

THREE NEW AND FOUR NEWLY RECORDED SPECIES OF LINYPHIINAE AND MICRONETINAE SPIDERS (ARANEAE: LINYPHIIDAE) FROM NORTHERN VIETNAM

Lihong Tu^{1,2} & Shuqiang Li^{1,*}

¹Institute of Zoology, Chinese Academy of Sciences, Beijing 100080, P. R. China

²College of Life Science, Capital Normal University, Beijing 100037, P. R. China

E-mail: lisq@ioz.ac.cn (*Corresponding author)

ABSTRACT. – Seven species belonging to six linyphiine and micronetine genera collected from northern Vietnam are diagnosed, described and illustrated. Among them, three species are new to science: *Bathypantes floralis*, new species, *Nerienne oxycera*, new species, and *Nesioneta ellipsoidalis*, new species. The species *Prosoponoides sinensis* (Chen, 1991), new combination, *Microbathypantes aokii* (Saito, 1982), new combination, *Parameioneta bilobata* Li & Zhu, 1993, and *Nerienne cavaleriei* (Schenkel, 1963) are newly recorded from Vietnam. *Microbathypantes aokii* is also considered here as a senior synonym of *Bathypante dipetalus* Chen & Yin, 2000, new synonymy.

KEY WORDS. – Linyphiidae, Linyphiinae, Micronetinae, taxonomy, new species, Vietnam.

INTRODUCTION

This is the fifth publication on taxonomic study of spiders and small crustaceans from northern Vietnam based on the material collected by the second author in December 2000 (Hou & Li 2003; Peng & Li 2003; Tu & Li 2004; Li & Liang 2002). This survey began at 4 December 2000, and conducted from Ha Giang to Cao Bang Provinces, then along Lang Son Province to Hanoi. After 22 December, the field collection was made in a research station of Hanoi University in Son Toy Province, which located about 70km north of Hanoi. This survey finished in 24 December 2000.

Linyphiinae and Micronetinae spiders are one of the largest groups of small spiders within the araneoid family Linyphiidae. It is recorded that there have been about 819 linyphiines and 1114 micronetines species from the world (Tanasevitch, 2004), but none has been reported from Vietnam before. As Vietnam is known as very diverse area in the temperate regions of the northern hemisphere, several hundreds species of linyphiine and micronetine spiders are expected to be discovered from there. More survey and further study on linyphiid spiders of Vietnam are expected in the future.

MATERIAL & METHODS

Specimens were examined and measured under an SZ11-Olympus stereomicroscope. Further details were studied under an Olympus BX40 compound microscope. All

illustrations were made using a drawing tube. Male palps and female epigyna were examined and illustrated after they were dissected from the spider's bodies. Vulvae were cleared in boiling KOH solution to dissolve nonchitinous tissues, and the embolic divisions of male palps were excised by breaking the column (the membranous connection between the supratégulum and the radix). For examination of the genital structures under a compound microscope, male palps and epigyna were immersed in 75% alcohol solution, while embolic divisions and vulvae were mounted in Hoyer's Solution.

For each species, only the name that appeared in the original description, new synonyms and new combinations are listed. Synonyms listed in Platnick's spider catalogue (Platnick, 2005) are not repeated here. Information about the distribution of each species in Vietnam is provided at the provincial level. If not otherwise stated the material examined for this paper is deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing, China (IZCAS); abbreviations for other depositaries are: Muséum d'histoire naturelle (MHNG), Genève, Switzerland; Zoological Museum of Turku University, Finland (MZT) and Hunan Normal University (HNU), Changsha, China.

The leg measurements are given in the following sequence: total (femur, patella+tibia, metatarsus, tarsus). All measurements are in millimeters. Due to without a uniform terminology for homologous structures of Linyphiinae and Micronetinae, terminology for the somatic morphology and genital structures of Linyphiinae is after van Helsdingen

(1969), and those of Micronetinae is after Saaristo & Tanasevitch (1996). Abbreviations used as followed:

Somatic characters: AER- anterior eye row; ALE- anterior lateral eye; AME- anterior median eye; AME-ALE- distance between AME and ALE; AME-AME- distance between AMEs; AMEd- diameter of AME; AMEr- radius of AME; PER- posterior eye row; PLE- posterior lateral eye; PME- posterior median eye; PMEd- diameter of PME; PME-PLE- distance between PME and PLE; PME-PME- distance between PMEs.

Male palp: ALP- anterior projection of LC; ATA- anterior terminal apophysis; DEA- dorsal embolic apophysis; DLP- dorsal projection of LC; DTA- dorsal tibia apophysis; E- embolus; EM- embolic membrane; EP- embolus proper; LC- lamella characteristica; LLP- lateral projection of LC; MTA- median terminal apophysis; P- paracymbium; PCA- proximal cymbial apophysis; PEA- posterior embolic apophysis; PH- pit-hook on distal part of suprategulum; PLP- posterior projection of LC; PTA- posterior terminal apophysis; R- radix; SPT- suprategulum; TA- terminal apophysis; TH- thumb of embolus; TRS- transversal sclerite; VEA- ventral embolic apophysis.

Epigynum: DPS- distal portion of scape; EG- entrance groove; FG- fertilization groove; LD- depression of lateral plate; LWS- lateral wing of scape; PMP- posterior median plate; MPS- median portion of scape; PPS- proximal portion of scape; RMP- ridge of median plate; S- spermatheca; SC- scape; TP- turning point.

TAXONOMY

Bathyphantes floralis, new species

(Fig. 1)

Type specimens. – Holotype: male, Van Hoa Village, Son Tay Province, Bavi District, Vietnam (131), 23 Dec.2000. Paratypes: 1 male and 1 female, same data as for holotype; 1 female, Van Hoa Village, Son Tay Province, Bavi District, Vietnam (142), 23 Dec.2000; 1 female, Gao Bao Village, Ha Giang Province, Vietnam (017), 9 Dec.2000.

Diagnosis. – The male of *Bathyphantes floralis*, new species, can be easily distinguished from other *Bathyphantes* by the shape of the lamella characteristica (Fig. 1E), the bifurcate pit-hook on the distal part of suprategulum (Fig. 1D) and by the flower-shaped embolic membrane (Figs. 1F-G). The female can be identified by the long, conspicuously diverging and spiraling entrance grooves (Fig. 1J).

Description of male. – Total length 2.17. Carapace: 0.87 long, 0.67 wide. Abdomen: 1.30 long, 0.57 wide. Carapace pale gray. Eyes with black surroundings, AMEs smallest, others subequal; AER recurved, AME-AME shorter than AMEd, AME-ALE longer; PER straight, PME-PME shorter than PMEd, PME-PLE longer; ALE and PLE juxtaposed. Chelicerae whitish brown, stridulatory ridges absent, fang groove with three promarginal and four retromarginal teeth

(Fig. 1A). Sternum slightly darker than carapace. Abdomen gray, with white and black spots. Lengths of legs: I 3.80 (0.93+1.17+1.00+0.70), II 3.50 (0.93+1.07+0.90+0.60), III 2.54 (0.67+0.77+0.60+0.50), length of leg IV unknown. All tibia with two dorsal spines, Ti I additionally with one prolateral and one retrolateral spine, Ti II with one retrolateral spine. Fe I and II with small spine dorsally. Tm I: 0.28. Tm IV unknown.

Palp (Figs. 1B-C). Patella with long dorsal bristle. Tibia unmodified with one prodorsal, two retrodorsal trichobothria. Paracymbium J-shaped, distally narrowing with blunt apex. Sperm duct in tegulum with three turnings in retrolateral view. Pit-hook on distal part of suprategulum bifid, one point, one stout, both strongly sclerotized (Fig. 1D). Embolic division (Fig. 1D): radix small and simple, somewhat S-shaped; embolus spiraling forwards, spiral axis parallel with that of palp; embolic membrane extending out through the spiraling embolus, flower-shaped, with rotation at stem portion and thread-like projections on prolateral surface of apical portion (Figs. 1F-G); two terminal apophyses in ventral view, the outer one membranous, quadrate and slightly convex, its inner side molar-shaped with many dentils, the inner one strongly sclerotized; lamella characteristica (Figs. 1C, 1E) large triangular plate-shaped, dorsal projection pointed, anterior projection extending, turning with hooked apex; long thread-like membrane arising from inner surface of lamella characteristica.

Description of female. – Total length: 2.17. Carapace: 0.85 long, 0.57 wide. Abdomen: 1.33 long, 0.90 wide. Carapace grayish brown, with black margin. Abdomen gray, without spots. Lengths of legs: I 3.50 (0.90+1.03+0.97+0.60), II 3.26 (0.83+1.03+0.80+0.60), III 2.47 (0.67+0.80+0.60+0.40), IV 3.25 (0.90+1.07+0.73+0.55). Tm I: 0.17. Tm IV absent. Other somatic characters same as male.

Epigynum (Figs. 1H-J). Ventral wall simple and convex, folding at middle. Long, spiraling entrance grooves partly visible through it. Fingerlike scape arising from dorsal wall, visible in ventral view, furnished with pit at distal end.

