LISSOCEPHALA RASPLUSI, SP. N., IN THE *JUNCTA* SPECIES GROUP [*DIPTERA, DROSOPHILIDAE*], FROM *FICUS POLITA*

PAR

Shane F. McEVEY (1) & Daniel LACHAISE

Laboratoire de Biologie et Génétique évolutives, Centre national de la Recherche scientifique, F-91198 Gif-sur-Yvette Cedex.

SUMMARY

Une nouvelle espèce de Lissocephala *est décrite et illustrée à partir de matériel collecté sur* Ficus polita *en Côte d'Ivoire. L'espèce appartient au groupe* juncta, *elle ressemble étroitement à* L. disjuncta *Tsacas & Chassagnard laquelle n'avait été trouvée que sur* F. sur *et* F. vogeliana. *Peu de caractères diagnostiques utiles peuvent être détectés, mais associés avec la discrimination des* Ficus-*hôtes, ils suffisent à reconnaître la présence de deux espèces distinctes, de toute évidence étroitement apparentées : les femelles de l'une et de l'autre espèce ont des postabdomens courts et pondent dans l'ostiole de la figue.*

Mots-clés : *Diptera, Drosophilidae, Lissocephala rasplusi,* new species, *Ficus polita,* Ivory Coast.

A new species of *Lissocephala* is described from material collected on *Ficus polita* in the Ivory Coast.

Morphological terms and morphometric formulae have been described previously (McALPINE, 1981 ; McEVEY, 1990). Type material is deposited in the Muséum national d'Histoire naturelle, Paris (MP) and the Australian Museum, Sydney (AM). Dissected specimens are marked with an asterisk (*) in the text below, terminalia are preserved in glycerine in microvials pin-mounted with imagoes. Measurement of wing-length from the humeral to the wing apex (W) cf. axillary area to apex (L) conforms with current practice (pers. comm. Bächli, Grimaldi and Vilela).

Lissocephala rasplusi, sp. n. McEvey & Lachaise
(Fig. 1, 3, 5-7, 11-13, 15-16)

Distinguishing features. Scutellum black, scutum entirely golden-tan and shining ; egg with two parallel longitudinal ridges dorsally ; body length 3.4 mm ; wing length (W) in the range 2.27-2.64 mm.

Description (male and female) :

Body length. 3.4 mm (paratype range 2.73-3.12 mm).

Head. Arista with 6 (7 in one paratype) dorsal and 3 ventral rays and a small terminal fork. Frons subshining tan, slightly wider than long, fw : fl = 1.19 (1.32 in ♀ 6839), width of the head

(1) Present address : Australian Museum (Entomology), PO Box A285, Sydney South NSW 2000, Australia.

