0.60), III 3.03 (1.00+0.93+0.80+0.30), IV 4.03 (1.17+1.33+1.00+0.53). Tm I: 0.60. Sternum darker than carapace. Abdomen gray with some black spots dorsally.

Male palp (Fig. 1C-G, J). Tibia short and wide, with long, sharp dorsal apophysis (DTA) and pointed inner tooth (IT) (Fig. 1G). Embolic parts (Fig. 1F, J): ectal tip of lamella characteristica (LC) round, strongly sclerotized, equipped with scale-like teeth on outer surface and with two sclerotized projections, smaller one subtriangular, larger one less chitinized, furnished with many small granules. Embolus wide at base, narrowing apically and slightly curved at the tip in dorsal view (Fig. 1F).

Description of female. Total length: 2.53. Carapace: 1.20 long, 0.83 wide. Abdomen: 1.33 long, 0.90 wide. Lengths of legs: I 3.49 (1.03+1.13+0.80+0.53), II 3.09 (1.00+1.03+0.73+0.33), III 2.76 (0.83+0.83+0.70+0.40), IV 3.61 (1.07+1.17+0.87+0.50). Tm I: 0.60. Other somatic characters of female as in male.

Epigyne (Fig. 1H-I). In ventral view bisection of ventral plate long elliptoid, with arced margin. Copulatory ducts opening under its anterior part. Dorsal plate exposed, somewhat diamond-shaped, ventrally convex.

Etymology. The specific name comes from the latin adjective *acmodontus* (sharp tooth), and refers to the pointed inner tooth of the male tibia.



Remarks. The male of the new species is similar to that of *G. foratus* but differs in: 1) dorsal tibial apophysis (DTA) longer and sharper in the new species, shorter and stouter in the latter; 2) inner tibial tooth (IT) more pointed in the new species; 3) comparing the ectal tip of the lamella characteristica of the two species in retrolateral view (Fig. 1J-K) reveals conspicuous differences in shape. The epigyne of the female as seen in ventral view similar to that of *G. foratus*, *G. onoi* and *G. rimatus*, but each one is distinct by the shapes of the bisection of its ventral plate.

Distribution. China (Sichuan).

***Gongylidioides angustus* sp. n.**

Fig. 2

Type material examined. ♂ holotype, Lanyu, Taitung, Taiwan, China, coll. I-Min Tso, Aug. 2000 (THU-Ar-02-0239); 1 ♀ paratype, Lanyu, Taitung, Taiwan, China, coll. I-Min Tso, Aug. 2000 (THU-Ar-02-0237); 1 ♀ paratype, Lanyu, Taitung, Taiwan, China, coll. I-Min Tso, Feb. 2001 (THU-Ar-02-0238, MHNG).

Diagnosis. The male of this new species can be distinguished by its long embolus and the female by its two long, narrow, curved copulatory openings.

Description of male. Total length: 1.97. Carapace: 1.00 long, 0.70 wide. Abdomen: 0.97 long, 0.77 wide. Carapace (Fig. 2A) pale yellow, both sexes similar in general appearance, without conspicuous modifications. Chelicerae yellowish brown. Fang groove with five promarginal and five retromarginal teeth (Fig. 2B). Legs pale white, lengths of legs: I 3.17 (0.90+1.00+0.77+0.50), II 3.10 (0.90+0.97+0.73+0.50), III 2.57 (0.73+0.80+0.67+0.37), IV 3.38 (0.97+1.07+0.87+0.47). Tm I: 0.80. Sternum darker than carapace. Abdomen pale gray with some black spots dorsally.

Male palp (Fig. 2C-H). Dorsal tibial apophysis (DTA) short and stout, similar to that of *G. foratus* and *G. rimatus*, but inner tooth (IT) triangular (Fig. 2H), bigger than in *G. rimatus* (Fig. 6G). Ectal tip of lamella characteristica (LC) truncate in ventral view (Fig. 2D), with horn-shaped sclerotized projection slightly bent. Embolus long, curved, tapering off distally.

Description of female. Total length: 2.83. Carapace: 1.20 long, 0.80 wide. Abdomen: 1.80 long, 1.20 wide. Lengths of legs: I 3.50 (1.00+1.17+0.83+0.50), II 3.23 (0.93+1.00+0.80+0.50), III 2.80 (0.80+0.90+0.70+0.40), IV 3.74 (1.00+1.27+ 0.97+ 0.50). Tm I: 0.81. Other somatic characters as in male.

