

THE SUBGENUS *DROSOPHILA* (*SCAPTODROSOPHILA*) IN INDIA (DIPTERA : DROSOPHILIDAE)

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ABSTRACT. An account is given of nine species of *Drosophila* (*Scaptodrosophila*), of which *D. (S.) riverata* is new. A list of species so far recorded from India and a key to them is provided.

Despite the fact that recent studies on the systematics of Indian *Drosophila* have accumulated many data but the members of the subgenus *Scaptodrosophila* are still poorly known. Only eight species have so far been recorded from India (Parshad and Duggal, 1966; Gupta and Ray-Chaudhuri, 1970; Gupta, 1971; Bächli, 1973). In the present paper a new species is described from Varanasi, India and the species so far known from the subcontinent of India, are reviewed.

Genus *Drosophila* Fallén

Drosophila Fallén, 1823, *Diptera Sueciae Geomyzides*, 2 : 4. Type species: *Musca funebris* Fabricius; Sweden.

Subgenus *Scaptodrosophila* Duda

Scaptodrosophila Duda, 1923, *Ann. Mus. Nat. Hungarici*, 20 : 37. Type-species : *Scaptodrosophila scaptomyzoidea*; New Guinea.

Pholadoris Sturtevant, 1942, *Univ. Texas Publ.*, 4213 : 28. Type-species : *Drosophila victoria*; United States.

Paradrosophila Duda, 1923, *Ann. Mus. Nat. Hungarici*, 20 : 43. Type-species : *Drosophila pictipennis*; New Guinea.

Three strong, subequal sternopleural bristles; prescutellars present; posterior gonapophyses of male copulatory apparatus fused or contiguous with penis; egg with 6 or more filaments.

KEY TO INDIAN SPECIES OF *DROSOPHILA* (*SCAPTODROSOPHILA*)

In compiling the key all the species of this subgenus so far recorded from India have been included except one new species (Bächli, 1973), for which no name and taxonomic description have so far been published.

1. Mesonotum and scutellum unicolorous. 2
- Mesonotum and scutellum not unicolorous 3
2. Tarsal segments of male fore legs normal. 4
- Tarsal segments of male fore legs with many long curved upright hairs along the anterior margin. latifshahi Gupta and Ray-Chaudhuri

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3. Mesonotum and scutellum with longitudinally arranged silvery white striations. *silvalineata* Gupta and Ray-Chaudhuri
Mesonotum and scutellum with longitudinally arranged silvery-white spots. *chandraprabhiana* Gupta and Ray-Chaudhuri
4. Genital arch at heel with a horn-like process. 5
Genital arch at heel without a horn-like process. 6
5. Mesonotum and scutellum tan brown. Aedeagus bifid, with numerous fine beaded thread-like structures. *ebonata* Parshad and Duggal
Mesonotum and scutellum yellowish orange to light brown. Aedeagus apically rounded and its dorsal margin with fine serrations *bryani* Malloch
6. Aedeagus completely bifid and pointed apically
Aedeagus broad and bifid at the tip only. 7
paratriangulata Gupta and Ray-Chaudhuri
7. Anterior parameres small, basally not contiguous with aedeagus. *bambuphila* Gupta
Anterior parameres large, basally contiguous with aedeagus. 8
8. Mesonotum and scutellum completely yellow. Primary clasper horse-shoe-shaped, upper end with about 5 black teeth, lower with 2 similar teeth and with two fine setae. *riverata*, sp. nov.
Mesonotum and scutellum deep black. Primary clasper quadrate, lower tip pointed, with a concave row of eight strong pointed teeth. *minima* Okada

1. *Drosophila* (*Scaptodrosophila*) *minima* Okada

Drosophila minima Okada, 1966, *Bull. Brit. Mus. Ent.*, Suppl. 6 : 69. Type locality : Arun Valley, East Nepal.

Drosophila minima Bachli, 1973, *Vjschr. Naturf. Ges. Zurich*, 118 : 25.

Distribution : Nepal and India.

2. *Drosophila* (*Scaptodrosophila*) *ebonata* Parshad and Duggal

Drosophila ebonata Parshad and Duggal, 1966, *Res. Bull. Punjab Univ.*, 17 : 219.

Type locality : Pahalgam, Kashmir, India.

Distribution : India.

3. *Drosophila* (*Scaptodrosophila*) *paratriangulata* Gupta and Ray-Chaudhuri

Drosophila paratriangulata Gupta and Ray-Chaudhuri, 1970, *Proc. Roy. Ent. Soc. London*, (B) 39 : 66. Type locality : Chandraprabha, Chakia forest, India.

