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A Catalog of *Drosophila* Metaphase Chromosome Configurations

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Introduction

Metaphase chromosome configurations have been described for 513 species and subspecies of *Drosophila*, representing about 40 percent of the total number of species described for the world. In the following catalog list (Table 1), species and species groups are arranged within subgenera alphabetically, generally organized according to the pattern of Throckmorton (Chapter 17 in this volume).

Most of the variations from the primitive condition, 5 pairs of rods and one pair of dots, can be attributed to translocations, pericentric inversions, and varying degrees of heterochromatic additions (either with or without other chromosomal rearrangements; see discussion in Patterson and Stone (1952), Chapter 4). The catalog gives only minimal data on metaphases, the distribution in different species, species groups, and

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higher categories, and acknowledges the first publication reporting the information. Other, later reports are included when they provide added significant details or describe a metaphase condition at variance with that first recorded.

Metaphase variations do occur within some species; other reports of variation may be due to errors of analysis of the chromosome preparations, or may result from misidentification of the species being studied. Where feasible, we have shown the geographic origins of the strains when significant variation has been reported. When a report was based upon a misidentification we have indicated (under Remarks) the species name used by the author at the time of his study, but we have listed the species by its currently approved name.

Abbreviations for the metaphases, shown as the haploid complement, are as follows: R and r represent large and small rod-shaped chromosomes; V and v are large and small V-shaped elements; J is J-shaped; and D, Dr, and Dv represent the dot chromosome, a rodlike dot, and a V-shaped dot, respectively.

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TABLE 1. Catalog of *Drosophila* Metaphase Chromosome Configurations

Species	Metaphase	Reference	Remarks
<i>busckii</i> Coquillett 1901	2 V, 1 R, 1 D 2 V, 1 R	Subgenus <i>Drosilopha</i> Metz (1916a) Wharton (1943)	— Y may appear J-shaped
<i>annulimana</i> Duda 1927	1 V, 3 v, 1 R	Subgenus <i>Drosophila</i> <i>annulimana</i> species group Dobzhansky and Pavan (1943)	XO ♂; X is rod- or J-shaped
<i>araiaca</i> Pavan and Nacurur 1950	1 V, 3 v, 1 D	Pavan and Nacurur (1950)	—
<i>arapuan</i> da Cunha and Pavan 1947	2 V, 1 R, 1 D	Pavan and da Cunha (1947)	Y is J-shaped
<i>ararama</i> Pavan and da Cunha 1947	4 R, 1 J	Pavan and da Cunha (1947)	—
<i>arassari</i> da Cunha and Frota-Pessoa 1947	5 R, 1 D	Pavan and da Cunha (1947)	—
<i>arawana</i> Pavan and Nacurur 1950	1 V, 3 v, 1 R, 1 Dr	Pavan and Nacurur (1950)	—
<i>gibberosa</i> Patterson and Mainland 1943	5 R	Wharton (1943)	X is long rod with proximal constriction; Y is J-shaped
<i>talamancana</i> Wheeler 1968	1 V, 4 R	Wheeler (1968)	X is rod-shaped; Y is J- or V-shaped
<i>bizonata</i> Kikkawa and Peng 1938	3 V, 1 D	<i>bizonata</i> species group Kikkawa and Peng (1938)	—
<i>heterobristalis</i> Tan <i>et al.</i> 1949	2 V, 1 R, 1 D	Tan <i>et al.</i> (1949)	—
<i>meitanensis</i> Tan <i>et al.</i> 1949	2 V, 1 J, 1 D	Tan <i>et al.</i> (1949)	X and Y are J-shaped
<i>bromeliae</i> Sturtevant 1921	2 V, 1 R, 1 D	<i>bromeliae</i> species group Metz (1916b)	Y is J-shaped
<i>bromelioides</i> Pavan and da Cunha 1947	1 R, 3 V 4 V	Pavan and da Cunha (1947) Clayton and Wasserman (1957)	— Species identity uncertain

TABLE 1. Catalog of *Drosophila* Metaphase Chromosome Configurations

Species	Metaphase	Reference	Remarks
<i>florae</i> Sturtevant 1916	2 V, 1 R, 1 D	bromeliae species group (Continued) Metz (1916a)	—
<i>atrata</i> Burla and Pavan 1953	5 R, 1 D	calloptera species group Dobzhansky and Pavan (1943)	Reported as <i>calloptera</i>
<i>calloptera</i> Schiner 1868	3 R, 1 V, 1 D	Clayton and Ward (1954)	—
<i>ornatipennis</i> Williston 1896	4 R, 1 J	Metz (1916a,b)	—
	3 R, 1 V, 1 D	Clayton and Ward (1954)	—
	3 R, 1 V, 3 D	Metz (1916a,b) Clayton and Wasserman (1957)	Reported as <i>calloptera</i> —
<i>canalina</i> Patterson and Mainland 1944	1 R, 1 V, 1 v, 1 D	canalina species group Patterson and Mainland (1944)	—
<i>canalinioides</i> Wheeler 1957	6 R	Clayton and Wasserman (1957)	—
<i>paracanalina</i> Wheeler 1957	1 V, 1 J, 1 R, 1 D	Clayton and Wasserman (1957)	J has satellite
<i>carbonaria</i> Patterson and Wheeler 1942	2 R, 2 J, 1 v, 1 D	carbonaria species group Ward (1949)	—
<i>acutitabella</i> Stalker 1953	2 V, 1 R, 1 D	cardini species group Stalker (1953)	—
<i>antillea</i> Heed 1962	2 V, 1 R, 1 D	Heed and Krishnamurthy (1959)	Reported as stock SL

<i>arawakana</i> Heed 1962	2 V, 1 R, 1 D	Heed and Krishnamurthy (1959)	Reported as stock GU
<i>a. kittensis</i> Heed 1962	2 V, 1 R, 1 D	Heed and Krishnamurthy (1959)	Reported as stock SK
<i>bedicheki</i> Heed and Russell 1971	1 R, 2 V, 1 D	Heed and Russell (1971)	—
<i>belladunni</i> Heed and Krishnamurthy 1959	2 V, 2 R	Heed and Krishnamurthy (1959)	—
<i>cardini</i> Sturtevant 1916	5 R, 1 D	Metz (1916b)	—
	2 V, 1 R, 1 D	Wharton (1943)	Species identity uncertain
	6 R	Ward (1949), Clayton and Wasserman (1957), Heed and Russell (1971)	—
<i>cardinoides</i> Dobzhansky and Pavan 1943	2 V, 1 R, 1 D	Dobzhansky and Pavan (1943)	—
<i>caribiana</i> Heed 1962	2 V, 1 R, 1 D	Heed and Krishnamurthy (1959)	Reported as stock MA
<i>dunni</i> Townsend and Wheeler 1955	2 V, 1 R, 1 r	Townsend and Wheeler (1955)	—
<i>d. thomasensis</i> Heed 1962	2 J, 1 V, 1 r	Heed and Krishnamurthy (1959)	Reported as stock ST
<i>neocardini</i> Streisinger 1946	2 V, 1 R, 1 D	Streisinger (1946)	—
		Ward (1949)	Y is a small V
<i>neomorpha</i> Heed and Wheeler 1957	2 V, 1 R, 1 D	Heed and Wheeler (1957)	Y is rod, shorter than X
<i>nigrodunni</i> Heed and Wheeler 1957	2 V, 1 R, 1 D	Heed and Wheeler (1957)	—
<i>parthenogenetica</i> Stalker 1953	2 V, 1 R, 1 D	Stalker (1953)	—
<i>pobymorpha</i> Dobzhansky and Pavan 1943	2 V, 1 R, 1 D	Dobzhansky and Pavan (1943)	Y is short rod
<i>procardinoides</i> Frydenberg 1956	2 V, 1 R, 1 D	Frydenberg (1956)	—
<i>similis</i> Williston 1896	2 V, 1 R, 1 D	Metz (1916b)	Species identity uncertain
		Heed and Krishnamurthy (1959)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>s. grenadensis</i> Heed 1962	2 V, 1 R, 1 D	cardini species group (Continued) Heed and Krishnamurthy (1959)	Reported as stock GR
<i>carsoni</i> Wheeler 1957	2 R, 2 J, 1 V, 1 D	carsoni species group Clayton and Wasserman (1957)	—
<i>briegeri</i> Pavan and Breuer 1954	3 V, 1 D	dreyfusi species group Pavan and Breuer (1954)	—
<i>camargoi</i> Dobzhansky and Pavan 1950	2 V, 1 J, 1 R 3 V, 1 J	Pavan (1950) Clayton and Wasserman (1957)	Stock from Brazil Stock from Honduras
<i>dreyfusi</i> Dobzhansky and Pavan 1943	2 V, 1 J	Dobzhansky and Pavan (1943)	X and Y are J-shaped
<i>wingei</i> Cordeiro 1964	3 V	Cordeiro (1964)	Largest V has satellite
<i>flavopilosa</i> Frey 1919	3 R, 2 V, 1 J	flavopilosa species group Wheeler <i>et al.</i> (1962)	—
<i>funebri</i> (Fabricius) 1787	5 R, 1 D	funebri species group Metz (1914)	—
<i>macrostoma</i> Stalker and Spencer 1939	5 R, 1 D	Wharton (1943)	—
<i>m. limpiensis</i> Mainland 1941	5 R, 1 D	Patterson and Wheeler (1942)	—
<i>subfunebri</i> Stalker and Spencer 1939	5 R, 1 D	Wharton (1943)	Y has proximal constriction
<i>trispina</i> Wheeler 1949	5 R, 2 D	Ward (1949)	—