Epigyne (Fig. 2I-J). Bisection of ventral plate semicircular, with margins extending anterolaterally and forming a pair of long, narrow copulatory openings. Vulva with long copulatory ducts forming pair of large round loops anteriorly.

Etymology. The specific name, the latin adjective *angustus* (= narrow), refers to the long, narrow and semicircular copulatory openings of the female epigyne.

Remarks. The male of the new species is similar to that of *G. communis* Saito & Ono, 2001 in the unmodified carapace, the shape of tibia and the long curved

FIG. 1

A-J, *Gongylidioides acmodontus* sp. n. A, carapace, lateral view; B, left male chelicera, frontal view; C, left male palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, embolic parts, dorsal view; G, palpal tibia, dorsal view; H, epigyne, ventral view; I, vulva, dorsal view; J, lamella characteristica, retrolateral view. K, *Gongylidioides foratus*, lamella characteristica, retrolateral view. [Scale bars: 0.1 mm].



embolus, but they differ in: the protegulum of *G. communis*, not as thin sclerite as in *G. angustus* sp. n., but a large membrane extending forwards, with many papillae on it and the ectal tip of lamella characteristica in *G. communis* without horn-shaped, sclerotized projection. Epigyne of the female as seen in ventral view, similar to that of *G. onoi*, but anterior parts of grooves of copulatory openings ending mesally in *G. onoi*, without extending laterally as in *G. angustus* sp. n.

Distribution. Only known from the type locality.

***Gongylidioides foratus* (Ma & Zhu, 1990)**

Figs 1K, 3

Oedothorax foratus Ma & Zhu, 1990: 433, figs 8-15.

Gongylidioides foratus Eskov, 1992: 159; Song, Zhu & Chen, 1999: 170, fig. 97D-E, M.

Type material examined. 6♂ 11♀ paratypes of *Oedothorax foratus* Ma & Zhu, 1990, Muyu Town, Shennongjia Forest Region, Hubei Province, China, 18 June 1986 (JLU).

Additional material examined. 2♂, Hunan Province, China, coll. Jiuchun Gao, 1985 (without further information on the label); 1♂ 1♀, Hunan Province, China, coll. Jiuchun Gao, 1985 (MHNG).

Diagnosis. The male of *G. foratus* can be distinguished by the axe-shaped inner tooth (IT) of the palpal tibia and the strong ectal tip of the lamella characteristica; the female is distinguished by the triangular ventral plate.

Description of male. Total length: 2.80. Carapace: 1.50 long, 1.20 wide. Abdomen: 1.53 long, 1.00 wide. Carapace (Fig. 3A) grayish brown, both sexes similar in general appearance, unmodified. Chelicerae yellowish brown. Fang groove with six promarginal and five retromarginal teeth (Fig. 3B). Legs pale white, lengths of legs: I 4.70 (1.40+1.47+1.10+0.73), II 4.23 (1.23+1.33+1.00+0.67), III 3.60 (1.07+1.13+0.90+0.50), IV 4.50 (1.30+1.47+1.10+0.63). Tm I: 0.63. Sternum dark brown. Abdomen with some grayish spots dorsally.

Male palp (Fig. 3C-E). Dorsal tibial apophysis (DTA) short and stout, with axe-like tooth (IT) on inner surface (Fig. 3H). Ectal tip of lamella characteristica (LC) strongly sclerotized, concaved anteriorly, outer surface equipped with many scale-like teeth and with two projections similar to that in *G. acmodontus*, see description and remarks in *G. acmodontus*. Embolus widened suddenly at base, narrowing apically forming round margin and pointed tip in dorsal view (Fig. 3F).

