

On the type specimens of *Smaris grandjeani grandjeani* (Oudemans, 1941) (Acari: Smarididae) from Panama

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Abstract

Smaris grandjeani grandjeani (Oudemans, 1941) is reassessed based on a re-examination of the type specimens from Panama. A redescription of the species is given and new morphological data are presented.

Key words: Acari, Smarididae, *Smaris grandjeani*, redescription

Introduction

The terrestrial Parasitengona is one of the most taxonomically difficult groups in the order Prostigmata. In addition to the complexity presented by heteromorphic larval and adult stages, many species cannot be recognized by modern standards due to inadequate descriptions typical of papers published in the 19th and early half of the 20th century. The revision of inadequately described species in this group is therefore an essential step toward accurate identification of the species and the advancement of the systematics of the group. This paper is part of a series devoted to the revision of some terrestrial Parasitengona in the important historical collection of the great acarologist A. C. Oudemans preserved in the National Museum of Natural History in Leiden, the Netherlands. This paper concerns *Smaris grandjeani grandjeani* (Oudemans, 1941) from Panama (Acari: Smarididae).

Oudemans (1941) erected the genus *Leuchsia* for some smaridid mites without eyes. The genus was based on a single species, *L. grandjeani* Oudemans, 1941, which was described from two specimens collected in rotten wood near Colon, Panama, by the French acarologist F. Grandjean. In his taxonomic review of the Smarididae, Southcott (1961) suggested that *Leuchsia* Oudemans might be a junior synonym of *Smaris* Latreille, the type genus of the family. This was confirmed later when Southcott (1963) gave an account of three specimens that he believed to be *Smaris grandjeani grandjeani* (he described a second subspecies, *christensoni* in the same paper). He postulated that Oudemans (1941) failed to see the eyes in this species (Southcott 1963). Southcott (1963), however, did not see the type specimens described by Oudemans and thus some doubts still remained. I was fortunate to have the opportunity to study the type specimens of *S. grandjeani*. As suspected by Southcott, I found two pairs of eyes not seen by Oudemans. In this note, I give new morphological data on this species based on the two type specimens and compare with the description of those studied by Southcott (1963).