<i>tenuicauda</i> Okada 1956	4 R, 1 V, 1 D	grandis species group Kang <i>et al.</i> (1964)	—
<i>griseolineata</i> Duda 1927	5 R, 1 D	guaramunu species group Dobzhansky and Pavan (1943)	—
<i>guaraja</i> King 1947	1 V, 3 R, 1 D	King (1947)	Y is rod with large satellite; X is short rod
<i>guaramunu</i> Dobzhansky and Pavan 1943	5 R, 1 D	Dobzhansky and Pavan (1943)	—
<i>neoguararamunu</i> Frydenberg 1956	4 R, 1 V	Clayton and Wasserman (1957)	Species identity uncertain
	3 V	Frydenberg (1956)	X is V-shaped; Y is rod
<i>guarani</i> Dobzhansky and Pavan 1943	5 R, 1 V	guarani species group Dobzhansky and Pavan (1943)	X and Y are V-shaped
<i>guaru</i> Dobzhansky and Pavan 1943	4 R, 1 V, 1 D	Dobzhansky and Pavan (1943)	Y is J-shaped
<i>subbadia</i> Patterson and Mainland 1943	3 R, 2 V	Wharton (1943)	
	5 R, 1 V	King (1947)	X is V-shaped; Y is J-shaped
<i>histrio</i> Meigen 1830	5 R, 1 D	histrio species group Frolova (1926)	—
<i>sternopleuralis</i> Okada and Kurokawa 1957	4 R	Okada and Kurokawa (1957)	—
<i>albomicans</i> Duda 1924	1 R, 1 V, 1 J	immigrans species group Wilson <i>et al.</i> (1969)	—
	3 R, 1 V	Kikkawa and Peng (1938)	Y is small V; reported as <i>komaii</i>
<i>argentostrata</i> Bock 1966	5 R, 1 D	Bock (1966)	—
<i>curviceps</i> Okada and Kurokawa 1957	2 R, 1 V, 1 J	Okada and Kurokawa (1957)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>immigrans</i> species group (Continued)			
<i>hexastriata</i> Tan <i>et al.</i> 1949	2 R, 1 V, 1 D	Tan <i>et al.</i> (1949)	—
<i>hypocausta</i> Osten-Sacken 1882	2 R, 1 V, 1 D	Pipkin (1956)	—
<i>immigrans</i> Sturtevant 1921	1 V, 1 J, 2 R	Emmens (1937), Wharton (1943)	Y is small V
	1 V, 3 R	Metz and Moses (1923), Ward (1949), Clayton and Wasserman (1957), Mather (1962)	
<i>kepulauanana</i> Wheeler 1969	2 R, 1 V, 1 D	Wilson <i>et al.</i> (1969)	X is rod; Y is rod- or J-shaped
<i>kohkhoa</i> Wheeler 1969	2 R, 1 V, 1 D	Wilson <i>et al.</i> (1969)	X is rod; Y is rod-, V-, or J-shaped
<i>nasuta</i> Lamb 1914	2 R, 1 V, 1 D	Wakahama and Kitagawa (1972)	X is rod; Y is J-shaped
<i>nixifrons</i> Tan <i>et al.</i> 1949	3 R, 1 V, 1 D	Tan <i>et al.</i> (1949)	—
<i>pallidifrons</i> Wheeler 1969	1 V, 2 R, 1 D	Wilson <i>et al.</i> (1969)	X and Y are rods
<i>pararubida</i> Mather 1961	2 R, 1 V, 1 D	Mather (1961)	—
	1 R, 2 V, 1 D	Mather (1962)	—
<i>pulaua</i> Wheeler 1969	2 R, 1 V, 1 D	Wilson <i>et al.</i> (1969)	X and Y are rods
<i>rubida</i> Mather 1960	1 V, 2 R, 1 D	Mather (1960)	—
	2 R, 2 V	Mather (1962)	—
<i>silvistriata</i> Bock & Baimai 1967	1 V, 3 R, 1 D	Bock and Baimai (1967)	X is long rod; Y is short rod
<i>sulfurigaster</i> Duda 1923	2 R, 1 V, 1 D	Mather (1962)	Reported as <i>setifemur</i>
<i>s. albostrigata</i> Wheeler 1969	1 V, 2 R, 1 D	Wilson <i>et al.</i> (1969)	X is rod; Y is V- or J-shaped
<i>s. bilimbata</i> Bezzi 1928	1 V, 2 R, 1 D	Patterson and Wheeler (1942)	X is rod; Y is rod-, J-, or V-shaped
		Wilson <i>et al.</i> (1969)	Reported as <i>spinifemora</i>

<i>macroptera</i> Patterson and Wheeler 1942	5 R, 1 D	<i>macroptera</i> species group Patterson and Wheeler (1942)	—
<i>submacroptera</i> Patterson and Mainland 1943	1 V, 2 v, 1 R, 1 D 2 V, 1 J, 1 D	Wharton (1943) Clayton and Wasserman (1957)	X and Y are rods (stock from Guerrero, Mexico) Stocks from Hidalgo, Puebla, and Vera Cruz, Mexico
<i>afra</i> Tan <i>et al.</i> (1949)	2 V, 1 R, 1 J, 1 D	<i>melanica</i> species group Tan <i>et al.</i> (1949)	—
<i>auronotus</i> Patterson and Ward 1952	1 V, 1 v, 2 R, 1 D	Patterson and Ward (1952)	—
<i>melanica</i> Sturtevant 1916	1 V, 1 v, 2 R, 1 D	Metz (1916a) Ward (1949)	— Y is J-shaped; X is V-shaped
<i>melanura</i> Miller 1944	1 V, 1 v, 2 R, 1 Dv	Miller (1944)	X is large V; Y is J-shaped
<i>micromelanica</i> Patterson 1941	1 V, 1 v, 2 R, 1 Dr 5 R, 1 D 1 V, 1 v, 2 R, 1 D	Ward (1949) Patterson (1941a) Patterson and Wheeler (1942), Wharton (1943)	X is large V; Y is V-shaped — —
<i>migromelanica</i> Patterson and Wheeler 1942	4 R, 1 v, 1 D 4 R, 1 v, 1 Dr 1 V, 1 v, 2 R, 1 D	Ward (1949), Clayton and Ward (1954), Stalker (1965) Ward (1949), Stalker (1965) Patterson and Wheeler (1942)	— — X is large V
<i>paramelanica</i> Patterson 1942	1 V, 1 v, 2 R, 1 Dv 1 V, 1 v, 2 R, 1 Dr 1 V, 1 v, 3 R 2 V, 2 R, 1 D	Wharton (1943) Stalker (1964) Ward (1949) Griffen (1942), Wharton (1943)	— — X is large V; Y is V-shaped —
<i>pengi</i> Okada and Kurokawa 1957	2 V, 3 R 1 V, 1 v, 2 R, 1 D	Ward (1949) Kikkawa and Peng (1938) Okada and Kurokawa (1957)	— Reported as <i>melanissima</i> —

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>altiplanica</i> Brncic and Koref-Santibañez 1957	1 V, 3 R, 1 D	mesophragmatica species group Brncic and Koref-Santibañez (1957)	One pair of rods bent in middle giving appearance of small V's; dots elongated
<i>brncici</i> Hunter and Hunter 1964	1 V, 3 R, 1 D	Hunter and Hunter (1964)	Dots usually appear as small rods
<i>gasici</i> Brncic 1957	1 V, 3 R, 1 Dr	Brncic (1957)	—
<i>gaucha</i> Jaeger and Salzano 1953	3 R, 1 V, 1 D	Jaeger and Salzano (1953)	Y has subterminal constriction
<i>mesophragmatica</i> Duda 1927	1 V, 3 R, 1 D	Pavan and da Cunha (1947)	—
	1 V, 3 R, 1 r	Brncic and Koref-Santibañez (1957)	—
<i>orkui</i> Brncic and Koref-Santibañez 1957	1 V, 4 R	Brncic and Koref-Santibañez (1957)	One rod is half length others
<i>pavani</i> Brncic 1957	3 R, 1 V, 1 D	Brncic and Koref-Santibañez (1957)	Y has subterminal constriction
<i>viracochi</i> Brncic and Koref-Santibañez 1957	3 R, 1 V, 1 D	Brncic and Koref-Santibañez (1957)	
<i>acanthoptera</i> Wheeler 1949	2 R, 1 V, 2 v	nannoptera species group Ward (1949)	X is large V; Y is J-shaped
<i>nannoptera</i> Wheeler 1949	3 V, 1 J, 1 v		Ward (1949)
<i>pachea</i> Patterson and Wheeler 1942	2 R, 1 V, 2 J	Ward and Heed (1970)	Y is J-shaped
		Ward and Heed (1970)	Y is short rod; X is large V
<i>pallidipennis</i> Dobzhansky and Pavan 1943	4 R, 1 V, 1 D	pallidipennis species group Dobzhansky and Pavan (1943)	X and Y are V-shaped
<i>p. centralis</i> Patterson and Mainland 1944	4 R, 1 V, 1 D		

