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The spider genus *Lepthyphantes* MENGE 1866 in Nepal¹⁾
 (Arachnida: Araneae: Linyphiidae)

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With 93 figures, 2 maps, and 1 table

A b s t r a c t : The spider collection of Prof. Dr. J. MARTENS from Nepal has proven to comprise 22 species or subspecies of the linyphiid genus *Lepthyphantes* MENGE 1866, of which no less than 19 are new to science: *uzbekistanicus himalayensis* n. subsp., *ancoriformis*, *nepalensis*, *yeti*, *theosophicus*, *anachoretus*, *sherpa*, *setifer*, *numilionis*, *rotundatus*, *alticola*, *faustus*, *occultus*, *bifurcatus*, *bifurcatoides*, *plumipes*, *asceticus*, *grandiculus*, and *magnus* n. spp. Two latter forms join *martensi* THALER 1987 within the new *martensi*-group. *Martensi*, *digitulus* THALER 1987 and *uzbekistanicus himalayensis* n. subsp. (sub prope *pinicola* SIMON 1884) have hitherto been reported only from the Himalayas of Kashmir/Ladakh, NW-India, whereas *nebulosoides* WUNDERLICH 1977 from Middle Asia, USSR. Such data indicate that the Himalayas are one of the major and well-isolated centers of speciation of *Lepthyphantes* in the Palaearctic. Outlines on vertical distribution and phenology are given.

Z u s a m m e n f a s s u n g : Die Spinnen-Sammlung, die Prof. Dr. J. MARTENS von 1969 bis 1983 in Nepal eingebracht hat, umfaßt 22 Arten und Unterarten der Linyphiidae-Gattung *Lepthyphantes* MENGE 1866, von denen sich 19 als neu erwiesen: *uzbekistanicus himalayensis* n. subsp., *ancoriformis*, *nepalensis*, *yeti*, *theosophicus*, *anachoretus*, *sherpa*, *setifer*, *numilionis*, *rotundatus*, *alticola*, *faustus*, *occultus*, *bifurcatus*, *bifurcatoides*, *plumipes*, *asceticus*, *grandiculus* und *magnus* n. spp. Die beiden letzten Arten schließen sich eng an *L. martensi* THALER 1987 an, und diese bilden zusammen die neue *martensi*-Gruppe. *Martensi*, *digitulus* THALER 1987 und *uzbekistanicus himalayensis* n. subsp. (als prope *pinicola* SIMON 1884) waren erst kürzlich aus den Himalaya-Teilen von Kashmir/Ladakh in NW-Indien bekannt geworden, während *nebulosoides* WUNDERLICH 1977 in Sowjetisch-Zentralasien verbreitet ist. Diese Fakten deuten schon jetzt an, daß der Himalaya als eines der bedeutenden und gut isolierten Speziations-Zentren für die Gattung *Lepthyphantes* in der Paläarktis angesehen werden muß. Die bisherigen Daten zur Vertikalverbreitung (bekannt zwischen wenig über 2000 und 5500 m) und zur Phänologie werden besprochen.

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¹⁾ Results of the Himalaya Expeditions of J. MARTENS, No. 123. - No. 122: Courier Forsch.-Inst. Senckenberg, 93: 33-42, 1987. - J. M. sponsored by Deutscher Akademischer Austauschdienst and Deutsche Forschungsgemeinschaft.

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Introduction

The linyphiid fauna of Nepal has become subject of special attention due to the works of WUNDERLICH (1973, 1974, 1979, 1983). However, no *Leptyphantes* MENGE 1866 has hitherto been reported from this small Himalayan country. Moreover, within all the huge system of the Himalayas, only a few *Leptyphantes* species have been recorded, in particular from Karakorum by di CAPORIACCO (1935), from Kashmir/Ladakh by THALER (1987), and from Sikkim by TIKADER (1970).

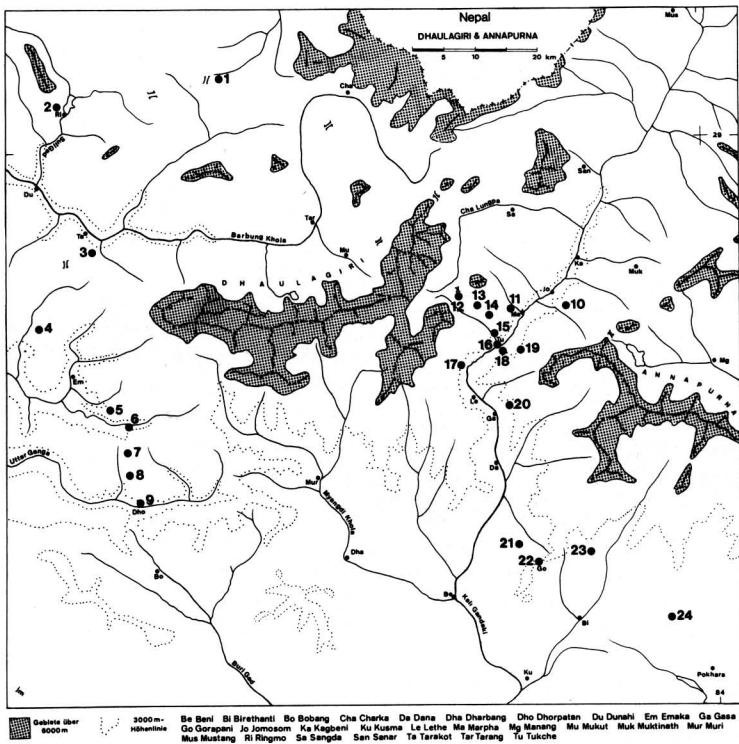
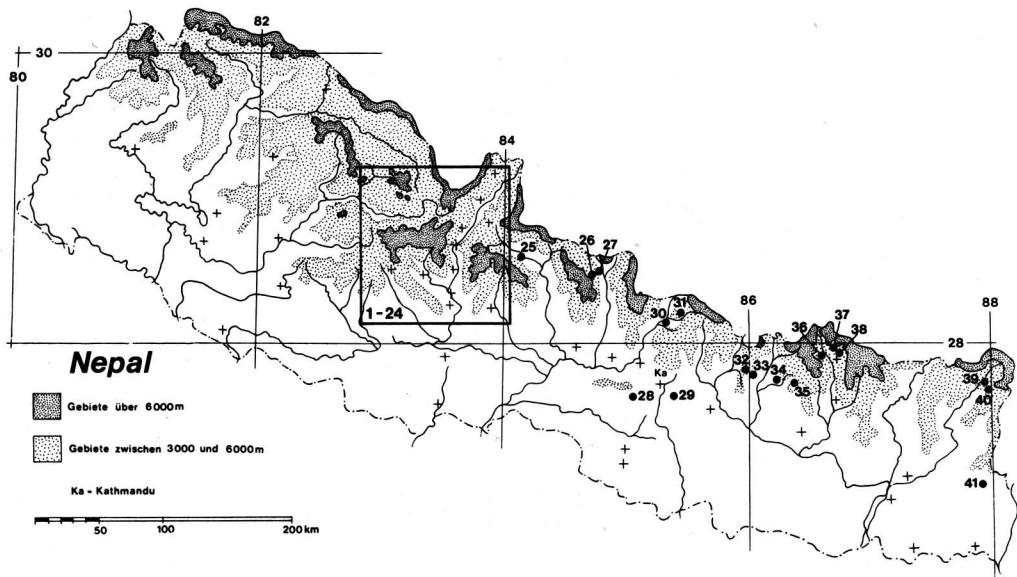
The present paper is devoted to a study of the rich and diverse collections of *Leptyphantes* managed since 1969 in various parts of Nepal (s. Maps 1-2) by Prof. Dr. J. MARTENS, Mainz.

Before going further, I wish to extend my deep appreciation to Prof. Dr. J. MARTENS, of the Institut für Zoologie der Johannes Gutenberg-Universität, Mainz, who kindly sent me for identification his materials he had collected alone (from 1969 till 1974) and with A. AUSOBISKY (1980), Dr. W. SCHAWALLER and/or Miss B. DAAMS (1983). Also, I am deeply indebted to Dr. K. THALER, of the Institut für Zoologie der Universität Innsbruck, for his valuable comments on di CAPORIACCO's (1935) type material from Karakorum, Dr. ZHU CHUANDIAN, of the Norman Bethune University of Medical Sciences, Changchun, for the help in establishing the identity of one of

the species involved, to Dr. T. KRONESTEDT, of the Naturhistoriska Riksmuseum, Stockholm, for sending me on loan some comparative materials under his care. Besides, I wish to thank cordially Dr. S. GOLOVATCH, Moscow, for checking the English of the final draft. Prof. Dr. J. MARTENS provided the chapter on ecology and arranged table 1.

Holo- and the majority of paratypes have been sent to the Senckenberg Museum, Frankfurt a. M. (SMF), some duplicate paratypes have become part of the collection of the Zoological Museum of the Moscow State University, Moscow (ZMMU).

In the descriptions, the following abbreviations have been used: PME - posterior median eyes; Fe - femur; Ti - tibia; Mt - metatarsus; Tm - position of metatarsal trichobothrium; C - cymbium; P - paracymbium; SA - suprategular apophysis; TA - terminal apophysis; M - membrane; E - embolus; R - radix; L - lamella characteristic; S - scape; AS and PS - anterior and posterior parts of S, respectively (sensu WANLESS 1973); St - stretcher; LP - lateral plate; MP - median plate. The chaetotaxy is given in the following formula: Ti I: 2-1-1-2. This stands for: tibia I has two dorsal, one pro-, one retrolateral and two ventral spines (the apical spines are herewith disregarded). All measurements given hereinafter are in mm. The scale is 0.1 mm, if not otherwise indicated.



Maps 1 and 2. Collecting sites of *Lepthyphantes* species in Nepal (MARTENS collection). - 1) between passes Zö La and Büko La (*L. setifer*, *L. sherpa*); 2) Ringmo (*L. sherpa*); 3) Gompa/Tarakot (*L. ancoriformis*, *L. digitulus*, *L. grandiculus*, *L. martensi*, *L. nepalensis*); 4) Dhule (*L. grandiculus*, *L. nepalensis*); 5) between Thankur and Pelma (*L. ancoriformis*, *L. grandiculus*); 6) Gustung Khola (*L. ancoriformis*, *L. nepalensis*); 7) Thankur (*L. ancoriformis*, *L. nepalensis*, *L. grandiculus*); 8) between Dhorpatan and Thankur (*L. ancoriformis*, *L. martensi*, *L. rotundatus*); 9) Dhorpatan (*L. ancoriformis*, *L. grandiculus*, *L. martensi*, *L. rotundatus*); 10) Thini (*L. nebulosoides*); 11) Purano Marpha (*L. martensi*, *L. zbekistanicus himalayensis*); 12) Dapa Col (*L. alticola*); 13) ascent to Dapa Col (*L. anachoretus*, *L. martensi*); 14) upper Dambush Khola Valley (*L. anachoretus*, *L. martensi*, *L. numilionis*); 15) lower Dambush Khola Valley near Tukche (*L. numilionis*); 16) Tukche (*L. digitulus*,

L. uzbekistanicus himalayensis; 17) Nabrikot (*L. numilionis*); 18) ascent to Thaksang from Tukche (*L. nepalensis*, *L. uzbekistanicus himalayensis*); 19) Thaksang above Tukche (*L. ancoriformis*, *L. grandiculus*, *L. martensi*, *L. nebulosoides*, *L. nepalensis*); 20) Chadziou Khola (*L. digitulus*, *L. grandiculus*, *L. nepalensis*); 21) between Sikha and Ghorapani Pass (*L. bifurcatus*); 22) Gorapani Pass (*L. ancoriformis*, *L. grandiculus*, *L. nepalensis*); 23) between Chitre and Ghandrung (*L. ancoriformis*, *L. bifurcatus*, *L. grandiculus*); 24) Dhumpus (*L. bifurcatoides*); 25) Marsyandi Valley, Manang Airport (*L. uzbekistanicus himalayensis*); 26) Rupina La (*L. martensi*, *L. plumipes*); 27) Chuling Khola, Nyak, Meme Kharka, Djinshi Kharka (*L. grandiculus*, *L. martensi*, *L. nepalensis*); 28) Daman, Mahabarat Mts. (*L. digitulus*); 29) Phulchoki Mt. (*L. faustus*, *L. theosophicus*); 30) Dhunche (*L. grandiculus*); 31) Gosainkund, Syng Gyang (*L. ancoriformis*, *L. grandiculus*, *L. magnus*, *L. martensi*); 32) Ting Sang La (*L. grandiculus*, *L. magnus*, *L. martensi*); 33) ascent to Ting Sang La (*L. grandiculus*); 34) Chordung Mt. near Jiri (*L. faustus*, *L. grandiculus*); 35) Thodung (*L. faustus*, *L. grandiculus*, *L. martensi*); 36) Pare (*L. nepalensis*, *L. occultus*); 37) Kalar Patar (*L. yeti*); 38) confluence of Imja- and Phungki Drangka (*L. nepalensis*); 39) S Gunsa (*L. faustus*); 40) ridge Lasse Dhara (*L. grandiculus*); 41) Mai Pokhari (*L. asceticus*, *L. digitulus*, *L. grandiculus*).

According to species: *L. alticola*: 12; *L. anachoretus*: 13, 14; *L. ancoriformis*: 3, 5, 6, 7, 8, 9, 14, 19, 22, 23, 31; *L. asceticus*: 41; *L. bifurcatoides*: 24; *L. bifurcatus*: 21, 23; *L. digitulus*: 3, 16, 20, 28, 41; *L. faustus*: 29, 34, 35, 39; *L. grandiculus*: 3, 4, 5, 7, 9, 19, 20, 22, 23, 27, 30, 31, 32, 33, 34, 35, 40, 41; *L. magnus*: 31, 32; *L. martensi*: 3, 8, 9, 11, 13, 14, 19, 26, 27, 31, 32, 35; *L. nebulosoides*: 10, 19; *L. nepalensis*: 3, 4, 6, 7, 18, 19, 20, 22, 27, 36, 38; *L. numilionis*: 14, 15, 17; *L. occultus*: 36; *L. plumipes*: 26; *L. rotundatus*: 8, 9; *L. setifer*: 1; *L. sherpa*: 1, 2; *L. theosophicus*: 29; *L. uzbekistanicus himalayensis*: 11, 16, 18, 25; *L. yeti*: 37.

