

TAXONOMIC NOTES ON FOUR GENERA OF THE FEATHER MITE SUBFAMILY PANDALURINAE (ASTIGMATA: PSOROPTOIDIDAE)

ТАКСОНОМИЧЕСКИЕ ЗАМЕЧАНИЯ К ЧЕТЫРЕМ РОДАМ ПЕРЬЕВЫХ КЛЕЩЕЙ ПОДСЕМЕЙСТВА PANDALURINAE (ASTIGMATA: PSOROPTOIDIDAE)

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Key words: Astigmata, Psoroptoididae, *Mesalgoides*, *Picalgoides*, *Dicamaralges*, *Chiasmalges*, taxonomy, synonymy

Ключевые слова: Astigmata, Psoroptoididae, *Mesalgoides*, *Picalgoides*, *Dicamaralges*, *Chiasmalges*, таксономия, синонимия

ABSTRACT

The taxonomic status of the genus *Mesalgoides* Gaud et Atyeo, 1967 (Psoroptoididae, Pandalurinae) and three related supraspecific taxa is revised, and taxonomic corrections to type species of the genera *Mesalgoides* and *Dicamaralges* Gaud et Atyeo, 1967 are made. I reduce the taxonomic frame and species content of the genus *Mesalgoides* to those of the subgenus *Mesalgoides* s. str. The genus *Picalgoides* Černý, 1974 stat. n., originally established as a subgenus of *Mesalgoides*, is elevated to generic rank. The taxon *Dicamaralges* retains its original generic status. *Chiasmalges* Gaud et Atyeo, 1967 is maintained as a distinct genus versus as a subgenus of *Mesalgoides*. Improved diagnoses are given for the genera *Chiasmalges*, *Dicamaralges*, *Mesalgoides*, and *Picalgoides*; main discriminative characters for all genera of the subfamily Pandalurinae are described.

Confusion over the type species of the genus *Mesalgoides* is clarified. The purported type species of this genus, designated as “*Dermaleichus oscinum* Koch, 1841 from *Chloris chloris* (L.)”, was misidentified by Gaud and Atyeo [1967] because it was treated in the sense of Robin and Mégnin [1877] rather than of Koch [1841]. *Dimorphus megnini* Oudemans, 1937, a substitution name for the species of Robin and Mégnin, which was actually used as a basis of the genus *Mesalgoides*, is now fixed as a type species (under Article 70.3.2 of the ICZN); its recent valid name is *Mesalgoides megnini* (Oudemans, 1937). True *Dermaleichus oscinum* Koch, 1841, which was actually described from *Motacilla alba* L., is a representative of the

genus *Analges* Nitzsch, 1818. The recent valid name of this mite species is *Analges oscinum* (Koch, 1841), and the name *Analges pachycnemis* Giebel, 1971 syn. n. is its new junior synonym.

The type species of the genus *Dicamaralges* is given the valid name *Dicamaralges loricatus* (Vitzthum, 1926) comb. n., because the originally proposed name *Dicamaralges dasybrachius* Gaud et Atyeo, 1967 syn. n. is its junior synonym.

РЕЗЮМЕ

Ревизован таксономический статус рода *Mesalgoides* Gaud et Atyeo, 1967 (Psoroptoididae, Pandalurinae) и трех близкородственных ему таксонов надвидового уровня; сделаны номенклатурные поправки для типовых видов родов *Mesalgoides* и *Dicamaralges* Gaud et Atyeo. В результате ревизии видовой состав рода *Mesalgoides* сокращен до видов, включаемых ранее в подрод *Mesalgoides* s. str. Род *Picalgoides* Černý, 1974 stat. n., первоначально установленный в качестве подрода в пределах рода *Mesalgoides*, повышен до родового ранга. Таксон *Dicamaralges* сохраняет свой первоначальный родовый статус. Поддержана исходная концепция родового статуса *Chiasmalges* Gaud et Atyeo, 1967, против таковой, придающей ему ранг подрода рода *Mesalgoides*. Составлены новые диагнозы для родов *Chiasmalges*, *Dicamaralges*, *Mesalgoides* и *Picalgoides*; даны основные отличительные признаки для всех родов подсемейства Pandalurinae.

Осуществлена фиксация типового вида рода *Mesalgoides*. Типовой вид этого рода, первоначально

чально названный как *Dermaleichus oscinum* Koch, 1841 с зеленушки *Chloris chloris* (L.), был в действительности ошибочно идентифицирован авторами рода [Gaud, Atyeo, 1967], т.к. рассматривался ими в трактовке Робина и Менъена [Robin, Mégnin, 1877], а не Коха [Koch, 1841]. Вид, Робина и Менъена, получивший замещающее название *Dimorphus megnini* Oudemans, 1937 и в действительности использованный в качестве основы рода *Mesalgoides*, зафиксирован в качестве типового (Статья 70.3.2 Международного Кодекса Зоологической Номенклатуры). Современное валидное название типового вида — *Mesalgoides megnini* (Oudemans, 1937). Подлинный вид, имеющий первоначальное название *Dermaleichus oscinum* Koch, 1841 и описанный с белой трясогузки *Motacilla alba* L., в действительности принадлежит роду *Analges* Nitzsch, 1818, и современное валидное название этого вида — *Analges oscinum* (Koch, 1841). В ходе исследования попутно установлено, что *Analges pachycnemis* Giebel, 1971 syn. n. является младшим синонимом этого вида.

Типовой вид рода *Dicamaralgae* получает валидное название *Dicamaralgae loricatus* (Vitzthum, 1926) comb. n., поскольку первоначальное название типового вида *Dicamaralgae dasybrachius* Gaud et Atyeo, 1967 syn. n., является его младшим синонимом.

INTRODUCTION

The feather mite family Psoroptoididae was established for eleven genera, which were removed from the family Analgidae in the course of the suprageneric revision of the latter family [Gaud, Atyeo, 1982]. Representatives of Psoroptoididae (Figs. 1, 2) belong to the morphotype specialised for inhabiting downy feathers and tufted basal parts of body covert feathers [Mironov, 1987]. Because they are comparatively less specialised for this microhabitat than are members of the Analgidae, the psoroptoidids are also located in a basal part of the flight feather vanes and wing coverts.

In the original taxonomic system of Psoroptoididae, its genera were arranged into two subfamilies: Psoroptoidinae (5 genera) and Pandalurinae (6 genera). Mites of the first subfamily are restricted to the hornbills (Coraciiformes: Bucerotidae); the second subfamily has a much wider range of hosts [Gaud, Atyeo, 1982]. Biodiversity of Pandalurinae is not well explored, and only a few publications were dedicated to its taxa during the past fifty years [Gaud, Atyeo, 1967; Černý, 1974;

Faccini et al., 1976; Shereef, Rakha, 1981; Pérez, Ramirez, 1996; Mironov, Pérez, 2002]. Although the taxonomic system of Pandalurinae seems to be relatively clear, in the course of working on various taxa of this subfamily, the author found that some supraspecific taxa obviously need re-estimation of their current status. Moreover, it was also discovered that there are some unsolved taxonomic problems concerning type species fixation and synonymy of type species.

The goals of the present paper are to re-estimate taxonomic status of some supraspecific taxa, to propose improved diagnoses for them, and to resolve problems in type species designations and synonymy.

MATERIAL AND METHODS

The main material for the present study is the feather mite collection deposited in the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, Russia); in addition, some specimens were borrowed from the University of Georgia (Athens, USA) and the Instituto de Biología, Universidad Nacional Autónoma de México (Mexico).