<i>flavopinicola</i> Wheeler 1954	5 R, 1 D	<i>pinicola</i> species group	Clayton and Ward (1954)	—
<i>pinicola</i> Sturtevant 1942	2 V, 1 R		Sturtevant (1942)	—
<i>polychaeta</i> Patterson and Wheeler 1942	2 R, 2 J, 1 V, 1 D	<i>polychaeta</i> species group	Patterson and Wheeler (1942)	X and Y are rods
<i>angularis</i> Okada 1956	5 R, 1 D	<i>quinaria</i> species group	Tokumitsu <i>et al.</i> (1967)	—
<i>brachynephros</i> Okada 1956	5 R, 1 D		Wharton (1943)	Reported as <i>transversa</i>
<i>falleni</i> Wheeler 1960	5 R, 1 D		Wharton (1943)	—
<i>guttifera</i> Walker 1849	5 R, 1 D		Clayton and Ward (1954)	—
<i>innubila</i> Spencer, 1943	6 R		Spencer (1942)	—
<i>magnaquinaria</i> Wheeler 1954	2 V, 1 R, 1 D		Tan <i>et al.</i> (1949)	—
<i>munda</i> Spencer 1942	5 R, 1 D		Momma (1954)	—
<i>mutandis</i> Tan <i>et al.</i> 1949	5 R, 1 D		Tokumitsu <i>et al.</i> (1967)	—
<i>nigromaculata</i> Kikkawa and Peng 1938	5 R, 1 D		Spencer (1942)	—
<i>occidentalis</i> Spencer 1942	5 R, 1 D		Wharton (1943)	—
<i>palustris</i> Spencer 1942	5 R, 1 D		Frolova (1926)	—
<i>phalerata</i> Meigen 1830	1 V, 1 J, 1 D		Metz (1914)	X is rod; Y is J-shaped
<i>quinaria</i> Loew 1865	5 R, 1 D		Spencer (1942)	—
<i>suboccidentalis</i> Spencer 1942	5 R, 1 D		Spencer (1942)	—
<i>subpalustris</i> Spencer 1942	5 R, 1 D		Spencer (1942)	Y is small, V-shaped
<i>subquinaria</i> Spencer 1942	5 R, 1 D		Spencer (1942)	—
<i>suffusca</i> Spencer 1943	1 V, 1 v, 1 R, 1 D		Clayton and Ward (1954)	—
<i>tenebrosa</i> Spencer 1943	3 R, 1 J, 1 D		Wharton (1943)	Y is J-shaped
	3 R, 1 V, 1 D		Blumel (1949)	—
	5 R, 1 D		Frolova (1926), Kim (1965)	—
<i>transversa</i> Fallén 1823	5 R, 1 D		Kang <i>et al.</i> (1964)	—
<i>unispina</i> Okada 1956	5 R, 1 D			—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>coroica</i> Wasserman 1962	5 R, 1 D	Wasserman (1960)	Reported as species L
<i>fasciola</i> Williston 1896	5 R, 1 D	Wasserman (1962c)	X is rod- or J-shaped
<i>fascioides</i> Dobzhansky and Pavan 1943	3 V, 1 D	Dobzhansky and Pavan (1943)	—
		Wasserman (1962c)	Reported 3 types of X and Y shapes
<i>fulvimeata</i> Patterson and Wheeler 1942	5 R, 1 V	Patterson and Wheeler (1942), Wharton (1943)	X is rod; Y is short rod
		Clayton and Wasserman (1957)	Stock from New Mexico
	1 V, 1 v, 3 R	Clayton and Wasserman (1957)	X is large V, Y is J-shaped; stock from Arizona
<i>moju</i> Pavan 1950	5 R, 1 Dr	Wasserman (1962c)	—
<i>mojuoides</i> Wasserman 1962	5 R, 1 D	Wasserman (1960)	Reported as species M
<i>paraguttata</i> Thompson 1957	5 R, 1 D	Clayton and Wasserman (1957)	—
<i>pictilis</i> Wasserman 1962	6 R	Wasserman (1960)	Reported as species J; Y is short rod
<i>pictura</i> Wasserman 1962	4 R, 1 V, 1 J	Wasserman (1960)	Reported as species K; X is J-shaped; Y is short rod
<i>bifurca</i> Patterson and Wheeler 1942	5 R, 1 D	<i>hydei</i> subgroup Patterson and Wheeler (1942), Wharton (1943) Ward (1949)	Y is rod Y is small, V-shaped

<i>eohydei</i> Wasserman 1962	5 R, 1 D	Wasserman (1962a)	Y is short rod
<i>hydei</i> Sturtevant 1921	4 R, 1 V, 1 D	Kikkawa (1935), Wharton (1943)	X is V; Y is J-shaped
<i>hydeoides</i> Patterson and Wheeler 1942	6 R	Kikkawa and Peng (1938), Wasserman (1960) Patterson and Wheeler (1942)	Y is rod
<i>neohydei</i> Wasserman 1962	5 R, 1 D	Wasserman (1962a)	X is J-shaped; Y is rod
<i>nigrohhydei</i> Patterson and Wheeler 1942	6 R	Patterson and Wheeler (1942)	Y is very short rod
<i>novemariata</i> Dobzhansky and Pavan 1943	6 R	Dobzhansky and Pavan (1943)	Microchromosome is large dot or short rod
<i>brunneipalpa</i> Dobzhansky and Pavan 1943	5 R, 1 D	<i>melanopalpa</i> subgroup Dobzhansky and Pavan (1943)	Y is dotlike
<i>californica</i> Sturtevant 1923	3 V, 1 R	Patterson and Wheeler (1942)	Reported as <i>fuliginea</i>
<i>canapalpa</i> Patterson and Mainland 1944	5 R, 1 V	Patterson and Mainland (1944)	—
<i>fulvamacula</i> Patterson and Mainland 1944	5 R, 1 D	Clayton and Ward (1954)	—
<i>f. flavorepleta</i> Patterson and Pavan 1952			
<i>fulvamaculoides</i> Wasserman and Wilson 1957	5 R, 1 D	Clayton and Wasserman (1957)	Y is J-shaped
<i>bimensis</i> Pavan and Patterson 1947	6 R	Pavan and da Cunha (1947)	Y is very short rod
<i>melanopalpa</i> Patterson and Wheeler 1942	4 R, 1 V, 1 J	Patterson and Wheeler (1942)	
<i>neorepleta</i> Patterson and Wheeler 1942	4 R, 2 J	Wharton (1943)	X is J-shaped; Y is short rod

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>repleta</i> Wollaston 1858	5 R, 1 D	<i>repleta</i> species group (Continued) Metz (1914), Wharton (1943), Clayton and Wasserman (1957) Metz (1916b)	—
<i>carcinophila</i> Wheeler 1960	1 V, 3 R, 1 D	<i>mercatorum</i> subgroup Carson (1967)	—
<i>mercatorum</i> Patterson and Wheeler 1942	1 V, 3 R, 1 Dv	Patterson and Wheeler (1942), Wharton (1943) Ward (1949), Clayton and Wasserman (1957)	XO ♂ X is rod; Y is short rod
<i>m. pararepleta</i> Dobzhansky and Pavan 1943	1 V, 3 R, 1 D	Dobzhansky and Pavan (1943)	Y is short rod
<i>paranaensis</i> de Barros 1950	1 V, 3 R, 1 D	de Barros (1950), Dreyfus and de Barros (1949)	—
	1 V, 1 v, 3 R	Clayton and Wasserman (1957), Clayton and Ward (1954)	—
<i>aldrichi</i> Patterson and Crow 1940	5 R, 1 D	<i>mulleri</i> subgroup Patterson and Crow (1940)	Y is short rod, 1/3 length of X
<i>anceps</i> Patterson and Mainland 1944	6 R	Patterson and Mainland (1944)	—
<i>airzonensis</i> Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)	Y is short rod, 1/3 length of X
<i>buzzatii</i> Patterson and Wheeler 1942			

