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ON THE GUNDER COLLECTION OF ARGYNNIDS

(Lepidoptera: Nymphalidae)

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IN CONTEMPORARY BUTTERFLY LITERATURE, F. Martin Brown's numerous papers on earlier collectors and collections have been especially valuable. It is well that students should be reminded of the importance of historical background and especially good that they should learn of the extent to which nomenclature is based on the art of "second guessing". Indeed, it may be uncomfortably close to the truth to say that the majority of taxa proposed for butterflies prior to the twentieth century now rest and must be allowed to rest on the deductions of specialists concerning what might be termed accidents of history. The identification of syntypical specimens and the selection from them of suitable lectotypes has been a major preoccupation of revisionary authors, with no end yet in sight. And what fascinating snarls have been revealed, when digging to bedrock for "origins"! Occasionally, even the apocryphal rumors and gargantuan tales of the earlier giants have to be given some weight when tracing material, as witness the stories of Herman Strecker's high silk hat.

It becomes painfully clear how large is the role of historical happenstance in shaping nomenclature when it is recalled in terms of concrete examples. A classic one of course is the handling of the W. H. Edwards collection. How often students find themselves wishing that this material could have been preserved exactly as Edwards arranged and labeled it when it was in his hands, at Coalburg!

Which reminds me that in a small way I was involved in an

analogous history. Therefore I believe it is a duty to recount what I can remember of the handling of the J. D. Gunder series of argynnid butterflies after they came to The American Museum of Natural History in New York.

A number of things were evident at that time, merely from Gunder's personal arrangement of his specimens. These were details which became obscured or lost when the series were shuffled from their original ordering and incorporated into the Museum drawers. I recall in particular several oddities of interest to *Speyeria* students. For one thing, the taxonomic status of *Argynnis pfoutsi* Gunder (1933, p. 171) appeared to me then in a light which no future reviser ever could be expected to apprehend, as I shall explain. Also, a few questions were raised which to this day remain unclarified.

As a visiting guest I had no part in policy making, but as a bystander I was impressed by the solicitude of Michener, Klots and dos Passos as they discussed how best to conserve the values and potential in the Gunder material. It was an amusing bylight, too, I thought, that Lutz, who at that time was chairman of the Department, seemed to be indifferent to the whole affair. His passion was for experimentation, probing the physiological and other biological attributes of insects; one might say he was very modern in his contempt for the mere "collecting" of dead butterflies.

The burden of guiding decisions thus fell mainly on dos Passos and Klots. It must not be assumed that they were insensitive to the value of the Gunder Collection purely as an historical monument. It is doubtful if any of our students who are under fifty or sixty years of age can really sympathize with their dilemma. One would have to be able to evoke the historical "then" and one would have to have lived through the period to know and understand just how incredibly far the study of Nearctic butterflies has progressed since that relatively short time ago.

In retrospect, this seems to have been a turning point. Butterfly classification had evolved mainly from odds and ends, and even singletons, acquired at random as chance had afforded, usually bearing such edifying labels as, *e.g.*, "Oregon Territory". The people then recognized as specialists and "best authorities" were laboring under a handicap beginning to be felt but impossible to overcome. Geographically representative series

simply did not exist. There was no possibility of examining region-to-region intergradings and discontinuities, much less to examine them for sympatrisms or to spin theories of their correlations with late Pleistocene refuging and ecogeographic factors.

Gunder may not have been the first to realize this need, but it can be emphasized that he was certainly the leader at the time, in this field of attempting large-scale geographic coverage. It was his vision and industry which Klots and dos Passos determined to carry forward and amplify. Nobody should fault them for scattering these particular bones of history. They broke up Gunder's arrangements, true, but only to lay the foundations of one of the great study collections of North American butterflies. I think they did the right thing; I lived in the era, too, and can remember how imperative our needs were, for better coverage, for continental surveys.

Reasonable care was exercised to keep the material in order. Every specimen was ticketed to identify its derivation from the Gunder Collection. Specialists were consulted before the plaques were opened and their contents dispersed. The fact of the specimens being in the the book-type Riker Mount cases, on cotton, was of course one of the major factors prompting the decision to rework Gunder's material. The papered excess was spread for later incorporation. The type specimens of taxa authored by Gunder were taken into the Museum's type collection which is maintained separately and given special care. This left the plaques, which Gunder considered to be his collection proper.

