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AN UNDESCRIBED AFRICAN SPECIES OF *LEIA* (DIPT.,
MYCETOPHILIDAE) INFESTING ROOT-GINGER IN LONDON

BY A.M. HUTSON

In June 1974 some flies invading an office in the Limehouse dock area of London were brought to the British Museum (Natural History) for identification. They were apparently a *Leia* sp. not previously recorded from Britain. These original specimens were not in good condition and so I accompanied the local public health inspector, Mr. W.G.J. Kidson, to the office, where a number of the flies was collected from the windows. One of the office staff took us to a nearby warehouse where the *Leia* were streaming out of a hole in the door together with the scatopsid fly *Coboldia fuscipes* (Meigen). In a betting-shop next to the warehouse great numbers of the *Leia* were present despite the fact that the shop was liberally festooned with Vapona-strip insecticide. The insecticide had been introduced by the occupants in an attempt to combat the flies, which had been invading the shop for about two weeks.

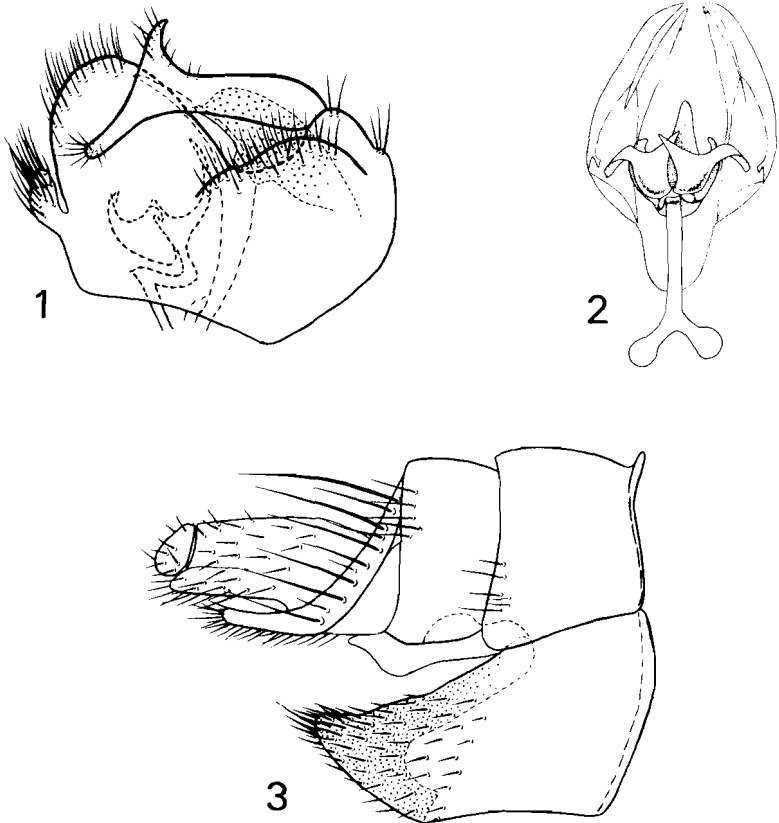
The warehouse contained 53 tons of root-ginger (*Zingiber officinale* Rosc.), much of which, particularly in the basement level, was rotting. Dead specimens of the *Leia* sp. covered the walls where they had stuck to the dampness, and were thick on the floor. Live specimens were also extremely numerous together with the scatopsid and some Drosophilidae. On the undersurface of the rotting ginger, larvae and pupae of the *Leia* sp. were found living in a silk platform and a number of these was collected.

On return to the British Museum (Natural History) it was established that these flies were an undescribed species. It was thought advisable to get more material, particularly of the immature stages. The public health inspector was endeavouring to ascertain the owner of the ginger so that the stock could be removed and disposed of, but thought that it would be possible for me to collect further samples before the stock was removed. Unfortunately, the warehouse mysteriously caught fire that night and the whole warehouse and its contents were destroyed by the fire, smoke and water. The debris was deposited in Essex. There is no evidence so far that the fly has become established anywhere else in the area and so it is assumed that the species is extinct in Britain.

