1-1-2000

# A New Elfin Butterfly (Lycaenidae: Eumaeini) from Northern China with Comments on the Nomenclature of Palaearctic Elfins

Kurt Johnson
*Ethical Culture Society*

**Volume 2** **1 January 2000** **Number 1**

*The Taxonomic Report*
*OF THE INTERNATIONAL LEPIDOPTERA SURVEY*

# A NEW ELFIN BUTTERFLY (LYCAENIDAE: EUMAEINI) FROM NORTHERN CHINA

## WITH COMMENTS ON THE NOMENCLATURE OF PALAEARCTIC ELFINS

KURT JOHNSON
Environmental Department, The Ethical Culture Society,
53 Prospect Park West, Brooklyn, New York 11215

**ABSTRACT**. *Ahlbergia hsui*, new species, is described from two specimens recently collected in China's Nan Shan area of endemism located along the boundary of northern China with Mongolia. In discussing the new species, the historical literature concerning Palaearctic elfin butterflies is reviewed and compared to nomenclatorial usages in D'Abrera's widely disseminated 1993 treatment of Palaearctic butterflies; 25 errors or omissions in the latter treatment are corrected.

**Additional key words.** Species group placement.

## INTRODUCTION

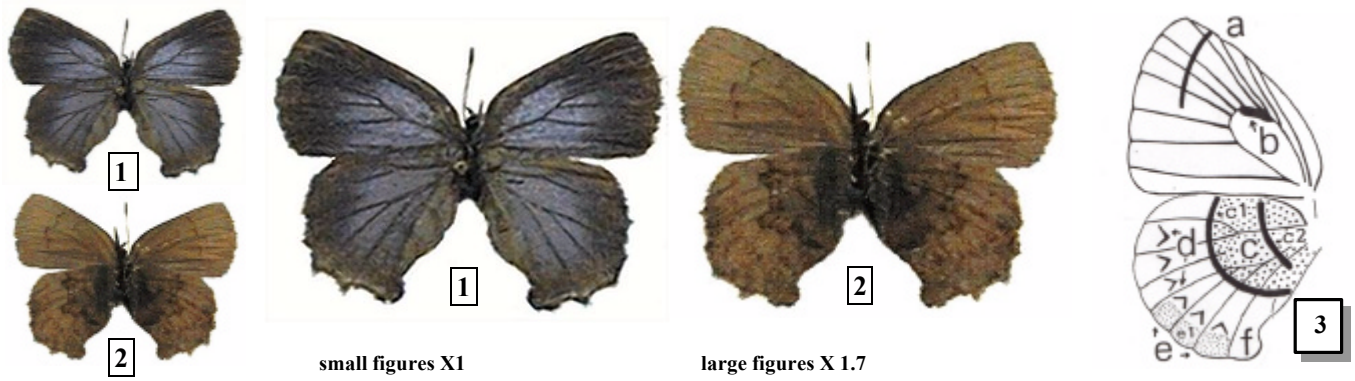
In July of 1999 Dr. Yu-Feng Hsu collected two specimens of a tailless elfin butterfly (Lycaenidae; Eumaeini) of the genus *Ahlbergia* Bryk (Figs. 1-2) in the Gansu Province of north-central China. In the context of my monograph of Palaearctic elfin butterflies (Johnson 1992), these individuals clearly represent a previously unknown species.

Dr. Hsu's specimens are from the northern "Nan Shan" area of endemism (Johnson 1992) located along the boundary of northern China with Mongolia (Figs. 5-6). Of the five areas of endemism noted for Palaearctic elfin butterflies in my 1992 monograph, the Nan Shan region is the least explored. Previously, the Nan Shan was known to have only three endemic elfin species: one from the diverse genus *Ahlbergia*, and two from the more primitive elfin genus *Cissatsuma* Johnson. Dr. Hsu's discovery adds a fourth endemic and second *Ahlbergia* to the elfin fauna of this region.

This new species is typical of previously unknown elfins from isolated areas of China with poorly known butterfly faunas in that its wing color and pattern, and genitalic features are unique and usefully comparable (as summarized in the description below) only to disparate elfin species from elsewhere in the eastern Palaearctic Region. Terminology follows Johnson (1992) as reviewed herein in Figure 3.

### *Ahlbergia hsui* Johnson, new species

**Diagnosis.** Currently known from only the female. *Wings* (Figs. 1-2 and 3): readily recognized by medium size (FW alar 13.5 mm.), dorsum shiny pewter blue from wing base through postmedial area, thereafter abruptly black; venter simply marked: over light beige ground color, FW with single, narrow and jagged, deep brown postmedial band crossing entire wing; HW with highly contrasted, hoary and dark brown, basal disc followed distally by lighter beige devoid of any outstanding markings in postmedial or limbal areas. *Comparisons*: among Palaearctic




**Figs. 1-2 (d/v),** ♀**holotype** *Ahlbergia hsui* Johnson. CHINA: GANSU Prov., [Longnan Dist.], Kang Xian, ca 1300 m, 8 July 1999, Y.F. Hsu, collector. **Fig. 3,** basic ventral (except **b)** wing pattern terminology from Johnson (1992): **a.** postmedial line or band; **b.** dorsal scent brand; **c.** basal disc (large stipples) [c1, marginal band of disc; c2, postbasal marks, if present]; **d.** crescent line (if present); **e.** limbal area (light stipples) [e1, Thecla-spot, if present]; **f.** anal lobe. (d) dorsal, (v) ventral.

