

Australian Endemic *Drosophila*
VI.* Species Collected by Sweeping in Rain Forests
of Queensland and Northern New South Wales,
with Descriptions of Four New Species

I. R. Bock and P. A. Parsons

Australian *Drosophila* Research Unit, Department of Genetics and Human Variation, La Trobe University, Bundoora, Vic. 3083.

Abstract

A summary is presented of the results of *Drosophila* collections made in Queensland and northern New South Wales by generalized sweeping of rain forest foliage, leaf litter and flowers. The species collected by sweeping are largely different from those attracted to fruit or mushroom baits or found on forest fungi. Species diversities are highest in north Queensland, and most species are restricted to the rain forests of basaltic soils. Four new species are described and a new species-group, the *zentae* group, is established in the subgenus *Hirtodrosophila*.

Introduction

The classic methods of collection of insect specimens are by sweeping with a hand-held net, or by trapping; these methods, largely non-specific for particular groups of insects, yield a variety of species spanning many taxa. The earliest collections of drosophilid flies in Australia and elsewhere in the world appear to have been made almost entirely by these methods, the only exceptions being the few species obviously associated with special habitats which could be caught directly on their preferred habitats (e.g. Oldenberg 1914: *Mycodrosophila* swarming about European fungi). With the development of genetics earlier this century, it was discovered that the favoured species *Drosophila melanogaster* could be collected, often in very considerable numbers, by baiting with fermented fruits, and other species were soon found to be similarly collected. The emphasis in collection of *Drosophila* species accordingly shifted to fruit baiting and, indeed, little attention was for a considerable time accorded those species not thus collectable.

It is now appreciated that efficient collection of the large and diverse number of species of the genus *Drosophila* requires application of a range of techniques. The Australian fauna has now been studied in considerable detail, and 95 species (including cosmopolitan and introduced species) have been recorded to date (Bock 1976, 1977; Cook *et al.* 1977; Parsons and Bock 1977b; Bock and Parsons 1978a, 1978b). These species have been collected by sweeping, baiting with fermented fruits, baiting with mushrooms, and direct aspiration from fungi or flowers.

Two previous papers in this series have discussed Queensland species collected in association with fruits and fungi (Bock and Parsons 1978a, 1978b). A separate series of collections has nevertheless revealed that sweeping may still be a very profitable method of collection of some *Drosophila* species, and, indeed, some

* Part V, *Aust. J. Zool.*, 1978, 26, 331-47.

species which are unattracted to baits of any kind may be taken in large numbers by sweeping. The results of the latter collections are reported below.

Collection Methods and Site Ecologies

Collections were undertaken in rain forests ranging from far northern Queensland to northern New South Wales. The north Queensland rain forests in which collections were made are detailed by Bock and Parsons (1977, 1978*a*, 1978*b*), who provided a map (Bock and Parsons 1978*a*); further collections are reported in this paper from the subtropical forests north of Brisbane and the Lamington National Park in southern Queensland, and from the large areas of rain forest in northern New South Wales. The latter forests are temperate at high elevations with subtropical elements at lower altitudes, often with considerable intermixing.

Most collections were made in dry weather when the ambient temperature was in the range 15–25°C, since collection of flies outside this range is difficult (Parsons 1978). On sunny days flies are usually found in cool damp shaded microhabitats near to permanent water, while on humid overcast days flies may be found on flowers some distance from permanent water. With these limits in mind, large numbers of flies can frequently be collected on sunny days at favourable temperatures.

It has previously been noted (Bock and Parsons 1977, 1978*a*, 1978*b*) that species diversities are considerably higher in the rain forests of basaltic soils than in those of granitic soils. [A classification of north Queensland rain forests has been given by Traeey and Webb (1975)]. For simplicity of comparison with results previously published, results of the extensive north Queensland collections from all localities in this paper have been grouped under the headings of basaltic and granitic soil forests (Table 1).