The idiosomal chaetotaxy used in the discussion and in diagnoses of taxa follows Gaud and Atyeo [1996]; the leg chaetotaxy is that of Atyeo and Gaud [1966]. Differences in applying the setal designations by recent authors to opisthosomal setae of pandalurine males are discussed below in a separate paragraph. Systematic names of birds and supraspecific taxa of hosts mentioned in the present study follow "A complete checklist of the birds of the world" [Howard, Moore, 1991].

Abbreviation used in access numbers of type materials used in the course of the present study: NU — Nebraska University, Lincoln, Nebraska, USA; UNAM — Universidad Nacional Autónoma de México, Mexico; ZNC — Zoological National Collection, München, Germany.

DISCUSSION

Status of supraspecific taxa

At first glance, the taxonomic system of the Pandalurinae at the supraspecific level is simple and raises no any questions. Originally the subfamily included 6 genera [Gaud, Atyeo, 1982]: *Chiasmalgae* Gaud et Atyeo, 1967, *Dicamaralgae* Gaud et Atyeo, 1967, *Eurydiscalgae* Faccini, Gaud et Atyeo, 1976, *Mesalgoides* Gaud et Atyeo, 1967, *Pandalura* Hull, 1934, and *Temnalgae* Gaud et Atyeo, 1967. Most genera were established by Gaud and Atyeo [1967] in the course of partial

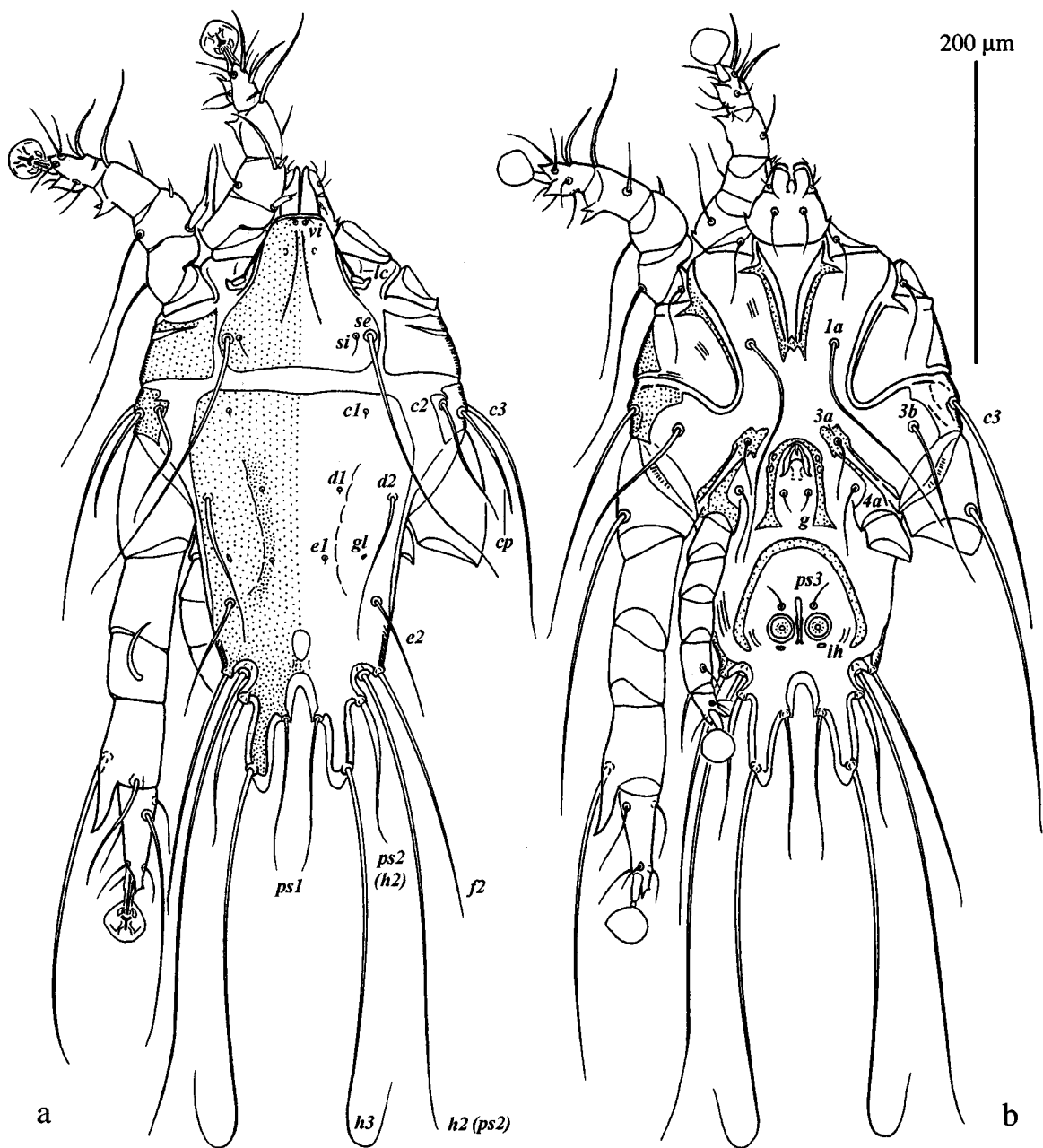


Fig. 1. *Mesalgoides megnini*, male. a — dorsal view, b — ventral view. Setal marks given in brackets — alternative designations after: Gaud, Atyeo [1967] and Pérez, Ramiez [1996].

taxonomic revision of the family Analgidae. The genus *Mesalgoides* is subdivided into two subgenera, *Mesalgoides* s. str. and *Picalgoides* Černý, 1974. The only contradiction in recent taxonomic points of view on the generic content of Pandalurinae is that Gaud and Atyeo [1996] had decreased the status of *Chiasmalgas* and considered it as a subgenus of *Mesalgoides*, while Pérez and Ramirez [1996] continued to treat it as a genus.

Generic status of three genera, *Eurydiscalges*, *Temnalges*, and *Pandalura*, is indisputable as each is characterized by very clear discriminative features (Table 1). However, the remainder of the

supraspecific taxa within Pandalurinae are not so well defined.

In the last version of the Pandalurinae, Gaud and Atyeo [1996] treated *Picalgoides* as a subgenus of the genus *Mesalgoides*, while *Dicamaralgas* was retained as a separate genus. However it is clear that *Picalgoides* is morphologically more similar to *Dicamaralgas* than to *Mesalgoides* s. str. Both sexes of *Picalgoides* and *Dicamaralgas* are characterised by rounded ventral processes on tarsi I, II; in males, the ledge on lateral margins of terminal cleft is not expressed, and terminal lobar digits are represented by short extensions moved lateral, the