Systematic part

Leptyphantes martensi THALER 1987

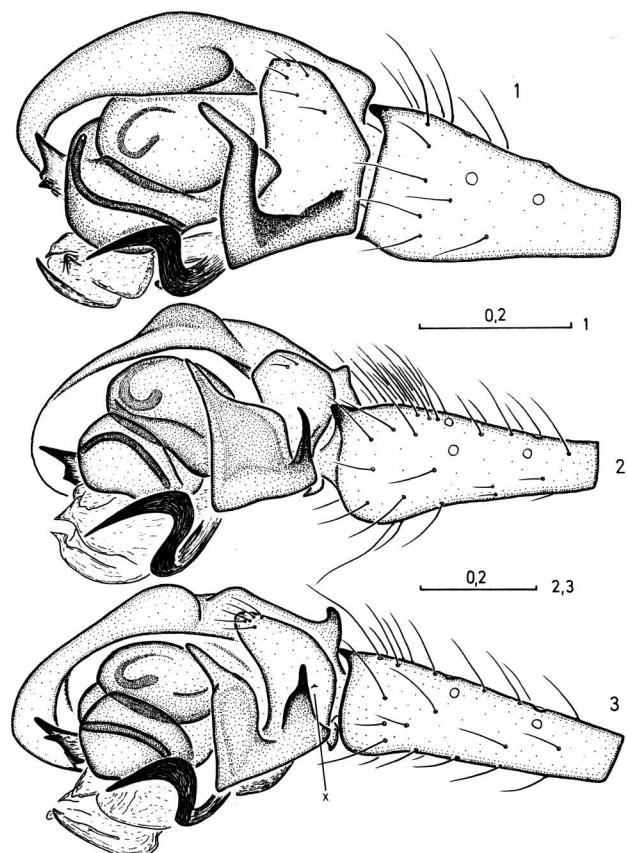
Figs. 1, 18 (see p. 49)

1987 *Leptyphantes martensi* THALER, in: "Beiträge zur Fauna, Faunengenese und Zoogeographie des Nepal-Himalaya", Courier Forsch.-Inst. Senckenberg, 93: 39.

M a t e r i a l : 1♂, 7♀ (SMF 34667), N e p a l : M u s t a n g D i s t r ., Thakkhola, Dambush-Tak, 3700-4100 m, alpine belt, 7.-13.X.1969. - 2♀ (SMF 34668), Thakkhola, Thaksang above Tukche, 3150-3400 m, mainly *Picea excelsa* forest, XI.1969. - 3♀ (SMF 34669), Thakkhola, Thaksang above Tukche, 3100-3400 m, 5.-10.VII.1970. - 1♀ (SMF 34670), 1♂, 3♀ (ZMMU), Thakkhola, Thaksang above Tukche, 3150-3200 m, 2.-4.VII.1973. - 4♀ (SMF 34671), Thakkhola, Thaksang, 3150-3400 m, *Pinus excelsa*-*Abies* forest, 26./29.IV.1980. - 1♂, 1♀, 1 juv. (SMF 34672), Thakkhola, Tukche to Dapa-Col, 3900-4200 m, alpine belt, 12. & 17.VII.1970. - 1♂, 1♀ (SMF 34673), Thakkhola, Purano Marpha, 3100-3200 m, dry coniferous forest, 6.-7.VII.1973. - 4♀, 4 juv. (SMF 34674), M y a g d i D i s t r ., Dhorpatan, SW-Dhaulagiri, coniferous forest, 3000-3200 m, IV.1970. - 1♂, 1♀, 2♂ subad., 2♀ subad. (SMF 34675), Dhorpatan to Thankur, Rhododendron forest and pebble, 3600-4000 m, 25.V.1973. - 2♂, 5♀ (ZMMU), D o l p o D i s t r ., Gompa near Tarakot, upper Barbung Khola Valley, *Picea-Betula* forest, 3400 m, 6.VI.1973. - 1♂ (SMF 34676), R a s u w a D i s t r ., Trisuli Valley, Gosainkund, 2700-3000 m, mixed forest, mainly of *Quercus*, 23.IV.1973. - 1♀ (SMF 34677), Gosainkund, Syng Gyang, 3200 m, *Abies* forest, 25.IV.1973. - 1♂, 1♀, 1 juv. (SMF 34678), Gosainkund, Syng Gyang, 3200 m, 25.IV.1973. - 1♀ (SMF 34679), R a m e c h a p D i s t r ., Thodung near

Those, E of Jiri, Rhododendron-*Abies*-*Tsuga* forest, 3100-3200 m, 7.-8.IV.1973. - 1♀ (SMF 34680), S i n d h u P a l c h o k D i s t r ., Ting Sang La Pass, 2650-3000 m, *Quercus*-coniferous forest, 13.IV.1973. - 1♀ (SMF 34681), Ting Sang La Pass, 3300 m, coniferous forest, 14.IV.1973. - 1♂ (SMF 34682), Ting Sang La Pass to Barabise, Rhododendron-*Quercus* forest, 2900-2800 m, 16.IV.1973. - 1♂ (SMF 34683), G o r k h a D i s t r ., Chuling Khola, Djinshi Kharka, 3400 m, *Abies*-Rhododendron forest, 4./5.VIII.1983. - 1♂ (SMF 34684), Chuling Khola, Meme Kharka, 3300-3400 m, 5./6.VIII.1983. - 1♀ (SMF 34685), NW-Rupina La, Tabruk Kharka, 4000 m, 7./8.VIII.1983. - 1♂ (ZMMU), Chuling Khola, *Abies*-*Quercus* forest, 3000-3400 m, 3.VIII.1983.

R e m a r k s : Described but very recently from the Himalayas of Kashmir/Ladakh, N-India (THALER 1987), *martensi* has happened to be widespread in Nepal. This species seems to be particularly closely related to both *grandiculus* n. sp. and *magnus* n. sp. (see below), all of them forming a new separate species-group, i. e. the *martensi*-group. This group can be characterized as follows: Larger forms (total length up to 7.10 mm). Legs relatively long, with numerous dark rings. Chaetotaxy: Fe I: 1-1(2)-0-0, II-IV: 1-0-0-0; Ti I-II: 2-2(1)-2(1)-2, III-IV: 2-2(1)-2(1)-1; Mt I-IV: 1-1-1-1. Tm I 0.12-0.20. Palpal tibia with four trichobothria, in ♂ elongate, reaching in length to that of cymbium. Latter proximally with one or more small outgrowths. Paracymbium at midlength with one or a few smaller teeth, or one larger tooth. Lamella characteristic sigmoid. Scapus of epigyne broad at base, almost entirely co-



Figs. 1-3. Left ♂ palp of *Leptyphantes* species. - 1) *L. martensi* THALER 1987, Tarakot; 2) *L. grandiculus* n. sp.; paratype, Chadziou Khola; 3) *L. magnus* n. sp.; paratype, Gosainkund.

vers aperture.

The *martensi*-group comprises *martensi* THALER 1987, *grandiculus* n. sp., and *magnus* n. sp. from the Nepal, Kashmir and Ladakh Himalayas.

The larger body size that gives these species a non-*Leptyphantes* appearance, their singular and conspicuous structure of both palp and epigyne makes the *martensi*-group well distinguishable from the other known species-groups of the genus. However, due to the chaetotaxy formula and general outline of the epigyne, it is possible to trace its affinities with the *nebulosus*-group known throughout the Holarctic.

Besides, *martensi* has turned out to be quite variable as regards the body size, ranging from 3.00-5.60 mm, and the paracymbium, which (Fig. 1) carries at midlength no or a few minute teeth sometimes coalescing into a single and somewhat premarginal larger tooth.

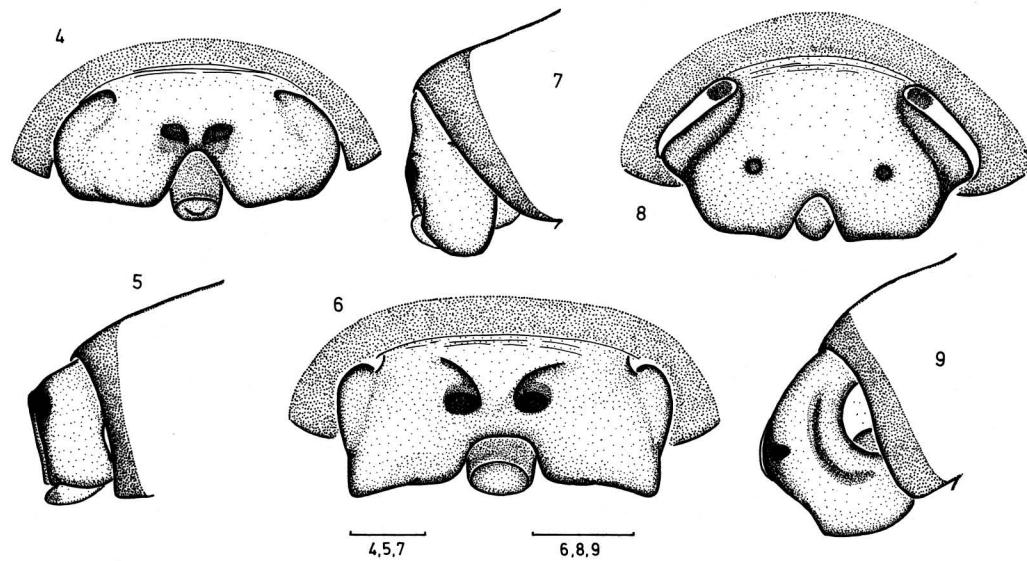
Leptyphantes grandiculus n. sp.

Figs. 2, 4-7, 10-12

H o l o t y p e : 1♂ (SMF 34686), N e p a l : R a m e c h a p D i s t r ., Jiri, Chordung Mt., 2900 m, Abies-Rhododendron forest, 28./29.III.1973.

P a r a t y p e s : 1♂, 2♀ (SMF 34687), same locality, together with holotype, 28./29.III.1973. - 2♀ (SMF 34688), Jiri, Chordung Mt., 2900 m, 1.IV.1973. - 2♂, 1♀ (SMF 34689), Thodung near Those, E of Jiri, Rhododendron-Abies-Tsuga forest, 3100-3200 m, humid litter, 4.-6.IX.1970. - 1♂, 1♀ (SMF 34690), Thodung near Those, Rhododendron-Abies-Tsuga forest, 3100-3200 m, 7.-8.IX.1973. - 1♀ (SMF 34691), S i n d h u P a l c h o k D i s t r ., ascend to Ting Sang La Pass, 2650-3000 m, Quercus-coniferous forest, 13.IV.1973. - 1♀ (SMF 34692), Ting Sang La Pass to Barabise, Rhododendron-Quercus forest, 2900-2800 m, 16.IV.1973. - 2♂, 2♀ (ZMMU), M u s t a n g D i s t r ., Thakkhola, Chadziou-Khola, monsoon-influenced, dense, primary broadleaved forest in canyon, bamboo growth, 2650 m, VI./VII.1970. - 2♀ (SMF 34693), Thakkhola, Chadziou-Khola, 2650 m, VI./VII.1970. - 2♀, 1 juv. (SMF 34694), Thakkhola, Dambush-Khola, 2890-2930 m, 7.XI.1969. - 8♀ (SMF 34695), Thakkhola, Thaksang above Tukche, 3150-3200 m, 2.-4.VII.1973. - 1♀ (SMF 34696), P a r b a t D i s t r ., Gorapani Pass, S-Annapurna, Rhododendron forest, 2300-2700 m, 11.VII.1973. - 1♂ (SMF 34697), between Chitre and Ghandrung, Chitre side of pass, species-rich forest, 2400-2800 m, 4.V.1980. - 1♀ (SMF 34698), M y a g d i D i s t r ., Dhorpatan, SW-Dhaulagiri, coniferous forest, 3000 m, 16.V.1973. - 1♂ (SMF 34699), Thankur, N of Dhorpatan, humid Quercus forest, 3350, 26./27.V.1973. - 5♀ (SMF 34700), Dhorpatan to Tarakot, below Dhule, 2850-3100 m, mixed broadleaved forest with a lot of Betula, 30.V.1973. - 1♂, 2♀ (ZMMU), Dhorpatan to Tarakot, between Thankur and Pelma, under logs near stream, 3000 m, 28.V.1973. - 1♀ (SMF 34701), R a s u w a D i s t r ., Trisuli Valley, Dunche, canyon, subtropical forest, 2000-2100 m, 29.V.1973. - 2♀ (SMF 34702), Gosainkund, Syng Gyang, 3200 m, Abies forest, 25.V.1979. - 1♀ (SMF 34703), D o l p o D i s t r ., Gompa near Tarakot, upper Barbung Khola Valley, Picea-Betula forest, 3300-3400 m, 11.-16.V.1970. - 1♂ (SMF 34704), G o r k h a D i s t r ., Chuling Khola, 2800 m, Quercus forest, 2./3.VIII.1983. - 1♂, 1♀ (ZMMU), I l a m D i s t r ., Mai Pokhari, 2000-2400 m, cultivated land, 27.III.1980. - 1♀ (SMF 34705), T a p l e j u n g D i s t r ., ridge Lasse Dhara and pasture Lasse Tham, 3000-3300 m, Abies-Rhododendron forest, 6./7.IX.1983.

D i a g n o s i s : The new species joins the *martensi*-group and seems especially closely related to *magnus* n. sp., though differs well from it by the very long chelicerae in ♂ which are almost equal in length to carapace, as well as by the size and shape of the upper proximal outgrowth of the cymbium (cp. Figs. 10 & 13), structure of the paracymbium (cp. Figs. 11 & 14), and form of the epigynal scapus in ♀ (cp.