Results

Collection results are presented in Table 1; species have been grouped by subgenus. Many of the species taken in low numbers by sweeping are regularly collected in larger numbers by baiting with fermented fruits or mushrooms, or directly from forest fungi; these species are indicated in Table 1 by notations 'Fr' (fruit), 'M' (mushroom) and 'Fu' (fungus). The species normally collected in larger numbers by fruit baiting include all members of the subgenus *Drosophila*, and all members of the *melanogaster* group of the subgenus *Sophophora* (*pseudotakahashii*, *serrata*, *birchii* and *denticulata*). *D. dispar* is regularly collected in north Queensland by baiting with fruits or mushrooms and by sweeping. The remaining three members of the subgenus *Sophophora* are not attracted to baits. Several of the *Hirtodrosophila* species are regularly collected on fungi, and three of them (*mycetophaga*, *polypori* and *mixtura*) are known to utilize the undersides of hard bracket fungi as courting territories (Parsons and Bock 1977*a*). Most of the *Scaptodrosophila* species have been collected only by sweeping, but *D. specensis* is regularly collected at both fruit and mushroom baits, and three species (*altera*, *fungi* and *rhipister*) are regularly attracted to mushrooms. One species (*novoguineensis*) has been collected at both fruits and mushrooms in Australia, and recent work in New Guinea has indicated that it is attracted to fruit baits there in very substantial numbers.

Four of the *Hirtodrosophila* species (*zentae*, *juna*, *palumae*, and *durantae*, sp. nov.) have been collected only by sweeping. These four species appear to be closely related and are discussed further from a taxonomic point of view in the Appendix. The dominant species in this complex is clearly *D. zentae*, which may be collected in very large numbers in most of the northern rain forests. It appears to be par-

Table 1. *Drosophila* species collected by sweeping in Queensland and northern New South Wales
 Values are numbers of individual flies. Fr, M, Fu, indicate flies normally collected by fruit baiting, mushroom baiting or directly from forest fungi. Values in parentheses, number of flies swept from flowers

Subgenus and species	North Queensland Basaltic soil	Queensland Granitic soil	South Queensland N. of Brisbane	Queensland Lamington Nat. Pk	Northern New South Wales	
<i>Drosophila</i>						
<i>immigrans</i> Sturtevant			1		4	Fr
<i>sulfurigaster</i> (Duda)	4					Fr
<i>rubida</i> Mather	1					Fr
<i>pseudotetrachaeta</i> Angus	4					Fr
<i>Sophophora</i>						
<i>pseudotakahashii</i> Mather	19	9	3	1	30	Fr
<i>serrata</i> Malloch	3		2			Fr
<i>birchii</i> Dobzhansky & Mather	2					Fr
<i>denticulata</i> Bock & Wheeler	12					Fr
<i>dispar</i> Mather		26		13	4	Fr, M
<i>pinnitarsus</i> Bock	21		7	2	12	
<i>scopata</i> Bock	4					
<i>progastor</i> Bock	3					
<i>Hirtodrosophila</i>						
<i>mycetophaga</i> Malloch				1		Fu
<i>polypori</i> Malloch				2		Fu
<i>macalpinei</i> Bock				2		Fu
<i>angusi</i> Bock & Parsons				3		Fu
<i>mixtura</i> Bock	1					Fu
<i>zentae</i> Bock	> 100	> 100	5			
<i>junae</i> Grossfield	3	3				
<i>palumae</i> Bock		24				
<i>durantae</i> , sp. nov.	1					
<i>Scaptodrosophila</i>						
<i>specensis</i> Bock	10(8)	1	15	1	21	Fr, M
<i>fuscithorax</i> Malloch				6		
<i>inornata</i> Malloch	2			21	4	
<i>collessi</i> Bock			1	4	1	
<i>barkeri</i> Bock			4	2	1	
<i>exemplar</i> Bock			1	1		
<i>concolor</i> Bock					1	
<i>bryani</i> Malloch			2			
<i>dichromos</i> Bock	1					
<i>minimeta</i> Bock	18(17)		4(4)			
<i>mania</i> Bock					1	
<i>parsonsi</i> Grossfield	1		1			
<i>metaxa</i> Bock	47	5	> 100			
<i>altera</i> Bock	4		1(1)			M
<i>fungi</i> Bock & Parsons		1	1(1)			M
<i>novoguineensis</i> (Duda)	1					Fr, M
<i>fimbriata</i> Bock	4					
<i>bushi</i> , sp. nov.			5(5)			
<i>rhypister</i> Bock	1(1)					M
<i>scaptomyzoidea</i> (Duda)	7(6)		2			
<i>rhinos</i> , sp. nov.			1			
<i>bodmeri</i> , sp. nov.				5		