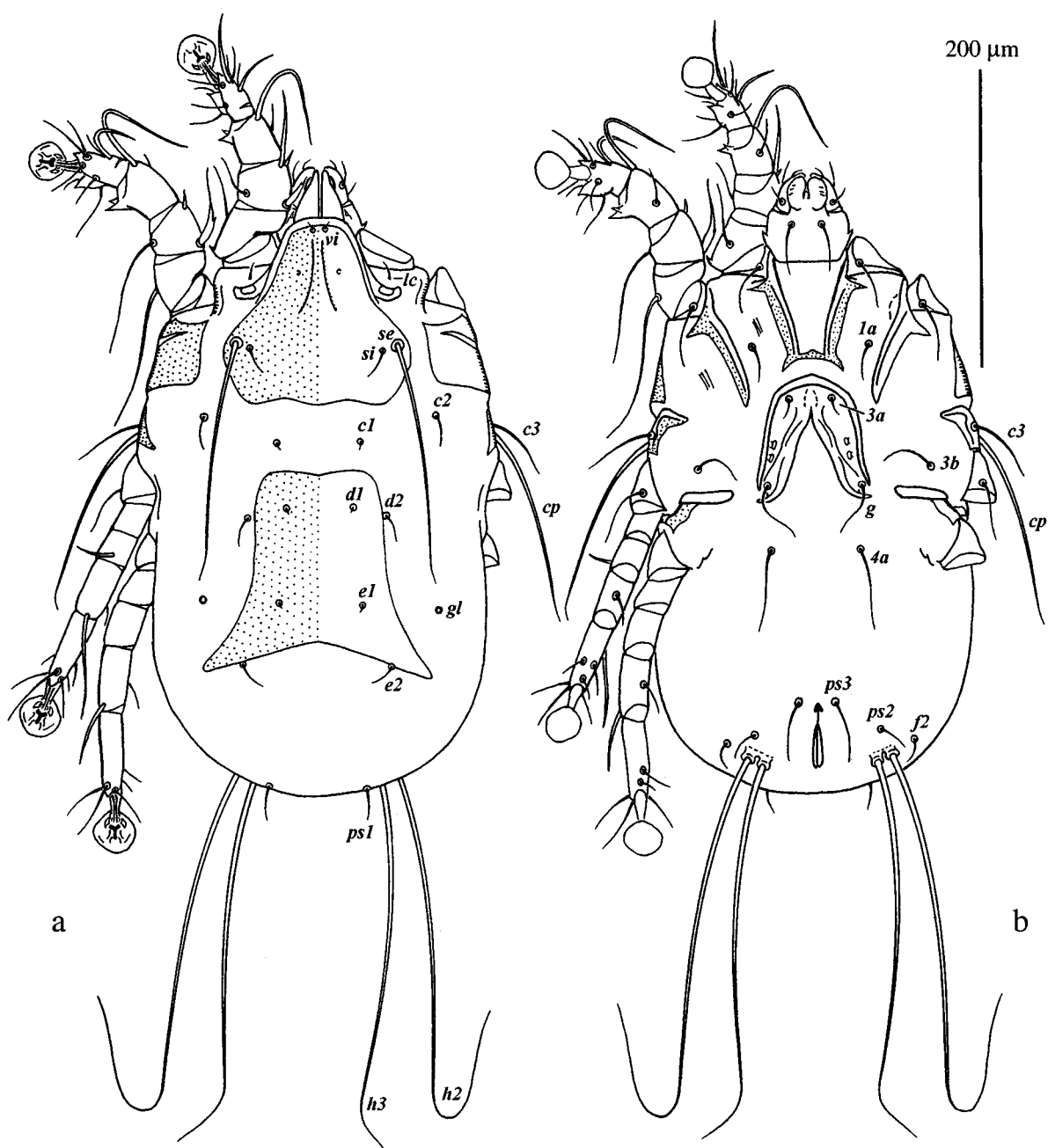


Fig. 2. *Mesalgoides megnini*, female. a — dorsal view, b — ventral view.

terminal membranes are triangular, with acute apex, antiaxial and paraxial distal spurs of tibia III are equal in length or their ratio not more than 2:1 (Figs. 3 b, c, 4 c–e, 5 b, c). In *Mesalgoides* s.str., ventral processes of tarsi I, II are acute; in males, the ledge on margins of terminal cleft is well-developed, terminal lobar digits are clearly recognisable, elongated, with short and rounded terminal membrane on apex, antiaxial distal spur of tibia III is much larger and longer than paraxial one, their ratio is 4:1 or more (Figs. 3 a, 4 a, b, 5 a). The two differences between *Dicamaralges* and *Picalgoides* are only the fusion of epimerites I as a Y in both sexes of the

former taxon and contact of epigynium with epimerites II by short lateral extensions in females. However, the form of epimerites I is a variable character among species of Pandalurinae. In males of different species of *Mesalgoides* s. str., for example, it varies from a V to a Y. Thus, it would be more reasonable to consider *Picalgoides* as a subgenus or even a synonym of *Dicamaralges* as this generic name is older, rather to include it in *Mesalgoides*. *Dicamaralges loricatus* (Vitzthum, 1926) comb. n., the only known species of *Dicamaralges*, which was originally described by Vitzthum (1926) as *Mesalges loricatus*, looks like a very derived spe-