Drosophila paratriangulata Vaidya and Godbole, 1972, *J. Univ. Poona Sci. Tech.*, 42 : 93; Bächli, 1973, *Vjschr. Naturf. Ges. Zurich*, 118 : 25.

Distribution : India.

4. *Drosophila* (*Scaptodrosophila*) *chandraprabhiana* Gupta and Ray-Chaudhuri

Drosophila chandraprabhiana Gupta and Ray-Chaudhuri, 1970, *Proc. Roy. Ent. Soc. London*, (B) 39 : 62. Type locality : Chandraprabha, Chakia forest, India.

Drosophila chandraprabhiana Bachli, 1973, *Vjschr. Naturf. Ges. Zurich*, 118 : 25.

Distribution : India.

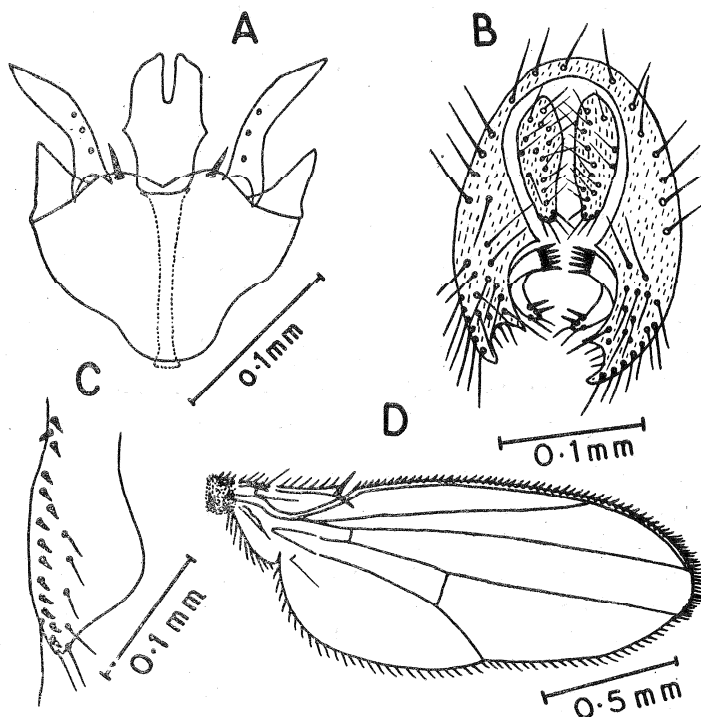


Fig. 1 : *Drosophila riverata*, sp. nov. : A, phallic organs; B, periphallial organs; C, egg-guide; D, male wing.

5. *Drosophila* (*Scaptodrosophila*) *silvalineata* Gupta and Ray-Chaudhuri

Drosophila silvalineata Gupta and Ray-Chaudhuri, 1970, *Proc. Roy. Ent. Soc. London*, (B) 39 : 64. Type locality : Chandraprabha, Chakia forest, India.

Drosophila silvalineata Bächli, 1973, *Vjschr. Naturf. Ges. Zurich*, 118 : 25.

Distribution : India.

6. *Drosophila* (*Scaptodrosophila*) *latifshahi* Gupta and Ray-Chaudhuri

Drosophila latifshahi Gupta and Ray-Chaudhuri, 1970, *Proc. Roy. Ent. Soc. London*, (B) 39 : 67. Type locality : Chandraprabha, Chakia forest, India.

Drosophila latifshahi Bächli, 1973, *Vjschr. Naturf. Ges. Zurich*, 118 : 25.

Distribution : India, Bangladesh by Dr. Anwara Begum (unpublished).

7. *Drosophila* (*Scaptodrosophila*) *bambuphila* Gupta

Drosophila bambuphila Gupta, 1971, *American Midl. Natur.*, 86 : 494. Type locality: old Botanical Garden, B.H.U., Varanasi, India.

Distribution : India.

8. *Drosophila* (*Scaptodrosophila*) *bryani* Malloch

Drosophila bryani Malloch, 1934, *Insects of Samoa*, 6 (8) : 210. Type locality : Samoa.

Drosophila levis Mather, 1955, *Australian J. Zool.*, 3 : 561.

Drosophila kitazawi Okada, 1964, *Kontyu*, 32 : 109.

Drosophila bryani Gupta, 1971, *American Midl. Natur.*, 86 (2) : 494.