<i>eremophila</i>	Wasserman 1962	5 R, 1 Dv	Wasserman (1960)	Reported as species F
<i>hamatofilis</i>	Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)	Y is small, V-shaped
<i>hexastigma</i>	Patterson and Mainland 1944	5 R, 1 D	Patterson and Mainland (1944)	Y is J-shaped
<i>longicornis</i>	Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)	Y is short rod
<i>martensis</i>	Wasserman and Wilson 1957	5 R, 1 D	Clayton and Wasserman (1957)	Y is small, V-shaped
<i>meridiana</i>	Patterson and Wheeler 1942	5 R, 1 V	Patterson and Wheeler (1942)	Y is short rod
<i>m. rioensis</i>	Patterson 1943	1 V, 3 R, 1 D	Wharton (1943)	Y is short rod
<i>meridionalis</i>	Wasserman 1962	1 V, 3 R, 1 D	Wasserman (1962b)	Y is short rod; X is rod
<i>mojavensis</i>	Patterson and Crow 1940	5 R, 1 D	Patterson and Crow (1940)	Y is short rod
<i>mulleri</i>	Sturtevant 1921	5 R, 1 D	Patterson and Crow (1940), Wharton (1943)	—
<i>nigricurva</i>	Patterson and Mainland 1943	1 V, 4 R, 1 D 5 R, 1 D	Metz (1916b) Wharton (1943)	Reported as <i>repleta</i> , variety b —
<i>pachuca</i>	Wasserman 1962	5 R, 1 D	Wasserman (1962b)	Y is J-shaped
<i>peninsularis</i>	Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)	Y is small, V-shaped
<i>promeridiana</i>	Wasserman 1962	1 V, 3 R, 1 D	Wasserman (1962b)	Y is short rod; X is rod
<i>propachuca</i>	Wasserman 1962		Wasserman (1962b)	Y is J-shaped
<i>racemosa</i>	Patterson and Mainland 1944	5 R, 1 D	Patterson and Mainland (1944)	—
<i>ritae</i>	Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)	X and Y are longest rods
<i>stalkerii</i>	Wheeler 1954	5 R, 1 D	Clayton and Ward (1954)	Y is J-shaped
<i>tira</i>	Wasserman 1962	5 R, 1 D	Wasserman (1962b)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>wheeleri</i> Patterson and Alexander 1952	5 R, 1 D	Patterson and Alexander (1952)	Y is short rod
<i>aureata</i> Wheeler 1957	5 R, 1 D	subgroup uncertain Clayton and Wasserman (1957)	Y is J-shaped
<i>betari</i> Dobzhansky and Pavan 1943	1 V, 3 R, 1 D	Dobzhansky and Pavan (1943)	Y is dotlike but larger than autosomal dot
<i>brevicarinata</i> Patterson and Wheeler 1942	5 R, 1 D	Wharton (1943)	—
<i>castanea</i> Patterson and Mainland 1944	2 V, 1 R, 1 D	Clayton and Wasserman (1957)	X is V-shaped; Y is J-shaped
<i>inca</i> Dobzhansky and Pavan 1943	5 R, 1 J	Dobzhansky and Pavan (1943)	—
<i>lewis</i> Patterson and Wheeler 1942	6 R	Wharton (1943)	—
<i>linearephleta</i> Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)	—
<i>onca</i> Dobzhansky 1943	1 V, 1 J, 1 R, 1 D	Dobzhansky and Pavan (1943)	X is rod; Y is J-shaped
<i>ramsdeni</i> Sturtevant 1916	5 R, 1 D	Metz (1916b)	—
<i>cheda</i> Tan <i>et al.</i> 1949	1 V, 1 v, 1 R, 1 D	robusta species group Tan <i>et al.</i> (1949)	—
<i>colorata</i> Walker 1849	2 R, 2 V, 1 v, 1 J	Wharton (1943)	X is V-shaped; Y is rod

				Determined from oogonal metaphase
<i>lacertosa</i> Okada 1956	1 V, 4 J, 1 d	Momma (1956)		—
<i>moriuakii</i> Okada and Kurokawa 1957	1 V, 2 v, 2 R, 1 D	Okada and Kurokawa (1957)		—
<i>pseudosordidula</i> Kaneko <i>et al.</i> 1964	1 V, 1 J, 3 R, 1 r	Tokumitsu <i>et al.</i> (1967)		—
<i>pullata</i> Tan <i>et al.</i> 1949	1 V, 3 R, 1 D	Kaneko <i>et al.</i> (1964)		—
<i>robusta</i> Sturtevant 1916	4 V, 1 D	Tan <i>et al.</i> (1949)		—
	2 V, 1 R, 1 D	Metz (1916a)		—
	3 V, 1 D	Carson and Stalker (1947)		X is largest V; Y is V-shaped
<i>sordidula</i> Kikkawa and Peng 1938	2 V, 2 R, 1 D	Kikkawa and Peng (1938)		—
<i>parachroaster</i> Patterson and Mamland 1943	4 R, 1 V, 1 D	<i>rubrifrons</i> species group Wharton (1943)		—
<i>rubrifrons</i> Patterson and Wheeler 1942	1 J, 4 R, 1 r	Clayton and Ward (1954)		—
<i>sticta</i> Wheeler 1957	5 R, 1 D	<i>sticta</i> species group Clayton and Wasserman (1957)		Three forms observed; rods identical but one pair of dots, rods identical but one dot with one short rod, or rods identical but two dots with one short rod
<i>putrida</i> Sturtevant 1916	2 V, 1 R, 1 D	<i>testacea</i> species group Wharton (1943)		Stock from Texas
	2 V, 1 R, 2 D	Wharton (1943)		Stock from Florida
<i>testacea</i> von Roser 1840	1 V, 2 R, 1 D	Wharton (1943)		X is rod
<i>albistrois</i> Sturtevant 1921	5 R, 1 D	<i>tripunctata</i> species group Clayton and Wasserman (1957)		Y is rod shorter than X
<i>bandarantonum</i> Dobzhansky and Pavan 1943	4 R, 1 V, 1 D	Dobzhansky and Pavan (1943)		—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>tripunctata</i> species group (Continued)			
<i>bipunctata</i> Patterson and Mainland 1943	5 R, 1 D	Clayton and Wasserman (1957)	Y is rod shorter than X
<i>blumelae</i> Pipkin and Heed 1964	5 R, 1 D	Pipkin and Heed (1964)	Y is J-shaped
<i>convergata</i> Heed and Wheeler 1957	5 R, 1 D	Heed and Wheeler (1957)	—
<i>crocina</i> Patterson and Mainland 1944	5 R, 1 D	Patterson and Mainland (1944)	—
<i>facialba</i> Heed and Wheeler 1957	3 R, 1 V, 1 D 5 R, 1 D	Heed and Wheeler (1957)	Stock from El Salvador
<i>fairchildi</i> Pipkin and Heed 1964	5 R	Pipkin and Heed (1964)	—
<i>fragilis</i> Wheeler 1949	3 R, 1 V, 3 D 3 R, 1 J, 1 D	Clayton and Ward (1954) Clayton and Wasserman (1957)	Stock from El Salvador
<i>greerae</i> Pipkin and Heed 1964	5 R, 1 D	Pipkin and Heed (1964)	X is rod, Y is shorter rod
<i>johnstonae</i> Pipkin and Heed 1964	5 R, 1 D	Pipkin and Heed (1964)	Y is J-shaped
<i>mediodiffusa</i> Heed and Wheeler 1957	5 R, 1 D	Heed and Wheeler (1957)	X is double-length rod; Y is short rod
<i>medionotata</i> Frota-Pessoa 1954	5 R, 1 D	Clayton and Wasserman (1957)	Species identity uncertain
<i>mediopictoides</i> Heed and Wheeler 1957	4 R, 1 r, 1 V	Heed and Wheeler (1957)	—
<i>mediopunctata</i> Dobzhansky and Pavan 1943	5 R, 1 D	Dobzhansky and Pavan (1943)	Stock from Brazil
<i>mediosignata</i> Dobzhansky and Pavan 1943	1 V, 1 J, 2 R, 1 D 5 R, 1 D	Clayton and Wasserman (1957) Dobzhansky and Pavan (1943)	Stock from El Salvador