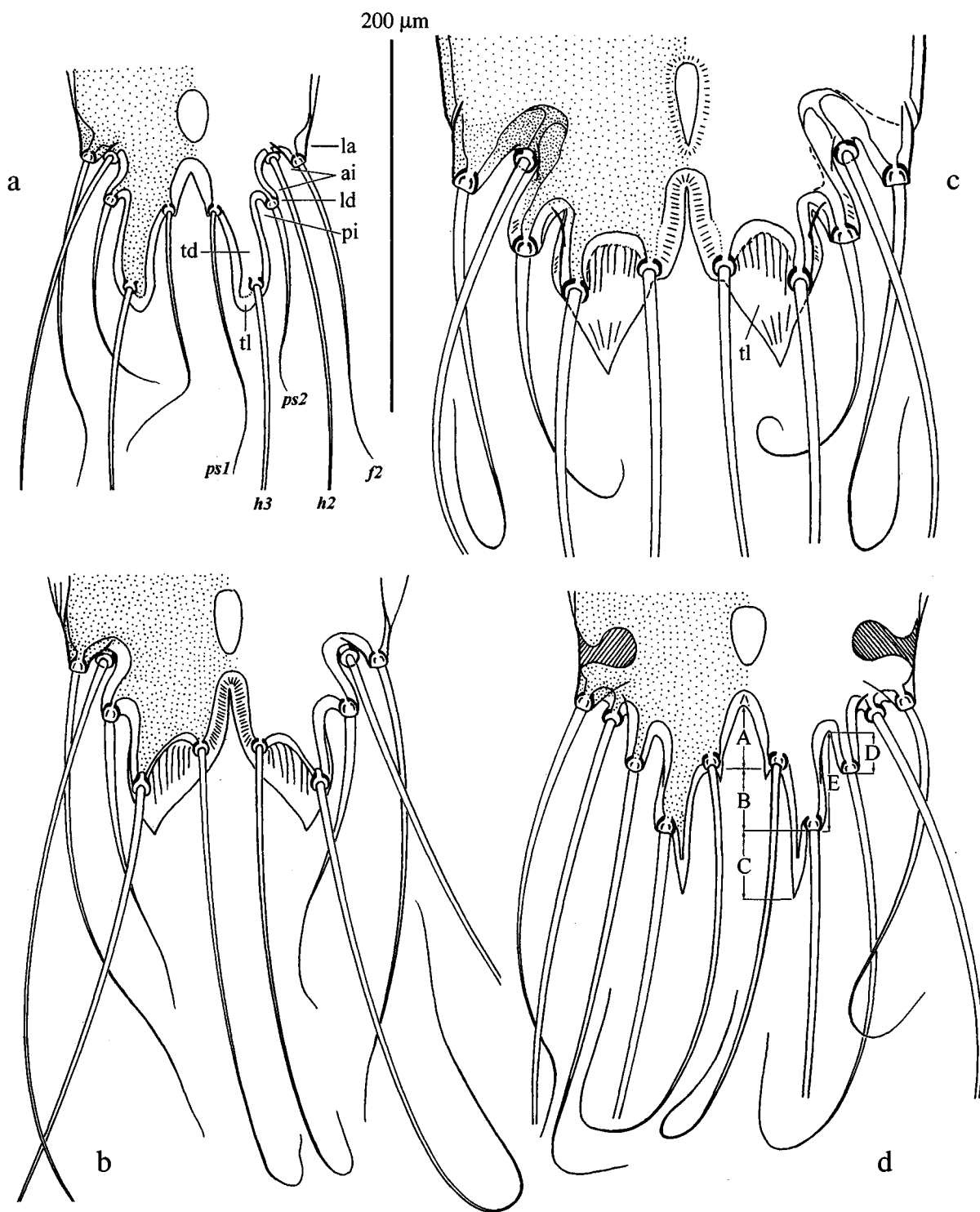


Fig. 3. Opisthosomal lobes of males. a — *Mesalgoides megnini*, b — *Picalgoides picimajoris*, c — *Dicamaralges lorricatus*, d — *Chiasmalgoides polypectrus*. ai — anterior incision of lobe, la — lateral angle of opisthosoma, ld — lateral lobar digit, pi — posterior incision of lobe, td — terminal lobar digit, tl — terminal lamella; scheme of lobar measurements: A — length of anterior part of terminal cleft, B — length of terminal lobar digit, A+B — total length of terminal cleft, C — length of terminal lamella, D — length of lateral lobar digit, E — length of posterior incision of lobe.

cies of *Picalgoides* (compare Figs. 3 b and c). Based on the above mentioned characters and taking in consideration that diversity of pandalurine mites associated with woodpeckers is still poorly ex-

plored; the most reasonable conclusion is to treat *Picalgoides* as a distinct genus.

Gaud and Atyeo [1967] originally established *Chiasmalgoides* as a distinct genus but for unclear

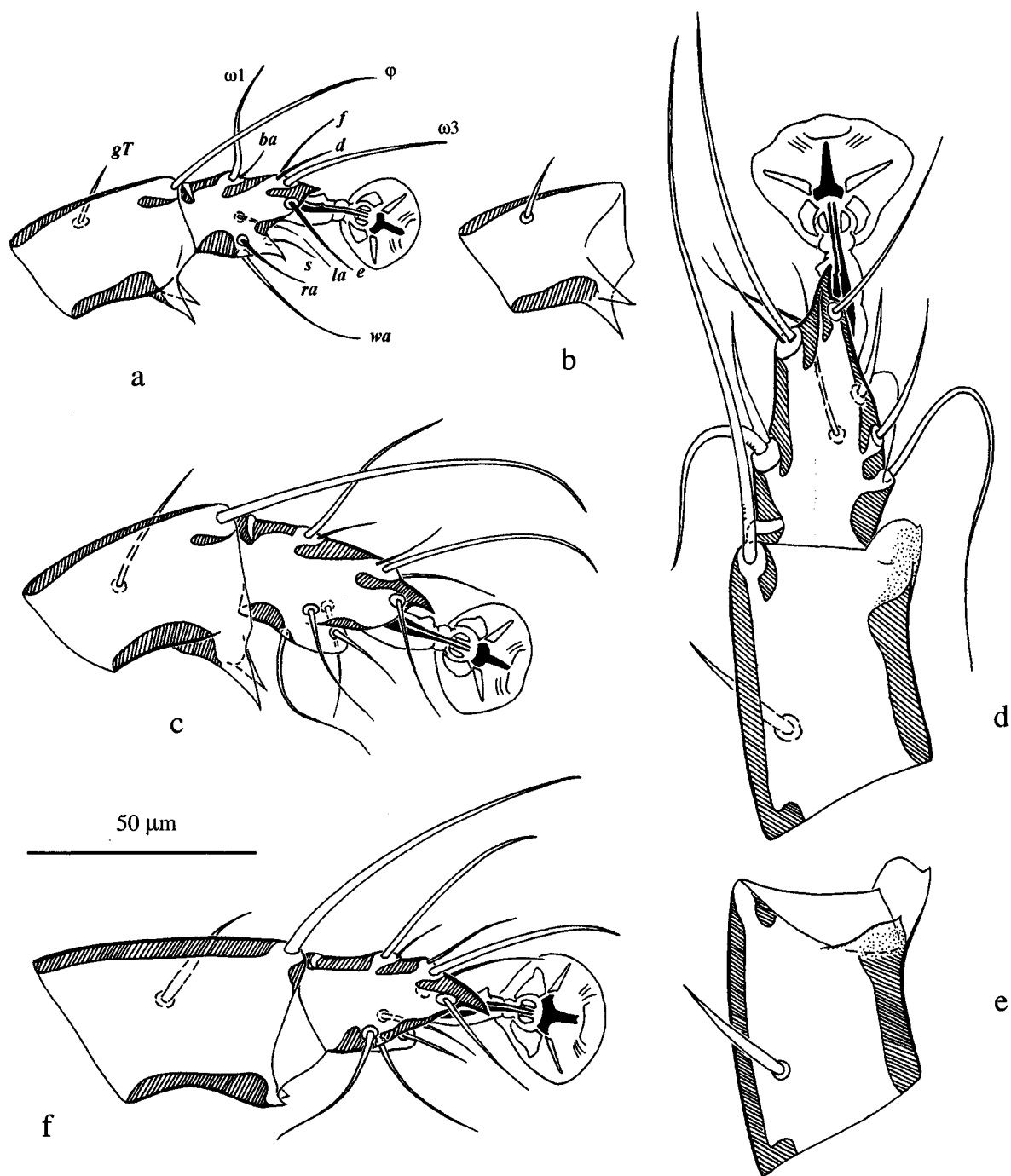


Fig. 4. Tibia and tarsus I. a — *Mesalgoides megnini*, dorsal view, b — same, ventral view of tibia, c — *Picalgoides picimajoris*, dorsal view, d — *Dicamaralges loricatus*, e — same, ventral view of tibia, f — *Chiasmalgas polyplectrus*, dorsal view.

reasons later included this taxon as a subgenus of *Mesalgoides* [Gaud, Atyeo, 1996]. However, the former taxon very clearly differs from *Mesalgoides* s. str. Although males of these taxa have similarly complicated shape of the opisthosoma (Figs. 3 a, d, Table 1), *Chiasmalgas* has numerous features differentiating it from *Mesalgoides*: in males, coxal fields III are closed, epimerites II are not touching or fused to epimerites III, lateral margins of opisthosoma with a pair of drop-shaped subtegumental

sclerotisations, aedeagus is whip-shaped and several times longer than the genital arch; in females, epimerites I are fused into a X or Y. Actually the genus *Chiasmalgas* shows much more similarity to the genus *Eurydisalgas*. The clearest differences between these taxa are the absence of setae *vi* in both sexes of *Eurydisalgas* and a very long aedeagus in males of *Chiasmalgas* (Table 1). As it is well known for feather mites and other taxa of Psoroptidia that setae *vi* easily disappear within different

Table 1
Main diagnostic characters of the genera of the subfamily Pandalurinae
Таблица 1
Основные диагностические признаки родов подсемейства Pandalurinae