Drosophila species

ticularly susceptible to desiccation stress; on hot dry days individuals are found in large numbers on foliage overhanging and in very close proximity to streams, while as little as 1 m away very few flies are found. It is possible that the other members, which are found in very much smaller numbers, occupy more specialized niches than does *D. zentae*. *D. palumae* is predominantly an upland species, most of the individuals recorded in Table 1 having been swept on the summit of Mt Bellender Ker (c. 1600 m). The other two species are rare; indeed, *D. durantae*, sp. nov., is known from only one individual.

The greatest numbers of species collected by sweeping — a total of 22 species including three new ones — are members of the subgenus *Scaptodrosophila*, which includes the bulk of the Australian *Drosophila* fauna. As indicated in Table 1, several of the *Scaptodrosophila* species were swept from flowers. Several of the species so collected (*specensis*, *altera*, *fungi* and *rhypister*) are normally attracted to baits, suggesting that if temperature–humidity conditions are favourable, adults may seek more than one resource; a similar situation occurs in southern Australia (Parsons and Bock 1977b).

Discussion

Previous studies utilizing different collection methods have demonstrated quite conclusively that species diversities are highest in rain forests of the richer (basaltic) soils (Bock and Parsons 1977); few species have been detected in the rain forests of granitic soils, but several of the latter species (e.g. *D. dispar*) are entirely restricted to granitic soil forests. The results reported in Table 1, representing an extensive series of collections on which considerable effort was expended, reinforce this conclusion. Only eight species were obtained by sweeping in the granitic soil forests in contrast to 27 in basaltic soil forests, but two of the species in the former category (*dispar* and *palumae*) were detected in the granitic soil forests only. Almost all of the rarer and new species detected during the course of this investigation are restricted to basaltic soil forests, and indeed it is likely that, according to the collection localities listed in Bock (1976), several more species collected by generalized sweeping (*sinape*, *concolor*, *mulgravei*, *nimia*, *glauca*, *oncera* and *crocata*) can also be added to the basaltic soil list.

As noted previously (Bock and Parsons 1978a, 1978b), few of the northern species occur in southern Queensland. The distributions reported above are compatible with the hypothesis that the Australian drosophilid fauna has been derived by successive invasions from the north, members of the most recent invasions remaining restricted to north Queensland while several of the more ancient elements have successfully colonized portions of southern Australia. Several of the species collected in the Lamington National Park and northern New South Wales are also known to be more widely distributed in southern Australia (Parsons and Bock 1977b, 1978b, and unpublished data), while the fauna of the subtropical elements north of Brisbane contains a higher proportion of species unknown from more southern localities. In general, as would be predicted on normal zoogeographic grounds, the more typically 'southern' species, where they occur towards the north, are restricted to upland localities. Of special interest is *Drosophila inornata*, here recorded for the first time from north Queensland (two specimens swept close to water in Lake Eacham National Park, elevation c. 720 m). This species was pre-

viously unknown north of a locality in southern Queensland near Nambour (Bock 1976), but it is, in fact, the dominant Victorian species (Parsons and Bock 1978). Only two other Victorian species (*parsonsi* and *obsoleta*) are also known from north Queensland, both of them rare in the north, *obsoleta* known only from upland localities.

The *Drosophila* fauna of Queensland has thus now been established by the full range of collection techniques. The various collection methods have yielded spectra of species which are largely non-overlapping, and which presumably represent substantially different ecological preferences.