Etymology. – The specific name comes from Latin *floralis* (flower-like) and refers to the shape of embolic membrane.

Distribution. – Vietnam (Son Tay, Ha Giang).

Microbathyphantes aokii (Saito, 1982), new combination (Fig. 2)

Bathyphantes aokii Saito, 1982: 34, Figs. 3-5, 10.

Bathyphantes dipetalus Chen & Yin, 2000: 89, Figs. 21-27 (new synonymy).

Material examined. – 1 male and 6 females, Viet Lann Village, Ha Giang Province, Vietnam (042), 10 Dec.2000.

Additional type material examined. – 1 male (HNU), holotype of *Bathyphantes dipetalus* Chen & Yin, 2000, Daoxian County, Hunan

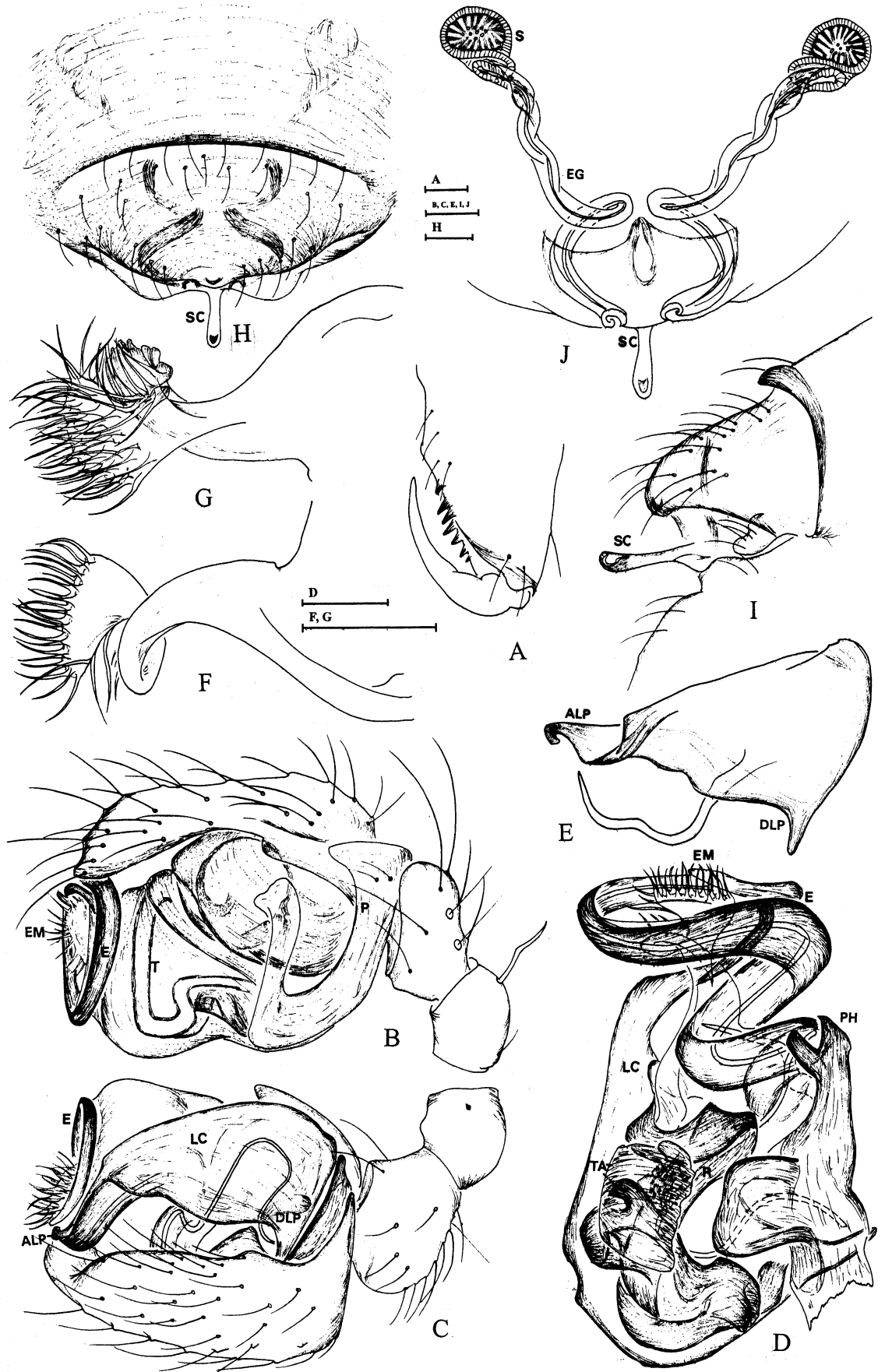


Fig. 1. *Bathyphantes floralis*, new species: A, left chelicera, frontal view; B, left male palp, retrolateral view; C, ditto, prolateral view; D, embolic division, ventral view; E, lamella characteristica, prolateral view; F, embolic membrane, retrolateral view; G, ditto, prolateral view; H, epigynum, ventral view; I, ditto, lateral view; J, vulva, dorsal view. Scale bars = 0.05 mm.

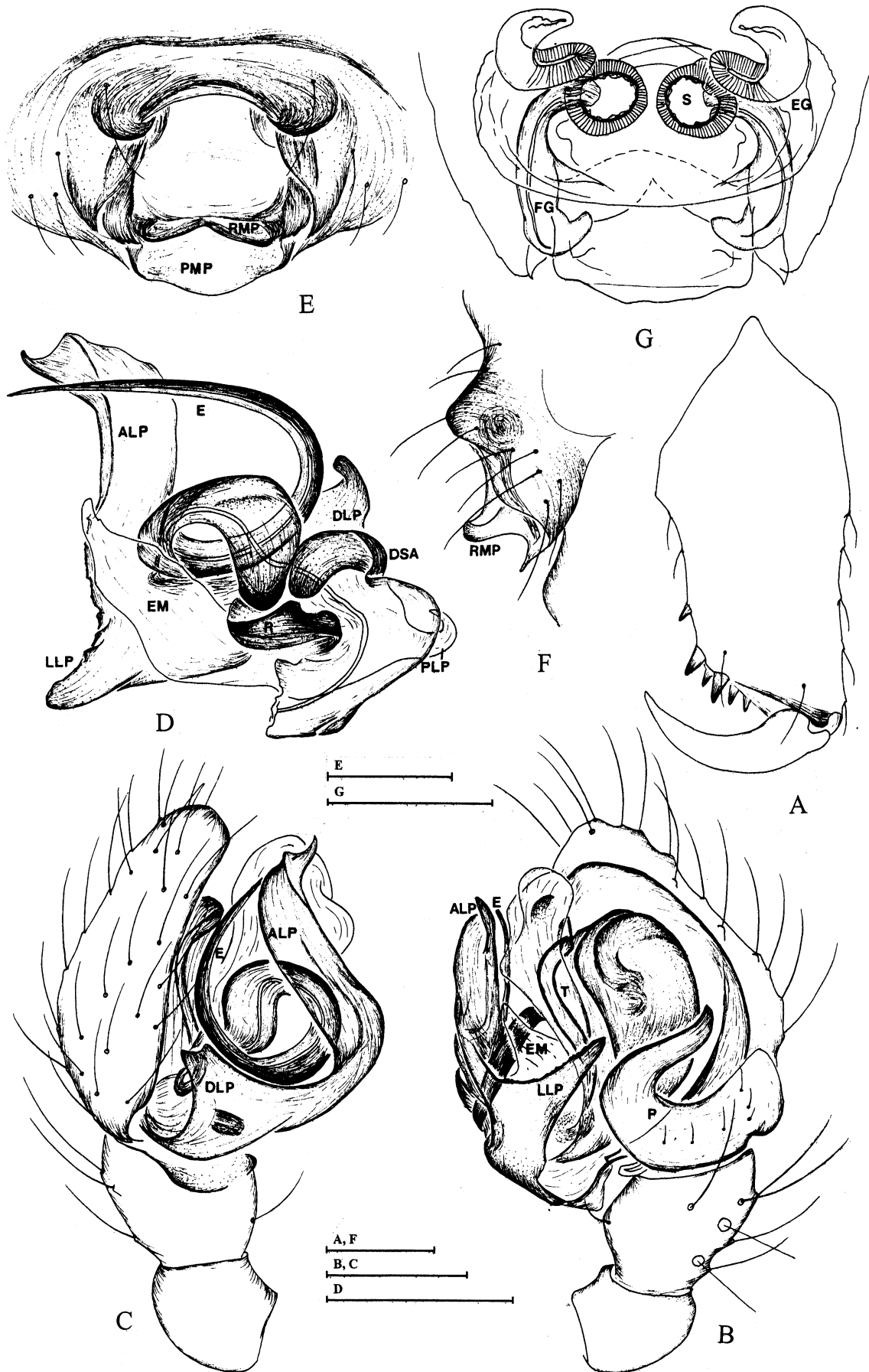


Fig. 2. *Microbathyphantes aokii* (Saito, 1982): A, left chelicera, frontal view; B, left male palp, retrolateral view; C, ditto, prolateral view; D, embolic division, ventral view; E, epigynum, ventral view; F, ditto, lateral view; G, vulva, dorsal view. Scale bars = 0.1 mm.

