from specificity and specialized desert adaptations. Another hypothesis could be that *D. simulans – Tempe* is just a relative newcomer to the Sonoran desert and has yet to evolve the more specialized adaptations that *D. mojavensis* already have.

Determining what makes adaptations of *D. mojavensis* so superior to those of *D. simulans* and whether it is possible for *D. simulans* to evolve them would provide an interesting expansion to this study. In addition, study of thermal stress on females would aid in understanding its effects on the species as a whole.

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References. Castro, W.L.R., and K.S. Matt 1997, Physiology & Behavior 61(4): 477-484; Dhabhar, F.S., A.H. Miller, M. Stein, B.S. McEwen, and R.L. Spencer 1995, Journal of Immunology 154(10): 5511-5527; Huey, R.B. and A.F. Bennett 1990, *Stress Proteins in Biology and Medicine* (eds., R.I. Morimoto, A. Tissieres and C. Georgopoulos), pp. 37-59; Jiang, C.G., J.L. Morrow-Tesch, D.I. Beller, and E.M. Levy 1990, Brain Behavior and Immunity 4: 278-291; Krebs, *et al.*, 1991, Evolutionary Theory 10: 101-107; McGrady, A.V., 1984, Archives of Andrology 13:1-7; McNamara, J.M., and A.I. Houston 1996, Nature 380: 215-221; Modell, S., A. Yassouridis, J. Huber, and F. Holsboer 1997, Neuroendocrinology 65: 216-222; Mokrani, M.C., F. Duval, M.A. Crocq, P. Bailey and J.P. Macher 1997, Psychoneuroendocrinology 22(Supplement #1): S63-S68; Sapse, A.T., 1997, Psychoneuroendocrinology 22(Supplement #1): S3-S10; Stearns, B.C., 1992, *The Evolution of Life Histories* (New York: Oxford University Press); Stratman, R., and T.A. Markow 1999, Functional Ecology 8: 965-970; Williams, J.H.G., 1998, British Journal of Psychiatry 173: 453-454.

Report on Genus *Dettopsomyia* (Insecta: Diptera: Drosophilidae) from Kumaon region, India.

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Our previous studies on the Drosophilids of Kumaon region have yielded interesting results (Singh and Bhatt, 1988; Singh and Negi, 1989, 1992, 1995; Singh and Dash, 1993, 1998) though many areas remain uncovered from the above point of view. The Kumaon region, a wild hilly area is located at an elevation of 6,000 feet (1828 meters) from the sea level on the North-east periphery of the state of Uttar Pradesh. This region includes six border districts of the state viz., Nainital, Almora, Pithoragarh, Udham Singh Nagar, Champawat and Bageshwar. The area is characterized by having dense evergreen coniferous forest with medium to very steep slopes and extremely moist conditions due to heavy rainfall. This note embodies the results of several surveys undertaken in Kumaon region, India, from July 1996 to April 1999.

Genus *Dettopsomyia* Lamb (New Record) *Dettopsomyia* Lamb 1914, Trans. Soc. Land. (2) (Zool) 16:349. Type species: Formosa Lamb.

Pictostyloptera Duda 1924, Arch. Naturgesch. 90A (3) 1192. Type species: *Drosophila preciosa* de Meijere.

Dettopsomyia nigrovittata Malloch (New Record)

Dettopsomyia nigrovittata (Malloch), 1924: 352 (*Drosophila*), widespread in tropics and subtropics; W. USA.

Syn. *argentifrons* Okada, 1956: 55.

Specimens examined: 2 males, 2 females: India: Uttar Pradesh, Nainital district, Nainital Cantt, 26.IV.1997.

Distribution: Widespread in tropics and subtropics, W. USA, India (New locality).

Remarks: The genus and species have been reported for the first time from India.

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References: Singh, B.K., and M. Bhatt 1988, Oriental Insects 22:147-161; Singh, B.K., and N.S. Negi 1989, Proc. Zool. Soc. Cal. 40:19-26; Singh, B.K., and N.S. Negi 1992, Senckenbergiana Biol. 72:321-327; Singh, B.K., and N.S. Negi 1995, Senckenbergiana Biol. 21:428-435; Singh, B.K., and S. Dash 1993, Proc. Zool. Soc. Cal. 46:131-140; Singh, B.K., and S. Dash 1998, Proc. Zool. Soc. Cal. 51:45-56.

Genetic manipulation of principal cuticular hydrocarbons in live *Drosophila melanogaster* flies.

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The principal hydrocarbons found on the cuticle of *Drosophila melanogaster* flies may play important roles in intra- and interspecific mate recognition and stimulation during precopulatory behavior (Savarit *et al.*, 1999). Female predominantly produce hydrocarbons with two double bonds and 27 carbons (7,11 heptacosadiene = 7,11HD), and with 29 carbons (7,11 nonacosadiene = 7,11ND), whereas males predominantly produce hydrocarbons with a single double bond on carbon 7 and with a chain length of 23 carbons (7-tricosene = 7-T) or of 25 carbons (7-pentacosene = 7-P) (Antony and Jallon, 1982).

The manipulation of principal hydrocarbons on the cuticle of live flies has been made possible by use of the feminizing transgene UAS-transformer (UAS-tra), either in specific tissues, or during a given developmental time period (Ferveur *et al.*, 1997). Flies used in the latter procedure were simultaneously carrying the UAS-tra transgene together with the heat-shock inducible hsp70-Gal4 transgene. F1 [hsp70-Gal4 x UAS-tra =] hs-tra individuals were simply transferred at 37°C during a unique period of time, and their hydrocarbons were analyzed when they were 4-day-old adults. This manipulation allows one to investigate the role of these different substances with live flies instead of using dummies covered with synthesized or extracted hydrocarbons.

We found that subtle changes of four experimental parameters can induce very significant effects on the production of principal hydrocarbons; These parameters are: (1) the period of time at which the heat-shock is applied. (2) the type of incubator used (air-dry or wather bath). (3) the duration of the heat-shock (one or two hours). (4) the type of vials containing the flies (glass or plastic, with or without food).