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A new species of *Psectrosciara* KIEFFER from East Siberia belonging to the *scatopsiformis*-group of species (Diptera, Scatopsidae) [1]

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Psectrosciara dissita n. sp. (East Siberia, Russia) is described and figured. This first known Palaearctic species of the *scatopsiformis*-group (9 described species from the Neotropical, southern Nearctic and Australian regions) presents several characters which suggest a sister-group relationship with the rest of the group. A biogeographical hypothesis is advanced for the origin of the group.

Keywords: *Psectrosciara,* new species, Scatopsidae, Siberia, biogeography.

INTRODUCTION

The genus *Psectrosciara* was first described by KIEFFER in ENDERLEIN (1911) under the family Sciaridae but became valid only one year later with the description of the type-species *Psectrosciara mahensis* from the Seychelles Islands (KIEFFER, 1912). According to EDWARDS (1927), this species is a junior synonym of *Scatopse brunnescens* BRUNETTI, 1911, from Sri Lanka.

This position, though accepted by many authors, may be not correct. EDWARDS (1929) two years later compared his new species *P. luzonensis* with both *P. brunnescens* and P. *mahensis*.

Additional species have been described from all zoogeographical regions of the world by ENDERLEIN (1912), COLE (1912), DUDA (1928), EDWARDS (1929), JOHANNSEN (1946), COOK (1958, 1965, 1971, 1978) and HAENNI (1990). Two groups of species have been recognized by COOK (1958) in his revision of the known species of the genus, the *brunnescens*-group and the *scatopsiformis*-group, chiefly on the basis of genital characters.

A specimen of *Psectrosciara* from Siberia was incidentally included in a loan of Neotropical Scatopsidae to one of us (DSA) some years ago. The study of this specimen showed it to be an undescribed, rather distinctive species of the genus. This new species is described below and its position within the genus *Psectrosciara* is discussed. Finally, a biogeographical hypothesis for the origin of the group is proposed.

Psectrosciara dissita sp. n. (figs 1-5)

Type locality: Russia (Siberia), Primorskiy Kray: Vladivostok.

Type material: Holotype male labelled "Vladivostok Siberia COCKERELL 1923"/ "*Psectrosciara* sp. 1 det. D. S. AMORIM, 1982", slide mounted, in very poor

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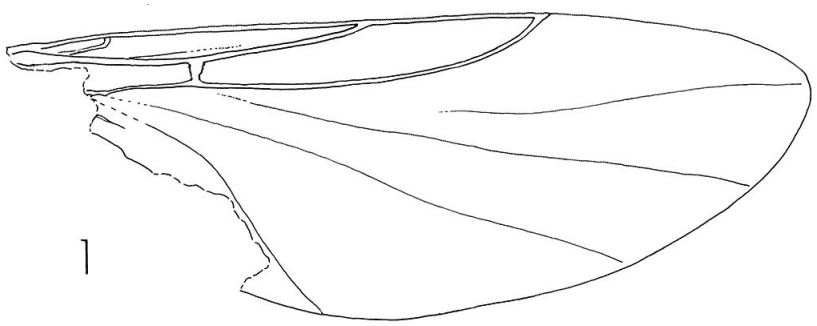


Figs 1-2. *Psectrosciara dissita* n.sp. (Holotype). 1: wing; 2: thorax (lateral view).

condition, deposited in the Smithsonian Institution, National Museum of Natural History, Washington, USA.