Figs. 4-7. *Lepthyphantes grandiculus* n. sp.; epigyne. - 4-5) paratype, Chadziou Khola; ventral and lateral views; 6-7) paratype, Dhorpatan; ventral and lateral views; 8-9) paratype, Gosainkund; ventral and lateral views.

Figs. 4-7 & 8-9). From *martensi* THALER 1987, it differs in having the proximal outgrowths of the cymbium, large tooth on the paracymbium, longer chelicerae in ♂, and peculiar shape of the epigynal scape in ♀ (cp. Figs. 4-7 & 18).

Description: ♂. Total length 4.25. Carapace: 1.90 long, 1.55 wide, reddish-brown, with a dark medial spot and a dark margin. PME separated by their R. Chelicerae very long (2.02), slender, well diverging distad, anterior margin with six teeth. Cheliceral claw very long and thick. Legs reddish-brown, with numerous dark rings. Chaetotaxy. Fe I: 1-1(2)-0-0, II-IV: 1-0-0-0; Ti I-II: 2-2(1)-2(1)-2, III-IV: 2-2(1)-2(1)-1; Mt I-IV: 1-1-1-1. Leg I - 13.45 long (3.50 + 0.60 + 3.55 + 4.10 + 1.70), IV - 9.20 long (2.55 + 0.45 + 2.30 + 2.70 + 1.20). Palp (Figs. 2, 10-12): Tibia well elongate, subequal to cymbium. Latter with a small proximal tubercle and a relatively large rounded outgrowth. Paracymbium with a long slender and a very small tooth at midlength. Lamella characteristic sigmoid. Abdomen: 2.25 long, 1.25 wide, dorsally pale, on anterior half with a broad medial stripe, on posterior half with a vague pattern of dark spots or markings sometimes coalescing into transverse bands.

♀. Total length 3.70. Carapace: 1.65 long, 1.20 wide, coloration darker than in ♂, margin of carapace more dark, medial spot extends to cephalic part. PME separated by their R. Chelicerae: 0.75 long, normal, anterior margin

with three teeth. Leg I - 8.05 long (2.10 + 0.45 + 2.15 + 2.20 + 1.15), IV - 6.30 long (1.80 + 0.40 + 1.50 + 1.65 + 0.95). Tm I 0.17. Abdomen: 2.75 long, 1.60 wide. Shape of anterior and lateral margins of epigynal scape well varies from rounded to angular (Figs. 4 & 6 present the extremes of such variations). Darker central spots on scape can be much larger and darker than presented in Figs. 4 & 6, but also can be wanting. Coloration of legs, dorsal pattern of abdomen, and chaetotaxy as in ♂.

Lepthyphantes magnus n. sp.

Figs. 3, 8-9, 13-15

Holotype: 1♂ (SMF 34706), Nepal: Rasuwa Distr., Trisuli Valley, Gosainkund, Syng Gyang, 3200 m, Abies forest, 25.IV.1973.

Paratypes: 4♂, 1♀, 1♀ subad. (SMF 34707), 2♂, 1♀ (ZMMU), same locality, together with holotype, 25.IV.1973. - 1♂ (SMF 34708), Gosainkund, 3000-3200 m, Quercus-Abies forest, 23.IV.1973. - 1♀ (SMF 34709), Gosainkund, 2700-3000 m, mixed forest mainly of Quercus, 23.IV.1973. - 1♂, 2♀ (SMF 34710), Sindhupalchok Distr., Ting Sang La Pass, 3300 m, coniferous forest, 14.IV.1973.

Diagnosis: The new species joins the *martensi*-group and seems particularly closely related to *grandiculus* (see above). From *martensi* THALER 1987, it differs by the presence of both proximal outgrowth of the cymbium and large tooth on the paracymbium, as well as by the more elongate palpal tibia in ♂ and shape of the epigynal scape in ♀.

Description: ♂. Total length 5.20. Carapace: 2.40 long, 1.85 wide, reddish-brown, with a dark medial spot and a wide dark margin. PME separated by their 0.75 D. Chelicerae strong, 1.80 long, fronto-basally with a pointed tubercle and numerous smaller tubercles on surface; anterior margin with three teeth, one of which is situated at very base of pointed tubercle. Legs pale brown, with numerous dark rings. Chaetotaxy. Fe I: 1-2-0-0, II-IV: 1-0-0-0; Ti I-II: 2-2-2-2, III-IV, 2-2(1)-2(1)-1; Mt I-IV: 1-1-1-1. Leg I - 16.30 long (4.25 + 0.75 + 4.55 + 4.70 + 2.05), IV - 11.60 long (3.50 + 0.50 + 2.95 + 3.25 + 1.40). Tm I 0.18. Palp (Figs. 3, 13-15): Tibia well elongate, subequal to cymbium. Latter with a proximal unciform tubercle and a relatively large and rounded outgrowth. Paracymbium with a large tooth sometimes bearing a minute additional tooth at base (x in Fig. 3). Lamella characteristic sigmoid. Abdomen: 2.75 long, 1.70 wide, dorsally pale, on anterior half with a broad median stripe, on posterior half with a vague pattern of dark spots or markings sometimes coalescing into transverse bands.

♀. Total length 4.50. Carapace: 1.70 long, 1.45 wide. PME separated by their R. Chelicerae: 0.95 long, anterior margin with three teeth. Leg I - 7.70 long (2.15 + 0.50 + 1.40 + 2.00 + 1.15), leg IV - 7.65 long (2.20 + 0.50 + 1.90 + 2.00 + 1.05). Abdomen: 3.05 long, 2.00 wide. Body and leg coloration, leg chaetotaxy, abdominal dorsal pattern as in ♂. Epigynal scape well variable by its lateral parts being rounded to angular (Figs. 8-9).

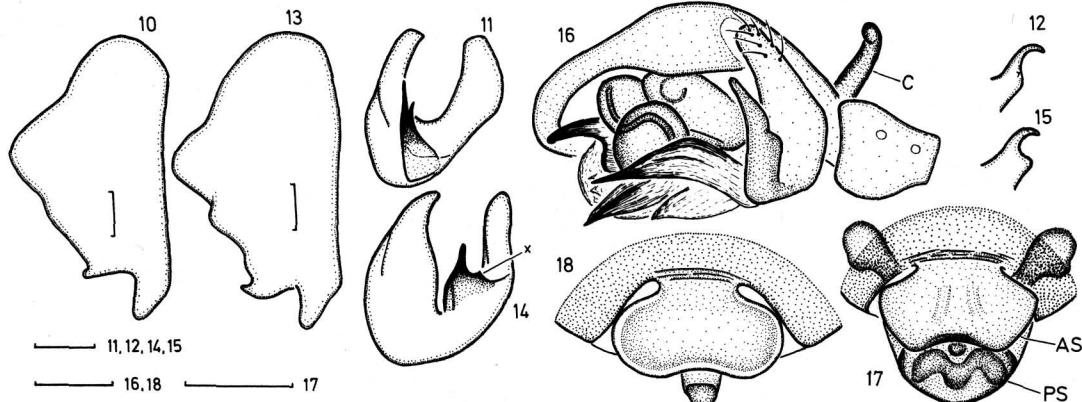
Leptyphantes digitulus THALER 1987

Figs. 16-17

1987 *Leptyphantes digitulus* THALER, in: "Beiträge zur Fauna, Faunengenese und Zoogeographie des Nepal-Himalaya", Courier Forsch.-Inst. Senckenberg, 93: 38.

Material: 1♂, 2♀ (SMF 34711), Nepal: Mustang Distr., Thakkola, Chadziou-Khola, monsoon-influenced, dense, primary broadleaved forest in canyon, bamboo growth, 2650 m, VI. & VII. 1970. - 1♂ (SMF 34712), same locality, 2530-2600 m, X.1969. - 1♂ (SMF 34713), same locality, 2700-2900 m, X.1969. - 1♀ (SMF 34714), Thakkola, Tukche, 2650 m, 26.II.1974. - 1♂ (SMF 34715), 1♂, 1♀ (ZMMU), Dolpo Distr., Gompa near Tarakot, upper Barbung Khola Valley, Picea-Betula forest, 3300-3400 m, 11.-16.V.1970. - 1♀ (SMF 34716), Lam Distr., Mai Pokhari, 2150-2400 m, cultivated land, 27.III. 1980. - 1♂, 1♀ (SMF 34717), Makwanpur Distr., Mahabarat Mts., Daman, 2500-2800 m, Quercus forest, 22./25.II.1970.

Remarks: This species very recently described from the Himalayas of Kashmir/Ladakh, N-India (THALER 1987), is well distinguishable by the presence of a very long proximal cymbial process directed almost rectangularly to the main axis, as well as by the conspicuous shape of the epigyne. A similar structure of the cymbium is met with in the species *tchatkalensis* TANASEVITCH 1983 and *rupeus* TANASEVITCH 1986, both from Tien-Shang (TANASEVITCH 1983, 1986), and *huangyanensis*



Figs. 10-12. *Leptyphantes grandiculus* n. sp.; paratype, Chadziou Khola. - 10) cymbium, dorsal view, 11) paracymbium, 12) suprategular apophysis.

Figs. 13-15. *Leptyphantes magnus* n. sp.; paratype, Gosainkund. - 13) cymbium, dorsal view; 14) paracymbium, 15) suprategular apophysis.

Figs. 16-17. *Leptyphantes digitulus* THALER 1987; ♂ and ♀, Chadziou Khola. - 16) left ♂ palp, 17) epigyne, ventral view.

Fig. 18. *Leptyphantes martensi* THALER 1987; Thaksang. - epigyne, ventral view.

ZHU & LI 1983, from Qinghai Prov., China
(ZHU & LI 1983).

Leptyphantes nebulosoides
WUNDERLICH 1977

1977 *Leptyphantes nebulosoides* WUNDERLICH, Senckenbergiana biol., 58 (1/2): 59; Figs. (♂, ♀).

M a t e r i a l : 1♀ (SMF 34718), N e p a l : M u s t a n g D i s t r ., Thakkhola, Thini near Jomosom, 2800 m, coniferous forest, 22.III.1974. - 1♀ (ZMMU), Thakkhola, Thaksang above Tukche, 3150-3400 m, mainly *Pinus excelsa* forest, 2.-4.VII.1973.

R e m a r k s : This species described by WUNDERLICH (1977) from Turkmenistan (= Turkmenia), USSR (without precise locality), has turned out to be quite widespread in Middle Asia obviously replacing there the Holarctic *nebulosus* (SUNDEVALL 1829) (s. TANASEVITCH & FET 1986). It is therefore doubtless that the record of *nebulosus* in Karakorum by di CAPORIACCO (1935) actually refers to *nebulosoides*.

***Leptyphantes plumipes* n. sp.**

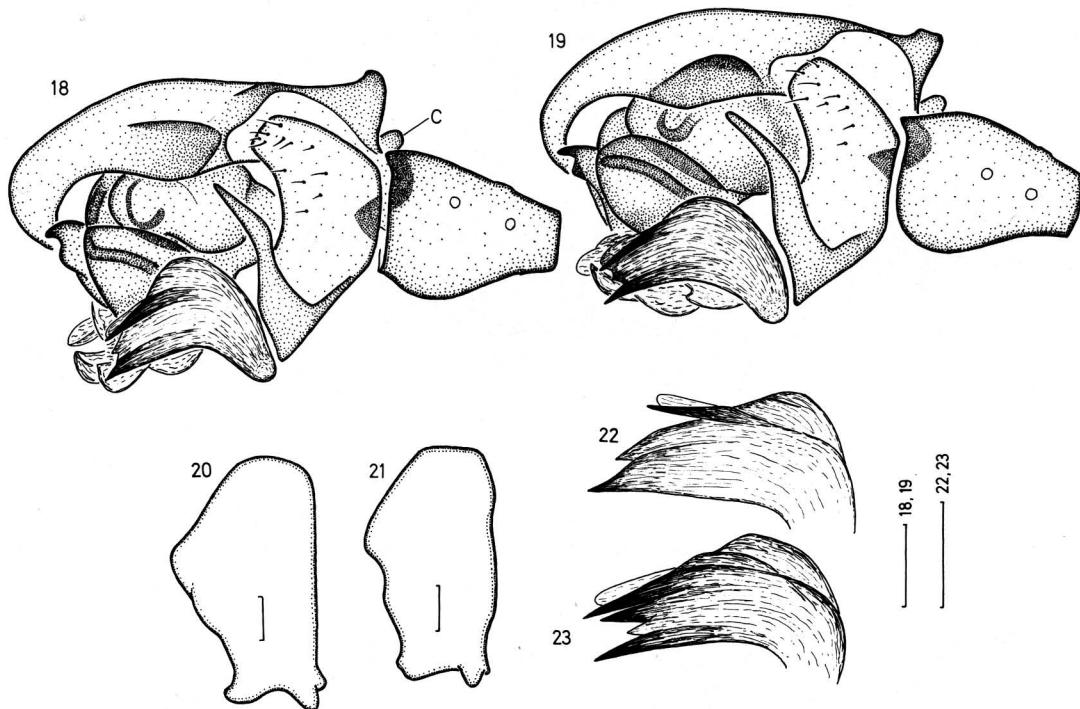
Figs. 18-27 (see p. 50)

H o l o t y p e : 1♂ (SMF 34719), G o r k h a D i s t r ., between pasture Tabruk and Rupina La Pass, 4400-4500 m, 9.VIII.1983

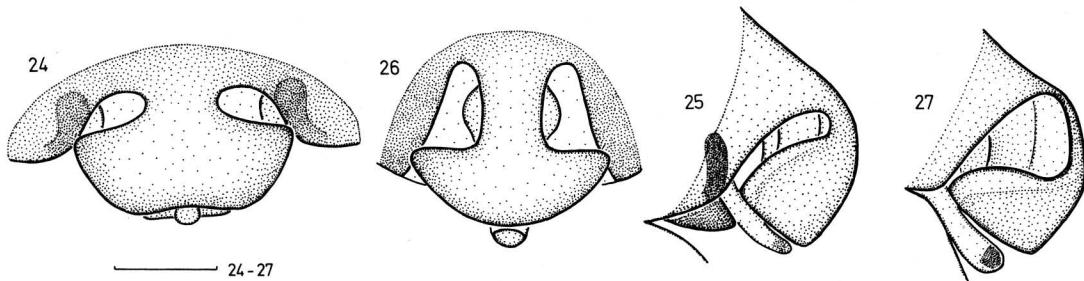
P a r a t y p e s : 1♂, 3♀ (SMF 34720), same locality, together with holotype, 9.VIII.1983.