Acknowledgments

Grateful acknowledgment is made to Dr Betsy Jackes, Department of Botany, James Cook University, for botanical identifications. Partial financial support was received from the Australian Biological Resources Survey (I.R.B.) and the Australian Research Grants Committee (P.A.P.). Thanks are due to the Queensland National Parks and Wildlife Service for permitting access to certain national parks.

References

- Bock, I. R.** (1976). Drosophilidae of Australia. I. *Drosophila* (Insecta : Diptera). *Aust. J. Zool. Suppl. Ser.* No. 40.
- Bock, I. R.** (1977). Notes on the Drosophilidae (Diptera) of Townsville, Queensland, including four new Australian species records. *J. Aust. Entomol. Soc.* **16**, 267–72.
- Bock, I. R., and Parsons, P. A.** (1977). Species diversities in *Drosophila* (Diptera): a dependence upon rain forest type of the Queensland (Australian) humid tropics. *J. Biogeogr.* **4**, 203–13.
- Bock, I. R., and Parsons, P. A.** (1978a). Australian endemic *Drosophila*. IV. Queensland rain-forest species collected at fruit baits, with descriptions of two species. *Aust. J. Zool.* **26**, 91–103.
- Bock, I. R., and Parsons, P. A.** (1978b). Australian endemic *Drosophila*. V. Queensland rain-forest species associated with fungi, with descriptions of six new species and a redescription of *D. pictipennis* Kertész. *Aust. J. Zool.* **26**, 331–47.
- Cook, R. M., Parsons, P. A., and Bock, I. R.** (1977). Australian endemic *Drosophila* II. A new *Hibiscus*-breeding species with its description. *Aust. J. Zool.* **25**, 755–63.
- Oldenberg, L.** (1914). Beitrag zur Kenntnis der Europäischen Drosophiliden (Dipt.). *Arch. Naturgesch.* **80**(A2), 1–42.
- Parsons, P. A.** (1978). Boundary conditions for *Drosophila* resource utilization in temperate regions, especially at low temperatures. *Am. Nat.* **112**, 1063–74.
- Parsons, P. A., and Bock, I. R.** (1977a). Lek behaviour in three species of the subgenus *Hirtodrosophila* of Australian *Drosophila*. *Nature (Lond.)* **265**, 48.
- Parsons, P. A., and Bock, I. R.** (1977b). Australian endemic *Drosophila*. I. Tasmania and Victoria, including descriptions of two new species. *Aust. J. Zool.* **25**, 249–68.
- Parsons, P. A., and Bock, I. R.** (1978). Australian endemic *Drosophila*. III. The *inornata* species-group. *Aust. J. Zool.* **26**, 83–90.
- Tracey, J. G., and Webb, L. J.** (1975). Key to the vegetation of the humid tropical region of North Queensland. (Long Pocket Laboratories, CSIRO: Brisbane.)