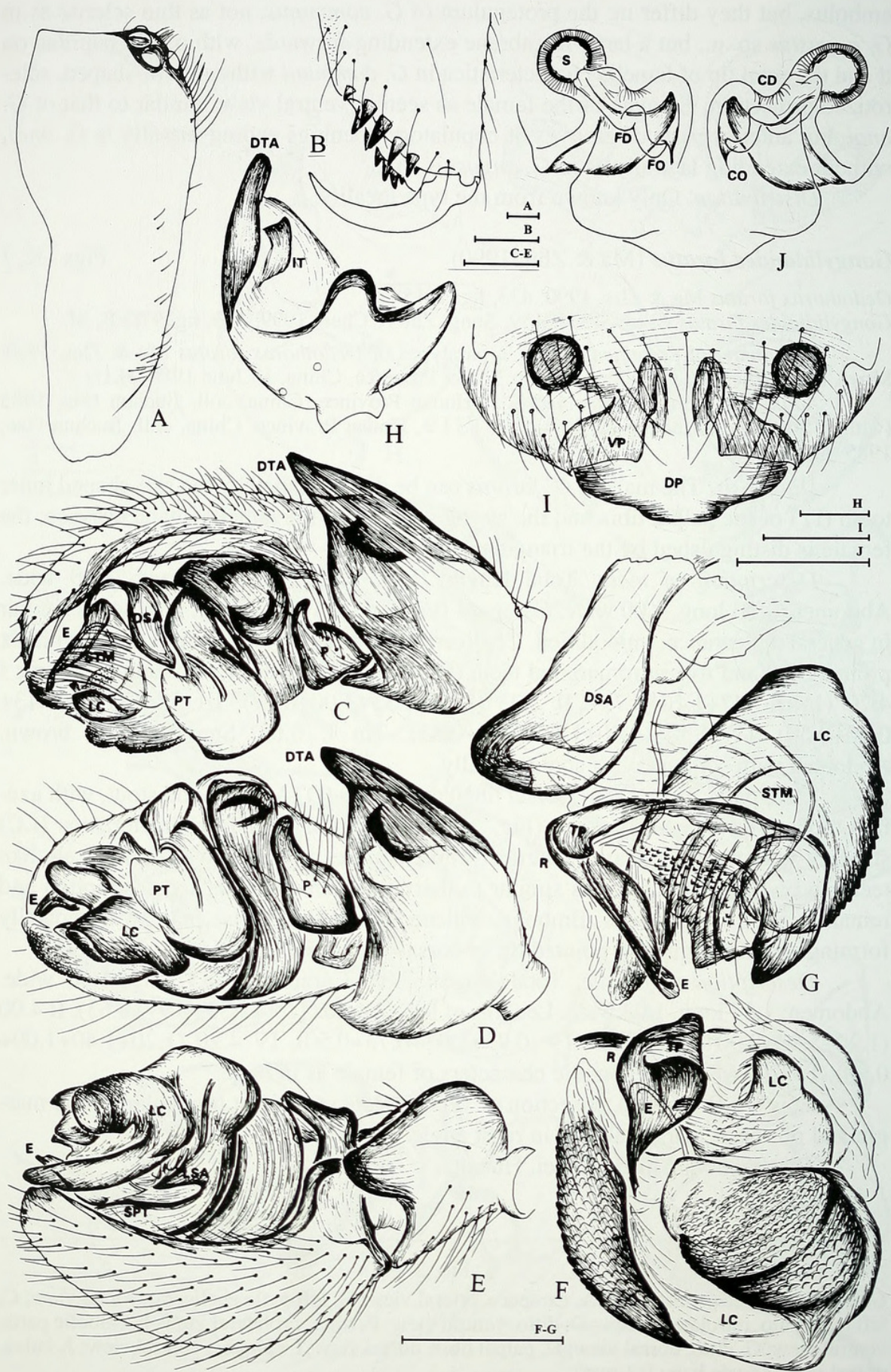
Description of female. Total length: 2.83. Carapace: 1.33 long, 1.00 wide. Abdomen: 1.57 long, 1.03 wide. Lengths of legs: I 4.20 (1.27+1.33+0.97+0.63), II 4.00 (1.20+1.33+0.90+0.57), III 3.19 (0.93+1.03+0.73+0.50), IV 4.20 (1.20+1.40+1.00+0.60). Tm I: 0.67. Other somatic characters of female as in male.

Epigyne (Fig. 3I-J). Bisection of ventral plate somewhat triangular, mesal margin and posterior margin almost in right angle.

Distribution. China (Hubei, Hunan).

FIG. 2

Gongylidioides angustus sp. n. A, carapace, lateral view; B, left male chelicera, frontal view; C, left male palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, embolic parts, ventral view; G, ditto, dorsal view; H, palpal tibia, dorsal view; I, epigyne, ventral view; J, vulva, dorsal view. [Scale bars: 0.1 mm].