Province, China, 19 Aug.1987; 1 female (HNU), paratype of *Bahtypnantes dipetalus* Chen & Yin, 2000, same data as holotype.

Diagnosis. – The male of *M. aokii* can be distinguished from other *Microbathyphantes* by the anterior projection of lamella characteristica which was ribbon-shaped with rolling and pointed apex (Figs. 2B-D).

Description of male. – Total length: 1.90. Carapace: 0.90 long, 0.68 wide. Abdomen: 1.00 long, 0.73 wide. Carapace pale brown. Eyes with black surroundings; AME smaller, others subequale; AER recurved, PER straight, eyes separated by about AMEd, ALE and PLE juxtaposed. Chelicerae brown; stridulatory ridges absent; fang groove with three promarginal and three retromarginal teeth (Fig. 2A). Lengths of legs: I 3.85 (1.10+1.30+0.75+0.70), II 3.73 (1.07+1.23+0.83+0.60), III 2.94 (0.87+0.90+0.67+0.50), IV 3.80 (1.00+1.17+0.90+0.73). Only femur I with short dorsal spine. All tibia with two dorsal spines; tibia I with additional one prolateral and one retrolateral spine; tibia II with one retrolateral spine. Tm I: 0.27. Tm IV absent. Abdomen gray, without spots.

Male palp (Figs. 2B-C). Tibia with one prodorsal, two retrodorsal trichobothria. Cymbium unmodified. Paracymbium J-shaped with short hairs on basal part, slightly tapering off distally. Tegulum with membranous extension covering apical part of embolus. Embolic division (Fig. 2D) characters by well-developed lamella characteristica with four projections: lateral one sharp triangular, anterior margin roughened by small warts; dorsal one blunt and turning inwards; posterior one translucent and hooked; anterior one longest, ribbon like and extending forwards with apex point and slightly rolling. Embolus smooth coil more than one circle, then extending forwards, accompanied by the anterior extension of lamella characteristica.

Description of female. – Total length: 1.80. Carapace: 0.77 long, 0.80 wide. Abdomen: 1.13 long, 0.87 wide. Lengths of legs: I 3.30 (0.90+1.00+0.83+0.57), II 3.14 (0.83+0.97+0.77+0.57), III 2.44 (0.67+0.70+0.57+0.50), IV 3.23 (0.90+1.00+0.80+0.53). Tm I: 0.24. Tm IV absent. Other somatic characters same as in male.

Epigynum (Figs. 2E-F). Doorframe-shaped in ventral view, posterior margin elevated and incised beside posterior median plate. Posterior median plate concave centrally and two ridges arising from lateral side towards center. Entrance grooves (Fig. 2G) start before the middle ridges, running either way in a half circle up to the conspicuous turning points, then another half circle reversely and entering spermatheca anterally. Fertilization grooves running along both lateral sides and ended behind the middle ridges.

Remarks. – Compared with the illustrations of *Microbathyphantes asiaticus* van Helsdingen, 1985, and *M. spedani* (Locket, 1968) provided by van Helsdingen (1985, Figs. 11-17), the genital structures of the current species show striking resemblance to that of *Microbathyphantes*, and herewith transfer it to genus *Microbathyphantes*.

Microbathyphantes aokii (Saito, 1982), new combination, can be distinguished from *M. asiaticus* and *M. spedani* by the rolling and pointed apex of anterior projection of lamella characteristica, which was not bifurcated as both in *M. asiaticus* and *M. spedani* according to the illustrations by van Helsdingen. Furthermore, the study on types of *Bathyphantes dipetalus* Chen & Yin, 2000, shows that *Microbathyphantes aokii* (Saito, 1982) is a senior synonym of *Bathyphante dipetalus* Chen & Yin, 2000.

Distribution. – Vietnam (Ha Jiang), China, Japan.

Nerienne cavaleriei (Schenkel, 1963) (Fig. 3)

Linyphia cavaleriei Schenkel, 1963: 119, Fig. 71.

Nerienne cavaleriei van Helsdingen, 1969: 153, Figs. 200-204.

Material examined. – 1 male and 1 female, Sac Ha Village, Cao Bang Province, Vietnam (075), 17 Dec.2000; 1 female, Sac Ha Village, Cao Bang Province, Vietnam (069), 17 Dec.2000; 1 female, Van Hoa Village, Sac Tay Province, Bavi Distr., Vietnam (128), 24 Dec.2000.

Diagnosis. – The male *N. cavaleriei* can be recognized by the shape of paracymbium (Fig. 3C) and by the longer terminal apophysis that with more than five coils (Fig. 3I). The female can be distinguished by the bell-shaped epigynum with two rows of translucent areas (Fig. 3J) and vulva with five parallel spiral grooves (Fig. 3K).

Description of male. – Total length: 5.04. Carapace: 2.02 long, 1.51 wide. Abdomen: 3.15 long, 1.01 wide. Carapace brown; cephalic portion slightly elevated. PME biggest, situated on black tubercles, others subequal. AER recurved, AME-AME about AMEd, AME-ALE longer; PER slightly procurved, PME-PLE about PMEd, PME-PME longer; ALE and PLE juxtaposed. Chelicerae brown, stridulatory ridges absent, promargin of fang groove with six teeth, but the biggest one not on the same line with the other five small ones, retromargin with six teeth (Fig. 3B). Lengths of legs: I 12.10 (2.96+3.53+3.72+1.89), II 9.83 (2.58+2.84+2.96+1.45), III 6.74 (1.89+1.95+1.95+0.95), IV 9.51 (2.77+2.58+2.90+1.26). Each patella and tibia with two dorsal spines, Ti I-II additionally with one prolateral and one retrolateral spine, Ti III-IV with one prolateral spine. Fe I-IV with small dorsal spine. Tm I: 0.18. Tm IV absent. Abdomen cylindriform with conspicuous posterodorsal tubercle above spinnerets; dark gray with whitish spots laterally and dorsally, ventral surface uniformly black.

Male palp (Figs. 3C-E). Patella short, with long spine dorsally. Tibia wider than long with several long spines and one prodorsal, two retrodorsal trichobothria. Cymbium unmodified. Paracymbium somewhat J-shaped with short hairs on basal part, distal arm well-developed with two free ends, one triangular pointing backwards, one more sharper, pointing forwards. Pit-hook on distal part of suprategulum as normal shape of *Nerienne hammeni* group (van Helsdingen, 1969), L-shaped with hooked apex (Fig. 3F). Embolic