Character	<i>Mesalgoides</i>	<i>Picalgoides</i>	<i>Dicamaralgoides</i>	<i>Chiasmalgoides</i>	<i>Eurydiscalgoides</i>	<i>Tennalgoides</i>	<i>Pandalura</i>
Setae <i>vi</i>	Present	Present	Present	Present	Absent	Absent	Present
Ventral processes of tarsi I, II	Acute	Rounded	Rounded	Rounded	Rounded	Rounded	Absent
Male							
Epimerites II and III	Connected by inner tips	Connected by inner tips	Connected by inner tips	Free	Free	Free	Free
Coxal fields III	Open	Open	Open	Closed	Open	Open	Open
Ratio of paraxial and antaxial spines of tibia III	1.4 – 1.5, paraxial spine may be absent	1:1 – 1.2, paraxial spine may be absent	Subequal	1.2, paraxial spine may be absent	1.2 – 1.3	Only large paraxial spine present	1:1 – 1.2
Shape of epimerites I	V, Y	V, Y	Y	Y	Y	Free	Y
Ledge on inner margins of terminal cleft	Present	Absent	Absent	Present	Weakly expressed	Absent	Absent
Terminal lobar digit	Well developed, usually longer than wide	Weakly expressed, moved lateral	Weakly expressed, moved lateral	Well developed, usually long	Weakly expressed, moved lateral	Absent	Well developed, longer than wide
Terminal membrane	As short extension, usually rounded	Large triangular, acute on apex	Large triangular, acute on apex	As long narrow extension, acute on apex	As short lanceolate extension, acute on apex	Absent	As short acute extension
Aedeagus	Shorter than genital arch	Shorter than genital arch, rarely 1.5–2 times longer	Shorter than genital arch	Long, whip-like, 2–4 times longer than arch	Shorter than genital arch	Shorter than genital arch	Shorter than genital arch
Tarsus IV	Shortened	Shortened	Shortened	Greatly shortened	Shortened	Shortened	Normal, elongated
Paraxial digit of tarsus IV carrying seta <i>e</i>	Present	Present	Present	Absent	Absent	Absent	Absent
Female							
Epimerites I	U, inverted II, free	U, V, free	Y	X, Y	Y	Free	Y
Epigynum	Free	Free	Touching epimerites II	Free	Free	Free	Free
Hysteronotal shield	Trapezoidal, rectangular	Trapezoidal, rectangular	Trapezoidal	Rectangle, or inverted trapezium	Rectangular, trapezoidal	Rectangular	Narrow rectangle or trapezium
Terminal macrochaetae of opisthosoma	<i>h2, h3</i>	<i>h2, h3</i>	<i>h2, h3</i>	<i>h2, h3</i>	<i>h2, h3</i>	<i>h2</i>	<i>h2, h3</i>

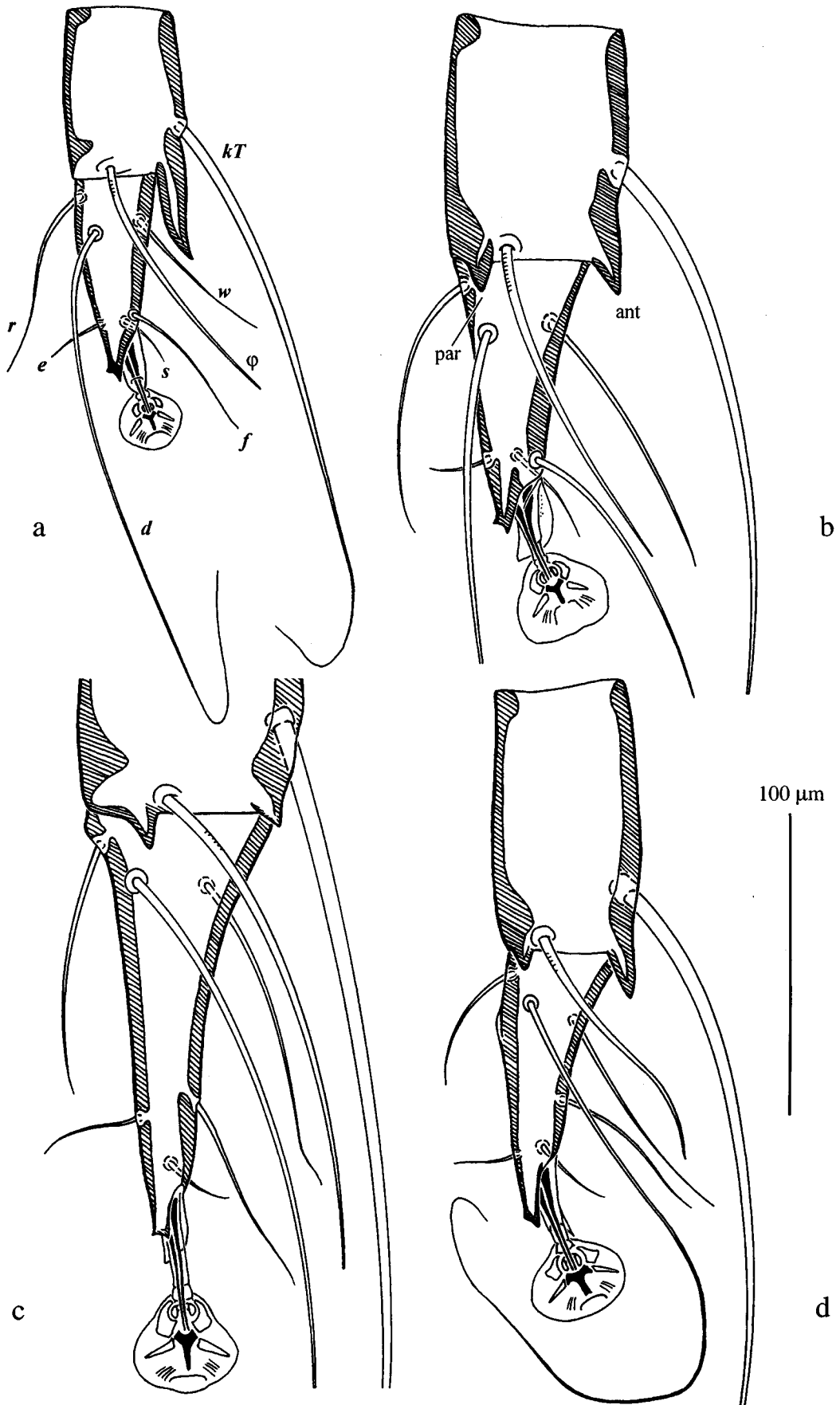


Fig. 5. Right tibia and tarsus III, dorsal view. a — *Mesalgoides megnini*, b — *Picalgoides picimajoris*, c — *Dicamaralges loricatus*, d — *Chiasmalgos polyplectrus*. ant — antaxial spine, par — paraxial spine.

families, presence or absence of these setae is a character of low taxonomic value. Based on differential features of *Chiasmalgas* it is necessary to conclude that the originally proposed generic status is quite justified.

