

V *DROSOPHILA NEONASUTA*, A NEW SPECIES OF *DROSOPHILA* FROM MYSORE (DIPTERA : DROSOPHILIDAE)

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ABSTRACT. A new species of the *nasuta*-complex, *Drosophila neonasuta*, sp. nov. is described from Mysore, India.

The *nasuta*-species complex, a subgroup of the *immigrans*-group of species, consists of about eight tropical and subtropical species. The members of this subgroup are morphologically more or less similar. The males lack tarsal ornamentation and usually have the frons silvery-whitish, all or in part. Similar flies with silvery markings on the sides of the frontal orbits were collected from Mysore and other places. The present paper describes the status of these flies in the *nasuta*-complex as a new species named here as *Drosophila neonasuta*.

✓ *Drosophila neonasuta*, sp. nov. (Figs. 1-7)

Male and female : Big yellowish flies. Females slightly bigger than the males. The mean body length of the females 3.64mm, ranging from 3.4mm to 3.75mm and that of males 3.06mm, ranging from 2.81mm to 3.25mm.

Head : Arista with 9 (6/3) branches including forked. Bright whitish silvery bands along the frontal orbits are present in males. Antenna light tan-brown, but the terminal segment is dark brown. Vibrissae clear with 3 to 4 bristles. Eyes rough and bright red. Proboscis carries a dark black streak at its outer margin. Anterior orbitals proclinate. Posterior recinate and longest. Anterior orbitals three-fourths the posterior. Mid orbitals reclinate and half the anterior orbitals. Ocellar triangle slightly broad. Carina broad and tan-yellowish. Palpi light yellow, with one prominent stiff bristle. Inner verticals approximately as long as the outer ones. Postverticals convergent and crossed.

Thorax : Brownish-yellow. Acrostichals regular in 8 rows between dorso-centrals. Scutellum tan-brown. Anterior scutellars convergent. Posterior scutellars crossed and convergent. Prescutellars absent. Anterior supra-alars longer than the posterior. Anterior and posterior humerals equal. Halteres yellow. Anterior sternopleurals about half the posterior, the middle absent. Wings smoky in appearance (Fig. 1). Mean length of the wings in males 2.6mm, ranging from 2.56 to 2.69mm and that of females 2.97 mm, ranging from 2.81 to 3.06mm.

Wing indices were calculated as per the formulae of Okada (1956)

	<i>Costal index</i>	<i>4V index</i>	<i>4C index</i>	<i>5X index</i>
<i>Female</i>	4.05	1.43	0.58	1.20
	3.75-4.28	1.33-1.43	0.56-0.64	1.12-1.28
<i>Male</i>	3.88	1.38	0.59	1.14
	3.36-4.16	1.33-1.45	0.53-0.73	1.12-1.28

Legs : Pre-apicals are present in the first and second tibiae. Sex comb is absent. Cuneiform bristles are present in the front femur of both males and females.

Abdomen : Yellowish in both males and females. No sexual dimorphism in abdominal pigmentation.

Periphallitic organs (Fig. 2) : Genital arch slightly broad above the toe. Toe pointed. Heel roundish. 8 to 12 bristles on the genital arch. Only one pair of claspers present which is broad near the tip and narrow at the base. Four to six long stout marginal bristles present with 11 to 12 teeth on the outer margin of the clasper. Anal plate oval with many long bristles and is free from genital arch.

Phallic organs (Fig. 3) : Bright yellow. Aedeagus cylindrical, apically divided into a median dorsal fan-shaped flap, paired lateral acutely pointed processes, and a median ventral serrated conical process. Anterior parameres conical attached to inner side of the novasternum pubescent with a few sensilla on inner border. Posterior parameres practically absent. Submedian spines stout, and are carried outside the anterior parameres.

Egg guide (Fig. 4) : Lobe exceedingly slender and pale yellow with about 24 marginal teeth and a few upper discal teeth of equal size.

Internal characters : Malpighian tubules forked and free. Testis light yellow with four and a half coils. Paragonia transparent. Sperm pump with two twisted posterior diverticulae. Spermathecae round and chitinized. Paraovaria transparent. Ventral receptacle long with about twenty five loosely arranged coils (Fig. 5).

Eggs : With 4 filaments tapering at their ends.

Pupa : Pupa with about 16 anterior spiracular filaments. The horn about one half the length of the puparium.

Cytology : Metaphase karyotype consist of a pair of V's, a pair of double length rods, a pair of dots and a pair of rods in females, while one of the rods is replaced by a J-shaped Y-chromosome in males (Fig. 6). The dot chromosomes are slightly thicker and longer than the basic dots. The salivary gland nuclei exhibit 4 long and one short euchromatic strands (Fig. 7). Chromocenter is practically absent.

