

Deng, Da, Hui-lin Qian & Xin-shi Yang. 1982. Anopheles dirus Peyton et Harrison, 1979. Rectification of Hainan's Anopheles b. balabacensis to A. dirus Peyton et Harrison, 1979. Acta Zootaxonomica Sinica 7(3):332-333.

Anopheles balabacensis balabacensis Baisas, 1936, was once regarded as the most widespread and important vector of malaria within the Anopheles leucosphyrus species group of Southeast Asia. Colless (1956, 1957) divided A. leucosphyrus into 13 species, subspecies, and varieties. In recent years, further detailed investigations have revealed that additional taxa may yet emerge from the leucosphyrus group. Guided by the work of Colless, Teng et al. re-examined collections of so-called A. leucosphyrus made on Hainan Island in 1963, designating this material A. b. balabacensis (Acta Entomologica Sinica 17:463, 1974).

In hindsight we see that Colless treated forms from the Asian mainland together with those from distant islands of Southeast Asia as geographical variants, ignoring the fact that significant morphological variation may also occur within a given geographical isolate. Recently, Peyton and Harrison redescribed specimens of A. b. balabacensis from Thailand and Taiwan (Mosquito Systematics 11:40, 1979; 12:335, 1980), erecting the new species A. dirus for their Thai material and resurrecting from synonymy the name A. takasagoensis Morishita, 1946, for specimens from Taiwan. Having studied all pertinent references as well as collections from Hainan, we now believe that Hainan specimens heretofore treated as A. b. balabacensis are actually A. dirus. The following tables list key morphological characters useful in separating A. b. balabacensis, A. dirus, and A. takasagoensis.

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11 January 1982

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30 JUNE 86

Key Characters Separating A. b. balabacensis and A. dirus

Character	<u>A. b. balabacensis</u>	<u>A. dirus</u> : Thailand	<u>A. dirus</u> : Hainan
Adults: ASP	usually present (85/116)	absent (0/100)	absent (0/100)
PSD on V <sub>1</sub>	equal to that of costa	equal to that of costa, or extending basally on at least one wing	equal to that of costa (29/71) or extending to PSP on at least one wing (35/71), occasionally to distal end of HD (7/71)
Pupae: IV.9 length (mm)	0.074	0.043	0.047
IV.9/V.9	0.81	0.41	0.44
IV.9/III.9	4.11	2.14	2.14

Key Characters Separating A. takasagoensis and A. dirus

Character	<u>A. takasagoensis</u>	<u>A. dirus</u> : Thailand	<u>A. dirus</u> : Hainan
Adults: SCP	seldom shorter than PP (2/48)	both wings (31/68) or at least one wing (53/68) shorter than PP	usually both wings (30/42) or at least one wing (39/42) shorter than PP
Pupae: setae V and VI	single	2-4 branches, occasionally single	2-4 branches, occasionally single
Larvae: seta 4-C length (mm)	0.062	0.077	0.071
Relative distance between alveolus of seta 4-C and alveolus of seta 2-C	length of seta 4-C only about 1/2 to 3/4 distance to alveolus of seta 2-C (46-76%)	length of seta 4-C equal to or greater than distance to alveolus of seta 2-C	length of seta 4-C equal to or greater than distance to alveolus of seta 2-C, average length about 86% [sic] of distance