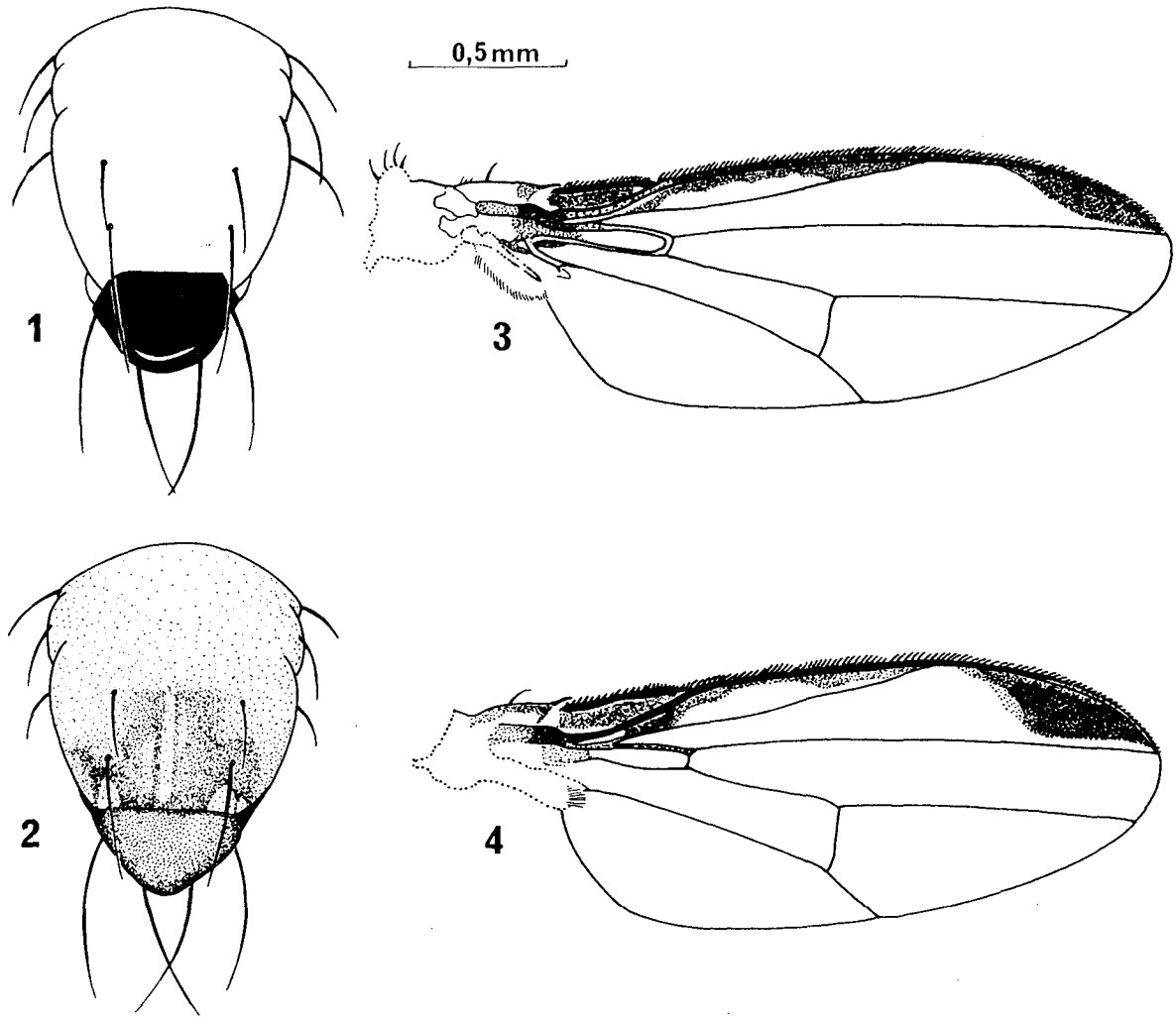

Fig. 1-4, Mesonotum and female wings. — 1 and 3, ***Lissocephala rasplusi***, sp. n. — 2 and 4, ***L. disjuncta.***

2.3 fw ; fronto-orbital plates and ocellar triangle not distinct ; several frontal hairs close to anterior margin. Ocellar triangle slightly raised, black only between ocelli. Pedicel small, pale tan ; first flagellomere concolorous with short pile. Carina large, flat, rounded below with squared sides ; narrower and lower between pedicels. Face subshining pale tan. Genal width about 0.1 maximum diameter of eye (o) ; not broadened posteriorly ; vibrissa single and large, subvibrissal setulae all small. Eye with very fine and short pile, extremely sparse ; line of maximum diameter bisects gena ; o : fw = 1.38. Fronto-orbital setae (or) arising very close together, or2 very fine and closest to eye, or1 and or3 approximately equidistant from eye and each other ; the three orbitals have length ratios : or1 : or3 = 0.95, or1 : or2 = 3.2 (2.7 in ♀ 6839) ; orbito-index = 0.42. Ocellar setae arise very close together behind the anterior ocellus ; distance between bases of postocellars equal to their lengths ; oc : or1 = 1.33, poc : oc = 0.55 ; other cephallic setae with length ratios : or3 : iv = 0.75 (in ♀ 6839), iv : ov = 1.10.

Thorax. Scutum polished golden tan. Acrostichal hairs in about 12 irregular rows between the anterior dorsocentral setae (adc) and in about 4 rows between pdc ; prescutellar acrostichals absent ; adc : pdc = 0.57 ; fw = distance between adc. Scutellum black and subshining (Fig. 1) ; bsc : asc = 0.97 (0.90 in ♀ 6839). Halter and thoracic pleura pale tan, the latter is shining ; sterno-index = 0.9 (0.83 in ♀ 6839), mid katepisternal seta (m. kepst) 0.2 length of anterior seta, p. kepst : pdc = 0.65 ; pdc and asc approximately subequal.