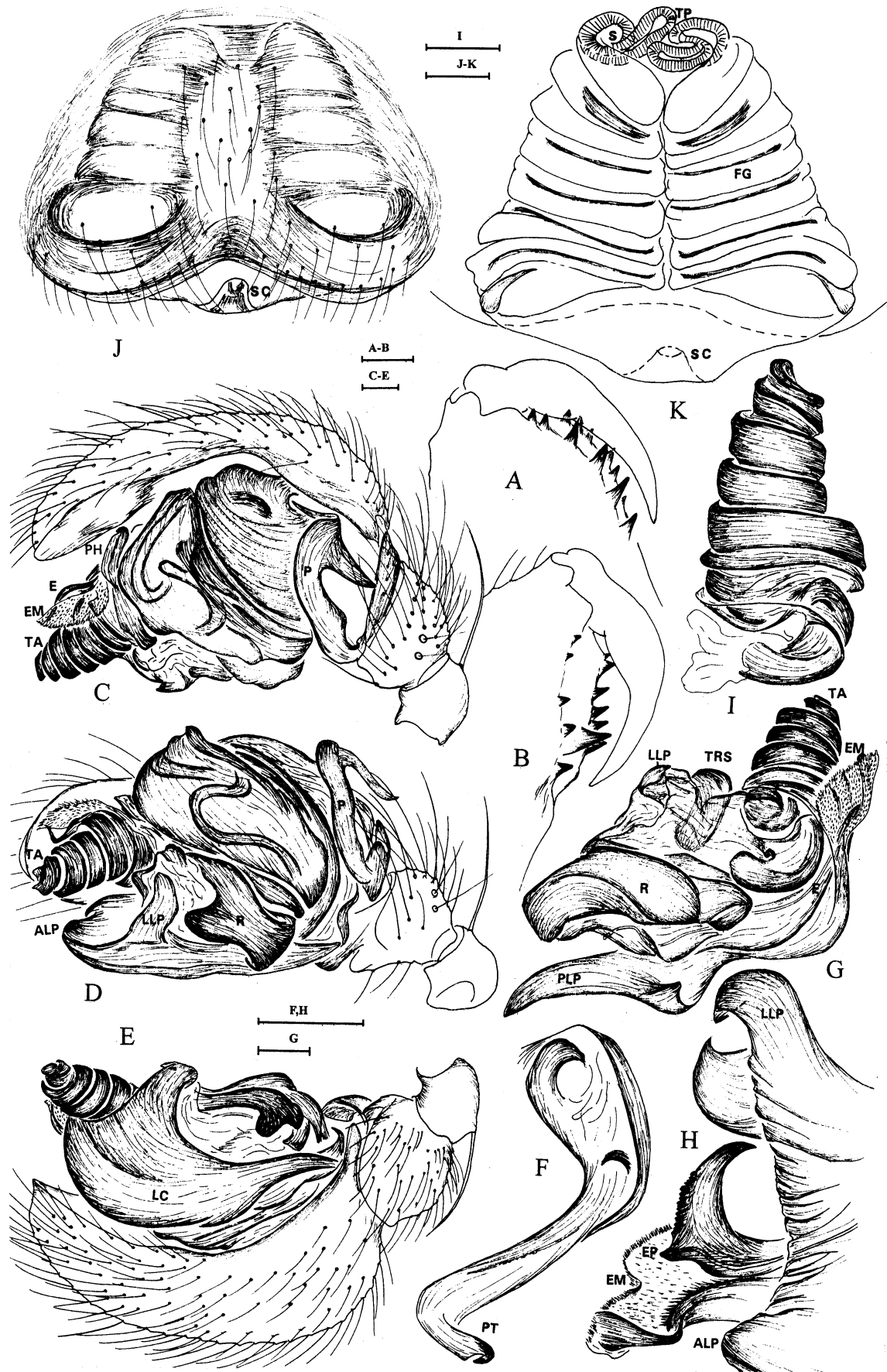


Fig. 3. *Neriene cavaleriei* (Schenkel, 1963): A, female left chelicera, frontal view; B, male left chelicera, frontal view; C, male left palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, distal part of suprategulum; G, embolic division, ventral view; H, embolus, dorsal view; I, terminal apophysis, lateral view; J, epigynum, ventral view; K, vulva, dorsal view. Scale bars = 0.1 mm.

division (Fig. 3G) prominently characters by large lamella characteristic in prolateral view, with slender and sharp posterior tip, blunt anterior tip, point tip at end of lateral projection and additional tooth-like projection on dorsal margin. Terminal apophysis conspicuously long with more than five coils (Fig. 3I), basal coil saucer-shaped, others with thin transversal grooves. Embolus visible at base of terminal apophysis covered by embolic membrane, with falciform appendage distally which sclerotized and serrated at basal part of anterior margin (Fig. 3H). Transversal sclerite somewhat rectangular, lying between lateral projection of lamella characteristic and base of terminal apophysis.

Description of female. – Total length: 5.29. Carapace: 2.02 long, 1.51 wide. Abdomen: 3.15 long, 1.01 wide. Lengths of legs: I 11.03 (2.90+3.34+3.15+1.64), II 8.95 (2.46+2.65+2.52+1.32), III 6.04 (1.76+1.76+1.70+0.82), IV 8.69 (2.58+2.46+2.52+1.13). Tm I: 0.20. Tm IV absent. Other somatic characters same as male.

Epigynum (Fig. 3J). In ventral view, ventral plate bell-shaped, with two rows of translucent areas. Posterior margin deeply concave in median and convex laterally. Scape arising from dorsal wall, turning up ventrally, with pit at tip. Vulva (Fig. 3K) as long as wide, fertilization grooves started from ventral wall, with five parallel coils, turning points laterally of apices, pointing inwards.

Distribution. – Vietnam (Cao Bang, Sac Tay), China.

Nerienne oxycera, new species

(Fig. 4)

Type specimens. – Holotype: male, Van Hoa Village, Son Tay Province, Bavi District, Vietnam (142), 23 Dec.2000.

Diagnosis. – Male of *Nerienne oxycera*, new species, can be distinguished by the shape of lamella characteristic and the simple terminal apophysis (Figs. 4C-F).

Description of male. – Total length: 2.90. Carapace: 1.37 long, 1.00 wide. Abdomen: 1.60 long, 0.90 wide. Carapace grayish brown, unmodified. Eyes (Fig. 4A) subequal. AER recurved, intervals between eyes of AER shorter than AMed; PER straight, PME-PME about PMed, PME-PLP longer; ALE and PLP juxtaposed. Chelicerae (Fig. 4B) brown, furnished with small warty granulations anterolaterally, stridulatory ridges absent, promargin of fang groove with two teeth, first much bigger than second, retromargin with two small teeth. Lengths of legs: I 8.90 (2.33+2.67+2.50+1.40), II 6.86 (1.73+2.03+2.00+1.10), III 4.00 (1.03+1.07+1.23+0.67), IV 5.66 (1.50+1.60+1.73+0.83). Each patella and tibia with two dorsal spines, Ti I-II additionally with one prolateral spine. Fe I-III with small dorsal spine, Fe IV without. Tm I: 0.14. Tm IV absent. Abdomen cylindrical, without tubercle, gray with whitish spots laterally and dorsally.

Male palp (Figs. 4C-E). Patella short, with long spine dorsally.

Tibia almost as long as cymbium, with several long spines on lateral and ventral surfaces, and one prodorsal, two retrodorsal trichobothria. Paracymbium J-shaped, basal part plate-shaped with short hairs, distal arm narrow, curved, pointing forwards with cluster of thin hairs at tip. Pit-hook on distal part of suprategulum long, extending out of cymbium, bending laterally. Embolic division (Fig. 4F) more simple than that of most *Nerienne*: Lamella characteristic with long, slender lateral projection and posterior projection pointing forward and backward respectively; short, blunt anterior projection and dorsal projection. Terminal apophysis short, twisted element with no more than half coil. Embolus covered by embolic membrane with thumb-like appendage apically, embolus proper blunt.

Female unknown.

Etymology. – The specific name comes from Latin *oxycerus* (sharp) and refers to the sharp lateral and posterior apophyses of lamella characteristic.

Remarks. – Although the embolic division of this new species is relatively simple, the pattern is reminiscent of the a *Nerienne* male palp. The general morphology of male palp, particularly the shape of embolus, which is similar to that of *N. emphana*, may show some relationship between them. However, neither terminal sclerite nor transversal sclerite exist in this new species that suggest that it does not belong in the *N. emphana* group.

Distribution. – Known only from the type locality.

Nesioneta ellipsoidalis, new species

(Figs. 5, 6)

Type specimens. – Holotype: male, Tan Linh Village, Son Tay Province, Bavi District, Vietnam (138), 24 Dec.2000. Paratypes: 6 males and 9 females, Tan Linh Village, Son Tay Province, Bavi District, Vietnam (138), 24 Dec.2000; 1 female, Ha Jiang Town, Ha Jiang Province, Vietnam (006), 8 Dec.2000; 3 females, Viet Lann Village, Ha Jiang Province, Vietnam (022), 10 Dec.2000; 5 females, Viet Lann Village, Ha Jiang Province, Vietnam (023), 10 Dec.2000; 1 female, Viet Lann Village, Ha Jiang Province, Vietnam (026), 10 Dec.2000; 1 male and 1 female, Viet Lann Village, Ha Jiang Province, Vietnam (032), 10 Dec.2000; 6 females, Viet Lann Village, Ha Jiang Province, Vietnam (033), 10 Dec.2000.

Additional compared material examined. – 1 female of *Nesioneta benoiti* (van Helsdingen, 1978) (MZT AA0.584), Seychelles, La Passe Gesthause on yard, coll. M. Saaristo, 11 Jan.1999; 1 male of *Nesioneta benoiti* (van Helsdingen, 1978) (MZT AA0.585), Seychelles, Silhouette Anse Lacars-Anse Parates sifting leaves of *Dendrobium umbellatum*, coll. M. Saaristo, 7 Jan.1999.

Diagnosis. – The male of this new species can be easily distinguished by the special shape of male palpal tibia and the posterior tooth of cymbium (Figs. 5A-C), as well as the combined characters of embolic division (Figs. 5D-E); female can be identified by the round and protruding epigynum with vase-shaped proximal portion of scape and large oval depression of lateral plates on each side (Fig. 5F).