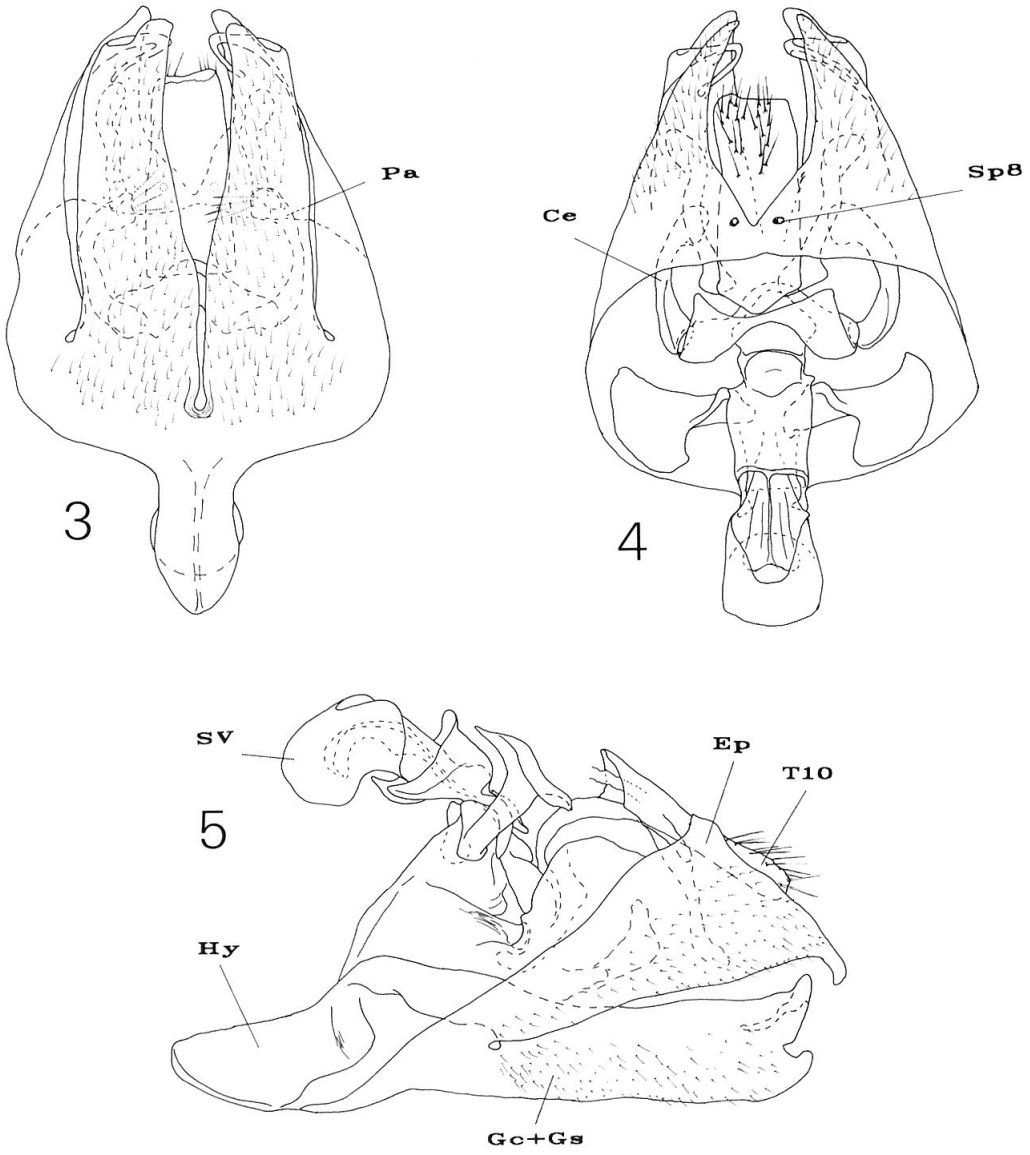
Diagnosis: The shape of the distally bilobed gonostyles is very different from that of the 2 other known Palaearctic species.

Description: Male. Large, dark species, 3.15 mm from anterior end of thorax to apex of abdomen. Head, left wing and legs (except for coxae, trochanters and left hind leg including femur, tibia and first tarsomere) lacking on unique specimen.

Thorax (fig. 2) entirely dark brown, 1.2 mm long; dorsal part of episternum I bearing spiracle, not separated from ventral part; thoracic setae: 15 subalars, 4 subspiraculars, about 15 upper episternals, 6-7 supraalars.

Hind tibia enlarged in the apical 2/5, club-shaped, with an apical internal comb of spiny setae; hind metatarsus nearly half as long as tibia, with the usual ventral spiny setae.

Wings (fig. 1) nearly hyaline, 2.9 mm long; costal ratio C1/C2/C3=2.04/1/1.54; anterior veins brownish, posterior veins translucent, unsclerotized; basal part of Rs in the shape of an enlarged, somewhat inflated, unclearly defined infuscated patch; basal part of M1 entirely lacking, and extreme base of M also not traceable; macrosetae present on all veins and on membrane, especially abundant on the posterior half of wing.



Figs 3-5. *Psectrosciara dissita* n.sp. (Holotype). Male terminalia. 3: ventral view; 4: dorsal view; 5: lateral view. (Abbreviations. Ce: cerci; Ep: epandrium; Gc + Gs: fused gonocoxites and gonostyles; Hy: hypandrium; Pa: parameres; Sp 8: spiracles of tergite 8; Sv: sperm vesica; T10: tergite 10).

