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Deutonymph of *Cornigamasus ocliferius* SKORUPSKI et WITALIŃSKI, 1997 (Acari: Gamasida: Parasitidae)

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ABSTRACT. A previously unknown deutonymph of *Cornigamasus ocliferius* SKORUPSKI et WITALIŃSKI, 1997 is described and distinguished from the common *C. lunaris* (BERLESE, 1882) deutonymph and the most similar *C. lunariformis* ATHIAS-HENRIOT, 1980 deutonymph. Diagnostic features of *C. ocliferius* are: a movable digit of the chelicera with five teeth, the number of opisthonotal setae reduced to 9 pairs, and the poststernal region with two pairs of ventral sclerites in a characteristic pattern. Reasons for the rarity of this species are proposed.

Key words: acarology, taxonomy, Acari, Parasitidae, *Cornigamasus*, deutonymph, Poland.

The description of *Cornigamasus ocliferius* SKORUPSKI et WITALIŃSKI, 1997 is based only on one male specimen collected in 1991. Since that time, the authors (WW, MS) have tried to find lacking adult and/or nymphal stages to complete the species description. Unfortunately, despite many sample collections in and around the *locus typicus* in the Pieniny Mountains, only 10 deutonymphs have been classified as *C. ocliferius* rather than *C. lunaris* (BERLESE, 1882), a species abundantly present (950 DNN, 58♀♀,59♂♂) in those samples. Hence we decided to describe the *C. ocliferius* deutonymph alone, first to confirm that this

rare species is actually present in and around the *locus typicus,* and second to alert acarologists working with material containing many *Cornigamasus* deutonymphs – practically *a priori* determined as *C. lunaris* – and focus their attention on all specimens which are somewhat morphologically different. We also make an attempt to explain why *C. ocliferius,* as well as species other than *C. lunaris,* are found only sporadically.

Cornigamasus ocliferius Skorupski et Witaliński, 1997

(Figs 1-4, 7-10, 13)

Diagnosis

Deutonymph: movable digit of chelicera with 5 teeth, tibia II without elevation on anterolateral surface, two pairs of sclerites in *st5–JV1–ZV1* setae region, opisthonotal shield with reduced number of setae (9 pairs).

Description

C. ocliferius deutonymphs are somewhat less sclerotised and coloured, as well as smaller than *C. lunaris* deutonymphs (in the same locality); in particular, the opisthosomal region of *C. ocliferius* is shorter and more tapered (figs 1, 4). Dimensions of idiosoma: *C. ocliferius* 315-410 x 495-655 µm (L/W factor 1.53-1.71; N=9), *C. lunaris* 370-450 x 585-800 µm (1.59-1.86; N=22).