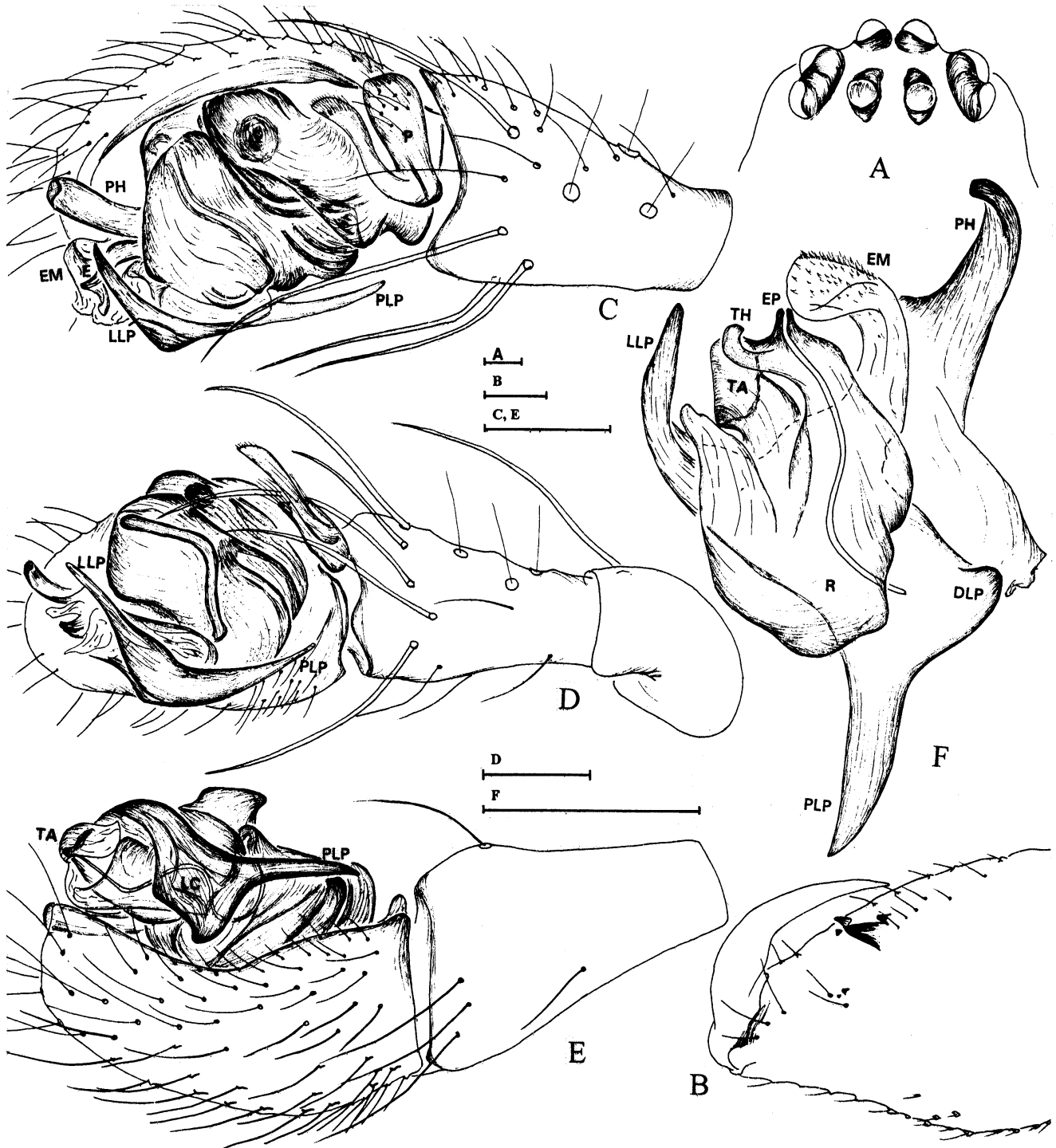


Fig. 4. *Neriene oxycera*, new species: A, ocular area of male, dorsal view; B, male left chelicera, frontal view; C, left male palp, retrolateral view; D, ditto, ventral view; E, ditto, prolateral view; F, embolic division, ventral view. Scale bars = 0.1 mm.

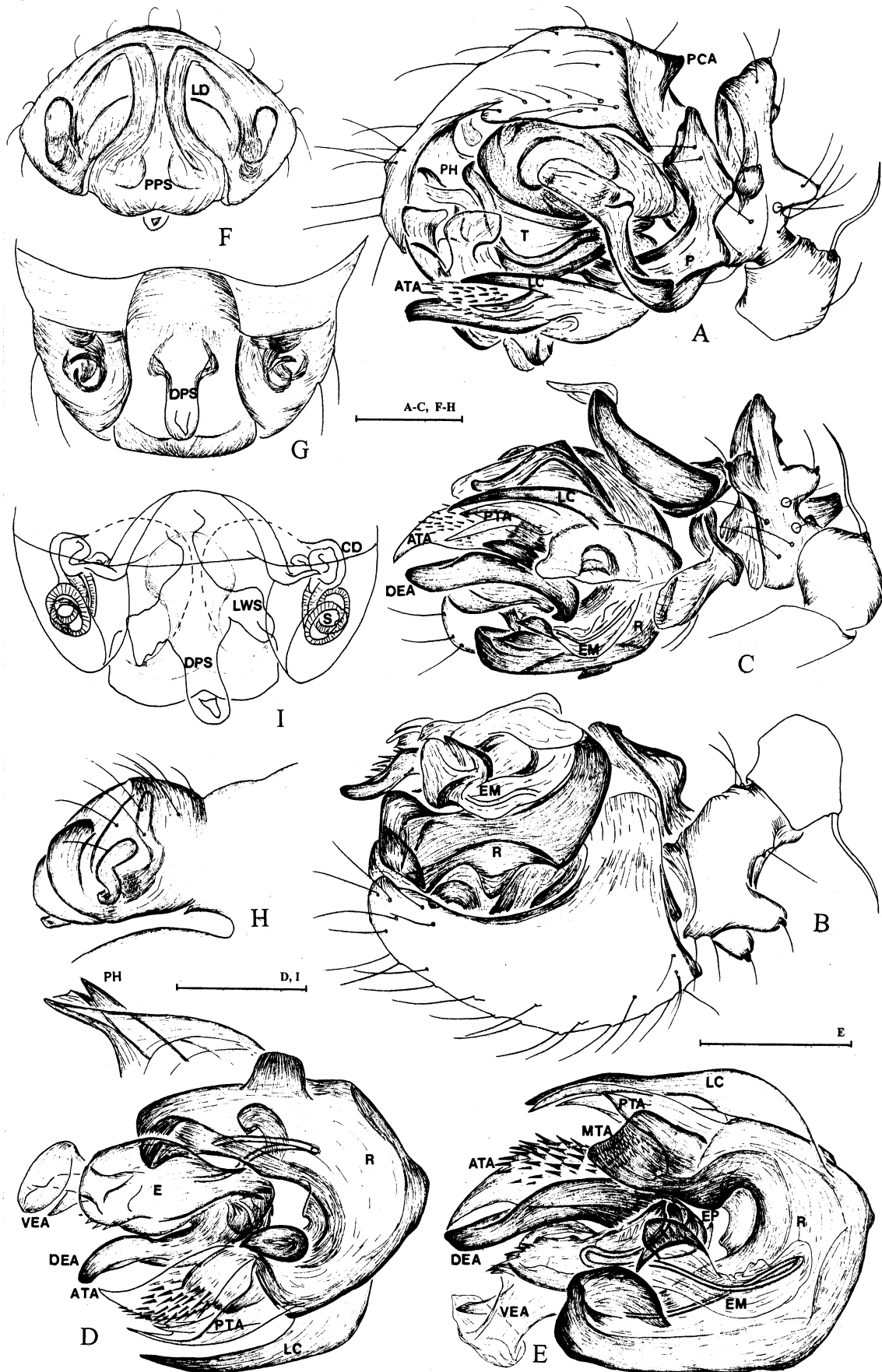


Fig. 5. *Nesioneta ellipsoidalis*, new species: A, left male palp, retrolateral view; B, ditto, prolateral view; C, ditto, ventral view; D, embolic division, ventral view; E, ditto, dorsal view; F, epigynum, ventral view; G, ditto, dorsal view; H, ditto lateral view; I, vulva, dorsal view. Scale bars = 0.1 mm.

Description of male. – Total length: 1.80. Carapace: 0.80 long, 0.60 wide. Abdomen: 1.10 long, 0.60 wide. Carapace grayish brown with black margin. Eyes subequal, with black surroundings; AER recurved, PER straight, eyes separated by AMEr, ALE and PLE juxtaposed. Chelicerae brown, stridulatory ridges present on ectal side, fang groove with three promarginal teeth, second of which biggest, and three small retromarginal teeth. Sternum darker than carapace. Abdomen dark gray, with a large white chevron. Lengths of legs: I 2.80 (0.73+0.90+0.70+0.47), II 2.46 (0.63+0.80+0.60+0.43), III 1.97 (0.57+0.60+0.47+0.33), IV 2.61 (0.80+0.77+0.67+0.37). Tibia dorsal spines: 2-2-2-2. Tm I: 0.28. Tm IV absent.