<i>mediotriata</i> Duda 1925	5 R, 1 D	Dobzhansky and Pavan (1943)	—
<i>metzii</i> Sturtevant 1921	5 R, 1 D	Clayton and Wasserman (1957)	—
<i>paramediotriata</i> Townsend and Wheeler 1955	5 R, 1 D	Townsend and Wheeler (1955)	—
<i>pellucar</i> Pipkin and Heed 1964	5 R, 1 D	Pipkin and Heed (1964)	Y is J-shaped
<i>proximilis</i> Duda 1927	5 R, 1 D	Dobzhansky and Pavan (1943)	—
<i>rochrae</i> Pipkin and Heed 1964	5 R, 1 D	Pipkin and Heed (1964)	—
<i>setula</i> Heed and Wheeler 1957	4 R, 1 V, 1 D	Clayton and Wasserman (1957)	Stock from Colombia
<i>spmaternina</i> Heed and Wheeler 1957	3 R, 1 V, 1 D	Clayton and Wasserman (1957)	Stock from Panama Canal Zone
<i>trapa</i> Heed and Wheeler 1957	3 R, 1 V, 1 D	Heed and Wheeler (1957)	—
<i>tranquilla</i> Spencer 1943	5 R, 1 D	Clayton and Wasserman (1957)	—
<i>triangula</i> Wheeler 1949	1 V, 2 R	Wharton (1943)	Stock from Chihuahua, Mexico
<i>trifolioides</i> Wheeler 1957	1 V, 2 R, 1 D	Clayton and Ward (1954)	Stock from Puebla, Mexico
	4 R, 1 J, 1 D	Clayton and Ward (1954)	—
	5 R	Clayton and Wasserman (1957)	—
<i>tripunctata</i> Loew 1862	3 R, 1 V	Metz (1914), Metz (1916b)	—
	5 R, 1 D	Metz and Moses (1923), Wharton (1943)	—
<i>tristriata</i> Heed and Wheeler 1957	5 R, 1 D	Clayton and Wasserman (1957)	One rod is double-length
<i>unipunctata</i> Patterson and Mainland 1943	2 R, 1 V, 1 J, 1 D	Wharton (1943)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>tumiditarsus</i> Tan <i>et al.</i> 1949	2 V, 1 J, 1 D	tumiditarsus species group Hsiang (1949)	X is V-shaped; Y is shorter J-shaped
<i>americana</i> Spencer 1938	2 V, 1 R, 1 D	virilis species group Hughes (1939), Wharton (1943)	—
<i>borealis</i> Patterson 1952	4 R, 1 v, 1 D	Patterson (1952)	—
<i>ezana</i> Takada and Okada 1958	4 R, 1 v, 1 D	Stone <i>et al.</i> (1960)	Y is small V
<i>flavomontana</i> Patterson 1952	4 R, 1 v, 1 D	Patterson (1952)	—
<i>laticola</i> Patterson 1944	4 R, 1 v, 1 D	Patterson (1944)	—
<i>littoralis</i> Meigen 1830	2 R, 1 V, 1 J, 1 D	Clayton and Ward (1954)	X is rod; Y is J-shaped
<i>montana</i> Stone <i>et al.</i> 1942	4 R, 1 v, 1 D	Stone <i>et al.</i> (1942)	—
<i>novamexicana</i> Patterson 1941	5 R, 1 D	Patterson (1941b)	—
<i>texana</i> Patterson 1940	1 V, 3 R, 1 D	Patterson (1941a)	—
<i>virilis</i> Sturtevant 1916	5 R, 1 D	Metz (1914)	Reported as species B
<i>amplitolobus</i> Hardy 1966	1 V, 3 R, 1 D	Subgenus Engiscaptomyza	Reported as <i>crassifemur</i>
<i>crassifemur</i> Grimshaw 1901	1 V, 3 R, 1 D	Clayton (1966)	—
<i>nasalis</i> Grimshaw 1901	2 V, 2 R, 1 D	Clayton (1968)	—
<i>reducta</i> Hardy 1965	1 V, 3 R, 1 D	Clayton (1966)	Reported as <i>crassifemur</i>
		Clayton (1968)	
<i>alboralis</i> Momma and Takada 1954	5 R, 1 D	Subgenus Hirtodrosophila	Y is shorter than X
<i>confusa</i> Staeger 1844	5 R, 1 D	Momma (1954)	Reported as <i>grischuna</i>
		Burla (1950a)	Reported as <i>histrionides</i>
		Okada and Kurokawa (1957)	Reported as <i>histrionides</i>
		Kang <i>et al.</i> (1964)	Reported as <i>histrionides</i>
	1 V, 3 R, 1 D		

Species	Year	Configuration	Author	Microsome considered small V; X is V-shaped; Y is rod	
<i>duncani</i>	Sturtevant 1918	2 V, 2 v, 1 Dv	Wharton (1943)	} XO ♂	
<i>grisea</i>	Patterson and Wheeler 1942	5 R, 1 D	Clayton and Ward (1954)		
<i>longata</i>	Patterson and Wheeler 1942	5 R, 1 D	Patterson and Stone (1952)		
<i>obsoleticula</i>	Patterson and Wheeler 1942	5 R, 1 D	Patterson and Wheeler (1942)		
<i>piciventris</i>	Duda 1925	1 V, 1 J, 1 R, 1 D	Clayton and Ward (1954)		
<i>thoracis</i>	Williston 1896	5 R, 1 D	Clayton and Ward (1954)		
<i>trivittata</i>	Strobl 1893	1 V, 1 v, 2 R, 1 D	Kikkawa and Peng (1938)		
Subgenus <i>Scaptotrosophila</i> (= <i>Pholadoris</i>)					
<i>brookiae</i>	Pipkin 1961	2 V, 1 v, 1 R	Pipkin (1961)		} X is rod; Y is rod with constriction
<i>bryani</i>	Malloch 1934	2 V, 1 R	} Mather (1956)		
<i>cancellata</i>	Mather 1955	3 R, 1 r, 1 V			
<i>coracina</i>	Kikkawa and Peng 1938	2 V, 1 R, 1 D	Kikkawa and Peng (1938)		
<i>enigma</i>	Malloch 1927	4 R, 2 V	Kang <i>et al.</i> (1964)		
<i>fumida</i>	Mather 1960	2 V, 2 R	Mather (1956)		
<i>latifasciiformis</i>	Duda 1940	1 V, 2 v	Mather (1960)		
<i>lativittata</i>	Malloch 1923	6 R	Dobzhansky and Pavan (1943)		
<i>lebanonensis</i>	Wheeler 1949	2 V, 1 v, 1 R	Mather (1956)	} One rod is twice the length of the others	
<i>l. castelli</i>	Pipkin 1961	2 V, 1 v, 1 R	Ward (1949)		
<i>novamaculosa</i>	Mather 1956	6 R	Pipkin (1961)		
<i>novopaca</i>	Mather 1956	6 R	Mather (1956)		
<i>pattersoni</i>	Pipkin 1956	1 V, 2 v, 1 R	Pipkin (1956)		
<i>rufifrons</i>	Loew 1873	2 V, 2 v	Buzzati-Traverso (1943)		
					} Reported as <i>nilens</i> ; X and Y are small, V-shaped

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
Subgenus <i>Scaptodrosophila</i> (= <i>Pholadoris</i>) (Continued)			
<i>stonei</i> Pipkin 1956	1 V, 1 J, 1 v, 1 R	Pipkin (1956)	X is rod or J; Y is small, V-shaped; in some, large V's are J-shaped
<i>subtilis</i> Kikkawa and Peng 1938	2 R, 1 V, 2 J	Kikkawa and Peng (1938)	—
<i>victoria</i> Sturtevant 1942	1 V, 1 v, 1 J, 1 R	Wharton (1943)	Species identity uncertain, stock from Mexico
	1 V, 1 v, 2 J	Sturtevant (1942)	Stock from California
Subgenus <i>Siphodora</i>			
<i>sigmoides</i> Loew 1872	5 R, 1 D	Butler and Mettler (1963)	—
Subgenus <i>Sophophora</i>			
<i>melanogaster</i> sp. group			
<i>ananassae</i> subgroup			
<i>ananassae</i> Doleschall 1858	4 V	Metz (1916b)	Reported as <i>caribbea</i>
<i>atriplex</i> Bock and Wheeler 1972	4 V	Kikkawa and Peng (1938)	X is large V; Y is J-shaped
<i>bipunctinata</i> Duda 1923	4 V	Kaneshiro and Wheeler (1970)	Reported as "species 2"; Y is J-shaped
<i>malerkotliana</i> Parshad and Paika 1964	4 V	Kikkawa and Peng (1938)	X is medium V; Y is V-shaped
<i>m. pallens</i> Bock and Wheeler 1972	4 V	Kaneshiro and Wheeler (1970)	X and Y are V-shaped; reported as "species 10 and 11"
<i>nesoetes</i> Bock and Wheeler 1972	3 V, 1 R	Kaneshiro and Wheeler (1970)	Reported as "species 10 and 11;" Y is J-shaped
		Kaneshiro and Wheeler (1970)	Reported as "species 3;" X is V-shaped; Y is J-shaped