***Gongylidioides griseolineatus* (Schenkel, 1936)**

Fig. 4

Gonatium griseolineatum Schenkel, 1936: 58, fig. 13.*Oinia griseolineata* Tanasevitch, 1989: 170, fig. 222.*Gongylidioides griseolineatus* Eskov, 1992: 159; Song, Zhu & Chen, 1999: 170, fig. 97I.*Type material examined.* ♀ holotype of *Gonatium griseolineatum* Schenkel, 1936, Southern Gansu (without further information), China, coll. David Hummel, 1930 (SMNH, K13).*Diagnosis.* The female of *G. griseolineatus* (male unknown) can be distinguished by the pair of sclerotized strongly curved folds in the centre of the epigyne.*Description of female.* Total length: 3.30. Carapace: 1.67 long, 1.03 wide. Abdomen: 2.17 long, 1.70 wide. Carapace (Fig. 4A): unmodified. Ocular area black and slightly protruding. Chelicerae yellowish brown. Fang groove with five promarginal and four retromarginal teeth (Fig. 4B). Lengths of legs: I 4.99 (1.53+1.87+1.30+0.47), II 5.17 (1.53+1.87+1.30+0.47), III 3.97 (1.17+1.20+1.10+0.50), IV 4.90 (1.40+1.57+1.37+0.60). Tm I: 0.82. Sternum darker than carapace, with black margin. Abdomen pale white, with some grayish spots dorsally.

Epigyne (Fig. 4C-F). Ventral plate covering most part of epigyne. Copulatory ducts forming a pair of strongly curved folds, close to each other in the middle.

Male. Unknown.*Distribution.* China (Gansu).***Gongylidioides kouqianensis* sp. n.**

Fig. 5

Type material examined. ♂ holotype, Kouqian County, Jilin Province, China, coll. Ye Tao, 29 June 1989; 1 ♂ paratype, same data as for holotype.*Diagnosis.* The male of *G. kouqianensis* sp. n. (female unknown) can be distinguished by the absence of a tooth on the inner surface of the dorsal tibial apophysis, which usually exists in other *Gongylidioides*, and by the horn-like ectal tip of the lamella characteristica.*Description of male.* Total length: 2.40. Carapace: 1.17 long, 0.83 wide. Abdomen: 1.23 long, 0.83 wide. Carapace (Fig. 5A) brown, unmodified. Chelicerae brown. Fang groove with five promarginal and five retromarginal teeth (Fig. 5B). Legs brown, lengths of legs: I 3.36 (1.07+1.13+0.73+0.43), II 3.19 (0.93+1.03+0.73+0.57), III 2.80 (0.83+0.90+0.067+0.40), IV 3.53 (1.00+1.20+0.90+0.43). Tm I: 0.58. Sternum dark brown. Abdomen gray.Male palp (Fig. 5C-G). Dorsal tibial apophysis (DTA) similar to that of *G. foratus*, but inner tooth absent (Fig. 5G). Ectal tip of lamella characteristica (LC) horn-like, strongly sclerotized, with two projections, inner one triangular in ventral view (Fig. 5F), dorsal one blunt. Embolus handgun-shaped.*Female.* Unknown.*Distribution.* Only known from the type locality.

FIG. 3

Gongylidioides foratus (Ma & Zhu, 1990). A, carapace, lateral view; B, left male chelicera, frontal view; C, left male palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, embolic parts, dorsal view; G, ditto, ventral view; H, palpal tibia, dorsal view; I, epigyne, ventral view; J, vulva, dorsal view. [Scale bars: 0.1 mm].