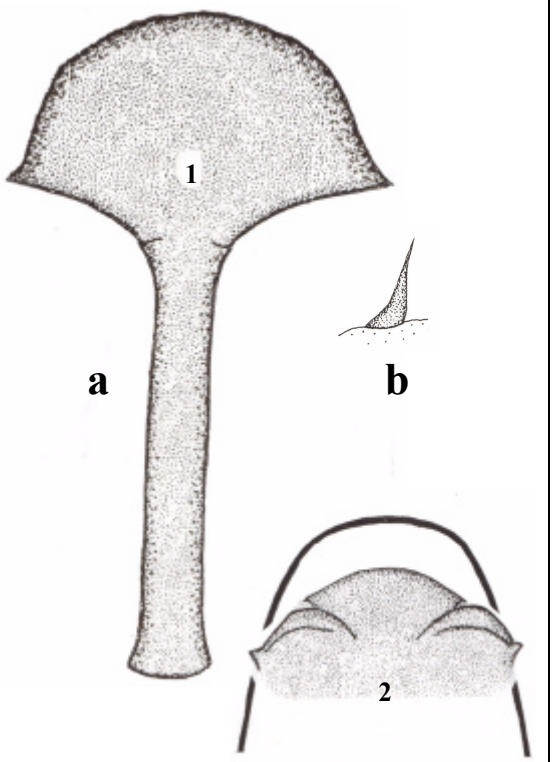



**Fig. 4**

**Fig. 4,** ♀ **holotype** genitalia. **a.** ventral view from lamellae to base of ductus. (l) marks an unusually prominent lamella antevaginalis; **b.** signum in isolation; **c.** rudimentary invaginations comprising lamella postvaginalis (2), inside a simplified outline of the abdominal terminus.