Dr. dos Passos invited me to help him pin and reclassify the "*Argynnis*", for three reasons: (1) We were then planning a jointly authored revision of the Nearctic species of these butterflies. (2) And prerequisite to this we had to rearrange and make usable the then-chaotic Museum collection, incorporating with it the extensive Gunder series. (3) Also, it seemed desirable that we should share responsibility of preserving whatever taxonomic or other data or deductions might appear from the original plaque arrangements and sortings. As I recall, we spent something like ten full working days merely to shuffle to a "species-by-States" arrangement, before any "study" could be possible. Incidentally, a recent (1969) check indicates that the geographic order has been maintained despite considerable additions. Students who go here and are given

instant access to whatever may be available of particular series from particular areas should realize the debt they owe to people like Gunder, Klots, dos Passos, and to the present Curator, Dr. Rindge, who keeps the series in scrupulous order and has added largely from his own field collecting.

Even so, and with all the work which has been done to ease the labors of researchers, I had a unique and never-again opportunity to see things which are now beyond recall. I saw precisely how Jeane Gunder interpreted taxa and categories, and I think it is long past time that somebody should speak up and defend his abilities. He seems to be remembered principally as a trifler with "aberrations", an arch-splitter. Few students seem to have any idea of his true dimensions as a pioneer. I noted instance after instance wherein he had lumped or juxtaposed taxa then rated as separate entities. The sheer size of his accumulations witnessed more eloquently than he, himself, ever managed to explain, of the importance he attached to geographical variation and of his concern to extend coverage to include generous population samples from as many localities as possible. Eastern lepidopterists, seeing this collection for the first time, were introduced to butterfly study in a new dimension; it was quite a jolt to some of them who had dismissed Gunder as a wild amateur.

I can testify for the argynnids that Gunder's arrangements bespoke not only his appreciation of the basic needs for extensive comparisons, but also a great deal of research in the literature and the study of preserved type series. His taxon usages in the main were up to present standards but naturally some of his ideas of "species" now seem outmoded. There is no need to eulogize him unduly; he made his share of blunders, and misdeterminations, and, as amply proclaimed by his critics, he wasted a disproportionate amount of energy in futile attempts to give nomenclatorial status to aberrations and minor color forms.

On balance, however, he surely deserves more credit and appreciation than seems to have been accorded him as one of our leading authors. The labels he put under his collection series I would say revealed a better grasp of identities and entities than can be claimed for any argynnid student prior to his time. They resulted, I am sure, from painstaking study combined with a really formidable taxonomic intuition. As for his blunders, one suspects that future workers will find

that "me and thee" also have sinned: it is impossible to work through any large collection without coming across the occasional lapses from virtue such as happen to us all. It is hardly fair to charge the man with errors which were, so to speak, inherent and embalmed in the listings and concepts of his day; leaving these aside only the few mistakes detailed in following paragraphs were noted, to which will be added my personal appraisal of their historical origins.

Gunder has been charged with one major taxon-error, namely, his misapprehension of *Argynnis platina* Skinner (1897, p. 154). I was in a position to understand how this error arose, since I had visited the Academy of Sciences and had studied Skinner's Utah material, shortly after Gunder had been there for the same purpose. Thus, I am safe in presuming that Gunder saw exactly what I did, in the way of Skinner-labeled material. It thus seems evident that he merely accepted, on Skinner's authority, that the variation range in Skinner's "*platina*" included forms which we now relegate to another species. It may as well be admitted that Skinner's legacy is a confused one; he apparently was unable to separate his own "*platina*" from his own *utahensis* (1919, p. 216). I recognized that his series were badly mixed and had the good fortune to be able to check my concepts with Nabokov; the latter had been collecting in Utah, had a good eye for species discrimination, and had been looking into these questions through spot-locality comparisons of sympatrisms, extent of local variation, etc. We agreed that Skinner never did learn to separate the Utah argynnid.