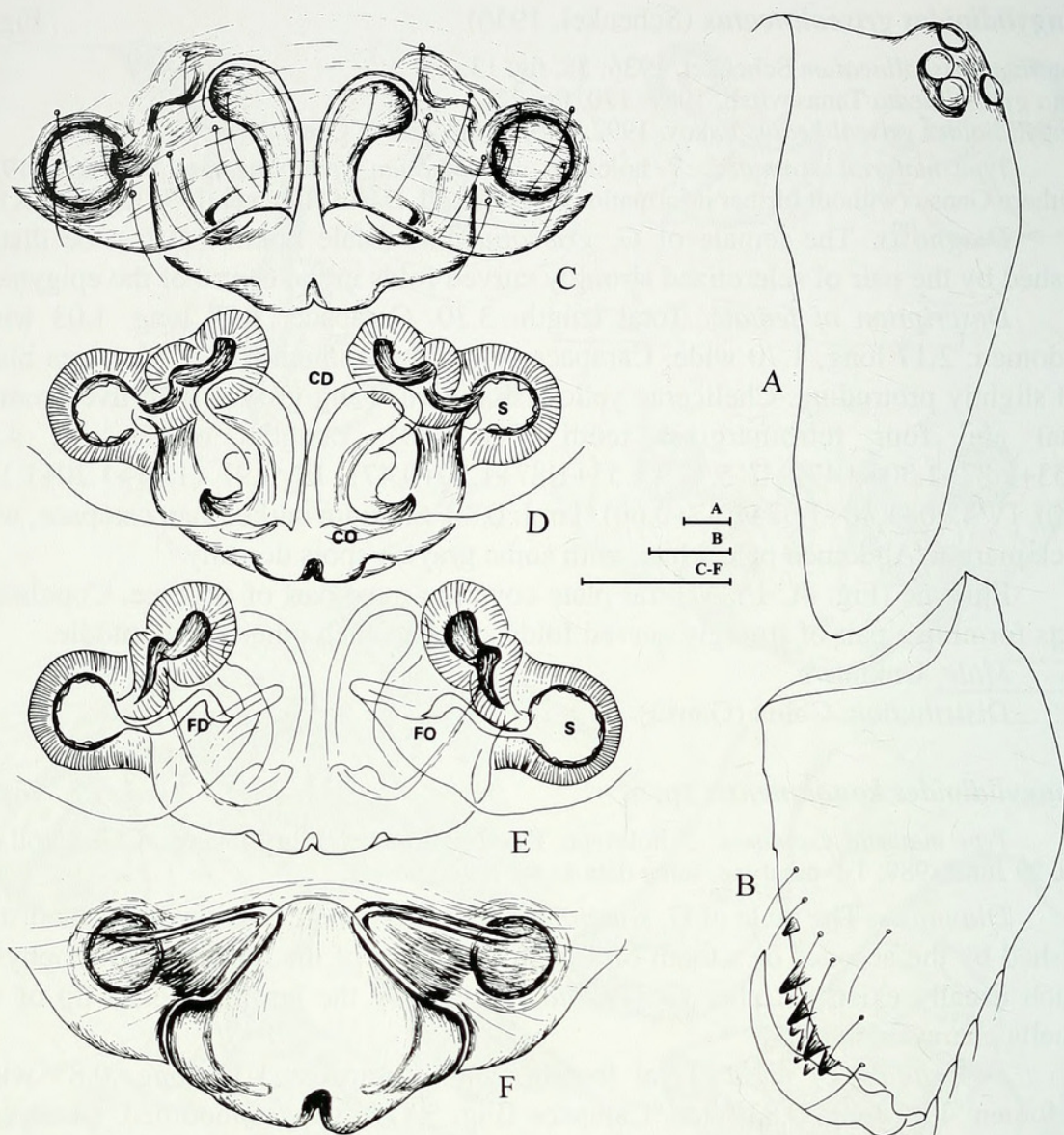


FIG. 4

Gongylidioides griseolineatus (Schenkel, 1936). A, carapace, lateral view; B, left chelicera, frontal view; C, epigyne, ventral view; D, vulva, ventral view; E, ditto, dorsal view; F, epigyne, dorsal view. [Scale bars: 0.1 mm].