***Smaris grandjeani grandjeani* (Oudemans, 1941)**

Leuchsia grandjeani Oudemans, 1941: 182

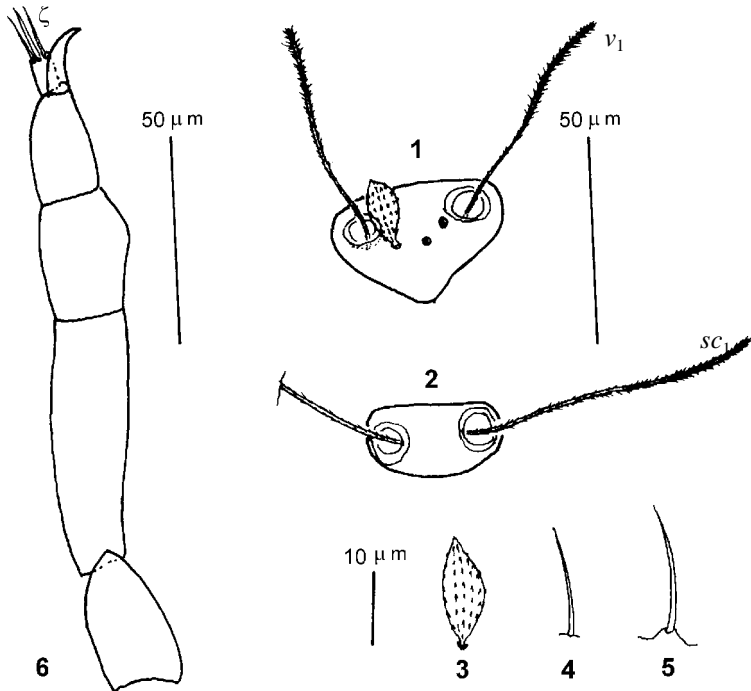
Smaris grandjeani: Southcott, 1961: 434

Smaris grandjeani grandjeani: Southcott, 1963: 174

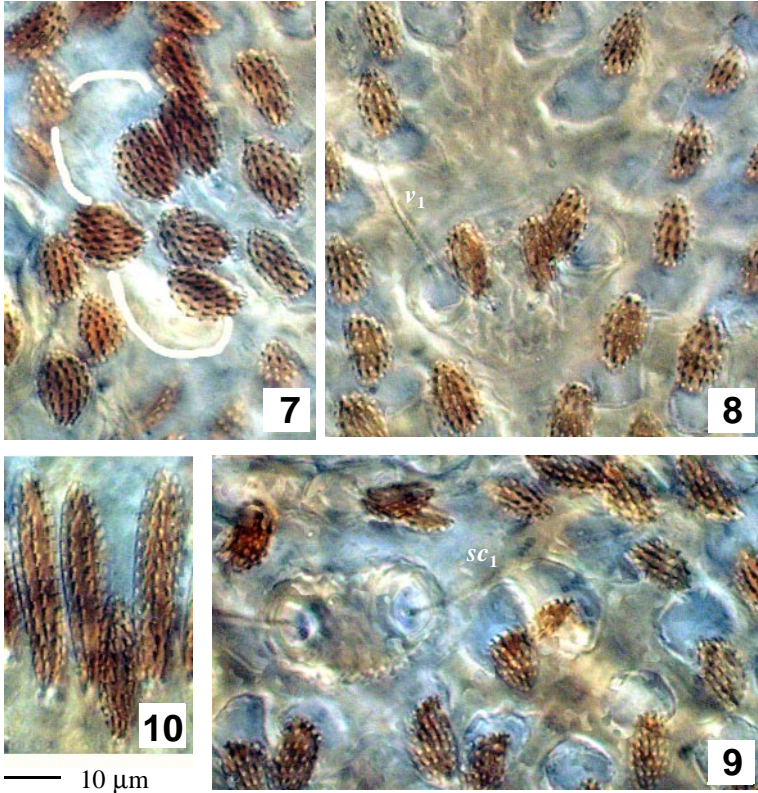
Types: two males mounted on one slide (No. 3987) with the label: "dans du Bois pourri; Environs de Colon Panama; VIII 1926; F. Grandjean". One specimen was mounted ventral side upmost and the other dorsal side upmost.

Male. Idiosoma 900 μm long from tip of naso to posterior end of opisthosoma, 430 μm wide near posterior propodosoma. Prodorsal sclerite 475-480 μm long, 232-240 μm wide. Anterior trichobothria v_1 apparently ciliated on its distal 3/4 (Figs. 1 & 8), setal length 50-54 μm long, their bases 20-22 μm apart. Posterior trichobothria sc_1 similar to

v_1 , but with basal part also apparently ciliated, but not as strongly ciliated as distal part (Figs. 2 & 9), length 70 μm , their bases 15-16 μm apart. Distance between two pairs of trichobothria 190 μm . Two pairs of eyes anterolaterad of anterior trichobothria; anterior eyes 22 μm in diameter, posterior eyes 20 μm (Fig. 7). Prodorsal setae 12-18 μm long, 6-12 μm wide; their tectum with 7-9 columns and 8-9 rows of spicules (Figs. 7-9). Anterolateral sclerite lateral in position, 100 μm long. Dorsal sclerite on opisthosoma 312-330 μm long and 210-218 μm wide. Lateral sclerite on opisthosoma 390-400 μm long, extending ventrally to cover contiguous coxae III-IV.



FIGURES 1-6. *Samris grandjeani grandjeani* (adult male). 1, anterior sensillary area and trichobothria (v_1); 2, posterior sensillary area and trichobothria (sc_1); 3-4, seta of external and internal row of genital valve, respectively; 5, eugenital seta; 6, palp with terminal eupathidia ζ indicated.