<i>pallidosa</i> Bock and Wheeler 1972	3 V, 1 v	Futch (1966)	Reported as "light" <i>ananassae</i> ; Y is J-shaped
<i>parabipunctata</i> Bock 1971	3 V, 1 v	Kaneshiro and Wheeler (1970)	Reported as "species 7"
<i>pharoplicura</i> Bock and Wheeler 1972	4 V	Kaneshiro and Wheeler (1970)	Reported as "species 5;" Y is J-shaped
<i>pseudoananassae</i> Bock 1971	4 V	Kaneshiro and Wheeler (1970)	Reported as "species 8"
<i>p. nigrens</i> Bock and Wheeler 1972	3 V, 2 v	Kaneshiro and Wheeler (1970)	Reported as "species 9;" X is V-shaped; Y is rod
<i>varians</i> Bock and Wheeler 1972	5 V	Kaneshiro and Wheeler (1970)	X is V-shaped; Y is rod
	4 V	Kaneshiro and Wheeler (1970)	Reported as "species 4;" Y is J-shaped
<i>denticulata</i> Bock and Wheeler 1972	2 V, 1 R	<i>denticulata</i> subgroup Bock and Wheeler (1972)	X is rod-shaped; Y is slightly longer rod with spherical expansion at end
<i>elegans</i> Bock and Wheeler 1972	5 R	<i>elegans</i> subgroup Bock and Wheeler (1972)	Y is short, J-shaped
<i>eugracilis</i> Bock and Wheeler 1972	2 V, 1 R	<i>eugracilis</i> subgroup Bock and Wheeler (1972)	X is short rod; Y is thick heterochromatic rod
<i>fusciphila</i> Kikkawa and Peng 1938	2 V, 1 R, 1 D	<i>fusciphila</i> subgroup Kikkawa and Peng (1938)	Y is J-shaped
<i>melanogaster</i> Meigen 1830	2 V, 1 R, 1 D	<i>melanogaster</i> subgroup Stevens (1912)	Reported as <i>ampelophila</i>
<i>simulans</i> Sturtevant 1919	2 V, 1 R, 1 D	Metz (1914) Patau (1935) Kikkawa and Peng (1938)	Y is J-shaped — X is rod; Y is small rod or J

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>melanogaster</i> sp. group (Continued)			
<i>montium</i> subgroup			
<i>auraria</i> Peng 1937	2 V, 1 R, 1 D	Kikkawa and Peng (1938)	Y is short rod
<i>baimai</i> Bock and Wheeler 1972	2 V, 1 R	Bock and Wheeler (1972)	X is rod; Y is short
<i>barbara</i> Bock and Wheeler 1972	2 V, 1 R		
<i>biararia</i> Bock and Wheeler 1972	2 V, 1 R		
<i>bicornuta</i> Bock and Wheeler 1972	2 V, 1 R, 1 D		
<i>birchii</i> Dobzhansky and Mather 1961	2 V, 1 D, + 1		
<i>kanapiae</i> Bock and Wheeler 1972	2 V, 1 R	Bock and Wheeler (1972)	Pair of sex chromosomes of various types
<i>khaoyana</i> Bock and Wheeler 1972	2 V, 1 R	Bock and Wheeler (1972)	X is rod; Y is small, densely heterochromatic
<i>kikkawai</i> Burla 1954	2 V, 2 R	Ward (1949)	X is rod; Y is short
		Baimai (1969)	X is rod; Y is rod or small V; reported as <i>montium</i>
			Reported extensive variation in metaphases; reported as <i>montium</i> .
<i>lini</i> Bock and Wheeler 1972	2 V, 1 R, 2 r	Bock and Wheeler (1972)	X is rod; Y is short
<i>mayri</i> Mather and Dobzhansky 1962	2 V, 1 R, 1 D	Mather and Dobzhansky (1962)	—
<i>montium</i> de Meijere 1916	2 V, 2 R	Kikkawa (1936)	Y is V-shaped; X is rod; species identity uncertain
<i>rosa</i> Bock and Wheeler 1972	2 V, 1 R	Bock and Wheeler (1972)	X is rod; Y is short
<i>parula</i> Bock and Wheeler 1972	2 V, 1 R	Bock and Wheeler (1972)	X is rod; Y is small, densely heterochromatic
<i>pennae</i> Bock and Wheeler 1972	2 V, 1 R	Bock and Wheeler (1972)	X is long rod; Y is short
<i>pseudomayri</i> Baimai 1970	3 V, 1 D	Baimai (1970)	X is V-shaped; Y is J-shaped

<i>quadriaria</i> Bock and Wheeler 1972	2 V, 1 R	} Bock and Wheeler (1972)	X is rod; Y is short	
<i>rhopaloa</i> Bock and Wheeler 1972	2 V, 1 R, 1 D		—	
<i>rufa</i> Kikkawa and Peng 1938	2 V, 1 R, 1 D		—	
<i>serrata</i> Malloch 1927	2 V, 1 R, 1 D		X is rod; Y is short	
<i>triauraria</i> Bock and Wheeler 1972	2 V, 1 R		X is rod; Y is short, J-shaped	
<i>vulcana</i> Bock and Wheeler 1972	2 V, 1 R, 1 D	} <i>suzukii</i> subgroup		
<i>lucipennis</i> Lin 1972	2 V, 1 R		X is rod; Y is small rod	
<i>mimetica</i> Bock and Wheeler 1972	2 V, 1 R, 1 D		} Y is J-shaped	
<i>pulchrella</i> Tan <i>et al.</i> 1949	2 V, 1 R, 1 D			
<i>suzukii</i> (Matsumura) 1931	2 V, 1 R, 1 D			
<i>lutea</i> Kikkawa and Peng 1938	2 V, 1 R, 1 D	} <i>takahashii</i> subgroup	Y is short rod	
<i>parabutea</i> Bock and Wheeler 1972	2 V, 1 R		X is rod; Y is short	
<i>prostipennis</i> Lin 1972	2 V, 1 R		X is rod; Y is short, heterochromatic	
<i>psrudotakahashii</i> Mather 1957	2 V, 1 R, 1 D		Reported as <i>takahashii</i>	
<i>takahashii</i> Sturtevant 1927	2 V, 1 R, 1 D		X is rod; Y is short rod	
<i>trilutea</i> Bock and Wheeler 1972	2 V, 1 J	Dot attached to X; X is J-shaped; Y is short rod		
<i>affinis</i> Sturtevant 1916	3 R, 1 V, 1 D	} obscura species group	X is rod; Y is short, heterochromatic	
	1 R, 2 V, 1 J, 1 D		} <i>affinis</i> subgroup	
	1 R, 1 V, 2 J, 1 D			
			Metz (1916a)	
			Kikkawa and Peng (1938)	
		Miller and Stone (1962)	X is V-shaped; Y is J-shaped	

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
<i>obscura</i> species group (Continued)			
<i>algonquin</i> Sturtevant and Dobzhansky 1936	1 R, 1 V, 2 J, 1 D	Sturtevant and Dobzhansky (1936) Miller and Stone (1962)	— Pericentric inversion in V to form J in some
<i>athabasca</i> Sturtevant and Dobzhansky 1936	3 J, 1 V, 1 D	Sturtevant and Dobzhansky (1936)	—
	2 V, 1 J, 1 R, 1 D	Kikkawa and Peng (1938)	—
	1 R, 1 V, 2 J, 1 D	Miller and Stone (1962)	Rod has subterminal centromere; X is V-shaped
<i>azteca</i> Sturtevant and Dobzhansky 1936	3 J, 1 V, 1 D	Sturtevant and Dobzhansky (1936)	—
	2 V, 1 J, 1 R, 1 D	Kikkawa and Peng (1938)	—
	1 R, 1 V, 2 J, 1 D	Miller and Stone (1962)	—
	1 V, 2 J, 1 R, 1 D	Burla (1948), Miller and Stone (1962)	— Like <i>algonquin</i> except Y is rod instead of J-shaped
<i>narragansett</i> Sturtevant and Dobzhansky 1936	1 V, 2 J, 1 R, 1 D	Sturtevant (1940), Miller and Stone (1962)	—
<i>tolteca</i> Patterson and Mainland 1944	2 V, 1 J, 1 R, 1 D	Ward (1949)	—
<i>ambigua</i> Pomini 1940	2 V, 2 J, 1 D	<i>obscura</i> subgroup Buzzati-Traverso (1941)	X is large V; Y is rod
<i>bifasciata</i> Pomini 1940	2 V, 2 J, 1 D	Buzzati-Traverso (1941)	X is large V; Y is rod; dots are large
<i>imani</i> Moriwaki <i>et al.</i> 1967	4 V, 1 D	Moriwaki <i>et al.</i> (1967)	X is V-shaped, Y is rod