Male palp (Figs. 5A-C). Patella with long bristle dorsally. Tibia widely depressed dorsal-posteriorly, two tips of retrolateral margin and one dorsal tip of prolateral margin rising into lobes, each carrying hair; another process exists

anterior-ventrally, also carrying hair. Tibia with two retrolateral and one prolateral trichobothria. Cymbium normal shape, with tooth-like apophysis posteriorly. Paracymbium as usual shaped for *Nesioneta*, apical branch ending in flat, translucent blade-shaped apex, strong tooth on outer margin of bottom. Pit-hook on distal part of suprategulum bifurcate, one point, slightly hooked, one truncate. Embolic division (Figs. 5D-E): radix large boat-shaped with dorsal bulge and anterior hook as usual, all other elements in planted on basal and curved middle part. Lamella characteristica long and sharp. Terminal apophysis consisted of three parts, anterior one large with many dentate-like projections and point tip, middle one short, plate-shaped and strongly sclerotized with scaled surface, posterior one slightly sclerotized with serrated apex. Embolus (Figs 5E, 6A) connected with radix by cylindrical membrane, its main body oval plate-shaped with two small apophyses posteriorly (Fig. 6A) and two large apophyses anteriorly, dorsal one long and strongly sclerotized

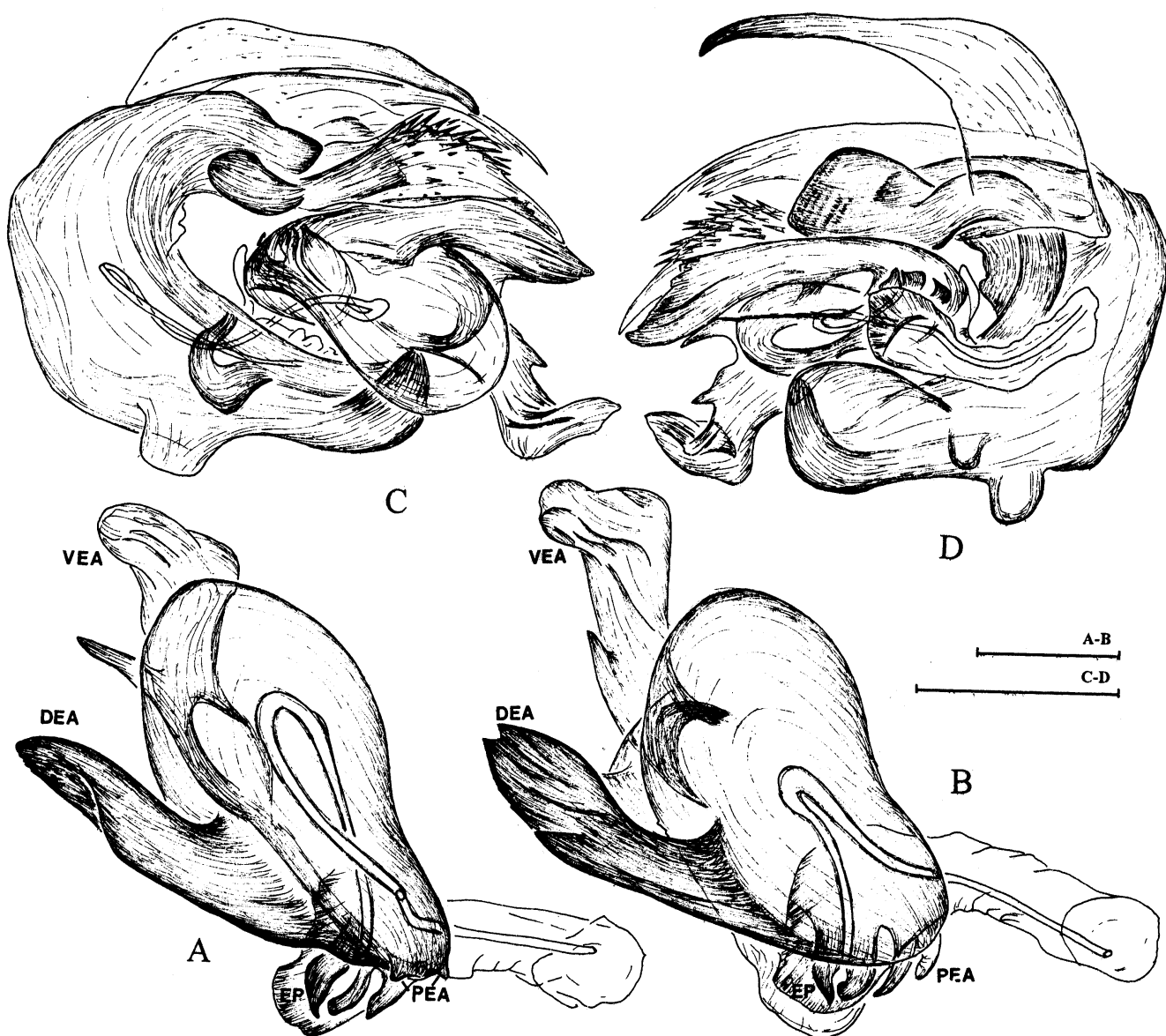


Fig. 6. *Nesioneta ellipsoidalis*, new species: A, embolus, dorsal view. *Nesioneta benoiti* (van Helsdingen, 1978): B, embolus, dorsal view; C, embolic division, ventral view; D, ditto, dorsal view. Scale bars: A-B = 0.05 mm; C-D = 0.1 mm.

extending forward, ventral one slightly sclerotized with sharp process in the middle and its tip rolling back. Seminal duct traversing in embolus plate and retracing back, embolus proper stout, near base, covered ventrally by sclerotic extension of cylindrical membrane.

Description of female. – Total length: 1.83. Carapace: 0.70 long, 0.55 wide. Abdomen: 1.50 long, 0.73 wide. Lengths of legs: I 2.50 (0.70+0.77+0.60+0.43), II 2.30 (0.67+0.70+0.53+0.40), III 1.90 (0.67+0.43+0.47+0.33), IV 2.44 (0.77+0.73+0.57+0.37). Tibia dorsal spines: 2-2-2-2. Tm I: 0.29. Tm IV absent. Other somatic characters same as male.

Epigynum (Figs. 5F-I). Half round and convex in ventral view, enlarged lateral plates forming large oval depressions on each side. Scape “S” shaped folding. Margin of proximal portion parallel originally and widened to broadly rounded posterior margin. Inner scape invisible in ventral view. Distal portion with two wings, translucent, hardly discernable in dorsal view, tip furnished with pit extending outside posterior margin visible in ventral view.

Etymology. – The specific name comes from Latin *ellipsoidalis* (ellipse) in reference to the shape of the embolus of the male palp.

Remarks. – The new species is similar to *Nesioneta benoitii* (van Helsdingen, 1978), which was transferred from genus *Meioneta* by Saaristo (1995). Comparison of the two species revealed that the differences between them mainly concentrated on embolic division (Figs. 6A-B): 1) the different shapes of their dorsal embolic apophyses; 2) the middle process of the ventral embolic apophysis in the new species is long and sharp, while it is short in *N. benoitii*; 3) the oval plate-shaped main body of embolus of this new species has two small posterior embolic apophyses, while *N. benoitii* has only one. Additionally, in this new species, the dentate-like projections on the dorsal surface of anterior terminal apophysis in *N. benoitii* seem much smaller in central than those along the margin (Fig. 6C).

Distribution. – Known only from the type locality.

***Parameioneta bilobata* Li & Zhu, 1993**
(Figs. 7, 8)

Parameioneta bilobata Li & Zhu, in Song, Zhu & Li, 1993: 867, Figs. 28A-M; Li & Zhu, 1995: 45, Figs. 5a-m.

Material examined. – 4 males and 2 females, Gao Bao Village, Ha Jiang Province, Vietnam (017), 9 Dec.2000; 4 females, Gao Bao Village, Ha Jiang Province, Vietnam (015), 9 Dec.2000; 4 females, Viet Lann Village, Ha Jiang Province, Vietnam (022), 10 Dec.2000; 4 females, Viet Lann Village, Ha Jiang Province, Vietnam (023), 10 Dec.2000; 3 females, Viet Lann Village, Ha Jiang Province, Vietnam (032), 10 Dec.2000; 1 female, Viet Lann Village, Ha Jiang Province, Vietnam (032), 10 Dec.2000; 3 females, Viet Lann Village, Ha Jiang Province, Vietnam (033), 10 Dec.2000; 1 female, Viet Lann Village, Ha Jiang Province, Vietnam (042), 10 Dec.2000.

Additional compared material examined. – 1 female and male of *Parameioneta spicata* Locket, 1982, Phetchabun Province, Lom Sak, church yard, Thailand, coll. E. Huitula & P. Lehtinen, 27 Oct.–18 Nov.1976.

Diagnosis. – The male *P. bilobata* can be easily distinguished by the large hooked dorsal apophysis of tibia, triangular tooth on outer margin of paracymbium (Fig. 7A) and the characters of embolic division (Fig. 8); the female by the shape of epigynum in ventral view and the fork-shaped distal portion of scape (Figs. 7F-I) in dorsal view.

Description of male. – Total length: 1.50. Carapace: 0.72 long, 0.50 wide. Abdomen: 0.78 long, 0.44 wide. Carapace yellowish brown, with black margin. Eyes subequal, with black surroundings; AER recurved, PER straight, eyes separated by AMEd, ALE and PLE juxtaposed. Chelicerae brown, fang groove with four promarginal, four retromarginal teeth. Sternum darker than carapace. Abdomen dark gray, with white spots. Lengths of legs: I 2.63 (0.66+0.86+0.61+0.50), II 2.12 (0.59+0.69+0.50+0.34), III 1.62 (0.50+0.50+0.34+0.28), IV 2.25 (0.66+0.69+0.56+0.34). Tibia dorsal spines: 2-2-2-2. Tm I: 0.27. Tm IV absent.