Setal nomenclature in males

When one compares opisthosomal chaetotaxy designations to pandalurine males made by different authors [Gaud, Atyeo, 1967; Faccini et al., 1976; Pérez, Ramirez, 1996; Mironov, 1997; Mironov, Pérez, 2002] it is easy to notice discordance in nomenclature for setae situated on postero-lateral margins of the opisthosomal lobes. The seta situated on the lobar apex (or terminal lobar digit) is indisputably seta *h3*, and the seta in the lateral angle of opisthosoma is most probably seta *f2* (Figs. 1 a, b, 3 a–d). The problem concerns two setae situated between them, the inner one disposed on the more or less extending lateral lobar digit and the outer in the anterior lateral incision of the lobe. According to one concept [Gaud, Atyeo, 1967; Pérez, Ramirez, 1996] (Fig. 1), the seta sitting on the lateral lobar digit is seta *h2* while the seta in the anterior incision is *ps2*. Comparing the topology of these setae with that in Analgidae, for instance in the subfamily Megniniinae, this concept seems to be right. The setae *ps2* in Analgidae are usually situated near the level of setae *f2* but always ventrally in relation to them. However, in the case of pandalurine males, it is impossible to detect the ventral position of any of four setae on lateral margins of lobes that could prove that such setae are *ps2*. All these setae are situated on the margin and none of them is directed obliquely downward.

Another concept [Faccini et al., 1976, Mironov, Pérez, 2002] suggests a controversial application of nomenclature for the setae in question: the seta on the lateral lobar digit is *ps2*, and the seta in the anterior incision of the lobe is *h2*. In such genera as *Eurydiscalgas*, *Mesalgoides* (in present sense), *Picalgoides*, and *Temnalges*, it is clearly visible that the setae on the lateral lobar digit are curved and often run along the ventral side of the lobes. This is a common feature of setae *ps2* in other analgoid mites of the families Analgidae, Pteronysidae, Xolalgidae and others. Besides, the setae situated in the anterior incision are more or less clearly directed upward; this gives the evidence that they are not setae *ps2* and most probably are *h2*. It is only necessary to admit that setae *ps2* have moved significantly posterior in regard to the level of setae *f2* and reached the level posterior to setae

h2. The concept of Faccini et al. [1976] seems to be correct and is used in generic diagnoses given in the present paper.

TAXONOMY

Family Psoroptoididae Gaud et Atyeo, 1982

Subfamily Pandalurinae Gaud et Atyeo, 1982

Genus *Mesalgoides* Gaud et Atyeo, 1967

Type species: *Dimorphus megnini* Oudemans, 1937, nom. pro *Dermaleichus oscinum* sensu Robin and Mégnin, 1877, non Koch, 1841.

Diagnosis

Both sexes. Setae *vi* present. Tarsi I, II with acute ventral processes (Figs. 4 a, b). Tibiae I, II with pair of long and acute ventral processes. Postero-lateral angle of femur I with little acute indentation.

Male. Epimerites I fused into V or Y. Epimerites II connected to epimerites III, coxal fields II closed, coxal fields III opened. Opisthosomal lobes of complicated configuration: outer margin of lobes with two incisions separated by lateral lobar digit carrying seta *ps2*; inner margins of lobes forming terminal cleft with clear rectangular ledge carrying seta *ps1*; terminal lobar digit (apical part of lobe) well-developed, usually elongated, with short rounded terminal membrane on the most apical part (Figs. 1 a, b, 3 a). Genital apodemes as long inverted U, aedeagus shorter than genital arch. Adanal apodemes present, long bow-shaped. Antaxial process of tibia III spur-shaped, 4–5 times longer than paraxial one, or paraxial process absent (Fig. 5 a). Tarsus IV with paraxial cone-shaped process bearing rudimentary remnant of seta *e* on obliquely cut apex; seta *d* sucker-shaped, with well-developed apical disc (Fig. 6 a).

Female. Epimerites I fused as a U or inverted II, rarely free. Hysteronotal shield as trapezium or rectangle. Posterior end of opisthosoma with two pairs of macrochaetae, *h2*, *h3*. Epigynium semicircular or horseshoe-shaped, free from epimerites (Figs. 2 a, b).

Hosts. Passeriformes of the families Emberizidae, Fringillidae, Furnariidae, Icteridae, Maluridae, Pipridae, Thraupidae, Turdidae, Tyrannidae.

The genus includes 13 species. *Mesalgoides elaeinae* Černý, 1974, *M. geospizae* Mironov et Pérez, 2002, *M. furnarius* Černý, 1974, *M. johnstoni* (Spory, 1965) comb. n., *M. koki* Černý, 1974, *M. megnini* (Oudemans, 1937), *M. piprae* (Berla, 1959) comb. n., *M. pyrrhulinus* Mironov, 1997, *M. sublobatus* (Trouessart, 1899) comb. n., *M. surinamensis* Černý, 1974, *M. travei* Shereef et Rakha, 1981, *M. turdinus* Černý, 1974, *M. tyrrelli* (Haller, 1882)