Abdomen 2.5 mm long, dark brown; all tergites and sternites covered with rather dense pilosity but devoid of pubescence; tergite 1 transverse, 2 nearly quadrangular, narrowing towards posterior margin, 3-4 practically quadrangular, 5-6 wider than long, 7 much developed, about twice as long as preceding one, with regularly produced, medially shallowly emarginated posterior margin. Sternites transverse, much wider than long.

Terminalia elongated, 1 mm long, 0.6 mm broad, with all pieces more or less fused together (figs 3-5); aedeagus not traceable, parameres internal in position, in the shape of elongated curved appendices bearing apical bristles; apparently fused gonocoxites and gonostyles in the shape of a pair of ventral elongated flattened, api-

cally bilobed, appendices, basally fused with hypandrium and basolaterally fused with epandrium; epandrium fused dorsally with spiracles-bearing tergite 8; tergite 10, sternite 10 and cerci present, internal in position.

Female unknown.

Distribution: Known only from the type-locality in coastal eastern Siberia.

DISCUSSION

AMORIM (1982) has demonstrated the monophyly of the genus *Psectrosciara* and of both divisions proposed by COOK (1958), the *brunnescens-* and *scatopsiformis*-groups. *P. dissita* most certainly belongs to the *scatopsiformis*-group. This is shown by apomorphic features of the male terminalia: genital capsule rather elongated, hypandrium laterally compressed, epandrium mostly membraneous, parameres mesally fused, gonocoxites shortened, distally fused to the elongated gonostyles.

The following 10 species belong to the *scatopsiformis*-group: *P. brevipennis* COOK, 1958, *P. elongata* COOK, 1958, *P. serrata* COOK, 1958 (southern Nearctic), *P. californica* (COLE, 1912) (southern Nearctic, Neotropical), *P. jamaicensis* COOK, 1958, *P. rossi* COOK, 1958, *P. scatopsiformis* ENDERLEIN, 1912 (Neotropical), *P. minor* COOK, 1971, *P. nitida* COOK, 1971 (Australian) and *P. dissita* sp. n. (eastern Palaearctic). On the other hand, 4 additional undescribed Neotropical species are known to one of us (DSA).

The male terminalia of *P. dissita* do not exhibit some striking modifications shared by the other species of the group. The cerci are present in *P. dissita*, a plesiomorphic feature, but are absent in probably all other species of the *scatopsiformis*-group. In the Australian, southern Nearctic, and Neotropical species (except for *P. rossi* from Chile), the terminalia are considerably more elongated by reduction of width of gonocoxal plate, posterior development of gonostyles and particular elongation of the characteristic anterior part of sternite 8. The epandrium is normally developed in *P. dissita* and *P. rossi* while it is very short and weakly sclerotized in the remaining New World species. Unfortunately this can not be verified in the drawing of the male terminalia of the Australian *P. nitida* by COOK (1971), as is the case of the more striking development and sclerotization of sternite 10 in the Neotropical and southern Nearctic species, except for *P. rossi.* Finally, the shape of the bilobed distal part of the gonostyles and the development of a pair of posterior projections to the epandrium are apomorphies of *P. dissita.*

This set of characters is sufficient to support the hypothesis of a sister-group relationship between *P. dissita* and the remaining species of the *scatopsiformis*-group. On the other hand, the Chilean *P. rossi* is the probable sister-group of the Australian plus the other Neotropical and southern Nearctic species of the group.

This separation into one taxon in the northern hemisphere and another in the southern hemisphere (actually with some extensions into the southern Nearctic Region) is congruent with the division of the Pangaea into Laurasia and Gondwanaland, already verified in many other groups (e.g., the laroniine spiders; PLATNICK, 1976). This would imply that the origin of the *scatopsiformis*-group of species of *Psectrosciara* is somewhat earlier than the Lower Jurassic.

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RÉSUMÉ

Une espèce nouvelle de *Psectrosciara* KIEFFER de Sibérie orientale appartenant au groupe de *P. scatopsiformis* (Diptera, Scatopsidae). - *Psectrosciara dissita n.* sp. (Sibérie orientale, Russie), première espèce paléarctique du groupe de *P. scatopsiformis*, est décrite et figurée. La nouvelle espèce représente probablement le groupe-frère du reste des espèces du groupe *scatopsiformis* (9 espèces décrites des régions néotropicale, néarctique méridionale et australienne) et une hypothèse biogéographique de l'origine de ce groupe d'espèces est avancée.

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