ASYMMETRICAL DEVELOPMENT IN AN ARGYNNID

by PAUL GREY

Occasional minor departures from pattern symmetry are not especially rare in butterflies. Conditions in which either both forewings or both hindwings depart from normal coloration are seen fairly often, in both sexes. Occasional partial gynandromorphs are known, with a patch of the opposite sexual characteristics developed on one or more of the wings. Bilaterally symmetrical gynandromorphs are not so rare as might be supposed; I know of four specimens of *Speyeria* in this category. They occur in a ratio of 1 to 25,000 — 50,000 in wild populations, one would estimate. Misplaced pattern elements (the underside color appearing above, in patches, or on one or more wings, or forewing pattern running over to hindwing, for examples) are rare but still of record.

I have examined recently a female specimen of *Speyeria atlantis dodgei* taken by RAY ALBRIGHT in Josephine County, Oregon, at 5000 ft. near Oregon Caves, August 13, 1958, which falls in no category familiar to me in this genus, and I would appreciate an explanatory note from anyone who can offer the rationale. The rather numerous conditions of asymmetry described by FORD, in *British Butterflies,* seem to offer no exact parallel to this particular specimen, afflicted as follows:

The left hindwing is well advanced in the usual argynnid aberrational pattern, that is, the band and marginal spotting below are replaced by large buff rays, the disk suffused solidly except for a few enlarged splotches replacing the usual spots. Above, the outer third of the pattern is replaced by buff raying as below, the inner two-thirds solid except for the enlarged and distorted black spotting, a facies entirely familiar to all who have seen the usual sort of "aberrations" found in this group, ordinarily accompanied by extreme melanism, particularly in forewings, but in this instance not especially melanic except for the blurred and enlarged spotting above.

Only the one wing is thus aberrant; the remainder of the insect is perfectly normal with the usual population facies at this geographical point, *i.e.,* running to small size, dirty and unaccented coloration, narrowed band and trace of silvering only in marginal lunules.

The occasional minor deformities of this nature, seen in one hindwing, usually consist of some crumpling or dwarfing with consequent pattern distortion rather easily attributable to damage on emergence, a mechanical interruption of perfect development. The fully symmetrical melanic aberrations of argynnids are often taken to be simply recessive, and population statistics indicate that explanation since they tend to recur in single localities. But how to account for this, perhaps partially developmental oddity? In one wing only it got a full dose and perfect expression of whatever produces the usual aberrant argynnid.

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[Ed. note: — A simple explanation is that this individual was heterozygous for the presumed recessive gene for the aberration and that a somatic mutation occurred very early in embryonic development, perhaps at the four-cell stage. This could have produced homozygous recessives in all the cells descending from the mutating cell, and of course in these the aberrational gene would be expressed. C. L. REMINGTON.]

[Alternatively, the chromosome carrying the normal allele might have failed to attach to the spindle at the same division and therefore have been lost. Tissue descended from the daughter cell lacking this chromosome would contain only the mutant allele. P. F. BELLINGER]

MORE PROBLEMS WITH *PROBLEMA* IN KANSAS (HESPERIIDÆ)

by P. S. REMINGTON

In a previous paper (1956) on Hesperiidæ of the vicinity of St. Louis, Missouri, I reviewed the uses of the name *Atrytone kumskaka* (Scudder), generally presumed to be a synonym of *Problema byssus* (Edw.). *A. kumskaka* had been recorded from Kansas in 1875 by SNOW, but the specimen was reported by FIELD (1938) to be *Atrytone logan* (Edw.). Both Dr. PAUL R. EHRLICH and KENT H. WILSON of the Entomology Department of the University of Kansas have recently verified that this specimen is actually a female *A. logan,* and they say that it now bears an additional label "determined by A. W. LINDSEY."

So then the question arises, what species did SCUDDER have in mind when he described *Atrytone kumskaka* in 1887? I believe I have discovered the answer to this question right in Chancellor SNOW's back yard, so to speak. It could scarcely have been *A. logan,* which he must have been familiar with, for EDWARDS had described *logan* in 1863, twenty-four years before, and we know that EDWARDS and SCUDDER corresponded and exchanged specimens.

In the summer of 1958 I received a National Science Foundation fellowship to study at the University of Kansas for eight weeks. On several Saturdays I went collecting around Lawrence, and between June 21 and July 12 I collected four males and eight females of *P. byssus* no more than five miles west of Lawrence. They were feeding on blossoms of milkweed and Pearly Everlasting, and I think I could have taken many more had I not been diverted by numerous fine specimens of the Regal Fritillary, *Speyeria idalia* (Drury). Only later did I realize the significance of my find.