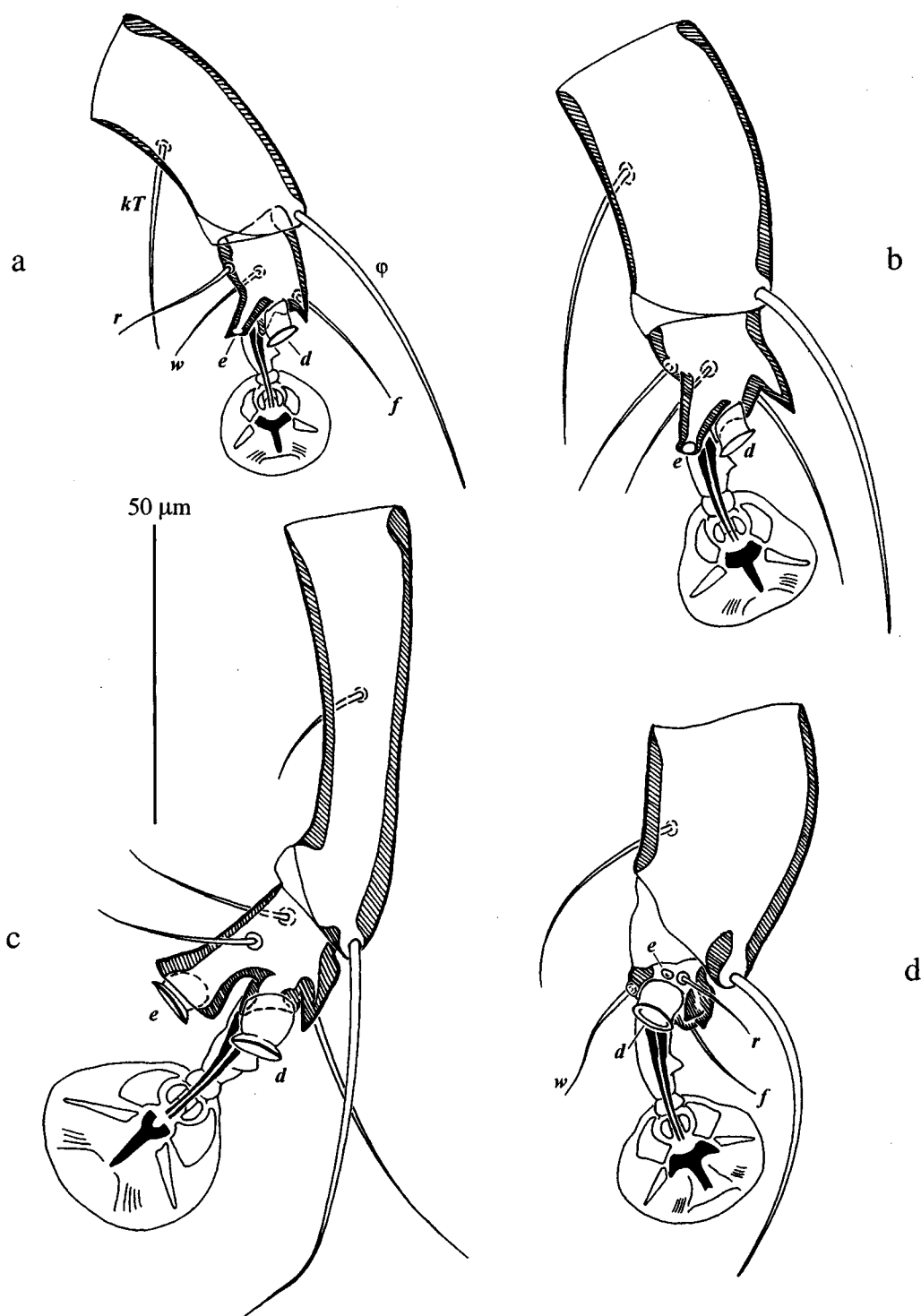


Fig. 6. Right tibia and tarsus IV, dorsal view. a — *Mesalgoides megnini*, b — *Picalgoides picimajoris*, c — *Dicamaralges loricatus*, d — *Chiasmalgales polyplectrus*.

comb. n. Original descriptions of species represented here by new combinations were given in following publications: Haller [1882], Trouessart [1899], Berla [1959], and Spory [1965].

Taxonomic remarks. The first taxonomic problem that should be formally resolved in Pandalurinae, concerns the type species of the genus *Mesalgoides*. The type species of this genus was

originally designated as *Dermaleichus oscinum* Koch, 1841 from the greenfinch *Chloris chloris*. Gaud and Atyeo [1967], authors of the genus *Mesalgoides*, actually treated this mite species in the sense of Robin and Mégnin [1877], a treatment that was subsequently confirmed by both authors in personal communications. However, in making a "redescription" of *Dermaleichus oscinum* Koch,

1841 and referring it to the genus *Analges* Nitzsch, 1818, Robin and Mégnin [1877] had made a misidentification. Simple comparison of drawings made by Koch [1841] with ones made by Robin and Mégnin [1877] shows absolutely clearly that from the recent taxonomic point of view their mites belong to different families. Koch [1841: Heft 33, fasc. 14, 15] actually described a species without doubt belonging in recent sense to the genus *Analges* (Analgidae). Moreover, he pointed out the white wagtail *Motacilla alba* L. as a host and mentioned additional hosts "Neuntödtern, Lerchen und Emmerlingen" (=shrikes, larks, and buntings), the birds commonly bearing various *Analges* spp; the greenfinch was not mentioned.

Oudemans [1897, 1937] was the first expert who recognised that Robin and Mégnin [1877] had misidentified Koch's species. At first, in the List of Dutch Acari [Oudemans, 1897], he simply used a combination "*Dimorphus oscinum* Mégn. (non Koch)" for the species actually described by Robin and Mégnin. Later, Oudemans [1937] proposed a new name, *Dimorphus megnini* Oudemans, 1937. Unfortunately, both publications were missed by most subsequent specialists. Only sixty years later, in taxonomic papers dealing with mites of the genus *Mesalgoides* [Mironov, 1997; Mironov, Pérez, 2002], was it pointed out that the type species was misidentified and the genus was based on *Dermaleichus oscinum* sensu Robin et Mégnin, not Koch. Even the correct nomenclature, *Mesalgoides megnini* (Oudemans, 1937), was proposed for the species, which was actually used as the type. Nevertheless, in these two publications this taxonomic problem was not formally solved according the current rules of ICZN [1999]. As the type species of the genus *Mesalgoides* was misidentified, Articles 67.9 and 70.3 of the fourth edition of the Code [1999] apply. It is natural and logical in the present situation to fix as a type species the one that was actually used by Gaud and Atyeo [1967]. Therefore, under Article 70.3.2 of the Code, the type species of the genus *Mesalgoides* Robin et Mégnin, 1877 is now fixed: *Dimorphus megnini* Oudemans, 1937. This name was proposed by Oudemans [1937] for the species *Analges oscinum* sensu Robin et Mégnin, 1877, non Koch, 1841. The valid name of this type species is now *Mesalgoides megnini* (Oudemans, 1937).

With regard to the species *Dermaleichis oscinum*, which was actually described by Koch [1841], the following taxonomic conclusion may be drawn. Based only on the description and drawing of the

homeomorph male made by Koch, from the recent point of view it is difficult to recognise indisputably what recently valid *Analges* species he dealt with. Nevertheless, it is absolutely clear that it is a species of the subgenus *Analges* s. str., males of which have cylindrical tarsi III, i.e. without a finger-shaped paraxial process. As the only host species directly pointed out in the paper is the white wagtail *M. alba*, it should be treated as a type host. This leads to the conclusion that Koch actually dealt with the species that is well known from this host under the name *Analges (Analges) pachycnemis* Giebel, 1871 [Giebel, 1871; Haller, 1877, 1882; Mironov, 1985]. The latter mite species was originally described as well from *M. alba*, and recently it is known as a specific and common parasite of the white and yellow wagtails of the genus *Motacilla* L. [Mironov, 1985, 1996]. Thus, there are two choices for taxonomists: either to avoid the problem of a new synonymy and continue treating *Demaleichus oscinum* Koch as a species iquerendum of *Analges*, or to assume that *A. pachycnemis* as a junior synonym of *Dermaleichus oscinum* Koch. The latter resolution seems to be more reasonable and expedient. Thus, the valid name of the species described by Koch is *Analges oscinum* (Koch, 1841) and the name *A. pachycnemis* Giebel, 1871 syn. n. is declared now as its junior synonym.

Genus *Picalgoides* Černý, 1974 stat. n.

Type species: *Dermaleichus picimajoris* Buchholz, 1869.

Diagnosis

Both sexes. Setae *vi* present. Tarsi I, II with rounded ventral processes. Tibiae I, II with pair of long and acute ventral processes (Fig. 4 c). Posterolateral angle of femur I with little acute indentation.

Male. Epimerites I fused into a Y, or V, or free. Epimerites II connected to epimerites III, coxal fields II closed, coxal fields III opened. Opisthosomal lobes of complicated configuration: outer margin of lobes with two incisions separated by lateral lobar digit carrying seta *ps*₂; inner margins of opisthosomal lobes forming terminal cleft without clear ledge; terminal lobar digit small triangular, moved lateral; terminal membrane short triangular, with acute apex and striations on dorsal surface. Genital apodemes as long inverted U, aedeagus commonly shorter than genital arch (except *P. dolichocaulus*, twice longer). Adanal apodemes present, long bow-shaped. Antiaxial and paraxial processes of tibia III as short spines (Fig. 5 b),

subequal in length or their ratio not more than 2:1 (paraxial spine absent in some species from Indicatoridae). Tarsus IV with paraxial cone-shaped process bearing rudimentary seta *e* on obliquely cut apex; seta *d* sucker-shaped, with well-developed apical disc (Fig. 6 b).

Female. Epimerites I fused as a U or V. Hysteronotal shield rectangular or trapezoidal. Posterior end of opisthosoma with two pairs of macrochaetae, *h2*, *h3*. Epigynium semicircular or horseshoe-shaped, free from epimerites.

Hosts. Piciformes of the families Capitonidae, Indicatoridae, Picidae, Ramphastidae; Passeriformes of the family Corvidae.