Gongylidioides onoi Tazoe, 1994

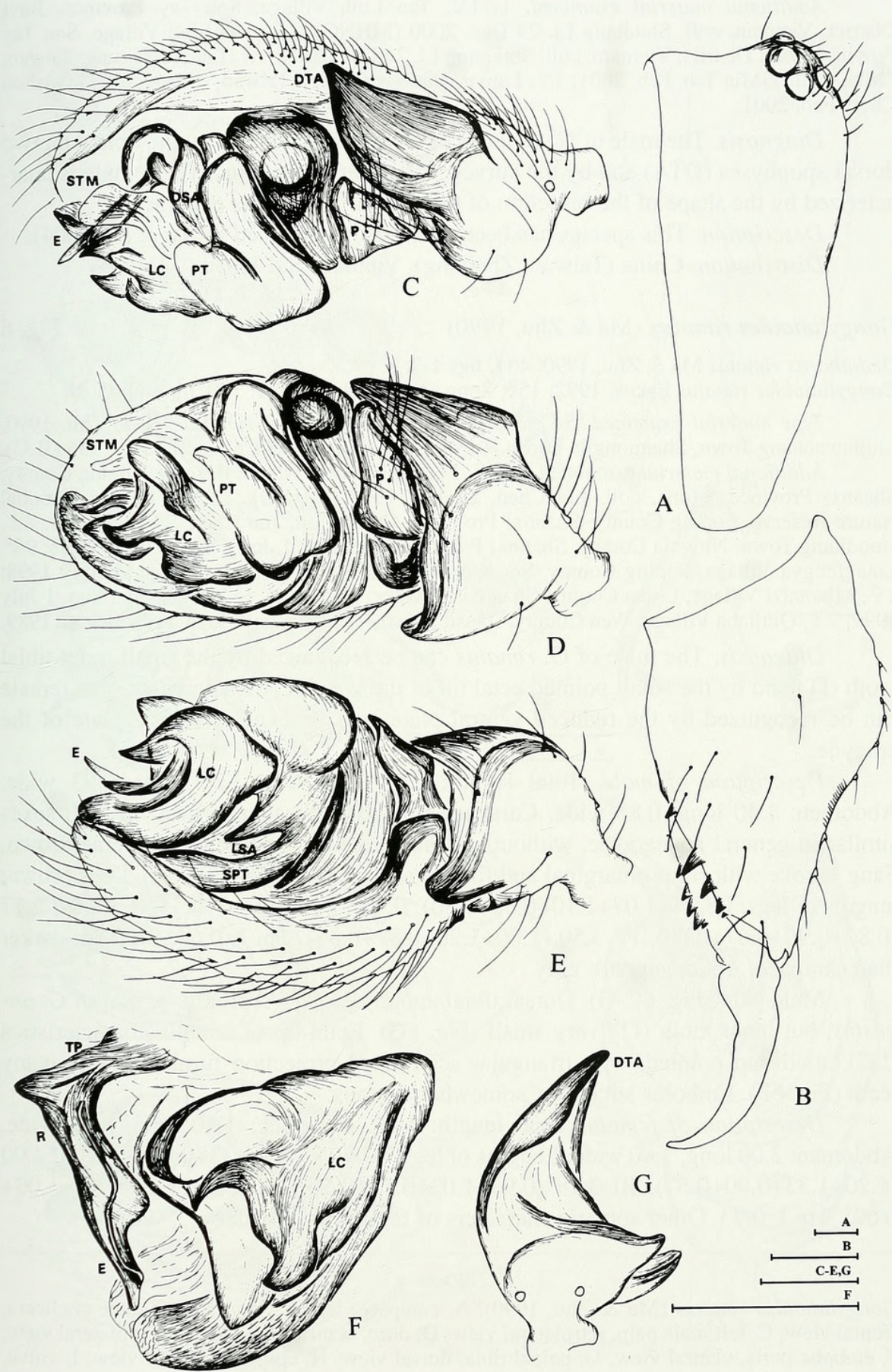
Gongylidioides onoi Tazoe, 1994: 131, figs 1-7; Tu & Li, 2004: 426, fig. 5A-I.

Aprifrontalia quadrialata Gao, Xing & Zhu, 1996: 293, fig. 2A-E; Song, Zhu & Chen, 1999: 156, fig. 85N-Q.

Type specimens examined. 2♂ 1♀ paratypes of *Gongylidioides onoi* Tazoe, 1994, Komi, Iriomotejima Is., Okinawa Pref., Japan, coll. A. Tanikawa, 30 Mar. 1989 (NSMT); 3♂ 4♀ paratypes of *Aprifrontalia quadrialata* Gao, Xing & Zhu, 1996, Mt Putuo, Zhejiang Province, China, 20 Aug. 1992 (JLU).

FIG. 5

Gongylidioides kouqianensis sp. n. A, carapace, lateral view; B, left male chelicera, frontal view; C, left male palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, embolic parts, ventral view; G, palpal tibia, dorsal view. [Scale bars: 0.1 mm].



Additional material examined. 1♂1♀, Tan Linh Village, Son Tay Province, Bavi District, Vietnam, coll. Shuqiang Li, 24 Dec. 2000 (MHNG); 1♀, Tan Linh Village, Son Tay Province, Bavi District, Vietnam, coll. Shuqiang Li, 24 Dec. 2000; 1♂, Lanyu, Taitung, Taiwan, China, coll. YiMin Tso, Feb. 2001; 1♀, Lanyu, Taidong County, Taiwan, China, coll. Guanzhou Chen, Feb. 2001.

Diagnosis. The male of *G. onoi* can be easily distinguished by the tibia with two dorsal apophyses (DTA) and by the curved, tube-shaped embolus. The female is characterized by the shape of the bisection of the ventral plate of its epigyne.

Description. This species has been thoroughly described by Tu & Li (2004).

Distribution. China (Taiwan, Zhejiang), Vietnam and Japan.

***Gongylidioides rimatus* (Ma & Zhu, 1990)**

Fig. 6

Oedothorax rimatus Ma & Zhu, 1990: 431, figs 1-7.

Gongylidioides rimatus Eskov, 1992: 159; Song, Zhu & Chen, 1999: 170, fig. 97F-G, N.