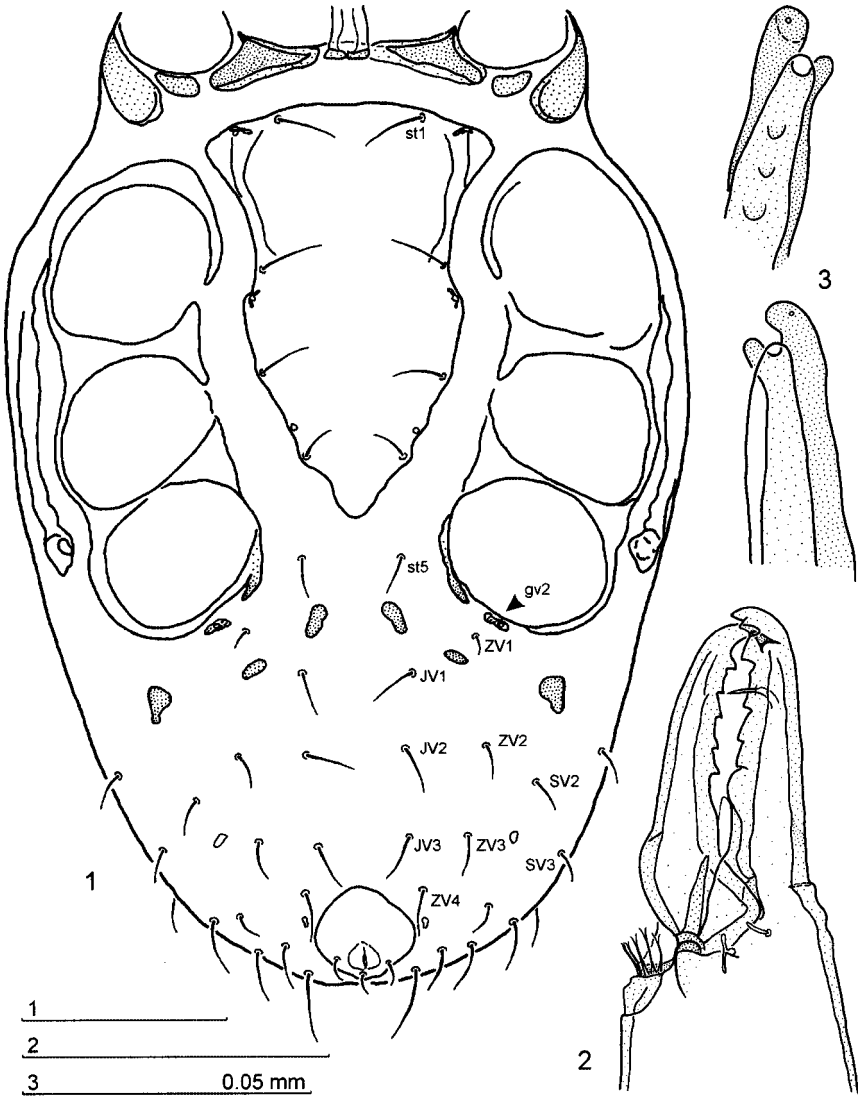
Ventral side (figs 1, 13). Presternal plates and sternal shield inconspicuous, similar in appearance to those of *C. lunaris*. In the poststernal region there are two pairs of sclerites located between *st5*, *JV1* and *ZV1* setae. A third pair of larger regular sclerites is present laterally.

Dorsal side (fig. 4). Podonotal shield bears 18 pairs of setae. Setation and pore distribution are practically the same as in *C. lunaris* (fig. 5) and *C. lunariformis* (fig. 6). Opisthonotal shield triangular in outline, its posterolateral margins are straight rather than convex. It bears 9 pairs of setae, since *J4* is lacking, whereas *S3* and *J5* are located beyond the shield.