The most similar described species are South American species such as *fasciata* Kertész and *halterata* Kertész. The new species keys to *fasciata* in Shaw & Lane's (1950) key to Neotropical species. The material in the British Museum (Natural History) identified as *fasciata* comprises a mixed series of several species, but none of these is the species found in London, although some species differ only in details of the genitalia. The London species is also unlike any of the 22 species of *Leia* known from the Ethiopian region (Matile, in prep.). But, in the British Museum (Natural History), a number of specimens of the species causing the recent infestation in London have been identified in seven samples from South Africa, Kenya and the island of St.

Helena. It would thus appear that this is an African species belonging to a species-group that is mainly South American. While the possibility that the African records are the result of a (Neotropical) introduction cannot be ruled out, it seems inadvisable to base the description of this new species on the British material, and so it is described below from South African specimens. No similar Oriental species could be found, and a brief survey of Holarctic species has not demonstrated any similar species. I therefore feel confident in placing on record the occurrence in London of a new species described from African material. Its description is published now to facilitate inclusion of the species in a forthcoming handbook to the Mycetophilidae occurring in Britain. An additional point of interest is that although many species of the related family Sciaridae are regularly synanthropic, cases in the Mycetophilidae are very rare.

With regard to the London infestation, the ginger in the warehouse was from Brazil and had been there for about six months. Previously the ware-



Figs. 1-3. — *Leia arsona*: 1, ♂ genitalia, lateral view; 2, ♂ aedeagus, from below; 3, ♀ genitalia. (Illustrated from British specimens.)

house had stood empty for several years and was last used regularly in about 1966. Banana ripening was carried on for many years, the heat being obtained from open gas-jets of the old fish-tail type. Since the *Leia* species is widespread in Africa, it seems likely that it is indigenous there and therefore was not introduced into Britain with the ginger. It could have been acquired en route to Britain from the ship that transported it, but it seems unlikely that the fly would have reached the densities present in the warehouse in six months. It is more likely that the fly was already present in the warehouse or its environs from a previous shipment of some African product.

In any event, this is not a typical breeding site for *Leia* spp.; the breeding sites of all the European species that have been detected are the nests of mammals, particularly squirrels, and birds. No tropical species has been bred, but it may be that the situation recorded in temperate regions is not constant throughout the genus.

Leia arsona sp. n.

Head: orange with black marks around the three ocelli. Scape and pedicel orange, flagellar segments 1-3 with some orange on underside, rest of antennae dark.

Thorax: Orange with dark marks on the mesonotum at the base of each wing and another black mark in the middle of the posterior margin of the mesonotum. Lower parts of pleurotergites dark. Four scutellar bristles. Postnotum usually somewhat darkened. Halteres with black capitulum and yellow pedicel.

Wings: slightly brown throughout. Dark cloud over proximal end of *r-m*, below Cu and a vague preapical band including most of the apical third of cell R1 and crossing wing to just beyond apex of anterior branch of posterior fork. Sc1 ending in costa above posterior fork, Sc2 about 2/3 along. R1, *r-m* and stem of median fork all about equal. All fork veins reaching wing margin. Anterior branch of posterior fork narrowly interrupted at base. Distinct black mark at base of fork of anal veins.

Legs: yellowish orange with the tip of the hind femur narrowly black.

Abdomen: tergite 1 usually with a black median apical mark. Tergites 2-5 with black apical bands across whole width of tergite, much wider medially than at sides thus tending to form a continuous dorsal longitudinal line as well. Sternites 1-5 yellow. Segment 6 black, 7 dark brown. Genitalia as in figs. 1-2 (♂) and fig. 3 (♀).

Holotype ♂: SOUTH AFRICA: Grahamstown, 1.x.1953. B.R. Stuckenberg. (Natal Museum).