The genus includes 8 species: *Picalgoides capitontis* Černý, 1974, *P. dolichocaulus* (Gaud, 1988) comb. n., *P. glandarii* (Buchholz, 1869), *P. lobatus* (Trouessart, 1885) comb. n., *P. mesocaulus* (Gaud, 1988) comb. n., *P. microcaulus* (Gaud, 1988) comb. n., *P. picimajoris* (Buchholz, 1869), *P. pteroglossorum* (Stoll, 1893) comb. n. Original descriptions of species represented here by new combinations were given in respective publications of Trouessart [1885], Stoll [1893], and Gaud [1988].

Taxonomic remark. The three species, *Picalgoides microcaulus*, *P. mesocaulus*, and *P. dolichocaulus*, described by Gaud [1988] from the honeyguides Indicatoridae, form a distinct species group within the genus *Picalgoides*. This group is characterised by the following features: in both sexes, the epimerites I are free; in males, the paraxial spine of the tibia III is absent. By the latter character, this group is similar to the genus *Mesalges*.

Genus *Dicamaralges* Gaud et Atyeo, 1967

Type species: *Mesalges loricatus* Vitzthum, 1926, = *Dicamaralges dasybrachius* Gaud et Atyeo, 1967 syn. n.

Both sexes. Setae *vi* present. Tarsi I, II with rounded ventral processes. Tibiae I, II with pair of large and rounded ventral processes, each with one small indentation on its margin (Figs. 4 d, e). Posterolateral angle of femur I with small acute indentation.

Male. Epimerites I fused into a Y. Epimerites II connected to epimerites III, coxal fields II closed, coxal fields III opened. Opisthosomal lobes: outer margin of lobes with two narrow incisions separated by lateral lobar digit carrying seta *ps2*; inner margins of opisthosomal lobes forming very narrow terminal cleft; terminal lobar digit short and narrow, moved lateral; distal end of the lobe concave, with terminal membrane occupying this incision and forming acute

triangular extension (Fig. 3 c). Genital apodemes as long inverted U, aedeagus shorter than genital arch. Adanal apodemes present, long bow-shaped, fused by anterior ends into large archi.

Antiaxial and paraxial processes of tibia III as short spines subequal in length (Fig. 5 c). Tarsus IV shortened, with paraxial process apically enlarged and blunt, bearing rudimentary remnant of seta *e*; seta *d* sucker-like; both sucker-like setae of tarsus IV with well-developed apical disc (Fig. 6 c).

Female. Epimerites I fused as a Y. Hysteronotal shield rectangular, elongated. Posterior end of opisthosoma with two pairs of macrochaetae, *h2*, *h3*. Epigynium horseshoe-shaped, elongated, with lateral extensions in anterior one third touching epimerites II.

Hosts. Piciformes, Picidae, *Chrysocolaptes validus* (Temminck).

The genus is monotypic.

Taxonomic remark. The second taxonomic problem in pandalurines concerns a synonymy of the type species of the genus *Dicamaralges*. The type species was originally designated as *Dicamaralges dasybrachius* Gaud et Atyeo, 1967 from a woodpecker *Chrysocolaptes validus* in Malaysia. However, the authors of the genus [Gaud, Atyeo, 1967] had missed the publication of Vitzthum [1926] with the description of *Mesalges loricatus* Vitzthum, 1926 from the same host in Sumatra. Descriptions given in both publications are so detailed and clear that the synonymy is obvious. Besides, the author of the present paper had a fortunate opportunity to examine both the paratypes of *Dicamaralges dasybrachius* and of *Mesalges loricatus* and confirm their conspecificity. Therefore the type species of the genus *Dicamaralges* should be given a valid name *Dicamaralges loricatus* (Vitzthum, 1926) comb. n.

Type materials examined. 1 male and 1 female paratypes (NU 6754) *Dicamaralges dasybrachius* from *Chrysocolaptes validus*, Malaysia, Subang, 12 January 1962, E. McClure. 1 male and 1 female (ZNC: V 3652, V 3653), "*Ingrassia loricata* Vitzthum, typus" [=syn-types?], from *Chrysocolaptes validus*, 25 November 1922, collector unknown. "*Ingrassia loricata*" is only a label name; actually the species was described by Vitzthum [1926] under the name *Mesalges loricatus*.

Genus *Chiasmalgas* Gaud et Atyeo, 1967

Type species: *Chiasmalgas polyplectrus* Gaud et Atyeo, 1967.

Both sexes. Setae *vi* present. Tarsi I, II with rounded ventral processes. Tibiae I, II with pair of acute ventral processes (Fig. 4 f). Posterolateral angle of femur I with small acute indentation.

Male. Epimerites I fused into a Y, surrounded by large sclerotised area. Epimerites II not connected to epimerites III, coxal fields II opened, coxal fields III closed. Opisthosomal lobes of complicated configuration: outer margin of lobes with two incisions, separated by lateral lobar digit carrying seta *ps2*; inner margins of opisthosomal lobes forming terminal cleft with ledge carrying seta *ps1*; terminal lobar digit well-expressed, elongated or relatively short, with knife-shaped or spine-like terminal membrane on apex (Fig. 3 d). Lateral margins of opisthosoma with pair of drop-shaped subtegumental sclerotisations. Genital apodemes as long inverted U, aedeagus shorter than genital arch or whip-shaped, 2–4 times longer than genital arch. Adanal apodemes present, long bow-shaped, usually not fused at anterior ends. Antaxial and paraxial processes of tibia III short spine-shaped, their ratio not more than 2:1 (Fig. 5.d), or paraxial process completely absent.

Tarsus IV greatly abbreviated, without paraxial process, with two dorsobasal teeth, seta *e* reduced to little button, seta *d* sucker-shaped, with well-developed apical disc (Fig. 6 d).

Female. Epimerites I fused as a X or Y. Hysteronotal shield as inverted trapezium (enlarged anterior) or rectangle. Posterior end of opisthosoma with two pairs of macrochaetae, *h2*, *h3*. Epigynium semicircular or horseshoe-shaped, with or without lateral extensions.

Hosts. Psittaciformes, Psittacidae.

The genus includes 3 species: *Chiasmalgas annahofmannae* Pérez et Ramirez, 1996; *Ch. hirsutus* (Trouessart, 1899) comb. n.; *Ch. polyplectrus* Gaud et Atyeo, 1967.

Taxonomic remark. The genus includes only three described species, but there is a great number of undescribed species on the New World parrots (personal examination of the mite collection in UNAM). Based on the structure of opisthosomal lobes in males, two species groups may be recognized among known and undescribed species: *polyplectrus* (2 described species) and *annahofmannae* (1 described species). The first group is characterised by distinctly elongated terminal and lateral lobar digits in males (2–3 times longer than wide). In the second group, the terminal and lobar digits are relatively short, their length and width are subequal.

ACKNOWLEDGEMENTS

The author wish to thank Prof. Dr. W.T. Atyeo (University of Georgia, Athens, USA) for loaning numerous comparative materials used in the present study, Dr. T.M. Pérez (Universidad Nacional Autónoma de México, Mexico) for the possibility to examine collection of feather mites in the UNAM, Dr. L. Tiefenbacher (Zoological National Collection, München, Germany) for loaning important type specimens, and Dr. H. Proctor (University of Alberta, Edmonton, Canada) for critically reviewing the manuscript.

The study was supported by the Russian Foundation for Basic Research (Project No 03-04-49072).

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