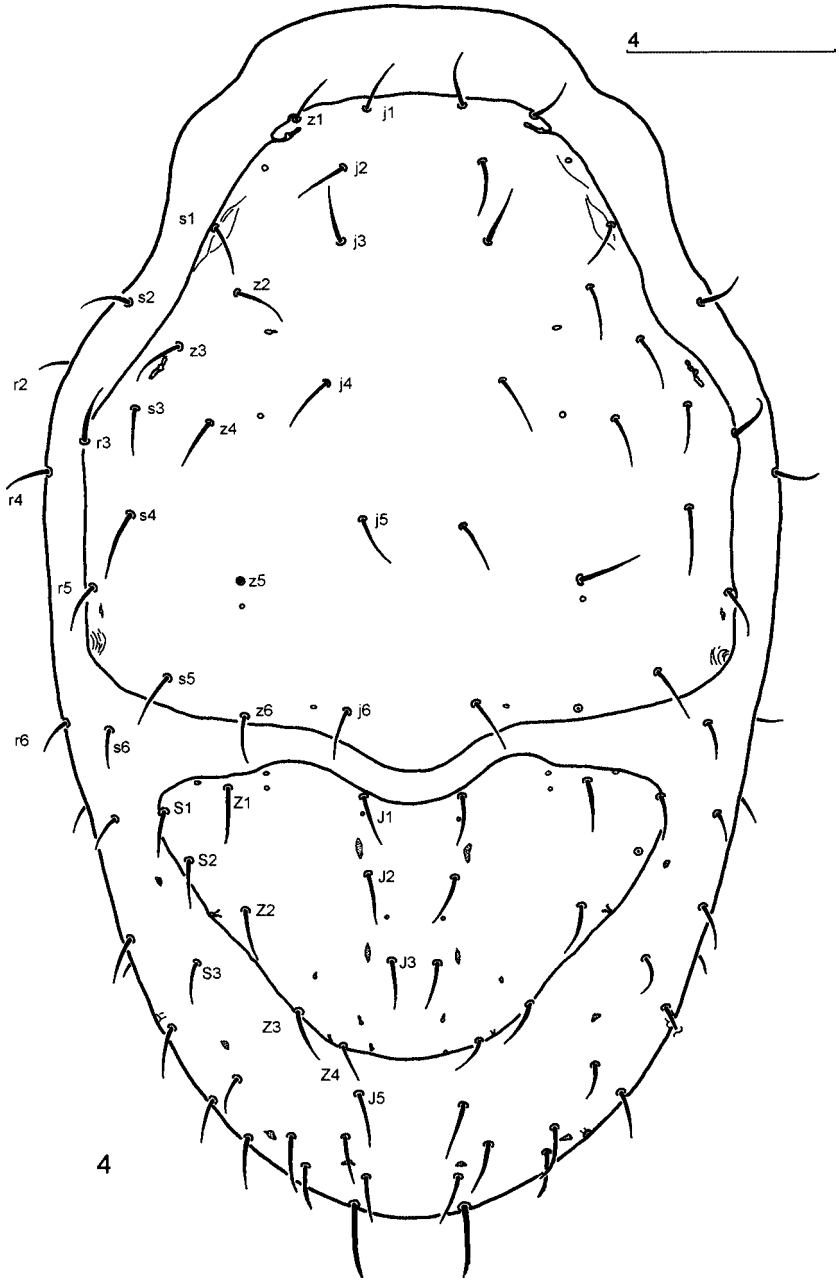
Gnathosoma. Gnathotectum (fig. 7) indistinguishable from that of *C. lunaris*, i.e. its prominent central prong has denticulate lateral margins. Hypognathal groove with 9 or 10 well visible rows of denticles (in *C. lunaris* 11 or rarely 12). Hypostomatic and palpcoxal setae simple.

Chelicera (figs 2, 3). Fixed digit bears 2 teeth in front of and 3 teeth behind the *pilus dentilis* followed by the hemicircular elevation. On the lateral, adaxial side of the digit, a toothlike protrusion forms a “rowlock” to accomodate the tip of the movable digit. Movable digit with 5 well pronounced teeth; proximal one-fourth of ventral margin convex. Arthrodial membrane is a fringe with bifid ends.