Type material examined. 5♂8♀ paratypes of *Oedothorax rimatus* Ma & Zhu, 1990, Liujiawuchang Town, Shennongjia Forest Region, Hubei Province, China, 21 June 1986 (JLU).

Additional material examined. 1♂1♀, Foping National Nature Reserve, Foping County, Shaanxi Province, China, coll. Jun Chen, 24 July 1998 (MHNG); 1♂3♀, Foping National Nature Reserve, Foping County, Shaanxi Province, China, coll. Jun Chen, 24 July 1998; 2♂, Huoditang Town, Ningxia County, Shannxi Province, China, coll. Jun Chen, 29 July 1998; 9♀, Liangfengya Village, Foping County, Shaanxi Province, China, coll. Jun Chen, 24 July 1998; 1♀, Miaotaizi Village, Liuba County, Shaanxi Province, China, alt. 1470, coll. Jian Yao, 1 July 1999; 2♀, Qiujiaba Village, Wen County, Gansu Province, China, coll. Jun Chen, 29 June 1989.

Diagnosis. The male of *G. rimatus* can be recognized by the small inner tibial tooth (IT) and by the small pointed ectal tip of the lamella characteristica. The female can be recognized by the reduced ventral plate and the exposed dorsal plate of the epigyne.

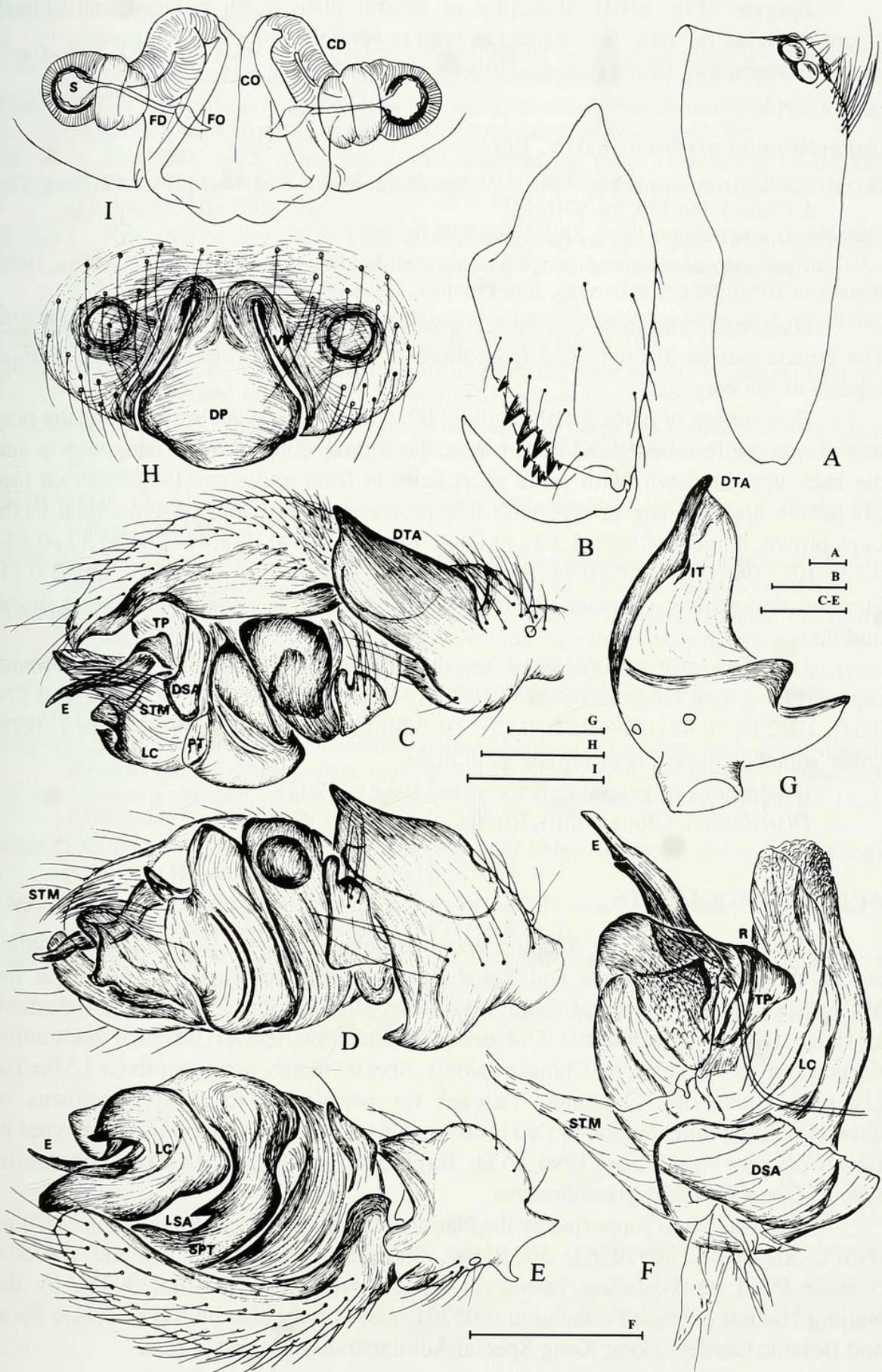
Description of male. Total length: 2.47. Carapace: 1.30 long, 0.93 wide. Abdomen: 1.40 long, 0.83 wide. Carapace (Fig. 6A) chestnut brown, in both sexes similar in general appearance, without conspicuous modifications. Chelicerae brown. Fang groove with six promarginal and four retromarginal teeth (Fig. 6B). Legs brown, lengths of legs: I 3.34 (1.07+1.10+0.67+0.50), II 3.40 (1.07+1.10+0.73+0.50), III 2.77 (0.80+0.90+0.67+0.40), IV 3.50 (1.00+1.20+0.87+0.43). Tm I: 0.64. Sternum darker than carapace. Abdomen dark gray.