D i a g n o s i s : By the structure of both palp and epigyne, *plumipes* n. sp. definitely belongs to the *tenuis*-group, where it becomes a second species possessing ventral spines on the leg tibiae: *retezaticus* RUŽIČKA 1985, recently described from Romania, has only one ventral spine on tibiae I-II, whereas *plumipes* n. sp. has two spines on tibiae I-II and one on tibiae III-IV.

D e s c r i p t i o n : ♂. Total length 2.80. Carapace: 1.35 long, 1.10 wide, brown, with a poorly expressed, grey, medial spot and a grey narrow margin. PME separated by their D. Chelicerae: 0.70 long, anterior margin with three large teeth. Legs brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I-II: 2-1(2)-1-2(1; 3), II-IV: 2-1-1-1; Mt I-II: 1-0(1)-0-1, III: 1-0(1)-0-0, IV: 1-0-0-0. Leg I - 7.95 long (2.10 + 0.45 + 2.15 +



Figs. 18-23. *Leptyphantes plumipes* n. sp.; holotype (18, 20, 22) and ♂ paratype (19, 21, 23). - 18-19) left ♂ palp, 20-21) cymbium, dorsal view; 22-23) lamella characteristic.



Figs. 24-27. *Leptophantes plumipes* n. sp.; epigyne; paratypes. - 24, 26) ventral view, 25, 27) lateral view.

$2.05 + 1.20$), IV - 7.65 ($2.05 + 0.40 + 2.05 + 2.10 + 1.05$). Tm 0.30. Palp (Figs. 18-23): Cymbium proximally with two small and obtuse outgrowths. Paracymbium toothless. Lamella characteristicia is variable in shape: sometimes the upper branch is longer than the lower one, sometimes vice versa. Abdomen: 1.50 long, 0.90 wide, dorsally dark, with pale transverse bands.

♀. Total length 2.70. Carapace: 1.35 long, 1.05 wide. PME separated by their D. Chelicerae: 0.65 long, anterior margin with three teeth. Leg I - 7.25 long ($1.90 + 0.40 + 2.00 + 1.80 + 1.15$), IV - 6.85 long ($1.90 + 0.40 + 1.80 + 1.75 + 1.00$). Body and leg coloration, chaetotaxy as in ♂. Epigyne well variable as in Figs. 24-27.

Leptophantes numilionis n. sp.

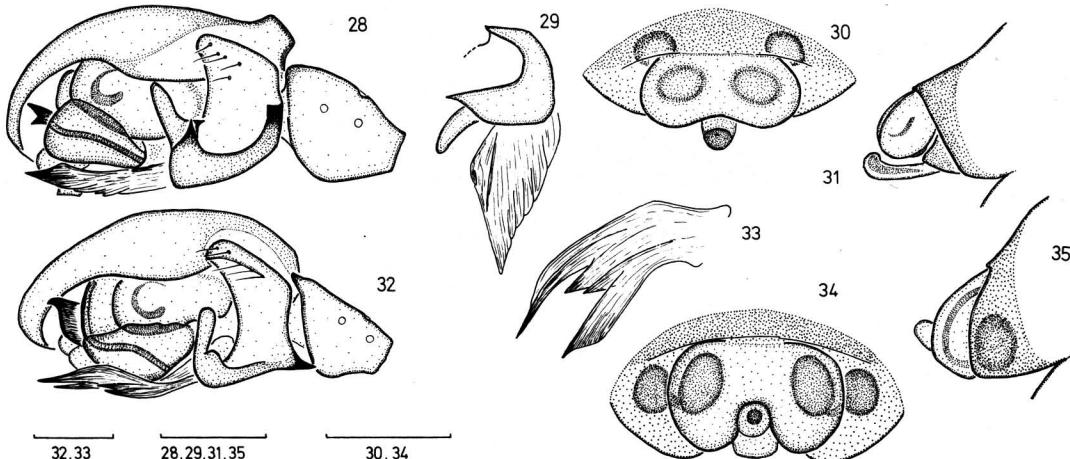
Figs. 28-31

H o l o t y p e : ♂ (SMF 34721), N e p a l : M u s t a n g D i s t r ., Thakkola, upper Dambush Khola, 3770-4100 m, alpic belt, 7.-13.X.1969.

P a r a t y p e s : ♂, 1♀ (SMF 34722), same locality, together with holotype, 7.-13.X.1969. - 1♀, 3 juv. (SMF 34723), Dambush Khola, 2890-2930 m, 7.X.1969. - 1♀ (SMF 34724), Kali Gandaki Valley near Nabrikot, 2550 m, 30.IV.1980.

D i a g n o s i s : This species seems closely related to *faustus* n. sp. (see its diagnosis).

D e s c r i p t i o n : ♂. Total length 1.70. Carapace: 0.78 long, 0.63 wide, dark brown.



Figs. 28-31. *Leptophantes numilionis* n. sp.; paratypes, upper Dambush Khola. - 28) left ♂ palp, 29) paracymbium and lamella characteristicia, 30) epigyne, ventral view, 31) epigyne, lateral view. Figs. 32-35. *Leptophantes faustus* n. sp.; ♂ paratype, Mt. Chordung (32-33), ♀ paratype, Thodung (34-35). - 32) left ♂ palp, 33) lamella characteristicia, 34) epigyne, ventral view, 35) epigyne, lateral view.

PME separated by their D. Chelicerae: 0.35 long, anterior margin with three teeth. Legs pale yellow. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-IV: 1-0-0-0. Leg I - 2.84 long ($0.70 + 0.23 + 0.68 + 0.70 + 0.53$), IV - 2.46 long ($0.68 + 0.20 + 0.55 + 0.60 + 0.43$). Tm I 0.16. Palp (Figs. 28-29): Cymbium proximally with a keel-shaped outgrowth. Lamella characteristic a broad, rather short, wedge-shaped toward end. Abdomen: 1.03 long, 0.78 wide, dorsally pale, anteriorly with a broad dark median stripe and posteriorly with transverse bands.

♀. Total length 1.73. Carapace: 0.73 long, 0.58 wide. PME separated by their D. Chelicerae: 0.30 long, anterior margin with three teeth. Leg I - 2.59 long ($0.65 + 0.23 + 0.63 + 0.63 + 0.45$), IV - 2.63 long ($0.70 + 0.20 + 0.70 + 0.63 + 0.40$). One paratype (♀) has a trichobothrium on metatarsus IV! Abdomen: 1.23 long, 0.85 wide. Epigyne as in Figs. 30-31. Body and leg coloration, chaetotaxy as in ♂.

Lepthyphantes faustus n. sp.

Figs. 32-35

H o l o t y p e : 1♂ (SMF 34725), N e p a l : R a m e c h a p D i s t r ., Thodung near Those, E of Jiri, Rhododendron-Abies-Tsuga forest, humid litter, 3100-3200 m, 7.-8.IV.1973.

P a r a t y p e s : 3♂ (SMF 34726), 2♀ (ZMMU), same locality, together with holotype, 7.-8.IV.1973. - 1♀ (SMF 34727), same locality, 3100-3200 m, 4.-6.IX.1970. - 4♀ (SMF 34728), L a l i t p u r D i s t r ., Kathmandu Valley, Phulchoki Mt., summit region, Quercus forest, 2600-2700 m, 25.-30.I.1970. - 1♀ (SMF 34729), same locality, 2475-2700 m, 19.III.1980. - 2♀ (ZMMU), R a m e c h a p D i s t r ., Jiri, Chordung Mt., 2330-2500 m, degraded scrub, I.1970. - 1♀ (SMF 34730), Jiri, Chordung Mt., 2330-2500 m, Rhododendron-Abies forest, 31.III.1973. - 1♂ (SMF 34731), same locality, 28.-29.III.1973. - 4♀ (SMF 34732), T a p l e j u n g D i s t r ., S of Gunsa, 4050-4270 m, alpine meadows, 10.IX.1983.

D i a g n o s i s : The new species seems especially closely related to *numilionis* n. sp., but differs from it by the absence of a cymbial proximal outgrowth, structure of the paracymbium, and shape of the lamella characteristic. Besides, the epigynal scape in *faustus* n. sp. differs from that of *numilionis* n. sp. by the deep notch for the stretcher to hinge into, as well as by the general outline of the epigyne in lateral view and abdominal coloration (sides dark in *faustus* n. sp., but pale in *numilionis* n. sp.).

D e s c r i p t i o n : ♂. Total length 2.08. Carapace: 0.98 long, 0.75 wide, pale brown, with a narrow dark margin. PME separated by their 0.75 D. Chelicerae: 0.43 long, anterior

margin with three teeth. Legs yellow. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-IV: 1-0-0-0. Leg I - 3.71 long ($0.98 + 0.28 + 0.90 + 0.90 + 0.65$), IV - 3.68 long ($1.00 + 0.28 + 0.90 + 0.90 + 0.60$). Tm I 0.20. Palp (Figs. 32-33): Cymbium without proximal outgrowth. Paracymbium at about midlength with a pointed outgrowth directed caudad. Lamella characteristic a large, both outer processes higher than both inner ones. Abdomen: 1.25 long, 0.78 wide, dorsally pale, with barely visible, transverse, pale bands.

♀. Total length 2.40. Carapace: 0.98 long, 0.70 wide, dark brown. PME separated by their 0.75 D. Chelicerae: 0.48 long, anterior margin with three teeth. Leg I - 3.89 long ($1.03 + 0.25 + 0.98 + 0.90 + 0.73$), IV - 3.59 long ($1.03 + 0.25 + 0.83 + 0.88 + 0.60$). Leg coloration and chaetotaxy as in ♂. Abdomen: 1.68 long, 1.15 wide, dorsal pattern varies, but almost as a fir-tree (>>>), lateral and ventral sides almost black. Epigyne as in Figs. 34-35.

Lepthyphantes bifurcatus n. sp.

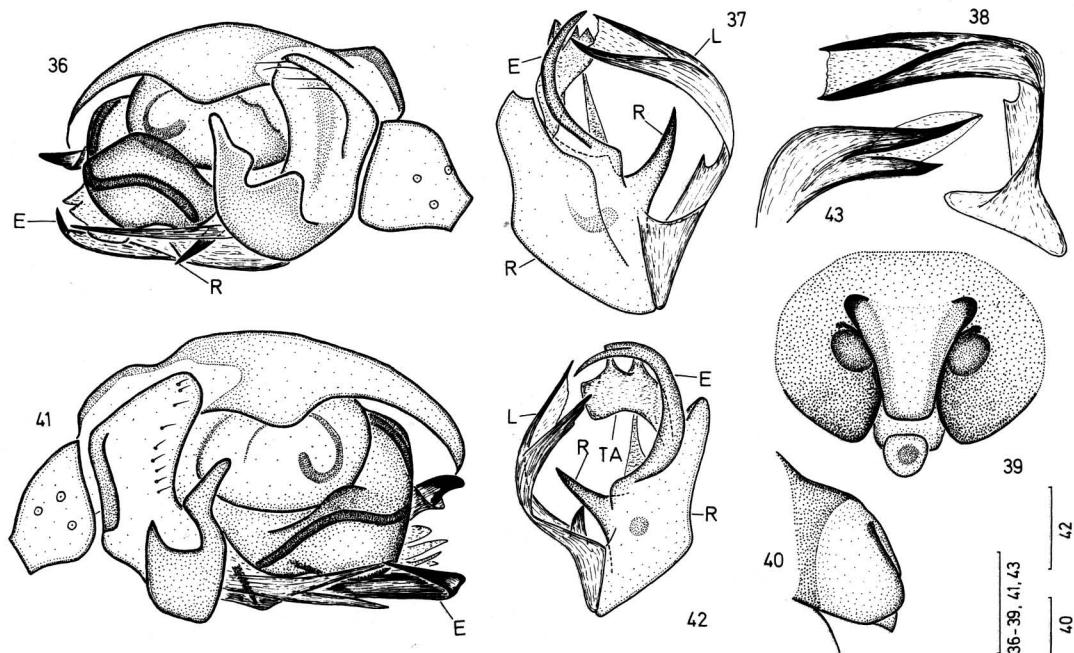
Figs. 36-40

H o l o t y p e : 1♂ (SMF 34733), N e p a l : P a r b a t D i s t r ., between Chitre and Ghandruk, Ghandruk side of pass, 2700-3100 m, Rhododendron-Tsuga-Acer forest, 7.V.1980.

P a r a t y p e s : 1♀ (SMF 34734), same locality, together with holotype, 7.V.1980. - 2♀ (SMF 34735), between Chitre and Ghandruk, 2800-2900 m, Chitre side of pass, Alnus-Quercus-Rhododendron forest, 6.V.1980. - 1♀ (ZMMU), between Sikha and Gorapani Pass, 2300-2700 m, Rhododendron forest. 11.VII.1973.

D i a g n o s i s : The new species is very closely related to *bifurcatoides* n. sp. (known only by ♂, see below), but differs by the better developed proximal keel-shaped outgrowth of the cymbium, form of the distal part of the paracymbium, shape of the terminal apophysis, as well as by certain details of both lamella characteristic and embolus. Both species in question are distinguishable from congeners by the presence of a fang-shaped radical apophysis and a well-developed and well-sclerotized terminal apophysis. The epigyne of *bifurcatoides* n. sp. is also quite peculiar, being characterized by the short scape and very closely adjacent lateral plates, which almost conceal the entire aperture.

