

Distribution and variation of *Pyrgus badachschanus* Alberti (Lepidoptera, HesperIIDae)

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ABSTRACT. — New discoveries of the apparently localized *Pyrgus badachschanus* Alberti show that this species occurs in two geographic forms appertaining to the two large mountain regions of Afghanistan, Koh-i-Baba and Hindu-Kush. On the basis of this variation the new subspecies *Pyrgus badachschanus sakai* is described.

Since its discovery by Alberti (1939) *Pyrgus badachschanus* has remained a rare insect in collections. The male genitalia were depicted with the original description, but the female genitalia remained unknown till 1972 (De Jong, 1972). In the latter paper only three localities were listed, viz. Sebak Valley, Upper Panjshir Valley, and Panjao, all in Afghanistan. I have now studied more extensive material, partly collected very recently. It appears that *P. badachschanus* is local but widespread at altitudes between 2500 and 4400 m in Afghanistan. It is not known outside Afghanistan, where it seems to be replaced by the species of the *Pyrgus alpinus* group, which are equally confined to high altitudes. In NE Afghanistan, however, from the Anjuman Pass to the north and east, *P. badachschanus* seems to be sympatric with two species of the *Pyrgus alpinus* group, viz., *P. cashmirensis* Moore and *P. darwazicus* Groum-Grshimailo (De Jong, 1979).

With more specimens available it has become clear that *P. badachschanus* shows geographic variation in the extension of the white spots on both sides of the wings, so that the following subspecies, appertaining to the two large mountain massifs of Afghanistan, Koh-i-Baba and Hindu-Kush, can be recognized. This geographic variation is not paralleled in the *Pyrgus alpinus* group, possibly because there are hardly any specimens of this group known south of the Anjuman Pass.

Pyrgus badachschanus badachschanus (Alberti, 1939)

Hesperia badachschanus Alberti, 1939. — *Ent. Rdsch.*, 56: 107—109. Type locality: Sebak Valley.

Distribution. — Hindu-Kush, from Panjshir Valley to Sebak Valley. Known from the following localities: Astana, Kurpetau, Kotal-e-Zerja (Dehkak), Koh-e-Galamastan (Dehkak), Kotal-e-Ui, Koh-e-Dalandur (Ghendju), Upper Panjshir Valley, Anjuman Pass, Anjuman Village, Bala-Quran, Sebak Valley.

Altitude. — 2.700-4.400 m

Flight period. — 28th June until 15th August.

Male. — Length of forewing 11.4-12.5 mm. Forewing upperside with relatively small spots, median spots 5 and 6 well separated, discoidal spot a narrow white line, white superscaling very slight, inconspicuous. Hindwing underside with median spots relatively small and submarginal spots inconspicuous. Ground colour of hindwing underside yellowish, strongly darkened by black scales, median spots 2 and 3 well-developed, median spot 4-5 with a more or less straight or slightly concave inner edge (towards base).

Female. — As male, but larger, 12.2-14.2 mm.

Material examined. — 21 ♂, 35 ♀; collections: CN, CS, LNK, RMNH, ZSM (for abbreviations see end of paper).

Pyrgus badachschanus sakai subspecies nova

Distribution. — Koh-i-Baba. Known from the following localities: Band-i-Amir, Panjao, Shah-tu Pass, Shah Fuladi, Kalu (Hajigak), Surtu, Ghilzai, Puistagoli.

Altitude. — 2.500-4.000 mm.

Flight period. — 18th June until 28th August.

Male. — Length of forewing 11.9-13.0 mm. Forewing upperside with relatively large spots,