<i>lawi</i> Heed <i>et al.</i> 1969	2 R, 2 V, 1 D	Heed <i>et al.</i> (1969)	X is large V; Y is J-shaped
<i>miranda</i> Dobzhansky 1935	3 R, 1 V, 1 D	Dobzhansky (1935)	In ♂ only 9 chromosomes; Y is J-shaped; X ₁ is V and unpaired X ₂ is rod
<i>obscura</i> Fallen 1823	2 V, 2 J, 1 D	Frolova and Astaurov (1929)	X is V; Y is rod
<i>obscuroides</i> Pomini 1940	1 V, 1 J, 2 R, 1 D	Buzzati-Traverso (1941)	Listed as synonym of <i>obscura</i> , but metaphases differ
<i>persimilis</i> Dobzhansky and Epling 1944	3 R, 1 V, 1 D	Dobzhansky (1935)	X is V-shaped; Y is variable
<i>pseudobscura</i> Frowola 1929	3 R, 1 V, 1 D	Metz (1916a, b)	Reported as <i>obscura</i> ; X is V, Y is rod
<i>subobscura</i> Collin 1936	5 R, 1 D	Dobzhansky (1935)	X is V; Y is variable
<i>trixis</i> Fallén 1823	3 V, 1 J, 1 D	Emmens (1937)	
		Buzzati-Traverso (1941)	X is V-shaped; Y is J-shaped
<i>saltans</i> species group			
		<i>cordata</i> subgroup	
<i>cordata</i> Sturtevant 1942	2 V, 1 R	Sturtevant (1942)	—
		<i>elliptica</i> subgroup	
<i>elliptica</i> Sturtevant 1942	4 R, 1 v, 1 j	Sturtevant (1942)	—
	2 V, 1 R	Clayton and Ward (1954), Clayton and Wasserman (1957)	—
<i>emarginata</i> Sturtevant 1942	2 V, 1 R	Sturtevant (1942)	—
<i>neoe elliptica</i> Pavan and Magalhaes 1950	} 2 V, 1 R	Pavan (1950)	—
<i>neosaltans</i> Pavan and Magalhaes 1950			
<i>australsaltans</i> Spassky 1957	2 V, 1 R	<i>saltans</i> subgroup Spassky (1957)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
saltans species group (Continued)			
<i>lusaltans</i> Magalhaes 1962	2 V, 1 R	Magalhães (1962)	—
<i>nigrosaltans</i> Magalhaes 1962	2 V, 1 R	Magalhães (1962)	—
<i>prosaltans</i> Duda 1927	2 V, 1 R	Wharton (1943)	X and Y are V-shaped
		Dobzhansky and Pavan (1943)	Rod X and rod Y; also X and Y are on one arm of V in some
<i>saltans</i> Sturtevant 1916	2 V, 1 R, 1 D	Metz (1916b)	—
	2 V, 1 R	Sturtevant (1942), Wharton (1943)	Reported as <i>sellata</i>
<i>septentriosaltans</i> Magalhães and Buck 1962	2 V, 1 R	Magalhães (1962)	—
		<i>sturtevantii</i> subgroup	
<i>rectangularis</i> Sturtevant 1942	2 V, 1 R	Sturtevant (1942)	—
<i>sturtevantii</i> Duda 1927	2 V, 1 R	Sturtevant (1942)	—
		Dobzhansky and Pavan (1943)	X is V-shaped
willistoni species group			
<i>bocainensis</i> Pavan and da Cunha 1947	2 V, 1 R	Pavan and da Cunha (1947)	—
		Clayton and Wasserman (1957)	X is V-shaped; Y is J-shaped
<i>bocainoides</i> Carson 1954	2 V, 1 R	Carson (1954)	—
<i>capricorni</i> Dobzhansky and Pavan 1943	2 V, 1 R	Dobzhansky and Pavan (1943)	—
<i>equinoxialis</i> Dobzhansky 1946	2 V, 1 R	Burla <i>et al.</i> (1949)	—
<i>fumipennis</i> Duda 1925	2 V, 1 R	Dobzhansky and Pavan (1943)	—

<i>insularis</i> Dobzhansky 1957	2 V, 1 R	Dobzhansky <i>et al.</i> (1957)	—
<i>mangabeirai</i> Malogolowkin 1951	2 V, 1 R	Carson <i>et al.</i> (1957)	—
<i>nebulosa</i> Sturtevant 1916	2 V, 1 R, 1 D	Metz (1916a), Wharton (1943)	—
<i>parabucarinensis</i> Carson 1954	2 V, 1 R	Pavan (1946), Ward (1949), Clayton and Ward (1954)	—
<i>pauлистorum</i> Dobzhansky and Pavan 1949	2 V, 1 R	Carson (1954)	—
<i>pavlovskiana</i> Kastritis and Dobzhansky 1967	2 V, 1 R	Dobzhansky and Pavan (1943)	—
<i>sacinea</i> Patterson and Mainland 1944	2 V, 1 R	Kastritis and Dobzhansky (1967)	—
<i>tropicalis</i> Burla and da Cunha 1949	2 V, 1 R	Patterson and Mainland (1944)	—
<i>t. cubana</i> Townsend 1954	2 V, 1 R	Burla <i>et al.</i> (1949)	—
<i>willistoni</i> Sturtevant 1916	2 V, 1 R, 1 D	Townsend (1954)	—
		Metz (1916b), Wharton (1943)	—
<i>nigrosparisa</i> Strobl 1898	2 V, 1 R	Dobzhansky and Pavan (1943)	—
	5 R, 1 V	Subgenus <i>Spinodrosophila</i> Burla (1950b)	X and Y are V-shaped
<i>alexandrei</i> Cordeiro 1951	3 R, 1 V	Cordeiro (1951)	—
<i>andina</i> Dobzhansky and Pavan 1943	1 V, 4 R	Dobzhansky and Pavan (1943)	—
<i>araca</i> Heed and Wheeler 1957	1 V, 1 J, 1 R	Clayton and Wasserman (1957)	—
<i>caponei</i> Pavan and da Cunha 1947	3 V, 1 D	Pavan and da Cunha (1947)	—
<i>endobranchia</i> Carson and Wheeler 1968	2 V, 1 R, 1 D	Carson and Wheeler (1968)	—
		Species of uncertain classification	

TABLE I. Continued

Species	Metaphase	Reference	Remarks
Species of uncertain classification (Continued)			
<i>fumosa</i> Pavan and da Cunha 1947	1 R, 2 V, 1 D	Pavan and da Cunha (1947)	—
<i>limbinervis</i> Duda 1925	5 R, 1 D	Clayton and Wasserman (1957)	—
<i>mcclintockae</i> Pipkin 1964	3 R, 1 V, 1 D	Pipkin (1964)	Y is rod
<i>nigrilineata</i> Angus 1967	5 R, 1 D	Angus (1967)	—
<i>paglioli</i> Cordeiro 1963	1 V, 3 R, 1 D	Cordeiro (1963)	—
<i>pseudotetrachaeta</i> Angus 1967	5 R, 1 D	Angus (1967)	—
<i>tetrachaeta</i> Angus 1964	5 R, 1 D	Angus (1964)	—
Endemic Hawaiian Drosophiloids			
"picture-winged" group			
<i>adiastola</i> subgroup			
<i>adiastola</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>citifera</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>clavisetae</i> (Hardy) 1966	5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>hamifera</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1971)	—
<i>neogrimshawi</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>ochrobasis</i> Hardy and Kaneshiro 1968			
<i>ornata</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1969)	—
<i>paenhamifera</i> Hardy and Kaneshiro 1969			
<i>peniculipetis</i> Hardy 1965			

<i>setosumentum</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>spectabilis</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>touchardiae</i> Hardy and Kaneshiro 1972	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>truncipenna</i> Hardy 1965	5 R, 1 D	Clayton (1969)	One rod is extremely large
<i>varipennis</i> (Grimshaw) 1901	5 R, 1 D	Clayton (1971)	
<i>basissetae</i> Hardy and Kaneshiro 1968	5 R, 1 D	<i>paucipuncta</i> subgroup Clayton (1968)	—
<i>ocellata</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1969)	—
<i>paucicilia</i> Hardy and Kaneshiro 1972	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>paucipuncta</i> Grimshaw 1901	} 5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>prolaticilia</i> Hardy 1965		Clayton (1971)	—
<i>prostopalpis</i> Hardy and Kaneshiro 1968	4 R, 1 V, 1 D	Clayton (1966)	—
<i>punalua</i> Bryan 1934	5 R, 1 D	Clayton (1968)	—
<i>uniseriata</i> Hardy and Kaneshiro 1968	6 R		
<i>alsophila</i> Hardy and Kaneshiro 1971		<i>versiseta</i> subgroup Clayton (1971)	
<i>assita</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1971)	—
<i>hexachaetae</i> Hardy 1965	5 R, 1 D	Clayton (1968)	—
<i>montgomeryi</i> Hardy and Kaneshiro 1972	6 R	Clayton <i>et al.</i> (1972)	—
<i>versiseta</i> Hardy and Kaneshiro 1968	} 5 R, 1 D	Clayton (1968)	—
<i>virgulata</i> Hardy and Kaneshiro 1968			