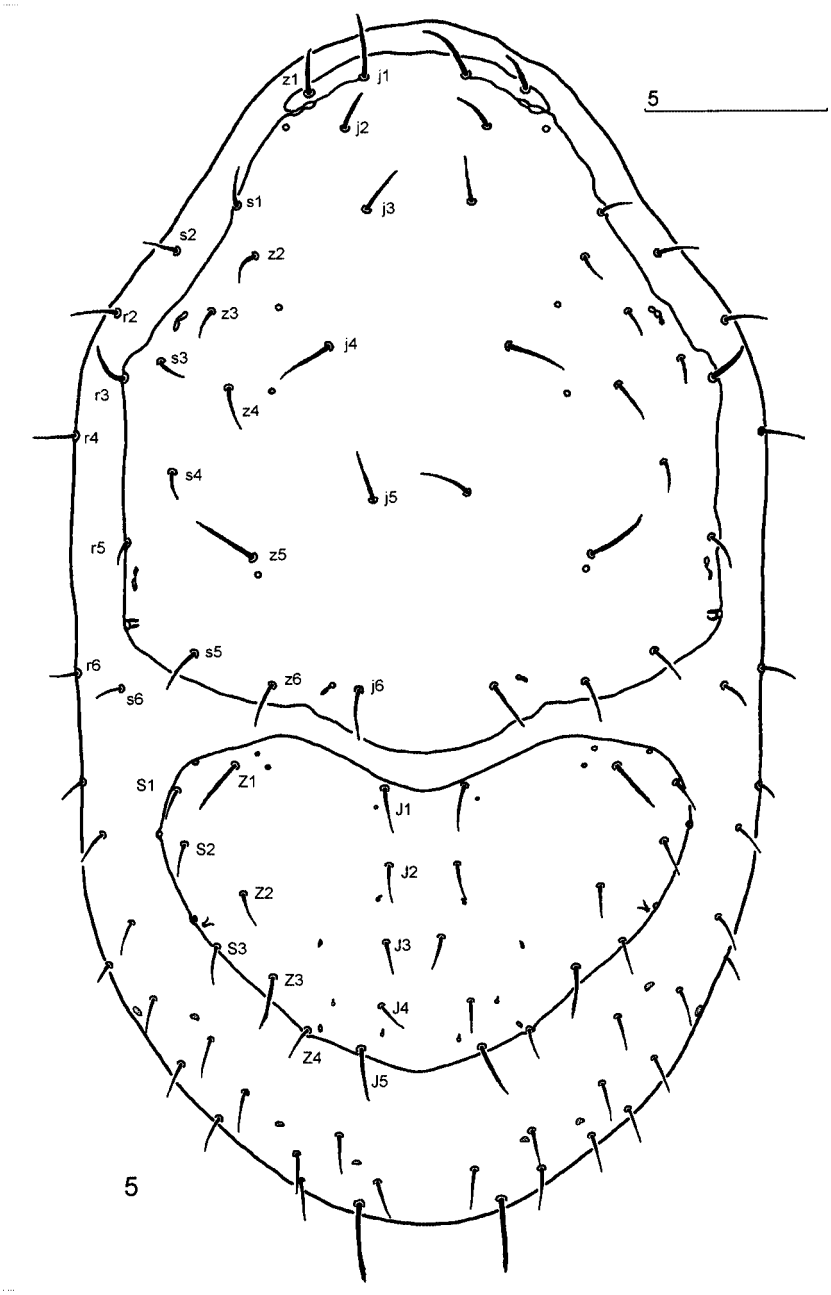
Pedipalps. Trochanter with seta *v1* simple, seta *v2* barbed on both sides distally and settled on low tubercle. Denticle protrudes anterolaterally from distal edge of trochanter.



1-3. *Cornigamasus ocliferius* Skorupski et Witaliński, deutonymph: 1– ventral side of idiosoma, 2 – chelicera, abaxial side, 3 – tips of chelicerae in ventral perspective. Scale bars: 0.1 mm (1, 2) and 0.05 mm (3)



4. *Cornigamasus ocliferius* SKORUPSKI et WITALIŃSKI, deutonymph: dorsal side of idiosoma. Scale bar: 0.1 mm