D e s c r i p t i o n : ♂. Total length 1.75. Carapace: 0.78 long, 0.63 wide, greyish-brown. PME separated by their D. Chelicerae: 0.33 long. Legs greyish-brown. Chaetotaxy: Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-IV: 1-0-0-0. Leg I - 3.34 long



Figs. 36-40. *Leptyphantes bifurcatus* n. sp.; ♂ holotype and ♀ paratype. - 36) left ♂ palp, 37) embolic division of ♂ palp, 38) lamella characteristic, 39-40) epigyne, ventral and lateral views, respectively.

Figs. 41-43. *Leptyphantes bifurcatoides* n. sp.; holotype. - 41) right ♂ palp, 42) embolic division of ♂-palp, 43) lamella characteristic.

$(0.88 + 0.25 + 0.83 + 0.80 + 0.58)$, IV - 3.08 long $(0.80 + 0.25 + 0.75 + 0.78 + 0.50)$. Tm I 0.19. Palp (Figs. 36-38): Cymbium proximally with a keel-shaped outgrowth. Paracymbium toothless. Lamella characteristic deeply notched, its two branches being connected by a membrane. Radix with a long, sharp, fang-shaped apophysis very well-developed, falcate and well-sclerotized. Abdomen: 0.93 long, 0.58 wide, dark, with pale transverse bands.

♀. Total length 2.00. Carapace: 0.85 long, 0.65 wide, greyish-brown, with vague radial stripes and a narrow dark margin. PME separated by their 0.75 D. Chelicerae: 0.38 long, anterior margin with three teeth. Leg I - 3.34 long $(0.90 + 0.25 + 0.83 + 0.78 + 0.58)$, IV - 3.21 long $(0.88 + 0.25 + 0.75 + 0.78 + 0.55)$. Abdomen: 1.28 long, 0.80 wide. Epigyne as in Figs. 39-40. Leg coloration, chaetotaxy, abdominal dorsal pattern as in ♂.

Leptyphantes bifurcatoides n. sp.

Figs. 41-42

H o l o t y p e : 1♂ (SMF 34736), N e p a l , K a s k i D i s t r ., above Dhumpus, broadleaved forest, 2100 m, 8. & 10.V.1980.

D i a g n o s i s : This species seems particularly closely related to *bifurcatus* n. sp. (see its diagnosis).

D e s c r i p t i o n : ♂ (♀ unknown). Total length 1.75. Carapace: 0.85 long, 0.65 wide, pale brown, with a narrow darker margin. PME separated by their 0.75 D. Chelicerae 0.38 long. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-IV: 1-0-0-0. Tm I 0.22. Leg I - 3.61 long $(0.98 + 0.25 + 0.90 + 0.90 + 0.58)$, IV - 3.09 long $(0.83 + 0.23 + 0.75 + 0.80 + 0.48)$. Palp (Figs. 41-42): Cymbium with a poorly-developed, keel-shaped, proximal outgrowth. Distal part of paracymbium deeply emarginate. Lamella characteristic divided into two branches connected by a membrane. Radix with a long, pointed, claw-shaped process. Terminal apophysis very well-developed, falcate, well-sclerotized. Abdomen: 0.93 long, 0.55 wide, dark grey, dorsally with barely distinguishable, pale, transverse bands.

Leptyphantes nepalensis n. sp.

Figs. 44-48

H o l o t y p e : 1♂ (SMF 34737), N e p a l : S o l u k h u m b u D i s t r ., Khumbu, Pare, Nang-pa La Pass Valley, 3350 m, subalpine mixed forest,

14.-16.X.1970.

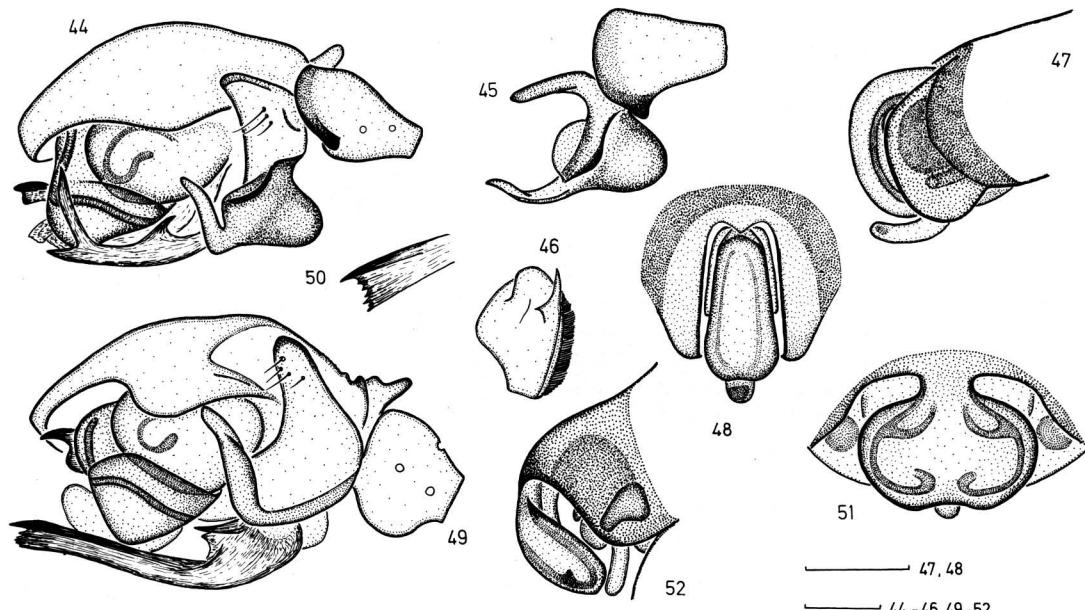
P a r a t y p e s : 2♂, 3♀ (SMF 34738), same locality, together with holotype, 14.-16.X.1970. - 2♂, 8♀ (SMF 34739), 2♂, 3♀ (ZMMU), Khumbu, Mt. Everest region, confluence of Imja and Phunki-Drangka, Betula forest, 3250-3300 m, 30.IX.-2.X.1970. - 1♂ (ZMMU), Mu s t a n g D i s t r ., Thakkhola, Chadziou-Khola, monsoon-influenced, dense, primary broadleaved forest in canyon, bamboo growth, 2700-2900 m, X.1969. - 2♂ (SMF 34740), Thakkhola, Thaksang above Tukche, 3150-3400 m, mainly *Pinus excelsa* forest, XI.1969. - 1♀ (SMF 34741), Thakkhola, Tukche to Thaksang, 2600-2900 m, dry coniferous forest, 1.VII.1973. - 1♀ (SMF 34742), P a r b a t D i s t r ., Gorapani Pass, S-Annapurna, Rhododendron forest, 2850-2900 m, 1.-14.XII.1969. - 2♀ (SMF 34743), M y a g d i D i s t r ., Thankur, N of Dhorpatan, humid Quercus forest, 3500 m, 26./27.V.1973. - 1♂, 1♀ (SMF 34744), Gustung Khola below Thankur, humid mixed forest in canyon, 2800 m, 28.V.1973. - 1♂ (SMF 34745), above resort Dhule near Sheng Khola, 3100-3600 m, Quercus forest, 30.V.1973. - 1♂, 1♀ (ZMMU), D o l p o D i s t r ., Gompa near Tarakot, upper Barbung Khola Valley, Picea-Betula forest, 3300-3400 m, 2.-6.VI.1973. - 1♂ (SMF 34746), Gompa near Tarakot, upper Barbung Khola Valley, Picea-Betula forest, 3300-3400 m, 11.-16.V.1970. - 2♀ (SMF 34747), G o r k h a D i s t r ., Buri Gandaki Valley, Nyak, *Pinus excelsa* forest, 2270-2450 m, 1.VIII.1983. - 2♀ (SMF 34748), Chuling Khola, 2800 m, Quercus forest, 2./3.VIII.

1983. - 1♀ (SMF 34749), Chuling Khola, 3000-3400 m, Abies-Quercus forest, 3.VIII.1983

D i a g n o s i s : The new species differs among congeners by the shape of the palpal tibia, structure of both cymbium and lamella characteristic. The presence of a fringe in the embolus displays affinities of *nepalensis* n. sp. with the Ancient Mediterranean *pinicola* SIMON 1884, the Middle Asian *uzbekistanicus* *uzbekistanicus* TANASEVITCH 1983, and *plumatus* TANASEVITCH 1986.

D e s c r i p t i o n : ♂. Total length 1.93. Carapace: 0.88 long, 0.65 wide, pale brown. PME separated by their R. Chelicerae: 0.38 long, anterior margin with three teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-III: 1-0-0-0. Leg I - 3.51 long (0.95 + 0.25 + 0.88 + 0.83 + 0.60), IV - 3.48 long (0.95 + 0.25 + 0.90 + 0.85 + 0.53). Tm I 0.23. Palp (Figs. 44-46): Cymbium with a proximal conical outgrowth. Paracymbium toothless, distally with a large, rounded swelling of variable development. Lamella characteristic distally biramous, its upper branch being directed dorsad. Embolus fringed at margin. Abdomen: 1.08 long, 0.70 wide, grey.

♀. Total length 1.98. Carapace: 0.90 long, 0.63 wide, pale brown, with a dark margin.



Figs. 44-48. *Leptyphantes nepalensis* n. sp.; ♂ and ♀ paratypes, Pare. - 44) left ♂ palp, 45) ♂ tibia and paracymbium, dorsal view, 46) embolus, 47) epigyne, lateral view, 48) epigyne, ventral view.

Figs. 49-52. *Leptyphantes rotundatus* n. sp.; ♂ paratype, Thankur; ♀ paratype, SW Dhaulagiri. - 49) left ♂ palp, 50) apex of lamella characteristic, 51) epigyne, ventral view, 52) epigyne, lateral view.

PME separated by their D. Chelicerae: 0.38 long, anterior margin with three teeth. Leg coloration and chaetotaxy as in ♂. Leg I - 3.09 long ($0.80 + 0.25 + 0.78 + 0.73 + 0.53$), IV - 3.17 long ($0.88 + 0.23 + 0.83 + 0.73 + 0.50$). Abdomen: 1.38 long, 0.83 wide, grey. Epigyne as in Figs. 47-48.

***Lepthyphantes ancoriformis* n. sp.**

Figs. 53-57

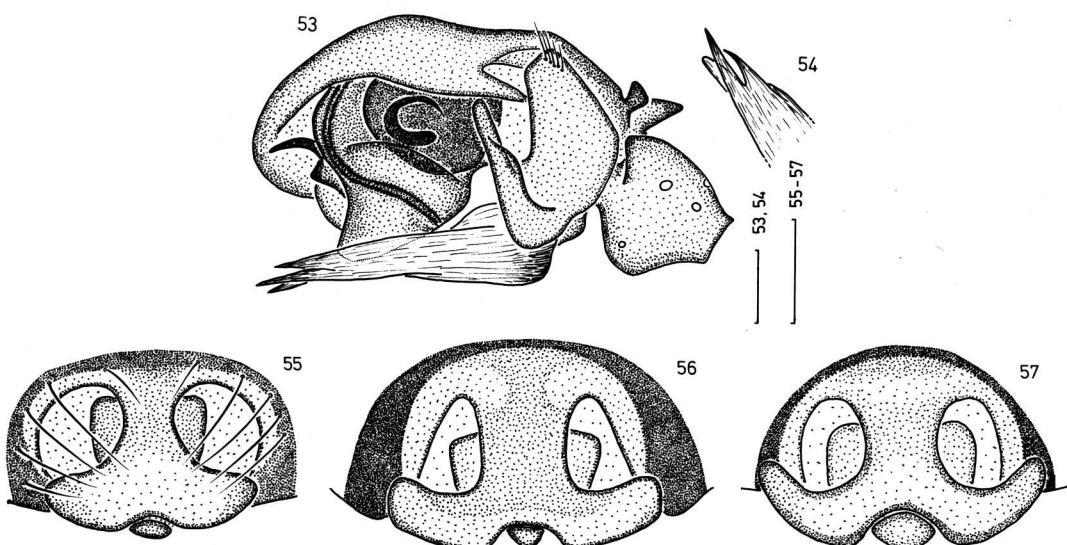
H o l o t y p e : 1♂ (SMF 34750), N e p a l : R a s u w a D i s t r ., Trisuli Valley, Gosainkund, Syng Gyang, 3200 m, Abies forest, 25.IV.1973.

P a r a t y p e s : 3♀ (SMF 34751), same locality, together with holotype, 25.IV.1973. - 1♀ (SMF 34752), Gosainkund, 2700-3000 m, mixed forest mainly of Quercus, 23.IV.1973. - 1♀, 1 juv. (SMF 34753), M u s t a n g D i s t r ., Thakkhola, Dambush-Tak, 3770-4100 m, alpine belt, 7.-13.X.1969. - 1♀ (SMF 34754), Thakkhola, Thaksang above Tukche, 3150-3400 m, Pinus excelsa forest, XI. 1969. - 2♀ (SMF 34755), 3♀ (ZMMU), Thaksang above Tukche, 3150-3200 m, 2.-4. VII.1973. - 1♀ (SMF 34756), Thaksang above Tukche, 3100-3400 m, 5.-10.VII.1970. - 1♀ (SMF 34757), Thakkhola, upper Dambush Khola, 3770-4100 m, alpine belt, 7.-13.X.1969. - 1♀ (SMF 34758), P a r b a t D i s t r ., Gorapani Pass, S-Annapurna, Rhododendron forest, 3130 m, 10.-14.XII.1969. - 1♀ (SMF 34759), between Chitre and Ghandrung, Chitre side of pass, Abies-Rhododendron forest, 2950-3050 m, 5.V. 1980. - 1♀ (SMF 34760), M y a g d i D i s t r ., Dhorpatan, SW-Dhaulagiri, coniferous forest, 3000 m, 16.V.1973. - 3♀ (SMF 34761), Dhorpatan to Thankur, Rhododendron forest, between pebbles, 3600-4000 m,

25.V.1973. - 1♀ (SMF 34762), Dhorpatan to Tarakot between Thankur and Pelma, under logs near stream, 3000 m, 28.V.1973. - 1♀ (SMF 34763), Thankur N of Dhorpatan, humid Quercus forest, 3350 m, 26./27.V.1973. - 1♀ (ZMMU), Gustung Khola below Thankur, humid mixed forest in canyon, 2800 m, 28.V.1973. - 1♀ (SMF 34764), D o l p o D i s t r ., Gompa near Tarakot, upper Barbung Khola Valley, Picea-Betula forest, 3400 m, 6.VI.1973.