Appendix: Descriptions of New Species

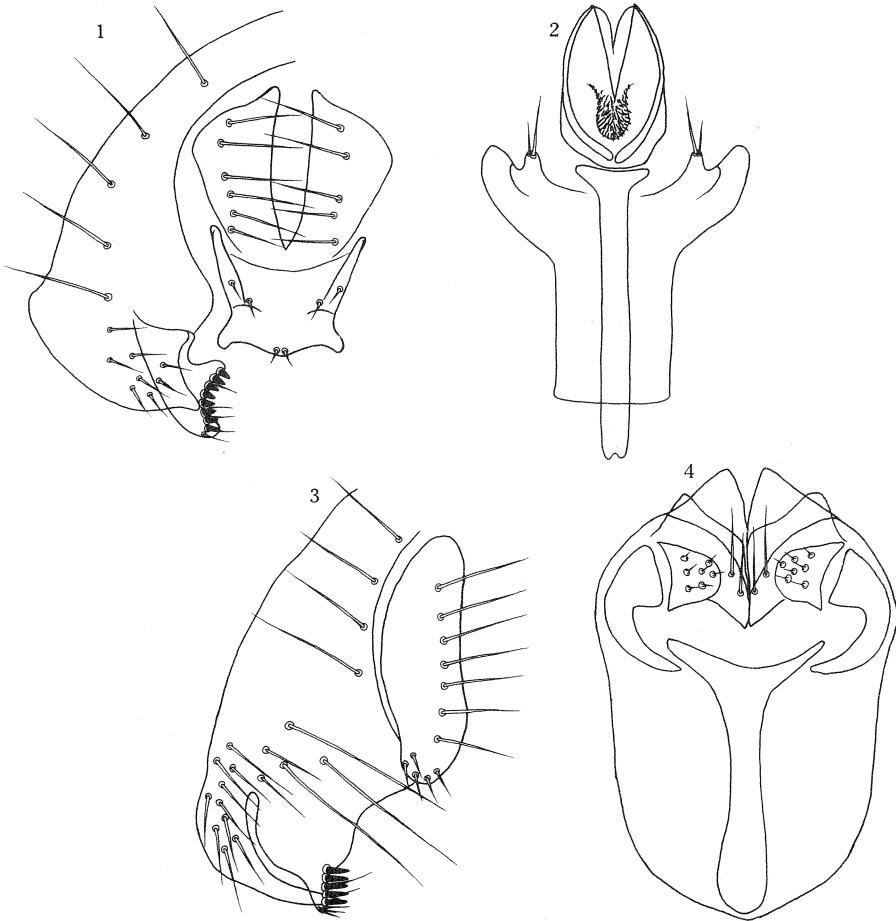
The four new species recovered in the collections discussed above are described below in the form used previously for the Australian *Drosophila* species (Bock 1976).

All type specimens have been deposited in the Australian National Insect Collection (Division of Entomology, CSIRO, Canberra).

Drosophila (Hirtodrosophila) durantae, sp. nov.

Type

Holotype ♂: Near Millaa Millaa, Atherton Tableland, Queensland, swept from flowers of *Duranta repens*, 29.x.1977, P. A. Parsons.



Figs 1 and 2. *D. durantae*: 1, male external genitalia; 2, male internal genitalia.

Figs 3 and 4. *D. palumae*: 3, male external genitalia; 4, male internal genitalia.

Distinguishing Features

Body small, dusky brown. Arista large. Carina absent. Wings hyaline; C-index low.

Description

Body length. 1·6 mm.

Head. Arista large, with 4 long straight rays above and 2 straight rays below plus terminal fork. Front very slightly broader than long, dark tan, darker posteriorly, dusky about ocellar triangle and bases of orbital and vertical bristles. 2nd antennal segments tan; 3rd dusky black. Carina absent. Cheek curved, barely widened in posterior corner, greatest width 0.1 times greatest diameter of eye. Eyes bare. Orbital bristles in ratio 3 : 1 : 3; anterior reclinate orbital lateral to proclinate orbital.

Thorax. Mesonotum dark tan, darker about humeral region. Scutellum dark tan. Pleura dusky tan. Acrostichal hairs in 6 rows in front of dorsocentral bristles, almost absent between dorsocentrals but pair of slightly enlarged prescutellar acrostichals present. Ratio anterior : posterior dorsocentrals 0.4. Sterno-index 0.7. Anterior scutellar bristles 0.7 length of posterior scutellars, slightly convergent. Legs pale tan; preapical bristles on all tibiae; apicals on 2nd tibiae only.

Wings. Entirely hyaline. *C*-index, 1.0; 4*V*-index, 3.5; 5*X*-index, 4.7; *M*-index, 1.4. 3rd costal section with heavy setation on basal 0.7. Length 1.8 mm.

Abdomen. Entirely shiny dusky brown.

Male genitalia (Figs 1, 2). Anal plates very weakly sclerotized, fused below. Clasper small, with medial row of strong black teeth. Genital arch and anal plate with micropubescence (not shown in Fig. 1). Decasternum strongly sclerotized, with 6 small bristles. Aedeagus with long basal apodeme.

Distribution

Known only from holotype.

Relationships

Three species similar to *D. durantae*, namely *D. zentae*, *D. palumae* and *D. junae*, were described in Bock (1976). *D. durantae* and the latter three species share many morphological features and there can be little doubt that they are all closely related; they are furthermore quite distinct from other species in the subgenus *Hirtodrosophila*, and establishment of a new species-group to include *zentae*, *palumae*, *junae* and *durantae* now seems warranted. The group is designated the *zentae* species group and is diagnosed below.