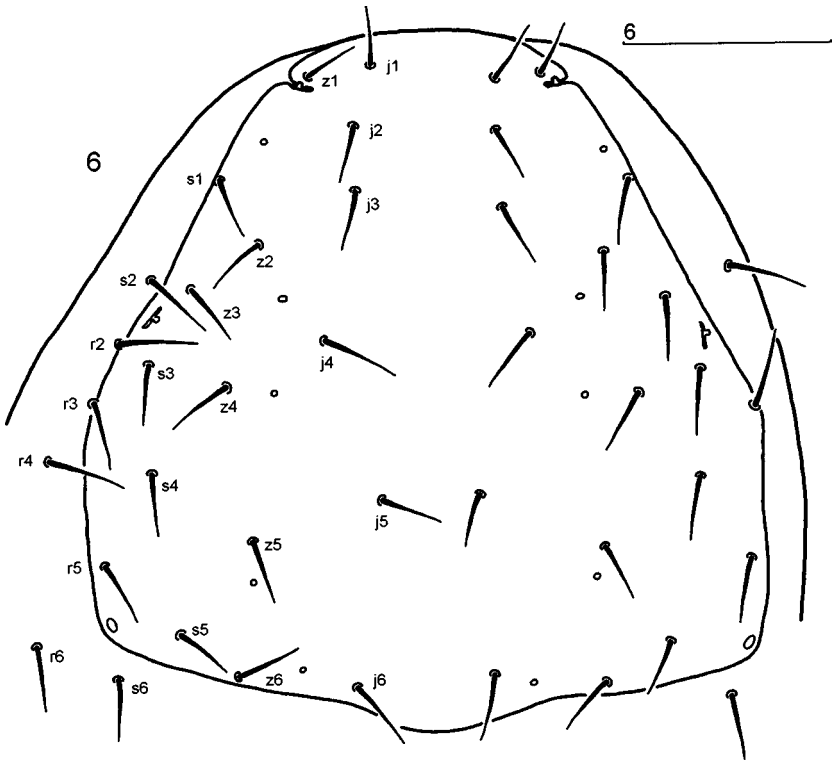


5. *Cornigamasus lunaris* (BERL.), deutonymph: dorsal side of idiosoma. Scale bar: 0.1 mm

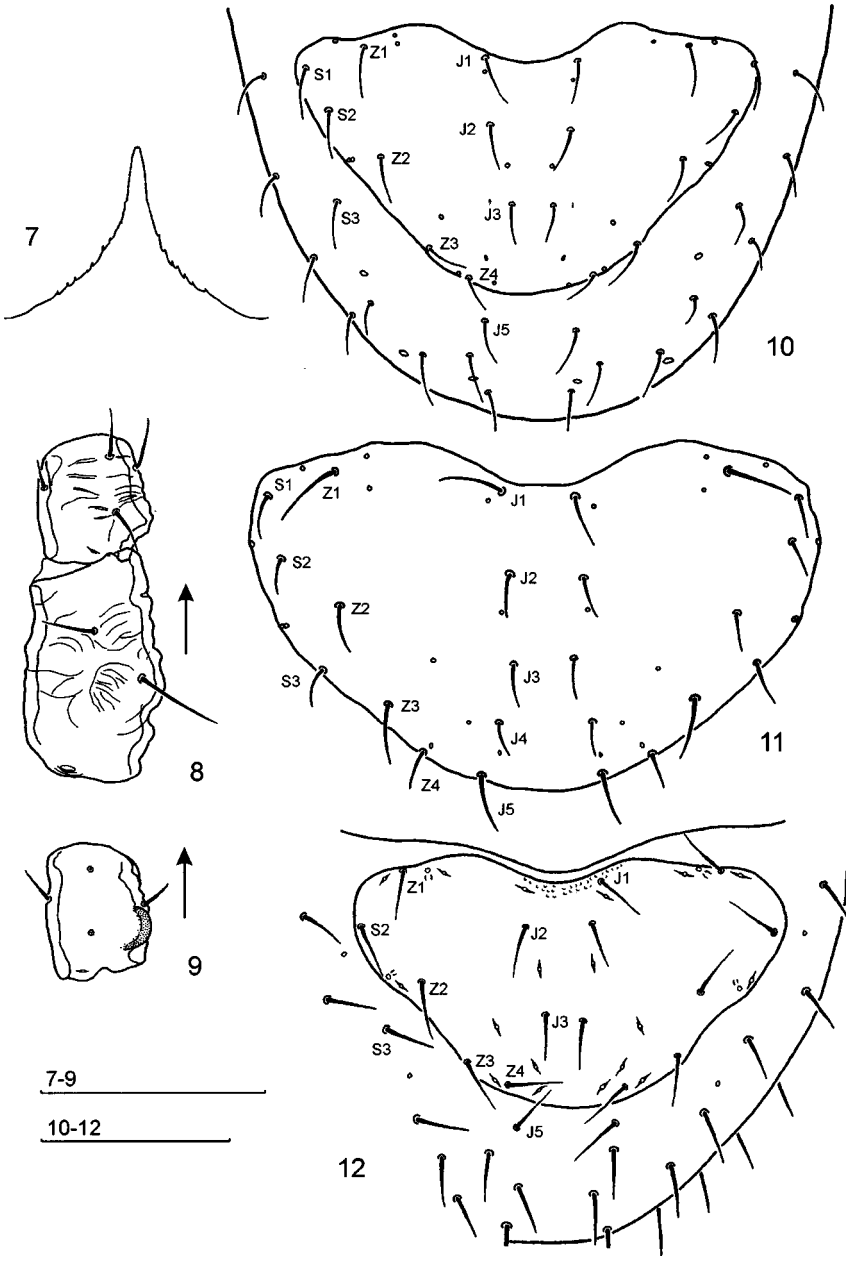
Legs. Coxa I shows two denticles anterolaterally and anterodorsally at the distal margin of the segment, trochanter I with anterolateral elevation (figs 8, 9). Anterolateral convexity on tibia II practically absent. Posteroventral tubercle on coxa III moderately pronounced.