Holotype ♂, INDIA : Mysore : Sewage farm, 720m, 14.vi.1971, Coll. S. Nirmala Sajjan and N.B.Krishnamurthy, deposited in the Museum of the

Department of Zoology, Manasa Gangotri, University of Mysore, Mysore. *Allotype* ♀ (data as above). *Paratypes* Several ♂♂, ♀♀, Mysore : Sewage farm, 720m, 20, vii, 1971, Coll. S. Nirmala Sajjan and N.B. Krishnamurthy. 10♂♂ and 10♀♀ deposited in Genetics foundation, University of Texas reference collections, 5♂♂ and 5♀♀ in Z.S.I, Calcutta and 5♂♂ and 5♀♀ in I.A.R.I, New Delhi.

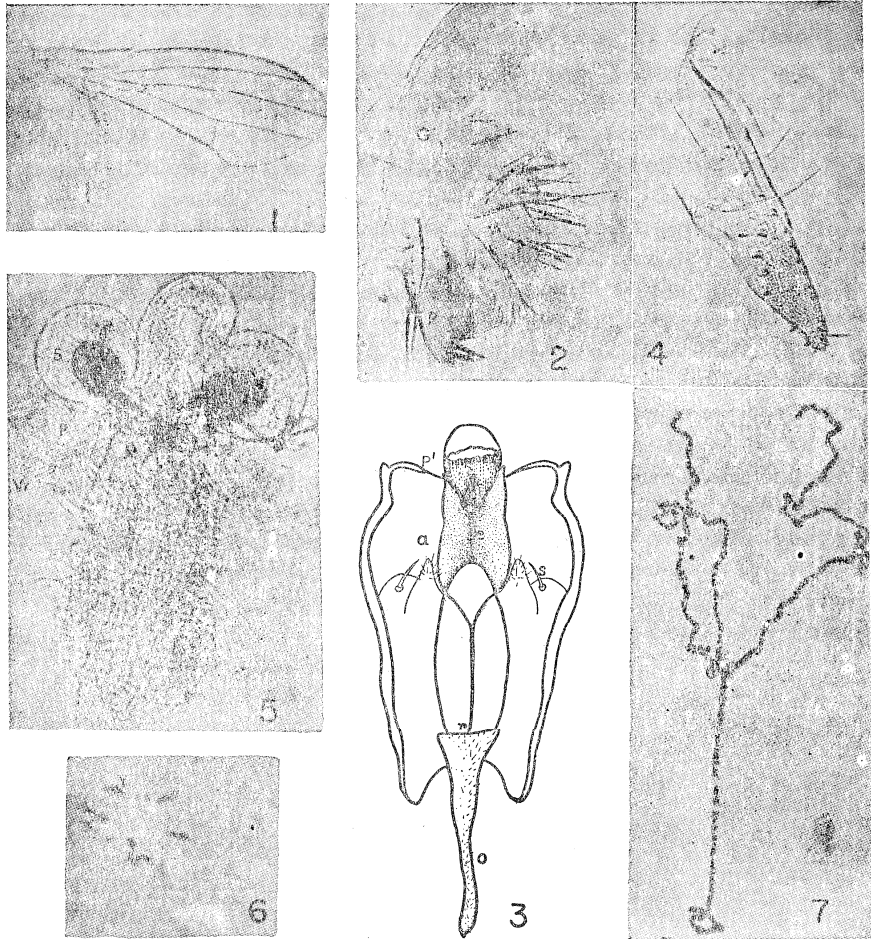
Distribution : INDIA : Mysore.

Retatnships and remarks : *D. neonasuta* resembles *D. sulfurigaster*, *D. pulaua* and *D. nixifrons* in having whitish silvery bands along the frontal orbits. It differs however, cytologically from the above species of the *nasuta*-subgroup described by Wilson *et al.* (1969). In *D. sulfurigaster* and *D. pulaua* the dots are of basic type while in the species under study the dots with added heterochromatin are slightly longer and thicker. *D. neonasuta* is also distinct from *D. nixifrons* in that *D. nixifrons* has $2n=10$, while *D. neonasuta* has $2n=8$. Based on these observations this has been given the status of a new species. The crosses between this species, with that of *D. sulfurigaster* and *D. pulaua*, further confirm its status as a new species. It is named as *Drosophila neonasuta* as it is a new member of the *nasuta*-complex.

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Figs. 1-7 *Drosophila neonasnta*, sp. nov. : 1, Wing; 2, Periphallallic organs, A=anal plate, G=genital arch, P=primary clasper; 3, Phallic organs, a=anterior paramere, e=aedeagus, o=apodeme, p=posterior paramere, r=vertical rod, s=submedian spine; 4, Egg guide; 5, Female reproductive organs, S=spermatheca, P=paraovaria, V=vagina, Vr=ventral receptacle; 6, Metaphase karyotype of larval neuroblast cell (♂); 7, Salivary gland chromosomes