FIGURES 7-10. *Smaris grandjeani grandjeani* (adult male). 7, eyes (outlined in white) among dorsal setae on prodorsal sclerite; 8, prodorsum showing dorsal setae, anterior sensillary area and trichobothria (v_1); 9, posterior sensillary area and trichobothria (sc_1) with other dorsal setae; 10, ventral setae at the anterior end of idiosoma.

Ventral setae slightly smaller than dorsal setae, but a row of long setae present at the anterior end, each about 40 µm long and 8 µm wide, with 5 columns and 20 rows of spicules (Fig. 10). Anterior ventral sclerite covering coxae I-II and sternal area, 338 µm long and 250 µm wide

at level of coxae II. Coxae I-II on each side contiguous; coxae I (212 μm) much longer than coxae II (125 μm). Coxae III (90 μm) much shorter than coxae IV (230 μm). Genital pore 155 μm long. Genital valve each with a row of 23 nude setae, each 16-18 μm long (Fig. 4) and 16 spiculed broad setae similar to ventral setae (Fig. 3). Some 20 pairs of eugenital setae present on aedeagus; each arising from a lobe, nude and about 16 μm long (Fig. 5). Aggenital sclerites 200 μm long, 50 μm wide. Anus enclosed in a sclerite (70 μm long, 90 μm wide), each anal valve with 3 spiculed setae. Posteromedian pair of small sclerite longer (85 μm) than wide (60 μm); the pair lateral to them as long as wide (83 μm).

Most of the leg segments of the two specimens were missing in the type slide, although Oudemans (1941) gave a habitus drawing including legs I, III and IV and part of leg II (trochanter and femur), which he probably drew before mounting. Trochanter I 85-90 μm long. Basifemur I 100 μm long. Telofemur I 150 μm long. Trochanter II 65 μm long. Basifemur II 132 μm long. Trochanter III 75 μm long. Basifemur III 140 μm long. Trochanter IV 75-83 μm long. Basifemur IV 185-188 μm long.

Gnathosoma retracted into idiosoma. Palp elongate (Fig. 6). Palptarsus 10-11 μm long, not reaching tip of tibial claw (14-15 μm long). Palptarsus with 3 eupathidia (ζ ; shown in Fig. 6) and 1 solenidion (ω) visible (other setae obscured). Palptibia 27-28 μm long. Palpgenu 30 μm long. Palpfemur 72 μm long. Palptrochanter 30 μm long. Chelicera 380-390 μm long.

Discussion

The re-examination of the type specimens of this species confirms that Southcott's specimens were conspecific with the type specimens of Oudemans; both are more similar to each other than to *S. grandjeani christensoni* Southcott, 1963 from Mexico and southwestern US. It is unfortunate that Southcott's material of *S. grandjeani grandjeani* was from an unknown locality presumably in North or Central America.

Southcott's material differs from the types of Oudemans in several aspects (length in micrometers):

	Panama specimens	Southcott (1963)
Prodorsal sclerite	475-480 by 232-240	460 by 280
Diameters of two eyes	22 & 20	28 & 24
Distance v_1-v_1	20-22	26
Opisthosomal dorsal sclerite	312-330 by 210-218	281 by 258

It should be noted the main prodorsal and opisthosomal sclerites are more elongate in the type specimens than in Southcott's specimens. These differences are considered here as interpopulation variation.

Of special interest are the chaetotaxies of the genital and anal areas in these mites, which may be of importance in species identification. Southcott (1963) did not describe these for the species treated in his revision. In a detailed description of *Smaris pinus* Zhang from Cyprus, Zhang (1995) showed 16 pairs of eugenital setae on the aedeagus (*cf.* 20 pairs in *S. grandjeani grandjeani*) and 2 pairs of setae on the anal valves (*cf.* 3 pairs in *S. grandjeani grandjeani*).

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