REMARKS ON TAXONOMY AND BIOLOGY

Deutonymphs of *C. ocliferius* represent a small fraction of specimens collected in the same localities as the predominating *C. lunaris*. Since both species are similar in general appearance, *C. ocliferius* can be misidentified as *C. lunaris*. However, the diagnostic features of *C. ocliferius* are evident and can be easily observed. A cheliceral movable digit with 5 teeth is a character shared only with one other species, *C. lunariformis* ATHIAS-HENRIOT, 1980. Both species can be easily distinguished due to different opisthonotal setation: in *C. lunariformis* (fig. 12) setae *S1* are lacking, therefore the opisthonotal shield bears only 8 pairs of setae. A reduction in the number of opisthonotal setae is evident if compared to



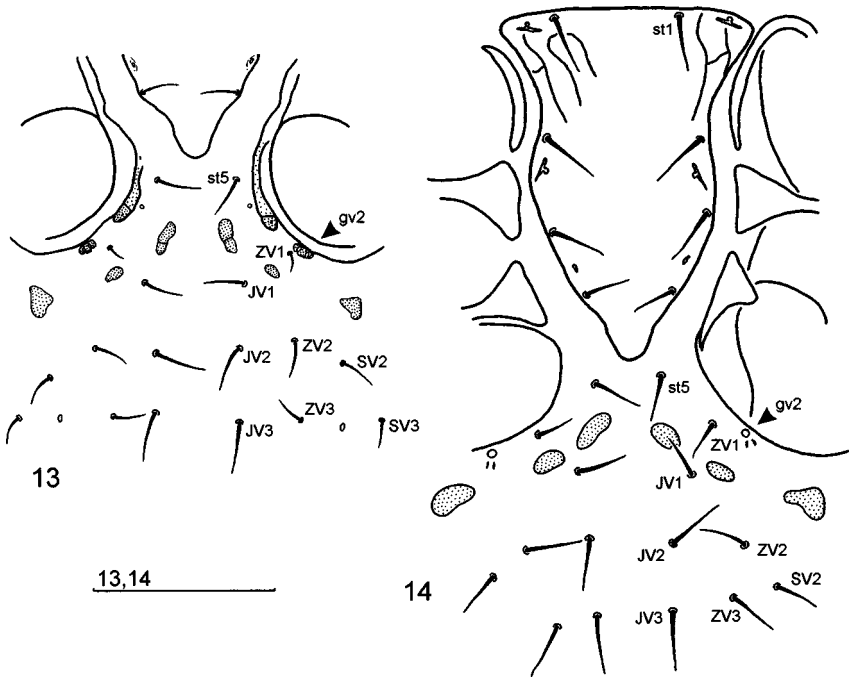
6. *Cornigamasus lunariformis* ATHIAS-HENRIOT, deutonymph: podonotum. Scale bar: 0.1 mm



7-10. *Cornigamasus ocliferius* SKORUPSKI et WITALIŃSKI, deutonymph: 7 – gnathotectum, 8 – coxa and trochanter of leg I, 9 – trochanter of leg I, another aspect, 10 - opisthonotum. Arrows are at anterolateral side; 11, 12. Deutonymph, opisthonotum: 11 – *Cornigamasus lunaris* (BERL.), 12 – *Cornigamasus lunariformis* ATHIAS-HENRIOT. Scale bar: 0.1 mm

C. lunaris (figs 5, 11), but only *J4* in *C. ocliferius* and *J4* / *S1* in *C. lunariformis* are actually lacking; setae *J5* and *S3* are still present beyond the opisthonotal shield (figs 4, 10, 12). The ventral side of *C. ocliferius* differs from that in *C. lunariformis* in details of sclerite distribution on the poststernal region (figs 13, 14).