***zentae* species-group.** Small species (body length *c.* 2.5 mm or smaller). Arista large, with straight rays. Carina absent. Wing hyaline; *C*-index *c.* 1.0; 4*V*-index > 3.0. Body colour brown, or brown and black.

Male genitalia

Despite the uniformity within the *zentae* group of body (especially wing) structure, the male genitalia differ considerably among the four species.

Drosophila (Hirtodrosophila) palumae Bock

At the time of description of *D. palumae*, a male was not available; figures (Figs 3, 4) of the male genitalia of this species are here included, drawn from one of the specimens collected on the summit of Mt Bellenden Ker.

Drosophila (Scaptodrosophila) bushi, sp. nov.

Types

Holotype ♂: Oakey Creek, near Oakey, Queensland, swept ex flowers of *Urena lobata*, 21.iv.1977, P. A. Parsons. Paratypes: 2 ♂, 1 ♀, same data as holotype; Mapleton Falls National Park, Queensland, swept ex flowers, 21.iv.1977, P. A. Parsons, 1 ♂.

Distinguishing Features

Body entirely tan. Carina large. Wings hyaline; C-index low; 3rd costal section with heavy setation on basal 0.85.

Description

Body length. 2.0 mm (holotype); 2.0–2.3 mm (paratype range).

Head. Arista with 3.4 rays above and 2 below plus terminal fork; all rays only slightly curved. Ratio frontal breadth : length 1.1; front tan, darkened within ocellar triangle. 2nd and 3rd antennal segments tan. Carina nose-like, large. Cheek slightly curved; greatest width 0.15 times greatest diameter of eye. Eyes bare. Orbital bristles in ratio 6 : 3 : 7; anterior reclinate orbital lateral and slightly posterior to proclinate orbital.

Thorax. Mesonotum, scutellum and pleura tan. Acrostichal hairs in 8 rows in front of dorsocentral bristles, 4–6 rows between dorsocentrals. Prescutellar bristles large. Ratio anterior : posterior dorsocentrals 0.45. Sterno-index 0.6. Legs tan, slightly paler than thorax; preapical bristles on all tibiae (small on 1st tibiae); apicals on 2nd tibiae only.

Wings. Entirely hyaline. C-index, 1.4; 4V-index, 2.5; 5X-index, 2.2; M-index, 0.8. 3rd costal section with heavy setation on basal 0.85. Length (holotype), 1.8 mm.

Abdomen. Entirely tan.

Male genitalia (Figs 5, 6). Genital arch and anal plate with strong micropubesence (not shown in Fig. 5). Clasper large, with medial row of stubby black teeth. Hypandrium broad but shallow, with pair of large submedian spines. Parandrites elongate, slender.