Male palp (Figs. 7A-C). Patella with long spine dorsally. Tibia dorsal apophysis hook-shaped with multiple teeth in planted in concave area (Fig. 7E). Paracymbium U-shaped with black triangular tooth on outer margin. Pit-hook on distal part of supratégulum with long stick and hooked apex. Embolic division (Figs. 7D, 8A): lamella characteristic with large sclerotic at base, two long narrow branches out extending, one knife-shaped, strongly sclerotized, the other less sclerotized with fringed apex. Terminal apophysis with two free ends, anterior one wide, petal-shaped, posterior one long with tapering tip. Embolus proper stout (Figs. 7D, 8B-C). Thumb spike-like, with wide base and some thread-like projections along its outer margin. Embolic membrane tail shaped with many papillae on it.

Description of female. – Total length: 1.72. Carapace: 0.59 long, 0.40 wide. Abdomen: 1.13 long, 0.72 wide. Lengths of legs: I 2.47 (0.69+0.78+0.56+0.44), II 2.06 (0.59+0.69+0.44+0.34), III 1.56 (0.50+0.44+0.34+0.28), IV 2.19 (0.63+0.72+0.50+0.34). Tibia dorsal spines: 2-2-2-2. Tm I: 0.25. Tm IV absent. Other somatic characters same as male.

Epigynum (Figs. 7F-H). Protruding, scape “S” shape puckered, proximal portion triangular, middle portion and distal portion folded under it, pressed tightly and invisible in lateral view. Distal portion forkshaped, very translucent, with pit in central and bifid apex.

Distribution. – China, Vietnam (Ha Jiang Province).

***Prosoptonoides sinensis* (Chen, 1991), new combination**
(Fig. 9)

Nerieus sinensis Chen, 1991: 164, Figs. 2A-D.

Material examined. – 1 male and 1 female, Tan Linh Village, Son Tay Province, Vietnam (131), 23 Dec. 2000.

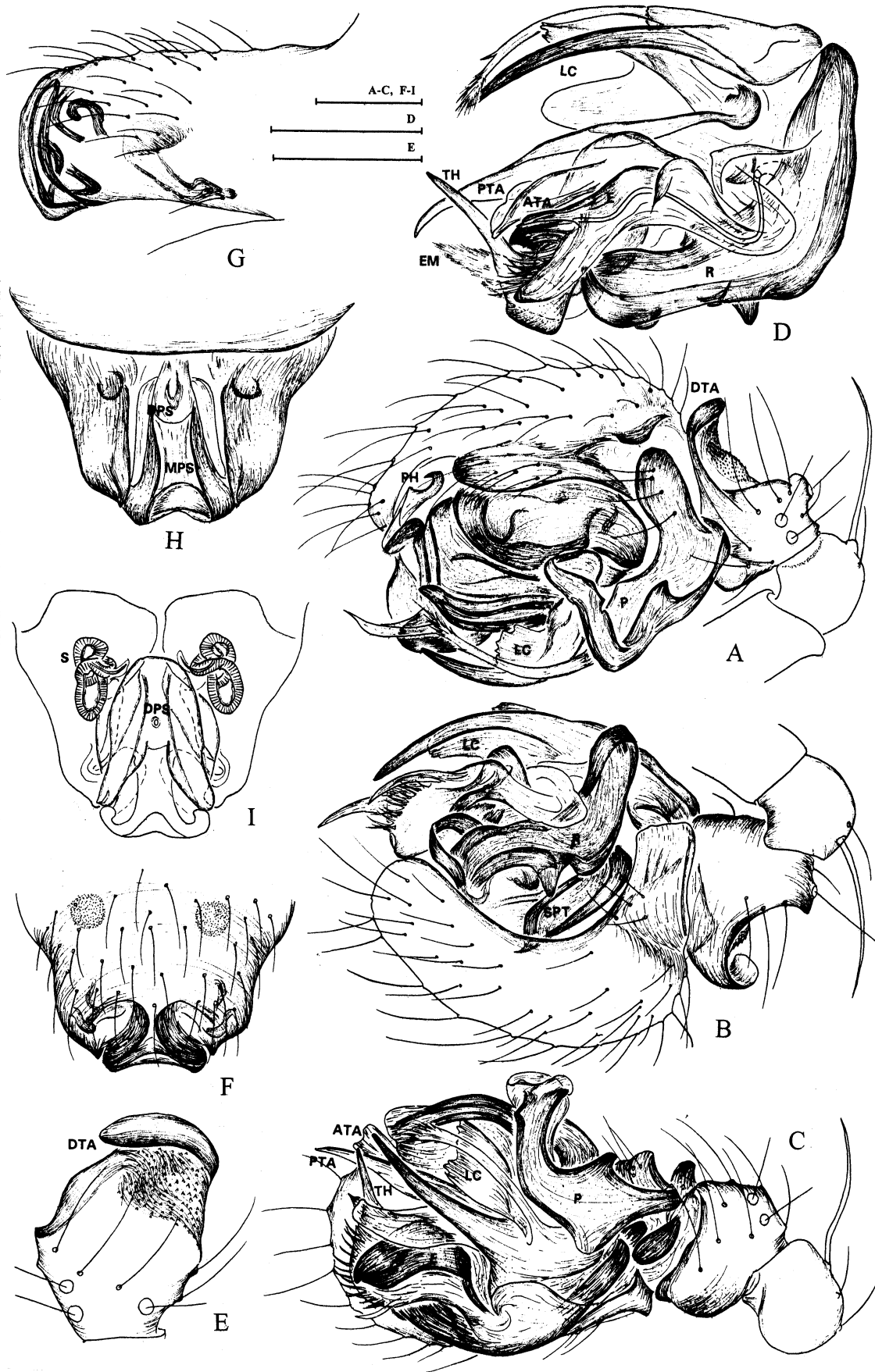


Fig. 7. *Parameioneta bilobata* Li & Zhu, 1993: A, left male palp, retrolateral view; B, ditto, prolateral view; C, ditto, ventral view; D, embolic division, dorsal view; E, palpal tibia, dorsal view; F, epigynum, ventral view; G, ditto, lateral view; H, ditto dorsal view; I, vulva, dorsal view. Scale bars = 0.1 mm.

Additional Material examined. – 1 male (MHNG), holotype of *Prosoponoides hamatus* Millidge & Russell-Smith, 1992, Ketambe, Gunung Leuser, northern Sumatra, coll. C. Deeleman, 3 May. 1976; 1 female (MHNG), holotype of *Prosoponoides kaharianum* Millidge & Russell-Smith, 1992, Swampy primary forest, kaharian, Central Kalimantan, coll. C. Deeleman, 2 Sep. 1985; 1 male (MHNG), holotype of *Prosoponoides simile* Millidge & Russell-Smith, 1992, Khao Yao National Park, Thailand, coll. C. Deeleman, 22 Dec. 1988.

Diagnosis. – The male of *Prosoponoides sinensis* can be recognized by the large lateral projection of lamella characteristica (Figs. 9B-E); the female by the epigynum with a septum that divides atrium into two compartments (Fig. 9F).

Description of male. – Total length: 2.70. Carapace: 1.50 long, 1.00 wide. Abdomen: 1.53 long, 1.00 wide. Carapace yellowish brown, unmodified. Eyes with black surroundings; AME smallest, others subequal; AER recurved, AME-ALE about AMEd, AME-AME shorter; PER straight, eyes separated by about PMEd; ALE and PLE juxtaposed. Chelicerae brown; stridulatory ridges absent; fang groove with three promarginal, two retromarginal teeth (Fig. 9A). Lengths of legs: I 5.90 (1.67+1.80+1.60+0.83), II 5.23 (1.50+1.60+1.40+0.73), III 3.03 (0.83+0.90+0.80+0.50), IV 3.94 (1.20+1.27+1.20+0.67). Each patella and tibia with two dorsal spines; Ti I-II additionally with one prolateral, one retrolateral spine. Fe I-IV with one small spine dorsally. Tm I: 0.21. Tm IV absent. Abdomen oval shape, dorsal surface pale white with black longitudinal spot on median line from which send out several short transversal spots, last one third part black, ventral surface uniformly dark gray.

Male palp (Figs. 9B-D). Patella short. Tibia wider than long, with one prodorsal, one retrodorsal trichobothrium. Cymbium unmodified. Paracymbium polliwog-shaped, main body stout, strongly sclerotized with short hairs, distal “tail” part narrow and thin, hardly visible. Large pit-hook on distal part of supratégulum well developed, with tip bifurcated in ventral view. Embolic division (Fig. 9E) characters by well-developed lamella characteristica with lateral projection wide and flat, bending dorsally, sharp apex pointing forwards, anterior and two dorsal projections blunt, triangular posterior projection pointing backwards. Terminal apophysis with two free ends, anterior one long, narrow, ribbon-like, posterior one sclerotized. Embolus long, more than half circle, arising from inside of radix, tracing out of cymbium through rolled embolic membrane.