But Gunder tripped over Skinner's mistakes, with the result that he took away the impression of "*platina*" as applying to "*utahensis*". Then, in a very interesting display of taxonomic virtuosity, Gunder thereafter consistently applied "*platina*" in the erroneous way he had apprehended. Thus it came about that Gunder's plaque of "*platina*" was filled with Idaho greenish-disk *egleis* (Behr) ("1863": 1862, p. 174) of the sort which dos Passos and I later dubbed "*linda*". Knowing this much of the story it is clear that Gunder would assume one of the major elements in Utah argynnid variation to be nameless. Hence, his description of "*pfoutsi*", justifiable by all that he had been able to learn of types and of natural populations.

In this instance one sees again the prime importance of background data when assessing nomenclature. Granting the above bylights on "*pfoutsi*" an adjudication of its status follows inevi-

tably: it drops to synonymy, naturally, but it should be of interest also to know that it does not represent mere ignorance or a propensity to split, on Gunder's part, but is rather a wholly excusable mistake with a logical historical cause.

Another incongruity in the Gunder series, one I have kept in mind over the years, was the occurrence in Nevada-labeled material (Clark and Lincoln Counties, *leg.* Eugene Schiffel) of specimens obviously representing subspecies of *atlantis* (Edwards) ("1862": 1863, p. 54) and of *hydaspe* (Boisduval) (1869, p. 60). These were of facies suggesting derivation from Montana or perhaps British Columbia. The geographic association seemed rather weird, even then, at a time when very little was known of distribution. Even today it might be risky to aver precisely what does or does not occur around the Spring Mountains area in the way of *Speyeria*. However, from everything presently witnessed and conceived, this bears the earmarks of some preparator's mistakes. I mention it to ease the minds of investigators who may run across these specimens in the Museum. It seems best agreed that whoever will accept these records as authentic should bear the burden of proof. Quite likely they resulted from some scrambling of envelope data but at any event this probable boo-boo involves merely the geographical labeling, and not taxon confusion. But another incongruity I took note of seems to involve a little of both, who knows?

The plaque of *Argynnis whitehousei* Gunder (1932, p. 279) consisted of 3 males and 5 females identifiable as an *aphrodite* (Fabricius) (1187, p. 62). But in the same plaque were 8 males of an *egleis* subspecies (my identification). These latter were in a facies which would have been tolerable if they had been labeled as from "Utah", instead of as from "British Columbia". They were doubly suspect to me also since I did not know then and still do not know of any authentic British Columbia records of *egleis*, this being a species which seems to taper off to rarity in northern Montana.

I offer no guaranteed solution to this strange action of Gunder's; probably it is best to treat it as an unresolved mystery, which, in any event, is the present state of knowledge *re* northernmost distribution of *egleis*. Still, it is tempting to express my suspicions, since they might provide another lead in case that Canadian students should fail to find *egleis* after due search in the indicated region: I can vouch for the fact

that Tom Spalding supplied Gunder with some material; I learned this from my correspondence with both of them. From the appearance of these specimens in question I have reason to guess that they might have derived from the Provo region of Utah, which Gunder's involvement with Spalding would rationalize. But as it stands they are purportedly from Jaffray, B. C., August 1-5, 1929, *leg.* Whitehouse. It is very definite, then, that Gunder was guilty here of one of his rare lapses, making that most embarrassing of all taxonomic mistakes, namely, confusing things distinct in nature. To top it off, I fear he had another visit from the scramble-gremlin which misplaces geographical labels on spreading boards. At least, the question must be answered: What actually does occur in the vicinity of Jaffray, in the way of an *egleis* subspecies?

In summary, then, many values were lost when Gunder's "*Argynnis*" were removed from their plaques. Today undoubtedly we would photograph them before tampering. The fact remains, however, that these specimens, vastly enriched by later additions, have served the true purpose intended by Gunder and still remain fully accessible to interested students in the precise but expanded concept and vision of Gunder, which was to build toward a total view of North American butterfly speciation and subspeciation. Unfortunately, the thing which was lost in the process was an intangible vignette of Gunder himself, as reflected by his handwork.