Material collected throughout several years showed extreme differences in abundance of *C. lunaris* versus *C. ocliferius*. In fact, seven out of eight *Cornigamasus* species known to date have been described from single specimens of deutonymph or adult: *C. imitans* ATHIAS-HENRIOT, 1980, *C. karachiensis* (ANWARULLAH et ALI KHAN, 1969), *C. lunariformis, C. lunarioides* ATHIAS-HENRIOT, 1980, *C. lunaroides* MA, 1986, *C. ocliferius*, and *C. quasilunaris* ATHIAS-HENRIOT, 1980. Presumably only *C. lunaris* inhabits rotten hay, compost and similar types of decomposed plant matter, full of potential food. This species is supposedly also present in other types of field micro-environments functioning as refuges, allowing instant colonization of ephemeral habitats soon after they emerge. On the other hand, an explanation for the rarity of *C. ocliferius* is as follows: (1) this species is only locally present and relatively scarce. In addition, (2) it is strictly



13, 14. Deutonymph, poststernal region: 13 – *Cornigamasus ocliferius* SKORUPSKI et WITALIŃSKI, 14 – *Cornigamasus lunariformis* ATHIAS-HENRIOT. Scale bar: 0.1 mm

nidicolous, inhabiting decaying matter present in small rodent (supposedly *Microtus*) underground nests, rather than living outside. Mite specimens can only accidentally be transported on the fur of rodents to vole-visited haystocks and similar places, where they can persist for some time eventually molting to the adult. Since studies concerning the biology of *Cornigamasus* and environmental preferences were not performed, we can support our speculative at present hypothesis only with observations of *C. lunaris* deutonymphs on the fur of *Microtus arvalis* and *Clethrionomys glareolus* (HAITLINGER, 1987), as well as a *C. lunaroides* deutonymph (MA, 1986) described from a rodent, *Marmota himalayana*, living also in underground nests.

MATERIAL EXAMINED

In material collected since 1996 in the Pieniny Mountains, we found 10 DNN of *C. ocliferius* SKORUPSKI et WITALIŃSKI, 1997. All material was collected in wet, rotten, small amounts of a hay, left behind from the previous year or even earlier in two close localities: (1) *locus typicus*, grassland at the border of a coniferous forest – GPS coordinates N 49° 25.59'; E 020° 21.33', alt. ca. 705 m a.s.l., (2) Majerz – ca. 3 km north-west from *locus typicus*, grassland between fields – GPS coordinates N 49° 26.79'-26.82'; E20° 19.51'-19.52', alt. ca 695-705 m a.s.l. In *locus typicus* we found 2 DNN (slides no. 1075, 1147), 27.05.1996 and 7.09.1997, respectively, whereas at Majerz 8 DNN (slides no. 1121, 1124, 1125), 27.05.1996. All material is in the senior author's collection.

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REFERENCES

ANWARULLAH, M., ALI KHAN, B., 1969. A new species of *Eugamasus* from Pakistan (Acarina: Parasitidae). Acarologia (Paris), **11**: 524-526.

ATHIAS-HENRIOT, C., 1980. Contribution à la définition, à la composition et à la géographie du genre *Cornigamasus* EVANS et TILL, 1979 (Acari: Parasitiformes, Parasitidae). Folia Entomol. Hung., **41**: 9-18.

HAITLINGER, R., 1987. The mites (Acari) new or little known in the fauna of Poland, taken from small mammals and insects. Fragmenta Faunistica, **30**: 313-320.

MA, L.-M., 1986. New species of subfamily Parasitinae from north Qing-zang Plateau, China. 1. Genera *Parasitus* and *Cornigamasus* (Acarina: Parasitidae). Acta Zootaxonom. Sinica, **11**: 379-388.

SKORUPSKI, M., WITALIŃSKI, W., 1997. *Cornigamasus ocliferius* sp. n., a new gamasid mite from Poland (Acari: Parasitidae). Genus, **8**: 145-152.