Description of female. – Total length: 3.20. Carapace: 1.30 long, 1.10 wide. Abdomen: 2.0 long, 1.50 wide. Lengths of legs: I 5.90 (1.60+1.83+1.60+0.87), II 5.17 (1.50+1.67+1.40+0.60), III 3.23 (0.90+1.00+0.83+0.50), IV 4.74 (1.27+1.40+1.37+0.70). Tm I: 0.26. Tm IV absent. Other somatic characters same as male.

Epigynum (Fig. 9F). Two openings of entrance grooves with curved, well sclerotized margins. Atrium formed by enlarged openings with septum, which divides atrium into two. Triangular scape extending from dorsal wall of atrium, strongly sclerotized with big pit, slightly turning upwards in lateral view. Vulva (Figs. 9G-H) as long as wide, entrance grooves started from ventral wall, with two and half coils, turning points laterally of apices, pointing inwards.

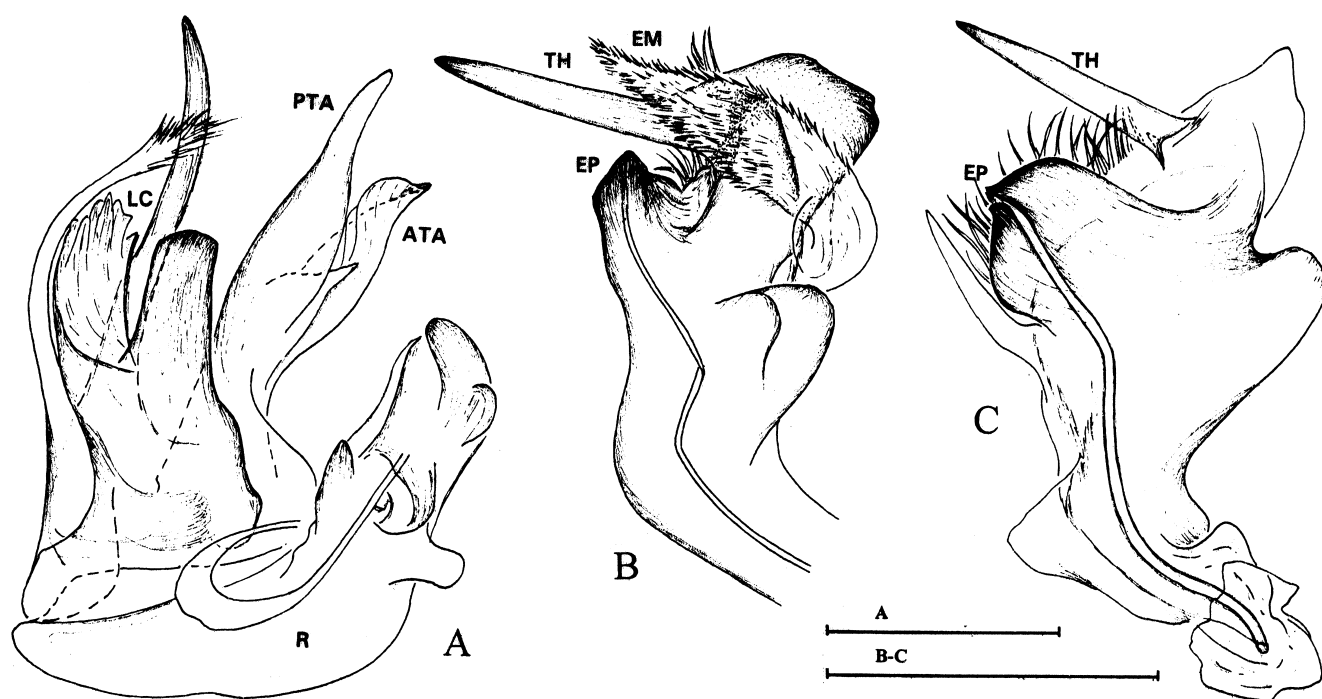


Fig. 8. *Paramieioneta bilobata* Li & Zhu, 1993: A, embolic division (removing embolus), ventral view; B, embolus, ventral view; C, ditto, ventrolateral view. Scale bars = 0.1 mm.

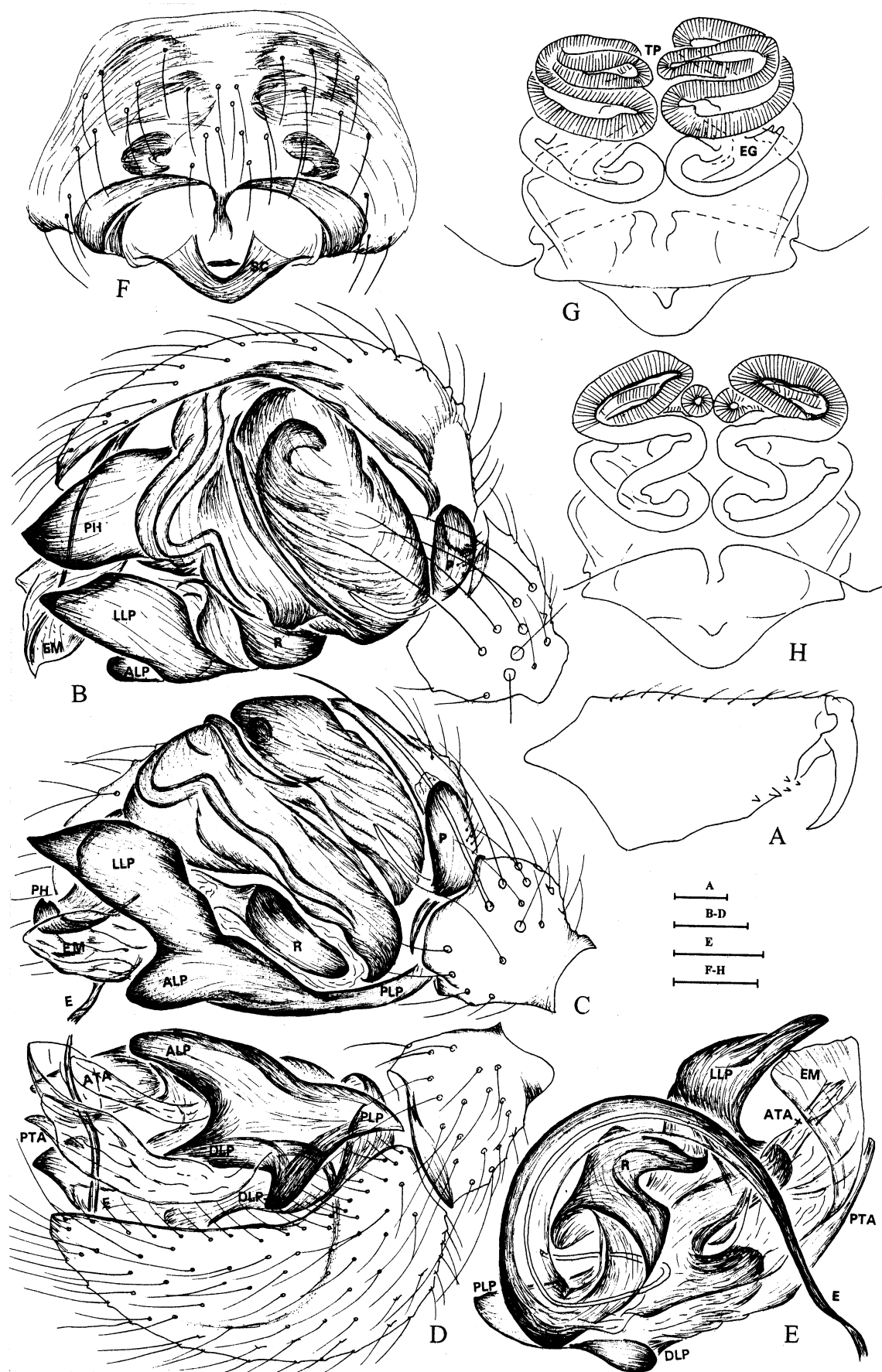


Fig. 9. *Prosoponoides sinensis* (Chen, 1991): A, left chelicera, frontal view; B, left male palp, retrolateral view; C, ditto, ventral view; D, ditto, prolateral view; E, embolic division, ventral view; F, epigynum, ventral view; G, vulva, dorsal view; H, ditto, ventral view. Scale bars = 0.1 mm.

Remarks. – Compared with the illustrations of *Nerienne clathrata* (Sundevall, 1830) provided by van Helsdingen (1969: Figs. 83-91), the genital structures of present species show several differences: 1) without the coil-shaped terminal apophysis which is typical character of male palp of *Nerienne*; 2) embolus long, thread like; 3) epigynum with posterior margin of ventral wall extending in the middle to form a septum which divides atrium into two. These characters do not corresponding well with the genital type of *Nerienne*, but show striking resemblance to that of *Prosoponoides hamatum* Millidge & Russell-Smith (1992: Figs. 1-4, 8-11). As a result, *N. sinensis* was transferred to *Prosoponoides* here in this study.

Distribution. – Vietnam (Cao Bang, Sac Tay), China.

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