Male palp (Fig. 6C-G). Dorsal tibial apophyses (DTA) similar to that of *G. angustus*, but inner tooth (IT) very small (Fig. 6G). Ectal tip of lamella characteristica (LC) small and pointed, with triangular sclerotized projection furnished with many teeth (Fig. 6F). Embolus stick like, somewhat sinuous.

Description of female. Total length: 3.00. Carapace: 1.30 long, 0.87 wide. Abdomen: 2.00 long, 1.40 wide. Lengths of legs: I 4.20 (1.27+1.33+0.97+0.63), II 4.00 (1.20+1.33+0.90+0.57), III 3.19 (0.93+1.03+0.73+0.50), IV 4.20 (1.20+1.40+1.00+0.60). Tm I: 0.73. Other somatic characters of female as in male.

FIG. 6

Gongylidioides rimatus (Ma & Zhu, 1990). A, carapace, lateral view; B, left male chelicera, frontal view; C, left male palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, embolic parts, ventral view; G, palpal tibia, dorsal view; H, epigyne, ventral view; I, vulva, dorsal view. [Scale bars: 0.1 mm].



Epigyne (Fig. 6H-I). Bisection of ventral plate much reduced, only small extension in lateral view, dorsal plate as seen in ventral view, almost exposed.

Distribution. China (Gansu, Hubei and Shaanxi).

***Gongylidioides ussuricus* Eskov, 1992**

Gongylidioides ussuricus Eskov, 1992: 159, figs 21-26; Eskov & Marusik, 1994: 67; Song, Zhu & Chen, 1999: 170, fig. 97H, J-L.

Oedothorax longistriatus Fei & Zhu, 1992: 536, figs A-G.

Type material examined. 1 ♂ 2 ♀ paratypes of *Oedothorax longistriatus* Fei & Zhu, 1992, Badaogou Town, Mt Changbaishan, Jilin Province, China, 24 June 1990 (JLU).

Diagnosis. The male can be recognized by the cephalic lobe on its carapace. The female can be distinguished from those of other *Gongylidioides* by the distinct septum of the epigyne.

Description of male. Total length: 2.03. Carapace grayish brown, cephalic portion elevated into lobe behind ocular area, the frontal slope of lobe rising slowly and the back upright down, with some short hairs in front and some long hairs on top. Chelicerae brown. Fang groove with five promarginal and four retromarginal teeth. Legs brown, lengths of legs: I 3.52 (1.04+1.14+0.80+0.54), II 3.44 (0.96+1.12+0.84+0.52), III 3.06 (0.91+0.95+0.74+0.46), IV 3.93 (1.16+1.23+1.05+0.49). Tm I: 0.71. Sternum darker than carapace. Abdomen dark gray, with a long white band in the middle.

Description of female. Total length: 2.59. Carapace grayish brown, without cephalic lobe. Leg lengths: I 3.61 (1.05+1.19+0.81+0.56), II 3.37 (0.98+1.09+0.77+0.53), III 2.88 (0.88+0.88+0.70+0.42), IV 3.80 (1.12+1.19+0.95+0.54). Tm I: 0.78. Other somatic characters of female as in male.

Illustrations of genital structures, see Eskov (1992).

Distribution. China (Jilin), Russia.

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