Wing (Fig. 3). Largely hyaline with distinctive infuscation in costal cell and in narrow irregular band along costal vein, broad in third section. The shape of the subapical wing patch varies among the types, not all of which have a tapered and narrow form as illustrated ; the holotype pattern is intermediate between the two forms figured (Fig. 3 *L. rasplusi*, n. sp. and Fig. 4 *L. disjuncta*). Wing indices of holotype, with paratype average and range between parentheses, are as follows :

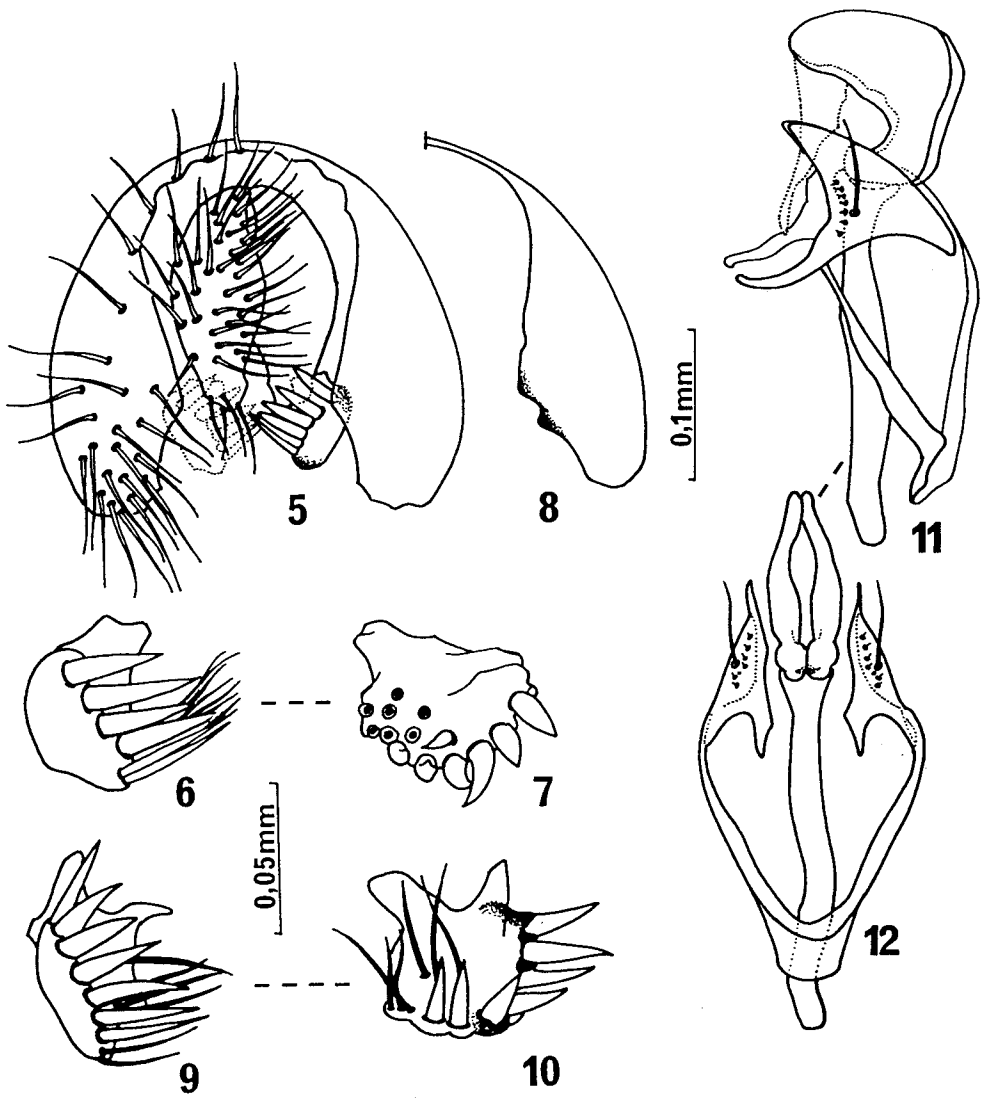

Fig. 5-12, male terminalia. — 5-7, ***Lissocephala rasplusi***, sp. n. epandrium and two views of surstylus of holotype (no. 6846). — 8-10, ***L. disjuncta***, epandrium and surstylus. — 11-12, ***L. rasplusi***, sp. n. hypandrium, lateral (11) and ventral (12) views.