Distribution : Samoa, Australia, Philippines, Japan, Micronesia, India.

9. *Drosophila* (*Scaptodrosophila*) *riverata*, sp. nov. (Figs. A-D)

Male and female : Arista with about 2 dorsal and 1 ventral branches in addition to the terminal fork. Antennae light brown. Frons tan to light brown. Orbital bristles in the ratio 6:3:6. Carina pale yellow, high, broader below. Second oral bristle not differentiated. Palpus pale yellow, with about 2-3 marginal setae. Face and cheek tan, greatest width of cheek from the base of oral bristle to eye border about one-seventh greatest diameter of eye. Eyes bright red.

Acrostichal hairs regular, in 8 rows between dorsocentrals. Prescutellars well developed. Anterior scutellars convergent. Distance from anterior dorsocentral to posterior dorsocentral about one-third distance between two anterior dorsocentrals. Mesonotum and scutellum unicolorous, yellow. Thoracic pleura yellow. All three sternopleural bristles moderately strong. Sterno-index about 0.6. Legs yellow, preapicals on all three tibiae; apicals on first and second tibiae.

Wings (Fig. 1D) hyaline. Approximate indices : C-index 2.34; 4V-index 2.1 to 2.5; 4C-index 1.2; 5X-index 1.9. Two equal bristles at apex of first costal section; heavy bristles on about basal two-thirds of third costal section. Halteres yellow.

Abdominal tergites completely yellowish, with no distinct apical bands.

Periphallic organs (Fig. 1B): Genital arch pubescent, narrow dorsally and broad medially, with numerous bristles running from top of posterior margin along margin downward, toe pointed. Clasper horse-shoe-shaped, upper end with about 5 black teeth, lower one with 2 similar teeth and with 2 fine setae. Anal plate pubescent, small, with 16-19 bristles.

Phallic organs (Fig. 1A): Aedeagus broad, bifid apically. Anterior parameres large, pointed apically and with 3 sensilla on basal half. Hypandrium slightly notched medially, with a pair of tough, short submedian spines. Ventral fragma V-shaped.

Egg-guides (Fig. 1C): Lobe with 16 marginal teeth, ultimate and penultimate teeth and 4 discal teeth bristle-like.

Average length of male body (from 3 males), 1.82 mm.

Average length of female body (from 5 females), 2.0 mm.

Holotype ♂, INDIA: U.P.: Rajghat, Varanasi, Varanasi district, Uttar Pradesh, 15.vii.1975. In the Department of Zoology, Banaras Hindu University, Varanasi,

India. *Paratypes* : 4 ♂♂, 6 ♀♀, same locality and collectors as holotype. In B.H.U., Varanasi and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan.

D. (S.) riverata somewhat resembles *D. (S.) minima* Okada, but distinctly differs from it in having a completely yellowish body, clasper horse-shoe shaped, anterior parameres large and pointed, and anal plate ventrally without strong setae.

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BOOK REVIEWS

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- 4. AN ATLAS OF INSECT DISEASES. By J. Weiser. Second Revised Edition, 1977. Published by Dr. W. Junk B.V.—The Hague, Netherlands and Academia Publishing House, Prague. Czechoslovakia. 81 Pages (text) and 240 pages (illustrations). Price Dutch Guilders 75.00.**

Another valuable publication from Dr. W. Junk. Diseases of insects are important factors in reducing the number of insects in natural populations. They are important factors in the biological control of insects. In order that the different symptoms of a disease in insects are properly diagnosed, a series of photographs of different stages of a collection of insect diseases are given. This would help workers in their proper identification and utilisation in the control of unwanted insects. The book is nicely produced and published.

- 5. INSECT CONTROL IN THE PEOPLES REPUBLIC OF CHINA. 1977. CSCPRC Report No. 2. Published by National Academy of Sciences, Washington, D.C., U.S.A. Unpriced.**

This publication of 218 pages is a trip report of the American Insect Control Delegation to the Peoples' Republic of China during 1975 and submitted to the committee on scholarly communication with the Peoples' Republic of China (CSCPRC). This book deals with various aspects of their visit to China: Impressions of an Entomological Layman, Status of Agriculture there, Entomological Research Organisations, Agricultural Extension, Insect Taxonomy and Collections, Entomological Literature and Libraries, Insect problems associated with various crops and produce, Insect control strategies adopted there and useful appendices on pests, books, germ plasm, etc. This publication is extremely valuable and useful to people in neighbouring countries of the Orient—as many pest problems may have a common solution.

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