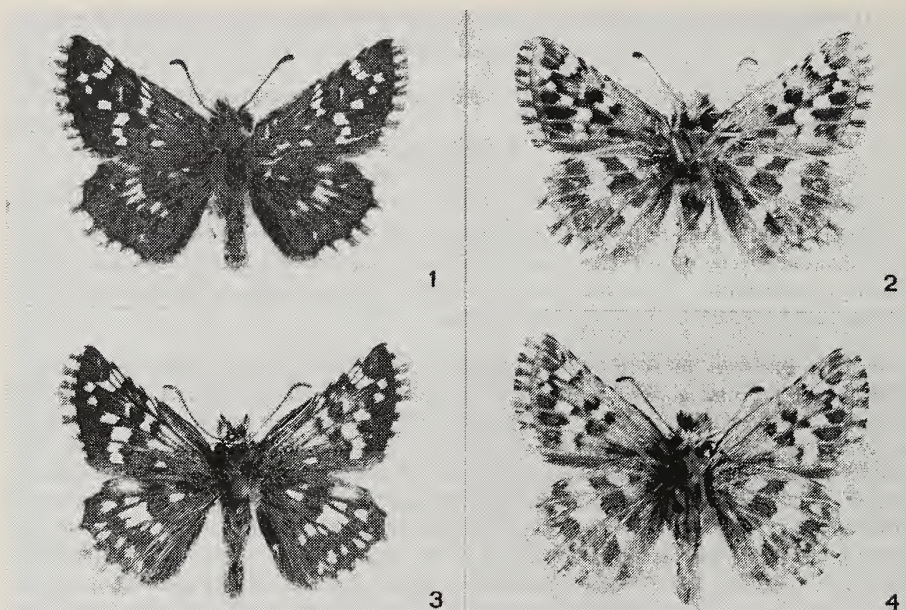


Fig. 1-4, *Pyrgus badachschanus* Alberti. 1-2, *P. badachschanus badachschanus*, male, upperside (1) and underside (2), Ghendju (Dar-e-Pandjshir) (CN). 3-4, *P. badachschanus sakai* subsp. nov., holotype, upperside (3) and underside (4), Panjao (Koh-i-Baba) (CS).



Fig. 5. Distribution of *Pyrgus badachschanus* Alberti; half closed circles *P. b. badachschanus*, closed circles *P. b. sakai* subsp. nov.

median spots 5 and 6 often touching, median spots 1a and 1b almost as wide as median spot 2, discoidal spot a conspicuous white line, usually vaguely extended to termen; white superscaling rather dense, together with the enlarged spots giving the specimens a lighter appearance than in ssp. *badachschanus*. Hindwing upperside with median spots well-developed and submarginal spots distinct. Hindwing underside with ground colour varying from yellowish to dark gray-green; median spots 2 and 3 often small (especially 3), median spot 4-5 large, often extended along vein 6 towards base.

Female. — As male, slightly larger, 12.5-13.1 mm.

Material examined. — Holotype, ♂, Panjao, 3300 m, 18-24.VI.1971, S. Sakai (CS). Paratypes: 5 ♂, 4 ♀, Shah Fuladi (CS, RMNH); 2 ♂, Panjao (CS); 1 ♂, Band-i-Amir (RMNH). Further material: 19 ♂, 6 ♀, Kalu (Hajigak), Shah Fuladi, Surtu, Ghilzai, Puistagoli, Band-i-Amir, Shah-tu Pass (CMP, LNK, NMW, ZMK, ZSM) (for abbreviations, see below).

I have named this subspecies after Mr. S. Sakai, in honour of his indefatigable research of the Afghan fauna.

Acknowledgements

For loan of material and opportunity to study specimens in their care I am greatly indebted to the following persons and institutions (with abbreviations used above):

H. K. Clench (Carnegie Museum of Natural History, Pittsburgh; CMP), Dr. W. Dierl (Zoologische Staatssammlung, München; ZSM), G. Ebert (Landessammlungen für Naturkunde, Karlsruhe; LNK), Dr. F. Kasy (Naturhistorisches Museum, Wien; NMW), Dr. N. P. Kristensen (Zoologisk Museum, Copenhagen; ZMK), Prof. Dr. C. Naumann (Bielefeld; CN), and S. Sakai (Tokyo, CS).

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COLLINGWOOD, C. A., 1979. THE FORMICIDAE (HYMENOPTERA) OF FINLAND AND DENMARK. *Fauna entomologica scandinavica* 8: 1-174, 268 figs., ca.150 refs. Scandinavian Science Press Ltd., DK-2930 Klampenborg, Denmark; ISBN 87-87491-28-1; prijs (gebonden) DKr 120 (voor intekenaren DKr 84).

Met een prijzenswaardig tempo komen deeltjes uit van de *Fauna entomologica scandinavica*, en niet minder verdienstelijk is hun inhoud en vormgeving. In afwijking van eerdere deeltjes is deze zelfs gebonden, wat mij voor een veel ter hand genomen determinatiewerk een vooruitgang lijkt.

Het deeltje van Collingwood behandelt naast wat de titel belooft, ook de mieren van de Britse eilanden en de Kanaaleilanden. Na een korte inleiding komen tabellen voor subfamilies en geslachten en soorten; genera worden kort gediagnosticeerd, soorten worden compact beschreven, waarna een beknopte bespreking volgt van verspreiding (binnen en buiten het onderzoeksgebied) en biologische en oecologische bijzonderheden. De overzichtelijke tabellen zijn veelal gesplitst naar de kasten. Van alle soorten wordt de verspreiding binnen het onderzoeksgebied in een kaartje weergegeven. De figuren zijn talrijk en duidelijk, maar, kennelijk om ruimte te sparen, ten opzichte van de tekst wel eens minder overzichtelijk geplaatst. Dit is een erg aantrekkelijk determinatiewerk voor een populaire insectengroep, dat ook buiten Fennoscandia veel gebruikt zal worden. — W. N. Ellis.