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
Endemic Hawaiian Drosophiloids			
"picture-winged" group (Continued)			
<i>distinguenda</i> subgroup			
<i>distinguenda</i> Hardy 1965	5 R, 1 D	Clayton (1969)	—
<i>divaricata</i> Hardy and Kaneshiro 1971	5 R, 1 D	Clayton (1971)	—
<i>inedita</i> Hardy 1965	5 R, 1 D	Clayton (1969)	Dots are extremely large
<i>odontophallus</i> subgroup			
<i>liophallus</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>macrothrix</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1971)	—
<i>odontophallus</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>psilophallus</i> Hardy and Kaneshiro 1971	6 R	Clayton (1971)	—
<i>spaniothrix</i> Hardy and Kaneshiro 1968	5 R, 1 D		
<i>tarphytrichia</i> Hardy 1965	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>pilimana</i> subgroup			
<i>aglaia</i> Hardy 1965	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>discreta</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>fasciculisetae</i> Hardy 1965	5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>glabripex</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>lineosetae</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1969)	—

<i>pilimana</i> Grimshaw 1901	5 R, 1 D	Clayton (1966)	—
<i>grimshawi</i> subgroup			
<i>halioptera</i> Hardy 1965	} 5 R, 1 D	Clayton (1968)	—
<i>bostrycha</i> Hardy 1965		Carson <i>et al.</i> (1967)	—
<i>conspicua</i> Grimshaw 1901	5 R, 1 D	Clayton (1966)	—
<i>crucigera</i> Grimshaw 1902	5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>disjuncta</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>grimshawi</i> Oldenberg 1914	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>pallipes</i> Hardy and Kaneshiro 1972	5 R, 1 D		—
<i>primaeva</i> subgroup			
<i>altigua</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1969)	—
<i>primaeva</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>planitibia</i> subgroup			
<i>cyrtoloma</i> Hardy 1969	5 V, 1 J	Clayton (1968)	Reported as " <i>perkinsi</i> ?"
<i>hanaulac</i> Hardy 1969	5 R, 1 D	Clayton (1969)	—
<i>hemipeza</i> (Hardy) 1965	5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>heteroneura</i> (Perkins) 1910	5 R, 1 D	Clayton (1968)	—
<i>ingens</i> Hardy and Kaneshiro 1971	5 R, 1 D	Clayton (1969)	Reported as <i>melanoccephala</i>
<i>melanoccephala</i> (Hardy) 1966	5 R, 1 V	Clayton (1969)	Reported as " <i>melanoccephala</i> ?"
<i>neoperkinsi</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1969)	—
<i>neopicta</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>planitibia</i> subgroup			
<i>nigrithaxis</i> Hardy 1969	5 R, 1 D	Clayton (1968)	Reported as <i>brunneipennis</i>
<i>oahuensis</i> (Grimshaw) 1901	5 R, 1 D	Clayton (1968)	—
<i>obscuripes</i> (Grimshaw) 1901	5 R, 1 D	Clayton (1968)	—
<i>picticornis</i> Grimshaw 1901	5 R, 1 D	Clayton (1966)	—
<i>planitibia</i> (Hardy) 1966	5 R, 1 D	Carson <i>et al.</i> (1967)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
Endemic Hawaiian Drosophiloids			
"picture-winged" group (Continued)			
<i>setosifrons</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1969)	—
<i>silvestris</i> (Perkins) 1910	5 R, 1 D	Carson <i>et al.</i> (1967)	Reported as <i>migrifacies</i>
<i>substenoptera</i> Hardy 1969	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>orphnopeza</i> subgroup			
<i>atrimentum</i> Hardy and Kaneshiro 1971	5 R, 1 D	Clayton (1971)	—
<i>ciliaticrus</i> Hardy 1965	5 R, 1 D	Clayton (1968)	—
<i>claytonae</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1969)	—
<i>engyocharacea</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>limitata</i> Hardy and Kaneshiro 1968	6 R	Clayton (1968)	—
<i>murphyi</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1969)	—
<i>obatai</i> Hardy and Kaneshiro 1972	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>ochracea</i> Grimshaw 1901	5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>orphnopeza</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>orthofascia</i> Hardy and Kaneshiro 1968			
<i>reynoldsiae</i> Hardy and Kaneshiro 1972	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>sejuncta</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1969)	—
<i>sobrina</i> Hardy and Kaneshiro 1971	5 R, 1 D	Clayton <i>et al.</i> (1972)	—

<i>sodomae</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1971)	—
<i>spraati</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>villosipedis</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>hawaiiensis</i> subgroup			
<i>flexipes</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1971)	—
<i>formella</i> Hardy and Kaneshiro 1972	5 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>gradata</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>Gynobasis</i> Hardy and Kaneshiro 1971	5 R, 1 D	Clayton (1971)	—
<i>hawaiiensis</i> Grimshaw 1901	5 R, 1 D	Carson <i>et al.</i> (1967)	—
<i>huedi</i> Hardy and Kaneshiro 1971	6 R	Clayton <i>et al.</i> (1972)	—
<i>hirtipalpus</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>musaphila</i> Hardy 1965	5 R, 1 D	Clayton (1969)	—
<i>recticilia</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>silvarentis</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>turbata</i> Hardy and Kaneshiro 1969	5 R, 1 D	Clayton (1971)	—
"Modified mouthparts" group			
<i>anoplasmata</i> Hardy and Kaneshiro 1968	5 R, 1 D	Clayton (1968)	—
<i>asketostoma</i> Hardy 1965	6 R	Clayton (1966)	—
<i>biseriata</i> Hardy 1965	1 V, 3 R, 1 D	Clayton <i>et al.</i> (1972)	—
<i>chaetopeza</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>comatifemora</i> Hardy 1965	5 R, 1 D	Clayton (1968)	—
<i>deltaneuron</i> Bryan 1938	2 V, 1 R, 1 D	Clayton <i>et al.</i> (1972)	—

TABLE 1. Continued

Species	Metaphase	Reference	Remarks
Endemic Hawaiian Drosophiloids			
"Modified mouthparts" group (Continued)			
<i>diminuens</i> Hardy 1965	5 R, 1 D	Clayton (1968)	—
<i>eurypeza</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>flavibasis</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>fuscamaeoba</i> Bryan 1934	5 R, 1 D	Clayton (1968)	Reported as "n. sp. near <i>caccabata</i> "
<i>hystricosa</i> Hardy and Kaneshiro 1969	1 V, 3 R, 1 D		
<i>infuscata</i> Grimshaw 1901	5 R, 1 D	Clayton (1966) Clayton <i>et al.</i> (1972)	—
<i>ischnotrix</i> Hardy 1965	1 R, 2 V, 1 D		
<i>kambysellisi</i> Hardy and Kaneshiro 1969	6 R		
<i>kauluai</i> Bryan 1934	5 R, 1 D	Clayton (1966)	—
<i>mimica</i> Hardy 1965	6 R	Clayton (1966)	—
<i>mitchelli</i> Hardy 1965	5 R, 1 D	Clayton (1968)	—
<i>polliciforma</i> Hardy 1965		Clayton <i>et al.</i> (1972)	—
<i>pychnochaetae</i> Hardy 1965	5 R, 1 D	Clayton (1966)	—
<i>quadrisetae</i> Hardy 1965		Clayton (1968)	—
<i>atroscutellata</i> Hardy 1966	5 R, 1 D	"bristle foot" group	
<i>basimacula</i> Hardy 1965		Clayton (1966)	Reported as "dark scutellum" species
<i>disticha</i> Hardy 1965	5 R, 1 D	"spoon foot" group	
<i>percnosoma</i> Hardy 1965	5 R, 1 D	Clayton (1969)	—
		Clayton (1968)	—

<i>imparisetae</i> Hardy 1965	5 R, 1 D	"ciliated tarsus" group Clayton <i>et al.</i> (1972)	—
<i>freycinetiae</i> Hardy 1965	5 R, 1 D	"split tarsus" group Clayton (1966) Clayton (1966)	—
<i>pectinitarisus</i> Hardy 1965	5 R, 1 D		—
<i>gonraui</i> Hardy 1972	5 R, 1 D	"fungus feeding" group Clayton (1966) Clayton (1966) Clayton (1968)	Reported as <i>mycetophila</i>
<i>melanosoma</i> Grimshaw 1901	5 R, 1 D		—
<i>nigra</i> Grimshaw 1901	5 R, 1 D		—
		Unassigned species	
<i>parva</i> Grimshaw 1901	1 R, 2 V, 1 D	Clayton (1966)	—
<i>quasianomalipes</i> Hardy 1965	5 R, 1 D	Clayton (1969)	—

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