L : w = 2.87 (2.81, 2.61-2.94), C-index = 1.07 (1.10, 1.00-1.23), 4v-index = 1.81 (1.84, 1.71-1.93), 4c-index = 1.54 (1.52, 1.39-1.64), 5x-index = 1.07 (1.11, 0.96-1.20), M-index = 0.38 (0.40, 0.36-0.45), ac-index = 2.99 (3.17, 2.69-3.60), C3 fringe = 0.99 (0.98, 0.97-1.00), wing length (L) = 2.62 mm (2.46, 2.27-2.64 mm), W = 2.26 mm.

Abdomen. Entirely black, highly polished. Setae long near posterior edge of tergite 3.

Terminalia male (Fig. 5-7, 11-12). Ventral lobe of epandrium with about 18 long setae (cf. about 10 in *Lissocephala disjuncta*) and broad, posterolateral margin without indentations at the level of the surstylus (cf. *L. disjuncta*). Ventral area of cercus with 5 setae apically. Surstylus with one basal prominence (cf. 2 in *L. disjuncta*) ; 4-5 stout prensisetae lacking basal denticulate setae (cf. *L. disjuncta*). Hypandrial lobes (gonopods ?) extended into narrow curved projections ; paraphysis prominent, crescentric and broad in lateral view, narrow and slightly curved in ventral and caudal view ; darkly pigmented. Aedeagus indistinct, shorter than apodeme.

Terminalia female (Fig. 13). Not with telescopic postabdominal segments ; apparently lacking other useful diagnostic characters ; T7 slightly larger than in *L. disjuncta*.

Egg morphology (Fig. 15-16). Egg with two distinct, parallel longitudinal ridges dorsally (cf. amorphous embossed chorion *L. disjuncta*) ; no filaments ; small polygonal imprints of follicular cells visible between ridges, larger cells visible laterally ; anterior pole with two bulbous protrusions.

