References: Abdou, R.F., S.E. Megalla, A.M. Moharram, K.M. Abdal, T.H.I. Sherif, A.L. El-Syed-Mahmood, and A.E. Lottfy 1989, J. Basis Micobiol. 29: 131-139; Allison, A.C., and G.R. Paton 1965, Nature (London) 207: 1170; Anwar, W.A., M.M. Khalil, and C.P. Wild 1994, Mutation Research 322: 61- 97; Barta, I., M. Adamkova, T. Petr, and J. Bartova 1990, Mutation Research 244 (3): 189-195; Benasutti, M., S. Ejadi, M.D. Whitlow, and E.L. Loechler 1988, Biochem. 27: 472-481; Bose, S., and S.P. Sinha 1991, Mutation Research 26: 15-19; Busby, W.R.J., and G.N. Wogan 1984, Aflatoxins. In: C.E. Searle (ed.), Chemical Carcinogens, ed. 2, pp. 945-1136, American Chemical Society, Washington, D.C.; Cavin, C., D. Holzhauser, A. Constable, A.C. Huggett, and B. Schilter 1998, Carcinogenesis 19 (8): 1396-1375; Davis, N.D., and U.L. Diener 1978, Mycotoxins. In: Food and Beverage Mycology 1: 397-444; Dietert, R.R., M.A. Qureshi, U.C. Nanna, and S.E. Bloom 1985, Environ. Mutagenesis 7: 715-725; El-Khatib, H.N., M.A. Akelia, and M.K. Abou El-magd 1998, Toxicology Lett. 95: 176; Gradelet, S., A.M. Le Bon, P. Berges, M. Suschelet, and P. Astorg 1998, Carcinogenesis 19(3): 403-411; Hartley, R.D., B.F. Nesbitt, and J. O'Kelly 1963, Nature 198: 1056-1058; IARC 1993, Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol.56, Some naturally occurring substances: food items and constituents, heterocyclic aromatic amines and mycotoxins, International Agency for Research on Cancer, Lyon; Ito, Y.S., S. Ohnishi, and K. Fujie 1989, Mutation Research 222: 253-261; Lilly, L.J., 1965, Nature 207-209; Lyman, B.A., L. Erki, D.W. Biedrzycka, T.M. Devlin, and J.J. Chich 1988, Biochem. Pharmacol. 37 (8): 1481-1486; McLean, M., and M.F. Dutton 1995, Pharmacol. Ther. 65: 163-192; Reiss, J., 1971, Experientia 27: 971-1002; Sidorov, R.A., E.G. Ugnivenko, E.M. Khovanova, and G.A. Belitsky 2001, Mutation Research 498: 181-191; Steyn, P.S., 1995, Toxicology Lett. 82/83: 843-851; Uysal, H., and T. Şişman 2003, Dros. Inf. Serv. 86: 22-26.

A preliminary report on *Drosophila* fauna of Islamabad (Capital, Pakistan).

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Considerable progress has been made in the field of taxonomy and systematics of the Genus *Drosophila* in the Indian subcontinent. More than 130 species belonging to its different sub-genera were reported by Fartyal and Singh (2001) from India, a neighboring country of Pakistan.

Nothing is known in the biological literature regarding *Drosophila* fauna of Pakistan, despite the prevalence of luxuriant flora and suitable climatic conditions for *Drosophila* diversification. This region includes luxuriant hilly and forest areas in Kashmir, northern areas and NWFP, vast agricultural regions in Punjab and Sindh, and varied climatic conditions in Balochistan. The survey conducted on *Drosophila* in Islamabad (Capital of Pakistan) was the first step towards a broad research program for exploration and description of the *Drosophila* fauna of Pakistan.

Islamabad is located in the North East corner of the Punjab. It lies between latitudes 33º-36' and 33º-49' North and longitudes 72º-50' and 73º-24' East rising gradually from an elevation of 503 m to 610 m above the sea level (Geological survey of Pakistan; personal communication). It is bounded on the north-east by the Margalla hills. The climate of Islamabad is sub-tropical, with two dry spells, one lasts from the end of the monsoon in September till the start of winter rains in December-January, and a second dry spell occurs during summer from May to July. In Islamabad, the

average summer and winter temperatures are 35ºC and 18ºC, respectively (SUPARCO, personal communication).

Collections were made by using ripe/fermented fruits; mainly banana and oranges, with watermelon, guava, apple, plums and grapes occasionally, as baits. Only viable flies were considered, but it is a fact that at least three different species remained unidentified due to non-viability in the laboratory. After crossing for reproductive isolation, and morphological characterization, the viable flies were identified by using keys proposed by wheeler (1952) and Okada (1956). These were *D. melanogaster, D. immigrans, D. takahashii, D. suzuki, D. nepalensis, D. hydei, D. jambulina, D. malerkotliana, D. leontia* and *D. bifasciata*.

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References: Fartyal, R.S., and B.K. Singh. 2001, Dros. Inf. Serv. 84: 30-38; Wheeler, M.R., 1952, Univ. Texas Publ. 5204: 162-218; Okada, T., 1956, Systematic study of Drosophilidae and allied families of Japan. Gihodo Co., Ltd, Japan.

The maternal effect and evolutionary conservatism of *miniature* gene in *Drosophila virilis*.

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The cuticle layers formation is regulated by several genes expressed in the cells-precursors of epidermal tissues. *miniature* and *dusky* genes are known by their role in the wing cuticle organization. They form so-called *m-dy* gene complex in *Drosophila melanogaster*. The two genes are closely localized in the chromosome, mutants on both genes have similar phenotype, and both the genes code proteins, which belong to the same protein family of cuticulins (Di Bartalomeis *et al.*, 2002; Akten *et al.*, 2002; Roch *et al.*, 2003). The main structural feature of these proteins is presence of *zona pellucida (ZP*) domain (Sebastiano *et al.*, 1991; Holt *et al.*, 2002).

Characteristics of the *miniature*^{G1} (m^{G1}) mutant allele are close to those of the *miniature*^{42} (m^{42}) described earlier (Kozeretska *et al.*, 2004). These features include a reduced wing size; an increased density of hairs on the wing surface; the cell outlines clearly visible in an optical microscope; a significantly perturbed, in comparison with the normal homogeneous, orientation of the wing hairs; a wavy shape of the wing edge. About a half of the mutants are characterized by diverged wings with an angle about 45º with respect to bilateral axis, the wings are slightly raised at the same time. Dark rounded, oval, or irregular structures (2 to 8 μm in diameter) were found in the mutant wing veins and called neomorphic vein structures (nvs). In the mutant wings the cuticles of the dorsal and ventral parts are not attached together; a rather thick lumen, filled with a fluid, remains between the dorsal and ventral plates. Inner surface of the cuticle looks corrugated because of the inner cuticle outgrowths. The mutant alleles m^{G1} and m^{42} are complemented by each other.

Cytological analysis of chromosomes in salivary glands did not reveal obvious chromosome aberrations in heterozygous m^{G1}/+ females.

The main difference between the mutant alleles m^{42} and m^{G1} is the female sterility in the mutant strain m^{G1}. We have analyzed the level of gonadal reduction in the females of the new allele.