At this late day, the only amend possible is to affirm for what my personal opinion may be worth that Gunder had rare natural talent as a taxonomist despite popular impressions to the contrary. I had the privilege of seeing for myself that his competence in sorting argynnids was quite amazing; very few students even today can approach his abilities in this department. And those who can remember what it was like, back in that quite recent and yet curiously remote era, to confront Western *Speyeria en masse* — we, at least, know very well the debt we owe to Gunder.

Merely from his sortings, innumerable instances could be cited of his acuity. Referring back to the blunder in the *whitehousei* plaque for example, one still could note how unerringly he had fingered out the *aphrodite* variation in the remainder of his British Columbia material, even from localities where *aphrodite* runs excruciatingly parallel to other species. In this and in many other instances of an analogous nature, his accurate

separations of parallel sympatres have stood unmodified over the years in the face of inspection by students with far larger data than ever were available to Gunder. He stood unmatched among his contemporaries; he was a far better argynnid taxonomist than McDunnough, for example, as can be seen from the historical record: McDunnough blundered seriously with some of the Western Canada parallels, even to the extent of assembling a mixture of entities in type series! My personal debt to Gunder is no small one. Dr. dos Passos and I became heirs to all of his extensive preliminary work with argynnids, and, as it has turned out, could have found no better source of properly sorted and correctly identified material.

Additionally, students should bear in mind that Gunder's approach to difficult genera was altogether modern although practically new and unheard of at the time. He first assembled huge and geographically representative material, which he attempted to sort out to "species", with a shrewd eye to sympatrisms and to variation as correlated with geographic barriers and opportunities for dispersals. In the case of the genus *Euphydryas* he went even further, to synthesize all of these facts with the evidences of genitalic structures. Indeed, his 1929 revision of the latter genus remains to the present day one of the landmark papers which have shaped our modern classification and concepts of butterfly species.

Given more time, it is altogether probable that Gunder would have revised "*Argynnis*" along the identical lines followed by dos Passos and myself. It was clear that he was quite far along in the data-gathering stage, and that he would have made short work of the ninety to a hundred and twenty-five or so "local species" then cluttering our lists and manuals. It cannot be repeated often enough that this man was not a splitter. He was a synthesizer, born before his time. We had no difficulty in following his ideas as expressed by his collection arrangements, and found relatively few puzzles and contradictions other than those described herein which seem mostly due to scrambled data. So, for argynnids, what with Gunder's published descriptions and the careful preservation of his specimens at the American Museum, there is little for future historians to stumble over, it would appear, if they will steer away from the superficial and altogether false presentation of Gunder as a playboy amateur.

Among other misfortunes which dogged Gunder, there remains

a major canard which seems to pass unanswered. Speculations continue to circulate that he did not do the work on *Euphydryas*, that it may have been the product of a hired collaborator. Before the obscurity of years closes over this latter revision it is a matter of urgency that any of the older generation having recollections or letters bearing on this subject should publish them. This is clearly an instance wherein "trivialities" might prove to have major historical importance. One fact seems assured: None of the original dissections or drawings were included in the material purchased by the Museum.

I know of no helpful data which might apply to this riddle. I exchanged relatively few letters with Gunder and in them there were no mentions of genitalic studies and only a few references to Western *Euphydryas* problems. Therefore, my personal curiosity, and I am sure the curiosity of other students, remains unsatisfied. We have a natural desire to know something of Gunder's methodology, of the material he assembled and his understanding of it. We have a duty to future researchers who will be equally curious. But as it stands, our estimation of the 1929 *Euphydryas* revision as a brilliant achievement seems best enforced by the fact that nobody seems able, even with vastly expanded material and knowledge, to come up with a better synthesis.

Are we never to learn more of the background of this mysterious feat? Perhaps, then, I should make bold to offer a comment which may have some incidental bearing on it. I know nothing about *Euphydryas*, but I did see how splendidly Gunder was brushing through the utter confusion which then prevailed in argynnids. From that experience I know that Gunder had an innate gift, a brilliance denied or only grudgingly recognized by his critics. Thus, I would be willing to defend the idea that Jeane Gunder needed no hired talent to supplement his own genius. Whoever can tell us more should do so.

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