D i a g n o s i s : The new species is conspicuous in the proximal outgrowth of the cymbium and shape of the lamella characteristica. The form of the epigyne in *ancoriformis* n. sp. is highly variable (cp. Figs. 55 & 56), sometimes (Fig. 57) being similar to that in *minhenensis* ZHU & LI 1983, known by ♀♀ from Qinhai Prov., China. However, both species in question differ well enough by the structure of the vulva.

D e s c r i p t i o n : ♂. Total length 2.25. Carapace: 1.03 long, 0.85 wide, pale brown, with a narrow dark margin. PME separated by their 0.75 D. Chelicerae: 0.55 long, anterior margin with two teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-III: 1-0-0-0. Leg I - 4.71 long ($1.18 + 0.35 + 1.13 + 1.20 + 0.85$), IV - 4.31 long ($1.20 + 0.30 + 1.00 + 1.13 + 0.68$). Tm I 0.26. Palp (Figs. 53-54): Cymbium proximally with a button-shaped and a conical outgrowth. Paracymbium toothless. Tegulum ventrally elongated conically. Lamella characteristica long, broad, apically trifid. Abdomen: 1.20 long, 0.73 wide, dorsally pale, anterior half



Figs. 53-57. *Lepthyphantes ancoriformis* n. sp.; holotype and ♀♀ paratypes. - 53) left ♂ palp, 54) apex of lamella characteristica, 55-57) epigyne, ventral view; from Gosainkund, Thankur and Thaksang, respectively.

with a dark median stripe flanked by an oblong spot from each side, posterior half with dark transverse bands.

♀. Total length 2.23. Carapace: 1.00 long, 0.85 wide, reddish-brown, with a narrow dark margin. PME separated by their 0.75 D. Chelicerae: 0.48 long, anterior margin with three teeth. Leg coloration and chaetotaxy as in ♂. Leg I - 4.01 long ($1.05 + 0.33 + 0.95 + 0.98 + 0.70$), IV - 3.76 long ($1.10 + 0.30 + 0.88 + 0.88 + 0.60$). Abdomen: 1.48 long, 0.93 wide, dorsally pale, with dark transverse waved bands. Shape of epigyne very variable. - s. Figs. 55-57 (Figs. 55 & 57 are extremes of the variation).

Leptyphantes setifer n. sp.

Figs. 58-61

H o l o t y p e : 1♂ (SMF 34765), N e p a l , Dolpo D i s t r ., Dolpo, between Passes Zö La and Büko La, 4900-4800 m, 19.VI.1973.

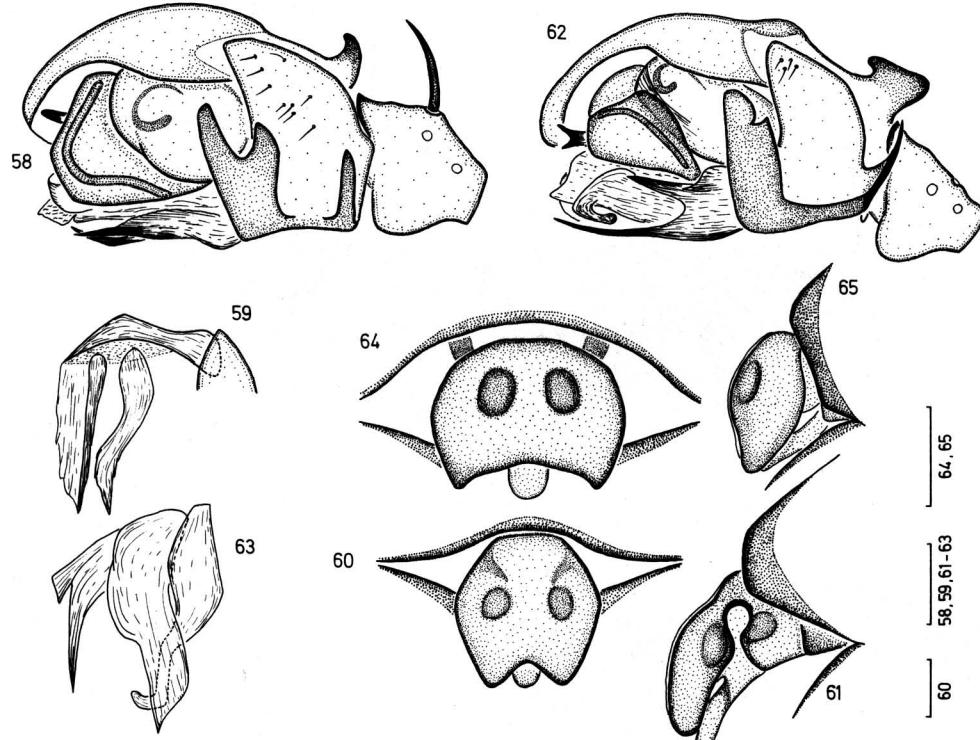
P a r a t y p e s : 2♀ (SMF 34766), same locality, together with holotype, 19.VI.1973.

D i a g n o s i s : The new species is closely related to *yetti* n. sp., but differs by the

presence of a peculiar thick dorsal seta on the palpal tibia in ♂, shape of the proximal cymbial outgrowth, certain structural details of the paracymbium, of the lamella characteristica in ♂ and of the epigynal scape in ♀.

D e s c r i p t i o n : ♂. Total length 2.10. Carapace: 0.95 long, 0.80 wide, brown, with a dark margin. PME separated by their R. Chelicerae: 0.43 long, anterior margin with two teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-2, II: 2-0-1-1, III-IV: 2-1-0-1; Mt I-IV: 1-0-0-0 (in holotype Mt IV: 1-0-0-1). Leg I - 4.51 long ($1.20 + 0.25 + 1.23 + 1.13 + 0.70$), IV - 4.43 long ($1.20 + 0.25 + 1.15 + 1.03 + 0.80$). Tm I 0.29. Palp (Figs. 58-59): Tibia with a strong dorsal seta. Cymbium with an unciform proximal outgrowth. Distal part of paracymbium with three sclerotized outgrowths. Lamella characteristica complex, trilobate. Abdomen: 1.25 long, 0.75 wide, dorsally pale, on anterior half with a median stripe and numerous dark spots or markings scattered throughout dorsal surface.

♀. Total length 2.50. Carapace: 1.03 long, 0.75 wide. PME separated by their D. Chelicerae: 0.45 long, anterior margin with three teeth. Leg coloration and chaetotaxy as in ♂.



Figs. 58-61. *Leptyphantes setifer* n. sp.; holotype and ♀ paratypes. - 58) left ♂ palp, 59) lamella characteristica, 60) epigyne, ventral view, 61) epigyne, lateral view.

Figs. 62-65. *Leptyphantes yeti* n. sp.; holotype and ♀ paratype. - 62) left ♂ palp, 63) lamella characteristica, 64) epigyne, ventral view, 65) epigyne, lateral view.

Leg I - 4.62 long ($1.23 + 0.33 + 1.18 + 1.10 + 0.78$), IV - 4.44 ($1.25 + 0.33 + 1.03 + 1.08 + 0.75$). Abdomen: 1.73 long, 1.00 wide, dorsal pattern as in ♂. Epigyne as in Figs. 60-61.

R e m a r k s : Such a trilobate appearance of the lamella characteristic in both *setifer* n. sp. and *yetti* n. sp. (see below), as well as the highly similar and conspicuous structure of the epigyne make these two forms well isolated within the genus. Furthermore, the presence of such a strong seta on the palpal tibia in ♂ in *setifer* n. sp. makes this species unique and well disjunct not only within the entire genus *Lepthyphantes*, but perhaps among all the Micronetinae.

Lepthyphantes yetti n. sp.

Figs. 62-65

H o l o t y p e : ♂ (SMF 34767), N e p a l , S o l u k h u m b u D i s t r ., Khumbu, foot of Everest Mt., Kalar Pattar Mt., 5500-5545 m, 26.IX. 1970.

P a r a t y p e s : 2♀, 1 juv. (SMF 34768), same locality, together with holotype, 26.IX.1970.

D i a g n o s i s : The new species seems particularly closely related to *setifer* n. sp. (see its diagnosis).

D e s c r i p t i o n : ♂. Total length 2.20. Carapace: 1.00 long, 0.88 wide, brown, with a dark margin. PME separated by their 0.75 D. Chelicerae: 0.48, anterior margin with three teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-2, II: 2-0-1-1, III-IV: 2-1-1-0; Mt I-IV: 1-0-0-0. Leg I - 4.09 long ($1.05 + 0.25 + 1.13 + 1.03 + 0.63$), IV - 4.21 long ($1.10 + 0.25 + 1.10 + 1.13 + 0.63$). Tm I 0.28. Palp (Figs. 62-63): Cymbium with a subseculariform proximal outgrowth. Paracymbium with a slender tooth projecting dorsally to main axis. Lamella characteristic large, trilobate. Abdomen: 1.25 long, 0.78 wide, dorsally pale, on anterior part with a fir-tree pattern (>>>) gradually turning on posterior half into a number of transverse bands.

♀. Total length 2.13. Carapace: 0.93 long, 0.75 wide. PME separated by their 0.75 D. Chelicerae: 0.40 long, anterior margin with three teeth. Leg I - 3.85 long ($1.05 + 0.25 + 1.00 + 0.95 + 0.60$), IV - 3.98 long ($1.13 + 0.25 + 1.00 + 1.00 + 0.60$). Abdomen: 1.28 long, 0.88 wide. Epigyne as in Figs. 64-65. Body and leg coloration, chaetotaxy as in ♂.

Lepthyphantes theosophicus n. sp.

Figs. 66-69

H o l o t y p e : ♂ (SMF 34769), N e p a l , L a l i t p u r D i s t r ., Kathmandu Valley, Phul-

choki Mt., summit region, Quercus forest, 2600-2700 m, 25.-30.I.1970.

P a r a t y p e s : 1♂, 4♀ (SMF 34770), same locality, together with holotype, 25.-30.I.1970. - 1♀ (ZMMU), Phulchoki Mt., Quercus semecarpifolia forest, 2600-2650 m, 21. & 22.III.1980. - 1♀ (SMF 34771), Phulchoki Mt., 2600-2650 m, 14.V.1980. - 1♀ (ZMMU), Phulchoki Mt., 2000-2300 m, 19.III.1980. - 1♂, 1♀ (SMF 34772), Phulchoki Mt., 2475-2700 m, 19.III.1980.

D i a g n o s i s : This new species is characterized by the shape of the cymbial proximal outgrowth, structure of both paracymbium in ♂ and epigyne in ♀.

D e s c r i p t i o n : ♂. Total length 2.25. Carapace: 1.05 long, 0.90 wide, brown. PME separated by their D. Chelicerae: 0.50 long, anterior margin with two teeth. Legs yellow. Chaetotaxy: though the majority of spines on tibiae are torn off in all specimens (♂, ♀), ventral spines can be stated as present with fair certainty; Mt I-IV: 1-0-0-0. Leg I - 4.90 long ($1.25 + 0.30 + 1.25 + 1.30 + 0.80$), IV - 4.15 long ($1.15 + 0.25 + 1.00 + 1.10 + 0.65$). Tm I 0.21. Palp (Figs. 66-67): Cymbium with a rounded proximal outgrowth. Paracymbium with a small, pointed, ventral process (x - in Fig. 66). Lamella characteristic rounded, broad. Abdomen: 1.30 long, 1.00 wide, dorsal pattern varies significantly, but mainly consists of a dark, broad, median stripe over pale background which splits on posterior half into transverse bands.

♀. Total length 2.50. Carapace: 1.05 long, 0.90 wide, dark brown. PME separated by their D. Chelicerae: 0.50 long, anterior margin with three teeth. Legs yellow. Spines torn off. Leg I - 4.05 long ($1.10 + 0.30 + 1.00 + 1.00 + 0.65$), IV - 3.95 long ($1.10 + 0.25 + 0.95 + 1.00 + 0.65$). Abdomen: 1.30 long, 1.00 wide, dorsal pattern similar to that in ♂. Epigyne as in Figs. 68-69.

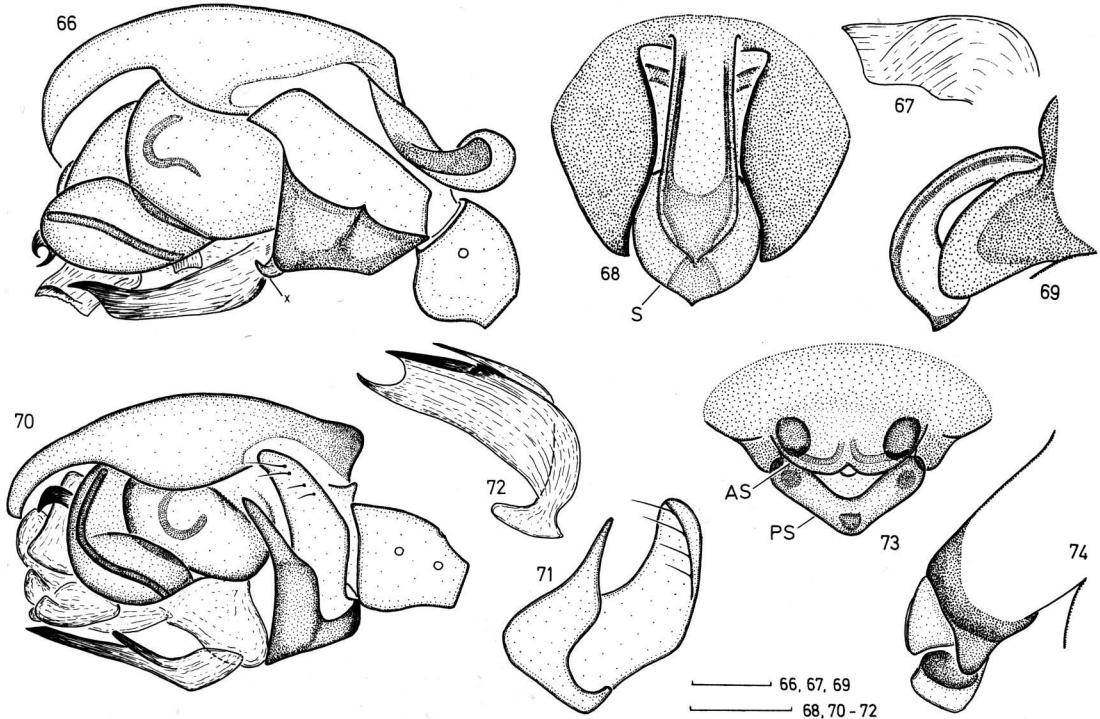
Lepthyphantes rotundatus n. sp.