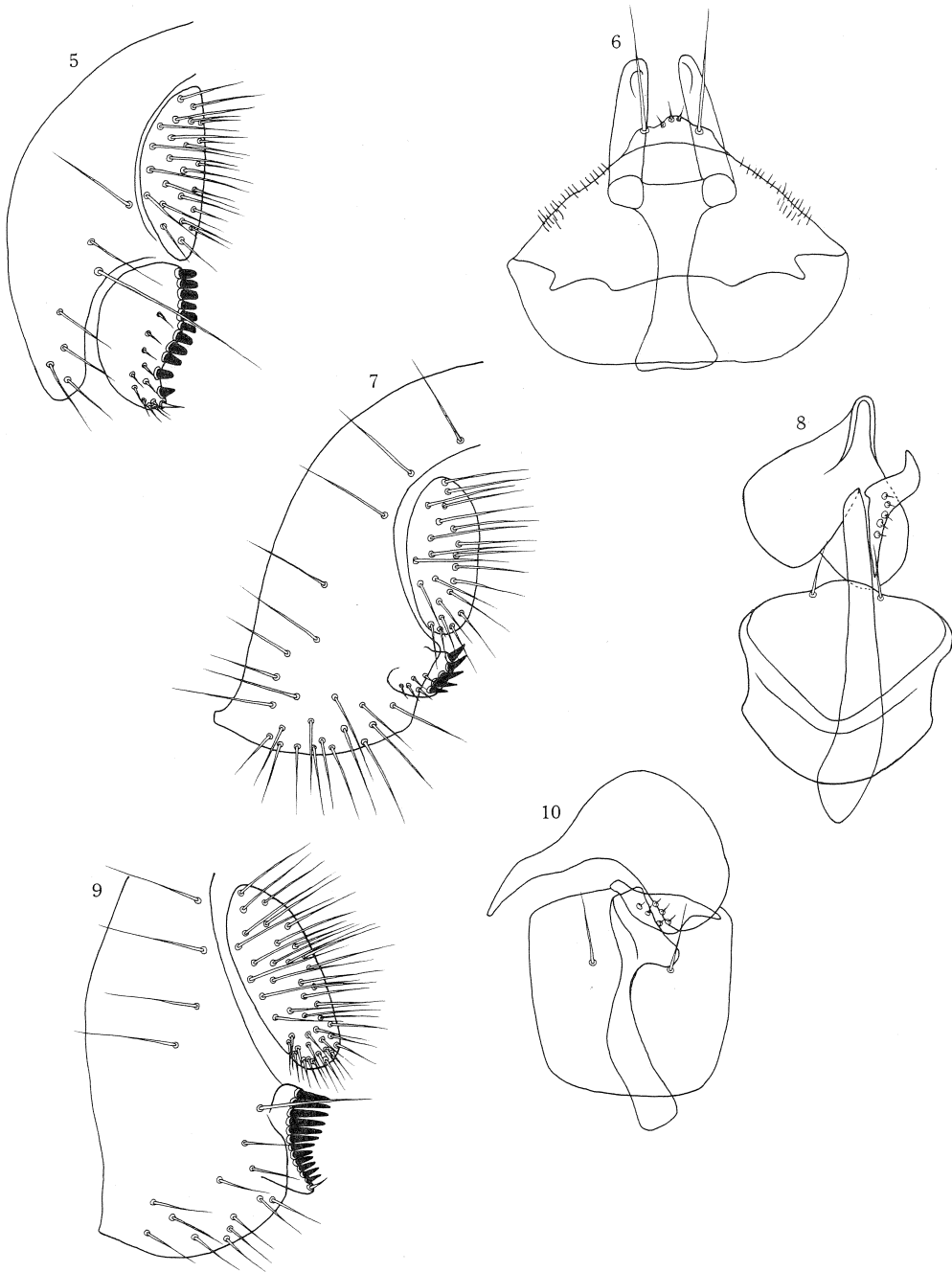
Female genitalia. Egg guides acutely rounded apically, with cluster of apical hairs.

Relationships

The species resembles *D. fimbriata* Bock in the structure of the male genitalia and in possession of an unusually long fringe of heavy bristles on the third costal section. There are nevertheless detectable differences in the male genitalia (the clasper of *bushi* is appreciably larger than that of *fimbriata* and the medial margin of the *bushi* clasper is curved), and the wing indices of *bushi*, especially the costal index, differ considerably from those of *fimbriata*.

Distribution

Known only from the type specimens.



Figs 5 and 6. *D. bushi*: 5, male external genitalia; 6, male internal genitalia.
Figs 7 and 8. *D. bodmeri*: 7, male external genitalia; 8, male internal genitalia.
Figs 9 and 10. *D. rhinos*: 9, male external genitalia; 10, male internal genitalia.

Drosophila (Scaptodrosophila) bodmeri, sp. nov.*Types*

Holotype ♂: Coomera River, Lamington National Park, Queensland, swept rain forest, 3.xii.1976, P. A. Parsons. Paratypes: 2 ♂, 1 ♀, same data as holotype.

Distinguishing Features

Body brown; wings with brownish tinge. Carina large, flat. Arista with 3 dorsal and 2 ventral rays.