Paratypes: SOUTH AFRICA: Grahamstown, 1.x.1953. B.R. Stuckenberg, 2 ♂; same data, but 24.x.1953, 1 ♀; same data, but 26.x.1953, 1 ♂ 1 ♀.

Other material: SOUTH AFRICA: Pietermaritzburg, 16.xi.1954, B.R. Stuckenberg, 1 ♀, Eshowe, caught on window pane of laboratory, 12.ix.1953 B. de Meillon (625), 1 ♀.

ST. HELENA: Nr. Plum-tree-cottage, in car on roadside, 31.vii.1959, K. Sim, 1 ♂; Oaklands, inside motor car, 3.vii.1959, K. Sim, 1 ♀; Scotland Lab., on window, 27.vii.1959, K. Sim, 1 (no abdomen). The male has the posterior part of the mesonotum dark and the postnotum darker than typical specimens.

KENYA: Muguga, viii.1953. V. Eastop, 3 ♂ 1 ♀. The genitalia of one were dissected and found to differ slightly in the structure of the aedeagus from typical specimens, but it is considered to be conspecific. One clasper is also deformed.

ENGLAND: London, Limehouse, in warehouse storing root-ginger, 21.vi. 1974. A.M. Hutson, 13 ♂ 13 ♀ pinned, plus larvae, pupae and other adults in spirit. A pinned pair with the same data are also deposited in the Muséum d'Histoire Naturelle, Paris, France.

ACKNOWLEDGMENTS

I thank Mr. W.G.J. Kidson, Public Health Inspector for the London Borough of Tower Hamlets, for taking me to the warehouse and for providing background information on the provenance of stocks in the warehouse. Mr. L. Matile, Muséum National d'Histoire Naturelle, Paris, kindly commented on specimens sent to him.

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Some Interesting Diptera Taken in 1976 in Sussex. — The effects of the drought are very clearly shown in changes in the dipterous fauna, some species becoming scarcer and others more common. The following species have occurred to me far more commonly than usual.

Doros conopseus (F.) (Syrphidae) is usually a very scarce insect, although it has been taken in Friston Forest near Eastbourne, once by my father in June 1969 and once by Mr. R. Dumbrell in June 1975. This year it has occurred once to Mr. Dumbrell again in Friston Forest, twice to myself above South Heighton near Newhaven and five times to Mr. Dumbrell and myself at Arundel Park. Mr. B. Coles also took one on Hackhurst Downs.

Evihrissa vittata (Meigen) (Tachinidae) was first taken in Britain by S.D. Barfoot in Whippendale Wood. A specimen has been in my father's collection from Plashett Wood, August 1970, unnamed until it was identified early last year by Mr. R. Uffen. Since then my father has taken it near Staplefield, and I have seen it twice in woods near Tortington, Arundel. Mr. B. Coles also has a specimen from Camp Hill on Ashdown Forest.

Physiphora demandata (F.) (Otitidae) is a fly I had not seen until last year when I found it in profusion on umbelliferous flowers in many places in Sussex (Wilmington, S. Heighton, Glynde, Westdean, Heathfield, Colemans Hatch, etc.).

On 24th June at the edge of woods near Folkington Manor, *Volucella inflata* (F.) (Syrphidae) was very common on privet flowers. Although this species is not very scarce I had never seen more than two at a time, and yet on this date there must have been between 20 and 30 in quite a short distance.

Thecophora atra (F.) (Conopidae) was also new to me last year when I found a small colony on the downs above Alfriston, where I also saw a single specimen of *Cylindromyia interrupta* (Meigen) (Tachinidae) which I failed to net. The last of my best captures last year was a single specimen of *Gymnosoma rotundatum* (L.) (Tachinidae) on a hogweed umbel in Tilgate Forest on August 1st. — RICHARD JONES, 11 Station Road, Newhaven, Sussex: June 13th, 1977.