Figs. 49-52

H o l o t y p e : ♂ (SMF 34773), N e p a l , M y a g d i D i s t r ., Dhorpatan, SW of Dhaulagiri, 3000-3200 m, coniferous forest, IV.1970.

P a r a t y p e s : 1♀ (SMF 34774), same locality, together with holotype, IV.1970. - 2♂, 1♀ (ZMMU), Dhorpatan to Thankur, Rhododendron forest, between pebbles, 3600-4000 m, 25.V.1973. - 3♂, 1♀ (SMF 34775), ♂, 1♀ (ZMMU), Thankur, N of Dhorpatan, humid Quercus forest, 3350 m, 26. & 27.V.1973.

D i a g n o s i s : This species is characterized by the shape of the proximal cymbial outgrowth, of the lamella characteristic, and the structure of the epigyne. By its scape, ro-



Figs. 66-69. *Lepthyphantes theosophicus* n. sp.; ♂ and ♀ paratypes. - 66) left ♂ palp, 67) lamella characteristica, 68) epigyne, ventral view, 69) epigyne, lateral view.

Figs. 70-74. *Lepthyphantes asceticus* n. sp.; ♂ and ♀ paratypes. - 70) left ♂ palp, 71) paracymbium, 72) lamella characteristica, 73) epigyne, ventral view, 74) epigyne, lateral view.

tundatus n. sp. displays certain affinities with the afer-group (s. BRIGNOLI 1971), the species of which have, however, ventral spines on the tibiae.

Description: ♂. Total length 2.25. Carapace: 1.10 long, 0.85 wide, brown, with a darker margin. PME separated by their 0.75 D. Chelicerae: 0.55 long, anterior margin with two teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0. II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-IV: 1-0-0-0. Leg I - 4.26 long (1.10 + 0.33 + 1.08 + 1.00 + 0.75), IV - 4.01 long (1.15 + 0.35 + 0.93 + 0.98 + 0.60). Tm I 0.26. Palp (Figs. 49-50): Cymbium with two small proximal outgrowths, paracymbium toothless. Lamella characteristica slender and long, apically serrate. Abdomen: 1.23 long, 0.75 wide, dorsally pale, on anterior part with a dark median stripe flanked with spots from each side, on posterior half with transverse bands.

♀. Total length 2.40. Carapace: 1.08 long, 0.70 wide, brown, with a narrow dark margin. PME separated by their D. Chelicerae: 0.53 long, anterior margin with three teeth. Legs pale brown, sometimes leg joints with poorly expressed darker rings, apices of joints slightly darkened. Chaetotaxy as in ♂. Leg I - 3.54 long

(0.95 + 0.30 + 0.93 + 0.78 + 0.58), IV - 3.41 long (0.93 + 0.30 + 0.90 + 0.75 + 0.53). Abdomen: 1.50 long, 0.88 wide, dorsally with a wide median stripe turning on posterior half into a number of transverse bands. Epigyne as in Figs. 51-52.

Lepthyphantes occultus n. sp.

Figs. 75-78

Holotype: ♂ (SMF 34776), Nepal, Solukhumbu Distr., Khumbu, Pare, Nangpa La Pass Valley, 3350 m, subalpine mixed forest, 14.-16.X.1970.

Paratypes: 2♂, 2♀, 1 juv. (SMF 34777), same locality, together with holotype, 14.-16.X.1970.

Diagnosis: This species is characterized by the conspicuous shape of the lamella characteristica in ♂ and structure of the epigyne in ♀.

Description: ♂. Total length 2.25. Carapace: 1.08 long, 0.85 wide, with a narrow darker margin. PME separated by their R. Chelicerae: 0.50 long, anterior margin with three teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-

0-0; Mt I-IV: 1-0-0-0. Leg I - 4.14 long ($1.10 + 0.33 + 1.00 + 0.98 + 0.73$), IV - 4.01 long ($1.10 + 0.33 + 1.00 + 0.95 + 0.63$). Tm I 0.21. Palp (Figs. 75-76): Cymbium with a small proximal tubercle. Paracymbium toothless. Lamella characteristica long, bifurcate at distal third. Abdomen: 1.40 long, 0.90 wide, dorsally with a wide, dark, median stripe splitting on posterior half into several transverse bands.

♀. Total length 2.10. Carapace: 0.93 long, 0.73 wide. PME separated by their R. Chelicerae: 0.45 long, anterior margin with three teeth. Leg I - 3.46 long ($0.95 + 0.28 + 0.80 + 0.80 + 0.63$), IV - 3.36 long ($0.95 + 0.25 + 0.83 + 0.78 + 0.55$). Abdomen: 1.25 long, 0.85 wide, dorsal pattern variable, though generally similar to that in ♂. Epigyne as in Figs. 77-78. Body and leg coloration, chaetotaxy as in ♂.

Leptyphantes asceticus n. sp.

Figs. 70-74

H o l o t y p e : 1♂ (SMF 34778), N e p a l : I l a m D i s t r ., Mai Pokhari, 2100-2200 m, forest, 25. & 27.III.1980.

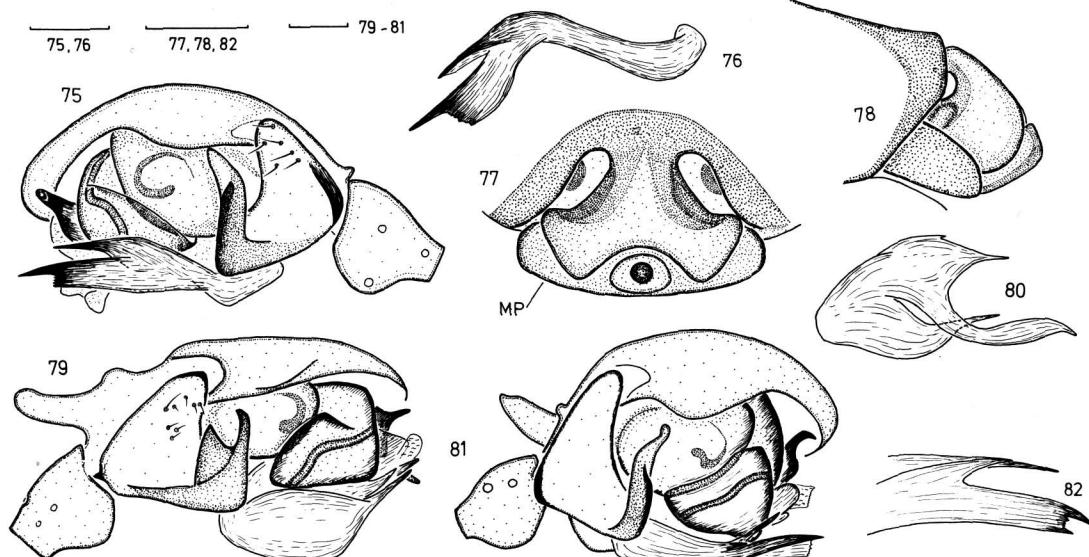
P a r a t y p e s : 2♂, 2♀ (SMF 34779), same locality, together with holotype, 25. & 27.III.1980.

D i a g n o s i s : This species is charac-

terized by the conspicuous structure of the epigyne in ♀ and shape of lamella characteristica in ♂.

D e s c r i p t i o n : ♂. Total length 1.73. Carapace: 0.88 long, 0.70 wide, brown. PME separated by their R. Chelicerae: 0.35 long, anterior margin with two (three) teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-III: 1-0-0-0. Leg I - 3.98 long ($1.05 + 0.25 + 1.00 + 1.00 + 0.68$), IV - 3.52 long ($1.03 + 0.23 + 0.83 + 0.90 + 0.53$). Tm I 0.20. Palp (Figs. 70-72): Cymbium with a rounded proximal outgrowth carrying a small tubercle at base. Paracymbium toothless. Lamella characteristica broad, apically roundly concave. Abdomen: 0.90 long, 0.63 wide, laterally pale, ventrally dark, dorsally with a wide dark medial stripe splitting on posterior half into a number of transverse bands.

♀. Total length 2.18. Carapace: 0.95 long, 0.73 wide, PME separated by their R. Chelicerae: 0.38 long, anterior margin with three teeth. Leg I - 3.63 long ($0.98 + 0.25 + 0.90 + 0.85 + 0.65$), IV - 3.26 long ($0.95 + 0.23 + 0.75 + 0.80 + 0.53$). Abdomen: 1.48 long, 1.00 wide. Epigyne as in Figs. 73-74. Body and leg coloration, chaetotaxy as in ♂.



Figs. 75-78. *Leptyphantes occultus* n. sp.; ♂ and ♀ paratypes. - 75) left ♂ palp, 76) lamella characteristica, 77) epigyne, ventral view, 78) epigyne, lateral view.

Figs. 79-80. *Leptyphantes alticola* n. sp.; ♂ holotype. - 79) right ♂ palp, 80) lamella characteristica..

Figs. 81-82. *Leptyphantes anachoretus* n. sp.; ♂ holotype. - 81) right ♂ palp, 82) lamella characteristica.

Leptyphantes alticola n. sp.

Figs. 79-80

Holotype: ♂ (SMF 34780), Nepal, Mustang Distr., Dapa-Col above Tukche, between rocky debris, 5030-5100 m, 14.-17.VII.1970.

Diagnosis: Hitherto known but by a single ♂, this new species is characterized by the long proximal outgrowth of the cymbium, shape of both paracymbium and lamella characteristica, as well as by the Tm I being 0.53 (in the majority of congeners this index is less than 0.30). By the form of both cymbium and paracymbium, *alticola* n. sp. is rather closely related to *sherpa* n. sp., but differs well from it by the shape of the lamella characteristica.

Description: ♂ (♀ unknown). Carapace: 0.98 long, 0.78 wide, pale brown. PME separated by their D. Chelicerae: 0.50 long, anterior margin with two teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I-II: 2-1-1-2, III-IV: 2-1-1-1; Mt I-III: 1-0-0-0 (Mt IV - ?). Leg I - 4.62 long ($1.23 + 0.25 + 1.23 + 1.13 + 0.78$), IV - 4.65 long ($1.25 - 0.27 + 1.20 + 1.20 + 0.73$). Tm I 0.53. Palp (Figs. 79-80): Cymbium with a long proximal outgrowth and a rounded tubercle at latter's base. Lamella characteristica very large, complex, with a deep notch. Abdomen missing.

Leptyphantes anachoretus n. sp.

Figs. 81-82

Holotype: ♂ (SMF 34781), Nepal, Mustang Distr., Thakkhola, from Tukche to Dapa-Col, 3900-4200 m, alpine belt, 12. & 17.VII. 1970.

Diagnosis: The new species is characterized by the long proximal process of the cymbium, shape of both paracymbium and lamella characteristica.

Description: ♂ (♀ unknown). Carapace: 1.20 long, 1.00 wide, dark brown. PME separated by their D. Chelicerae: 0.75 long, anterior margin with two teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-IV: 1-0-0-0. Leg I - 5.30 long ($1.30 + 0.35 + 1.40 + 1.35 + 0.90$), IV - 4.85 long ($1.30 + 0.30 + 1.20 + 1.30 + 0.75$). Tm I 0.20. Palp (Figs. 81-82): Cymbium proximally with a long, apically pointed process and a small tubercle. Paracymbium toothless. Lamella characteristica large, well notched. Abdomen missing.

Leptyphantes sherpa n. sp.

Figs. 83-86

Holotype: ♂ (SMF 34782), Nepal, Dolpo Distr., Dolpo, between Passes Zö La

and Büko La, under stones, naked slope, 4800-4900 m, 19.VI.1973.

Para types: 1♀ (SMF 34783), same locality, together with holotype, 19.VI.1973. - 2♀ (SMF 34784), Ringmo on Phoksumdo Lake, pebble, Salix stand, 4000-4100 m, 3.-14.VI.1970.

Diagnosis: This species is characterized by the long proximal cymbial outgrowth, structure of the paracymbium and especially of the lamella characteristica in ♂. The shape of the epigyne in ♀ rather commonplace, though it seems to be generally characteristic of the species, lacking ventral spines on the tibiae.

Description: ♂. Total length 2.00. Carapace: 0.88 long, 0.70 wide, brown, with darker margin. PME separated by their D. Chelicerae: 0.38 long, anterior margin with two teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-1, II-IV: 2-?-?-?; Mt I-III: 1-0-0-0 (Mt IV - ?). Leg I - 3.66 long ($0.90 + 0.25 + 0.98 + 0.90 + 0.63$), IV - 2.90 long ($0.80 + 0.25 + 0.70 + 0.65 + 0.50$). Tm I 0.21. Palp (Figs. 83-84): Cymbium with a long proximal outgrowth carrying a small tubercle at base. Paracymbium with a long, slender, slightly curved process directed caudad. Lamella characteristica broad, being a midlength branch in the form of a narrow arched ribbon bifid at tip. Abdomen: 1.10 long, 0.63 wide, dark grey.