Description

Body length. 3.5 mm (holotype); 3.3–3.5 mm (paratype range).

Head. Arista with 3 long curved rays above and 2 short rays below plus terminal fork. Ratio frontal breadth : length 1.4; front dark tan. 2nd antennal segments dark tan; 3rd slightly dusky. Carina large, broad, flat anteriorly but lateral edges rounded, tapered towards clypeal margin below. Cheek almost linear, greatest width 0.2 times greatest diameter of eye. Eyes with fine extremely sparse pile. Orbital bristles in ratio 2 : 1 : 3; anterior reclinate orbital posterolateral to proclinate orbital. Ocellar, vertical and postvertical bristles all large.

Thorax. Mesonotum, scutellum and pleura dark tan. Acrostichal hairs in 8 rows, somewhat irregular, in front of dorsocentral bristles, c. 4 rows between dorsocentrals. Ratio anterior : posterior dorsocentrals 0.5. Sterno-index 0.7. Anterior scutellar bristles long, divergent. Legs tan; preapical bristles on all tibiae; apicals on 2nd tibiae only.

Wings. Translucent with brownish tinge, more intense towards costa. C-index, 3.0; 4V-index, 1.9; 5X-index, 1.4; M-index, 0.5. 3rd costal section with heavy setation on basal 0.5. Length (holotype), 3.4 mm.

Abdomen. Dark tan; tergites slightly darker posteriorly.

Male genitalia (Figs 7, 8). Genital arch broad below; genital arch and anal plate with dense micropubescence (not shown in Fig. 7). Clasper small, with few large black teeth. Hypandrium with pair of small submedian spines. Aedeagus strongly compressed laterally, with long basal apodeme. Parandrites crescentic.

Female genitalia. Egg guides slender, pointed, with several long apical hairs.

Distribution

Known only from type specimens.

Drosophila (Scaptodrosophila) rhinos, sp. nov.*Type*

Holotype ♂: East Cedar Creek 8.5 km N. of Mapleton, Queensland, 22.iv.1977, P. A. Parsons.

Distinguishing Features

Body brown. Wings with weak brownish tinge; C-index high. Carina very large, flat.

Description.

Body length. 3·2 mm.

Head. Arista with 4 curved rays above and 2–3 straight rays below plus terminal fork. Frontal breadth equal to length; front tan; periorbits slightly paler; ocellar triangle barely darkened within. 2nd and 3rd antennal segments tan. Carina very large, broad, slightly broader below, flattened anteriorly, squared laterally, rounded below, not tapered to clypeal margin. Cheek slightly curved, barely widened in posterior corner; greatest width 0·1 times greatest diameter of eye. Eyes with fine, very sparse pile. Orbital bristles in ratio 5 : 2 : 6; anterior reclinate orbital lateral and slightly posterior to proclinate orbital. Ocellar, vertical and postvertical bristles large.

Thorax. Mesonotum, scutellum and pleura tan. Acrostichal hairs in 8 rows in front of dorsocentral bristles, 4–6 rows between dorsocentrals. Ratio anterior : posterior dorsocentrals 0·5. Sterno-index 0·7. Legs slightly paler than thorax; preapical bristles on all tibiae (small on 1st tibiae); apical bristles on 2nd tibiae only.

Wings. Hyaline with weak brownish tinge, strongest towards costa. C-index, 3·5; 4V-index, 1·7; 5X-index, 1·4; M-index, 0·45. 3rd costal section with heavy setation on basal 0·55. Length 3·0 mm.

Abdomen. Uniformly tan.

Male genitalia (Figs 9, 10). Clasper small, with medial row of black teeth long above, considerably shorter below. Genital arch and anal plate with micropubesence (not shown in Fig. 9). Hypandrium with pair of submedian spines. Aedeagus greatly expanded apically, laterally compressed. Parandrites large, apically narrowed.

Relationships

In general coloration *D. rhinos* resembles many other Australian species, but the structure of the male genitalia (especially the unusual arrangement of teeth on the clasper) is quite distinctive and not closely similar to that of any other species.

Distribution

Known only from holotype.