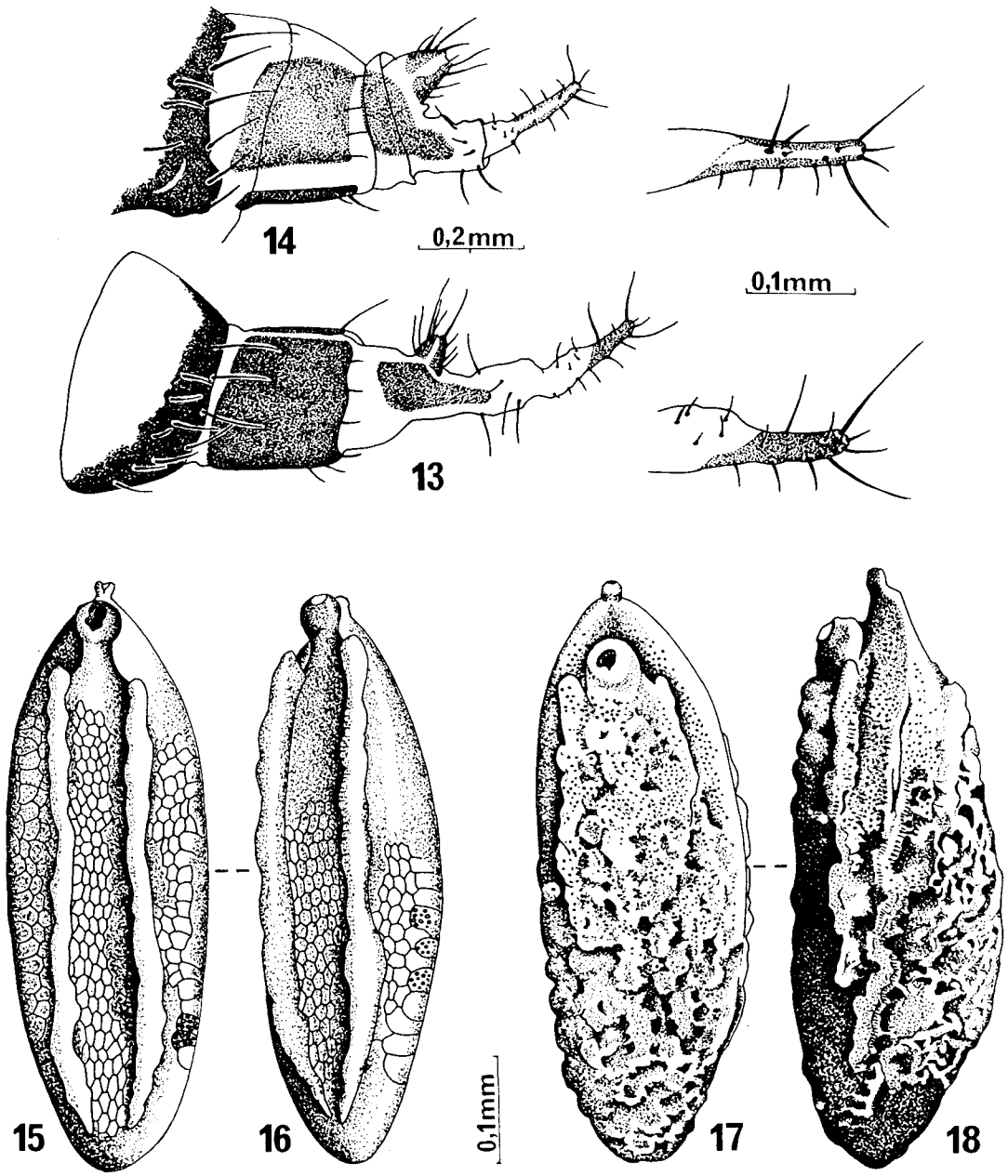

Fig. 13-18, female postabdomens with detail of oviscapts and eggs. — 13 and 15-16, ***Lissocephala rasplusi***, sp. n. — 14 and 17-18, ***L. disjuncta***. Eggs portrayed in dorsal (15, 17) and lateral views.

Holotype ♂ in MP : « IVORY COAST, Lamto Station, off *Ficus polita*, VI-1989 [collected by] D. Lachaise, Registered Specimen S F McEvey 6846 » collected on a single tree near Zougoussi village on a Bandama River tributary ; *in :* M.N.H.N. à Paris. — **Paratypes** (7 ♀♀) with same data as holotype but with Reg. numbers 6839-6844 (*in :* M.N.H.N. à Paris) and 6845 (*in :* A.M., Sydney).

Remarks. *Lissocephala rasplusi*, sp. n. is a member of the *juncta* species group (TSACAS & LACHAISE, 1979 ; TSACAS & CHASSAGNARD, 1981) : the epandrium lacks a finger-like expansion and is smoothly rounded ventrally ; surstyli bear a series of strong prensisetae. The group now comprises nine species : *L. rasplusi*, sp. n., *L. africana* Tsacas, *L. ambigua* Tsacas & Chassagnard, *L. diola* Tsacas & Lachaise, *L. disjuncta*, *L. juncta* Tsacas & Chassagnard, *L. linearis* Tsacas, *L. melanothyrea* Tsacas and *L. nigroscutellata* Tsacas. The new species is morphologically very similar to *L. disjuncta* but the two species are found on different species of *Ficus* within the same area, species of this genus in the Afrotropics are characterized by their specialized association with

particular fig species (LACHAISE & McEVEY, 1990). Of eight *disjuncta* specimens examined only one had more than five dorsal aristal rays whereas all specimens of *rasplusi*, sp. n. have at least six dorsal rays, sometimes seven.

Distribution. Ivory Coast, known only from types.

Etymology. Named after Jean-Yves Rasplus.

ECOLOGY

Like other species of *Lissocephala* in Africa *L. rasplusi*, sp. n., is strictly fig-breeding (LACHAISE & TSACAS, 1984 ; LACHAISE & McEVEY, 1990). It was found only on *Ficus polita* Vahl in the preforest savannas of Lamto whereas the cryptic species *L. disjuncta* which is undoubtedly closely related breeds on, and is found only in association with the sympatric *F. sur* Forsskål. The latter fig grows in fire-protected savanna and has been extensively investigated ; only *Lissocephala disjuncta* has been found on it. These two host fig species belong to separate subgenera, *Ficus sur* is a member of the subgenus *Sycomorus* Mildbraed & Burret and *Ficus polita* is in *Urostigma* Miquel.

Females of *Lissocephala rasplusi*, n. sp. lay one to three eggs in the slit of the protruding, bilabiate ostiole of the immature syconium at the *early interfloral phasis* just after the pollinating fig wasp (*Courtella bekiliensis bispinosa* Wiebes, *Agaonidae*) has entered. The fly larvae pass three larval instars inside the fig before it ripens and falls from the tree. Pupation occurs in the soil. In these respects the biology of *L. rasplusi*, n. sp. is very similar to *L. disjuncta* a result which was predicted for ficophilous flies of this genus the females of which have short postabdomens (LACHAISE & McEVEY, 1990.).

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