♀. Total length 2.05. Carapace: 0.78 long, 0.63 wide, dark brown, PME separated by their D. Chelicerae: 0.38 long, anterior margin with three teeth. Legs brown, spines torn off. Leg IV - 2.92 long ($0.78 + 0.25 + 0.73 + 0.68 + 0.48$). Abdomen: 1.25 long, 0.75 wide, dark grey. Epigyne as in Figs. 85-86.

Leptyphantes uzbekistanicus himalayensis

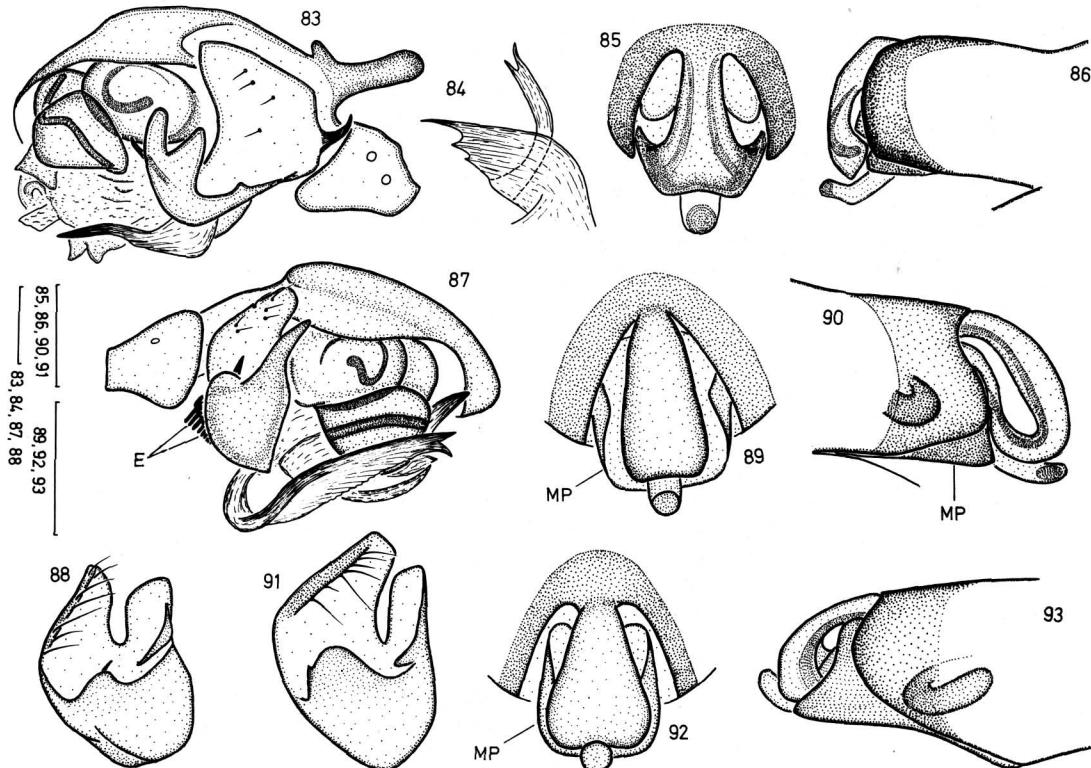
n. subsp.

Figs. 87-90

1987 *Leptyphantes prope pinicola*, - THALER, in: "Beiträge zur Fauna, Faunengenese und Zoogeographie des Nepal-Himalaya", Courier Forsch.-Inst. Senckenberg, 93: 37.

Holotype: ♂ (SMF 34785), Nepal, Mustang Distr., Thakkhola, from Tukche to Thaksang, 2650-2950 m, Cupressus-Pinus forest, 26.IV. 1980.

Para types: 1♂, 2♀ (SMF 34786), same locality, together with holotype, 26.IV.1980. - 1♂, 10♀ (SMF 34787), 3♂, 4♀ (ZMMU), Purano Marpha, 3200-3600 m, Pinus Cupressus-Abies forest, 22./25.IV.1980. - 1♂, 1♀ (SMF 34788), Thakkhola, from Tukche to Thaksang, 2950-3050 m, Pinus-Abies-Picea forest, 26.IV. 1980. - 1♂, 1♀ subad. (SMF 34789), Thakkhola, Tukche, left side of valley, coniferous forest, 2600-2800 m,



Figs. 83-86. *Leptophantes sherpa* n. sp.; ♂ holotype and ♀ paratype. - 83) left ♂ palp, 84) lamella characteristica, 85) epigyne, ventral view, 86) epigyne, lateral view.

Figs. 87-90. *Leptophantes uzbekistanicus himalayensis* n. subsp.; ♂ and ♀ paratypes, Purano Marpha. - 87) right ♂ palp, 88) paracymbium, 89) epigyne, ventral view, 90) epigyne, lateral view.

Figs. 91-93. *Leptophantes uzbekistanicus uzbekistanicus* TANASEVITCH 1983; ♂ and ♀, Aravan, Kirghizia, USSR. - 91) paracymbium, 92) epigyne, ventral view, 93) epigyne, lateral view.

2.X.1969. - 3♂, 3♀ (SMF 34790), Thakkola, Purano Marpha, 3100-3400 m, dry coniferous forest, 13.-20. III.1974. - 1♂, 1♀ subad. (SMF 34791), Thakkola, Tukche, 2650 m, 26.II.1974. - 3♀ (SMF 34792), Manang District, Marsyandi, 3000-3300 m, near Airport, *Pinus-Cupressus* forest, 18.IV.1980.

Diagnosis: The new subspecies differs from nominate *uzbekistanicus uzbekistanicus* TANASEVITCH 1983, restricted to Tien-Shang, Middle Asia (s. TANASEVITCH 1983), chiefly by the darker body coloration and the structure of the epigyne (a longer and slender scape, the median plate not projecting beyond the lateral plates - cp. Figs. 89-90 & 92-93). By the structure of the male palp, the nominate form is almost identical to *u. himalayensis* n. subsp. and differs only by the structure of the paracymbium (cp. Figs. 88 & 91).

Description: ♂. Total length 1.88. Carapace: 0.80 long, 0.68 wide, reddish-brown,

with a narrow dark margin. PME separated by their R. Chelicerae: 0.28 long, anterior margin with three teeth. Legs pale brown. Chaetotaxy. Fe I: 0-1-0-0; Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-III: 1-0-0-0. Leg I - 3.46 long ($0.90 + 0.25 + 0.88 + 0.85 + 0.58$), IV - 3.53 long ($0.95 + 0.25 + 0.90 + 0.90 + 0.53$). Tm I 0.21. Palp as in Figs. 87-88. Abdomen: 1.00 long, 0.65 wide, dark grey.

♀. Total length 1.93. Carapace: 0.73 long, 0.63 wide. PME separated by their D. Chelicerae: 0.30 long, anterior margin with three teeth. Leg I - 2.86 long ($0.80 + 0.23 + 0.73 + 0.65 + 0.45$), IV - 3.07 long ($0.88 + 0.23 + 0.75 + 0.73 + 0.48$). Abdomen: 1.33 long, 0.85 wide. Body and leg coloration as in ♂. Epigyne as in Figs. 89-90.

Remarks: This subspecies has already been recorded from the Himalayas of Kashmir/Ladakh under the name of *L. prope pinicola* SIMON 1884 by THALER (1987).

Zoogeography

Besides the 22 species or subspecies of *Leptyphantes* treated above, the material at hand contains at least another half dozen forms, possibly new ones. Unfortunately, these are represented only by ♀♀, and I refrain from describing them.

Taking the above point into account, the Nepalese fauna of *Leptyphantes* comprises at least 30 species, even this figure obviously not fully reflecting the entire regional diversity of the genus. However, even at the present, the fauna of Nepal is almost equal to those of all Siberia and the Far East (s. TANASEVITCH & ESKOV 1987) and of Soviet Middle Asia. And like, e. g., the Middle Asian fauna, that of Nepal is characterized, besides its richness and diversity, by the high-level endemism. There can be no doubt whatever that the majority of the above new *Leptyphantes* are endemic in the Himalayas, with only a single species, *nebulosoides* WUNDERLICH 1977, currently known also outside this system, namely in Middle Asia.

Systematically, the genus *Leptyphantes* of

Nepal is characterized by the presence of numerous taxonomically isolated and disjunct species; in particular it harbours a highly homogenous and distinct species set - the *martensi*-group. Polymorphism in many species, as well as the existence of very closely related forms within a relatively small area are also noteworthy, being perhaps due to isolation of differently aged populations in the conditions of a highly differentiated mountain system. The discovery of *L. yeti* n. sp. at an altitude of 5500-5545 m (Everest Mt.) is perhaps the highest not only for the genus, but also for the entire family Linyphiidae.

The absence of widespread forms, very feeble zoogeographical connections with Middle Asian or Ancient Mediterranean species, no evident relations with the Siberian fauna, as well as the high-level endemism permit to regard the Himalayas as an ancient and, to a considerable extent, an autonomous center of diversification of *Leptyphantes* in Asia and in the Palaearctic as a whole.

Ecology

In Nepal, *Leptyphantes* belongs to the Palaearctic set of genera - a fact clearly revealed by the altitudinal distribution of the 22 species in question. Up to now, no species has been recorded below 2000 m, and the highest record is 5545 m on the top of Kalar Pattar, opposite Mt. Everest. The lowest records are already well within the Oriental realm and the southern slopes of the Nepal Himalayas and fall within the subtropical broad-leaved forests. Those comparatively low altitudes, as regards Palaearctic affinities in the Himalaya, are secondarily colonized. This fact is known also from other Arachnida of the region (MARTENS 1979). Higher records than those mentioned are to be expected. Snow line in many north-facing slopes exceeds 6000 m, and such extreme altitudes may be inhabited by pioneer *Leptyphantes*.

The vertical distributional belt of *Leptyphantes* in Nepal as presently known covers roughly 3500 m, but none of the species in question settles all parts of this ecologically extremely diverse altitudinal belt. On the contrary, vertical distribution seems to be quite limited in the single species, even in those with many records already at hand (see table 1). A vertical belt of 2000 m, (*L. faustus*) is already unusual, but about 1500 m seems to fit for many species (*L. ancoriformis*, *L. digitulus*,

L. grandiculus, *L. martensi*, *L. nepalensis*, *L. numilionis*). For apparently rarer and/or ecologically more limited species no statements are possible at present.

Within the vertical belt given, the distribution of the species is by no means homogenous. Only one species, *L. martensi*, settles within climates of high monsoon precipitation of the southern slopes as well as in markedly dryer forest habitats north of the main range. Forestless biotopes are inhabited only in high altitudes above timber line, which are generally moist enough. All other species seem to have clear preferences. For example, *L. grandiculus* and *L. nepalensis* are species of low altitudes, nearly exclusively on the southern slopes. *L. zbekistanicus himalayensis* and *L. nebulosoides* are known only from the dry inner Himalayan belt north of the main range. This is in accordance with the general distribution of both species in Central Asia. Of special interest are the species which we have known until now only from very high altitudes and very few specimens (*L. alticola*, *L. setifer*, *L. sherpa*, *L. yeti*; see table 1). All originate from the dry northern slopes with barren Tibetan landscapes. We may assume that they belong to a major (ecological) species group, adapted to the harsh climate of the Tibetan plateau and up to now largely undiscovered, which transgresses locally the border into North Nepal.

Table 1. Lowest and highest records, area belts, months in which adults were collected, and number of records of *Leptyphantes* species in Nepal.

	lowest record (m)	highest record (m)	area belt (m)	adults collected (months)	number of records
<i>alticola</i>	5030	5100	?	7	
<i>anachoretus</i>	about 4000	?	?	7	1
<i>ancoriformis</i>	2800	4000	1200	4, 5, 6, 7, 10, 11, 12	15
<i>asceticus</i>	2100	2200	100	3	1
<i>bifurcatooides</i>		2100	?	5	1
<i>bifurcatus</i>	2300	3100	800	5, 7	3
<i>digitulus</i>	2150	3400	1250	2, 3, 5, 6, 7, 10	7
<i>faustus</i>	2300	4300	2000	1, 3, 4, 9,	7
<i>grandiculus</i>	2000	3400	1400	3, 4, 5, 6, 7, 8, 9	21
<i>magnus</i>	2700	3300	600	4	4
<i>martensi</i>	2700	4200	1500	4, 5, 6, 7, 8, 10	21
<i>nebulosoides</i>	2800	3300	500	3, 7	2
<i>nepalensis</i>	2300	3400	1100	5, 6, 7, 8, 9, 10, 11	14
<i>numilionis</i>	2550	4000	1450	4, 10	2
<i>occultus</i>		3350	?	10	1
<i>plumipes</i>	4400	4500	100	8	1
<i>rotundatus</i>	3000	4000	1000	4, 5	3
<i>setifer</i>	4800	4900	100	6	1
<i>sherpa</i>	4000	4900	900	6	2
<i>theosophicus</i>	2100	2700	600	1, 3	4
<i>uzbekistanicus</i>					
<i> himalayensis</i>	2650	3300	750	2, 3, 4, 10	6
<i>yeti</i>	5500	5545	45	9	1

As regards phenology, preliminary statements are already possible: Species of low altitude (up to about 3500 m) seem to be adult throughout the year. This is obvious in species which are represented by many records (*L. ancoriformis*, *L. digitulus*, *L. grandiculus*, *L. nebulosoides*, perhaps *L. martensi*; see table 1). In several species, adults were also collected in the winter months proper (November to February: *L. anachoretus*, *L. faustus*, *L. nepalensis*, *L. theosophicus*). Specimens of the species in question were active in forest litter and under stones and rotten logs. Concerning species of high altitudes, above 4000 m, knowledge is scanty. High snow cover during winter and difficult access prevent normally field work in the winter season. Perhaps adults are limited to distinct periods of the year.

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