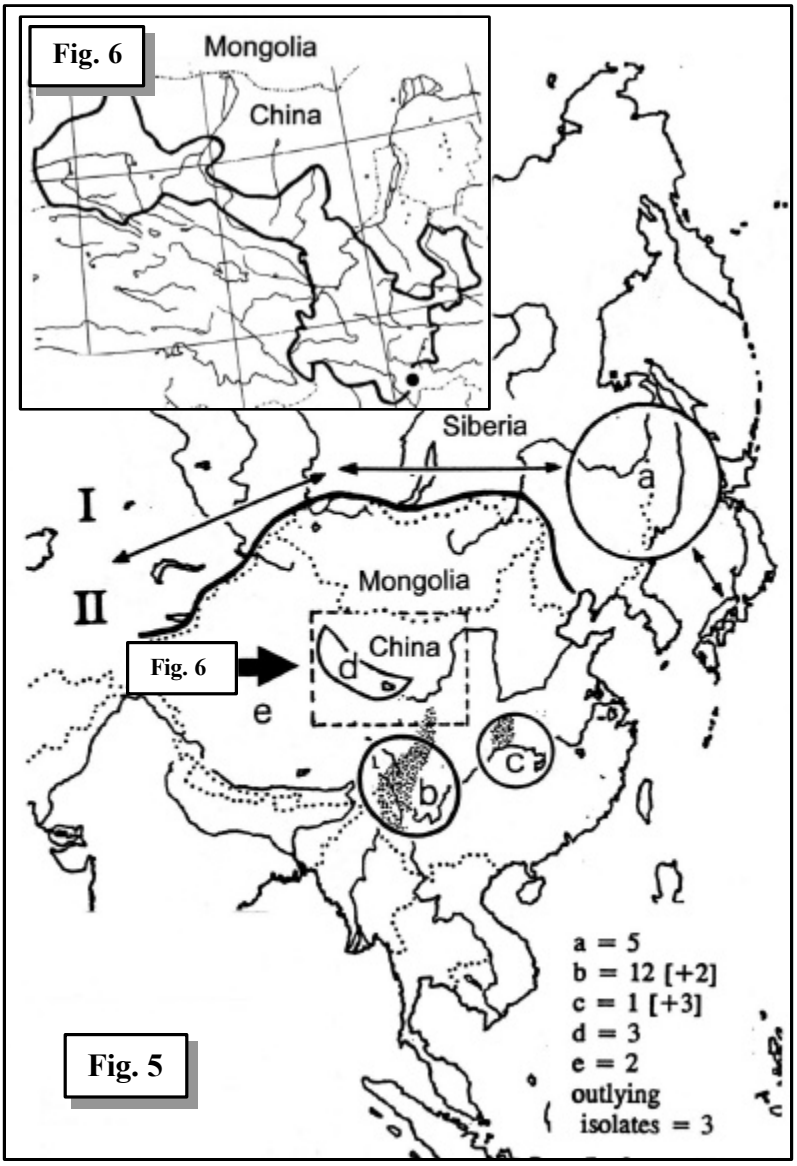



**Fig. 5,** areas of endemism in Palaearctic elfin butterflies (from Johnson 1992). Two general regions (I, II) and five localized areas (a-e) distinguished by Johnson: Siberia Region (I) – **a.** Amur River Basin; Chinese Region (II) – **b.** Yunnan Plateau; **c.** Central Mountain Belt; **d.** Nan Shan mountain boundary with Mongolia; **e.** Tibetan Plateau. The number of endemic species in each area is at the lower right. **Fig. 6,** detail of Fig. 5 dashed inset locating the type locality (black dot) of *Ahlbergia hsui* in Gansu Province (in dark outline).

elfins, the dorsal markings of *A. hsui* resemble *A. chalybeia* Riley (b and c areas of endemism, Fig. 5) a much larger species (FW 15.0 mm.) with an olivaceous venter striped with concentric brown bands. The ventral markings of *A. hsui* resemble only *A. bimaculata* Johnson (b area of endemism, Fig. 5) a species with both sexes showing completely brown wing dorsa. Both *chalybeia* and *bimaculata* belong to the *chalybeia* species group (Johnson 1992).

**Genitalia.** (Fig. 4). Unique, making A. *hsui* of questionable species group placement. Female terminalia at caudal end of elongate ductus bursae showing a pronounced and extremely sclerotized lamella antevaginalis, dwarfing the lamella postvaginalis; the latter is rudimentary at best, comprised of indiscreet invaginations of the abdomen's integumental wall. In all congeners, the opposite is true – the lamella postvaginalis is the elaborated structure, with the lamella antevaginalis occurring only as a slight, secondary, lip-like structure. Corpus bursae of *A. hsui* with two unifurcate spine-like signa typical of numerous congeners.

**Description.** *Male:* Unknown. *Female:* Head, thorax, abdomen, legs, palpi, and frons typical of the genus (Johnson 1992). *Size:* medium (FW alar 13.5 mm). *Wings: shape:* broad with arched margins and only slight protrusion (1 mm.) of HW anal lobe; *dorsal:* color distinctly pewter blue, wing base through postmedial area, thereafter abruptly black; *ventral:* ground color uniform beige brown; forewing with narrow and jagged deep brown postmedial band crossing entire wing; hindwing color contrasted – dark brown in basal disc, light beige distad, basal disc dark hoary brown, postbasal area with single, darker brown, narrow lineate mark, distal margin of disc outlined by narrow, jagged, blackish-brown marginal band. Distal areas (crescent line and limbal areas of Fig. 3) without distinctive markings. *Genitalia:* Female (Fig. 4a) with prominent, elongate and tubular ductus bursae; corpus bursae with two unificate spine-like signa; terminus of genitalia with extremely prominent, elongate and heavily sclerotized lamella antevagionalis (Fig. 3a1) contrasing an insignificant lamella postvaginalis comprised of only a few, rudimentary, invagainations of the abomen's integumental wall (Fig. 3a2).

**Types.** ♀ holotype (Figs. 1-2): CHINA: GANSU Prov., [Longnan Dist.], Kang Xian, ca 1300m, 8 July 1999, Y. F. Hsu, collector. (Longnan means southern Gansu in Chinese.) Paratype: 1♀, 9 July 1999, same location as holotype. The holotype is deposited in the Zoological Institute, Academia Sinica, Beijing. The paratype is deposited in the Florida State Collection of Arthropods (Gainesville).

**Distribution.** *Spatial.* Known only from the type locality (Figs. 5-6). Dr. Hsu (pers. com. to Johnson) describes the type locality as "a canyon with a stream running through, the vegetation type mainly deciduous forests, with deciduous oaks and *Carpinus* the dominant tree species, and bamboo common at the lower layer." *Temporal.* Known only from the two type specimens. Dr. Hsu relates, "I spent 15 days on the trip, and the real collecting time was less than 4 days, wasting too much time on the bad dirt roads where the most commonly used transportation is donkey. It would be hard for me to believe this elfin is a multivoltine species. The area is said to be cold in winter and spring, but hot in summer as it was the border area between wet southwest and dry northwest China. As a consequence, the low elevations of the area were very dry and hot, but high elevations was moderately cool during my visit. It did surprise me when I caught this elfin, as I had never seen any elfin in summer in China before. I predict it is a species flying in June to July, because I got only the females while seeing no males… and at least one of the specimens was in very good wing condition."

**Etymology.** This new species is named for Dr. Yu-Feng Hsu (Taiwan Normal University) who collected the type specimens and has, in the last decade, made numerous important contributions to the knowledge of Chinese butterflies, including the naming of numerous new species.

## DISCUSSION

### *Palaearctic Elfin Butterflies in the Diverse Scientific Literature of the World*

In 1992 I published a thorough revision of the elfin butterflies of the Palaearctic Realm (*Ahlbergia*, Cissatsuma, and *Novosatsuma* Johnson, 1992). Because of price, and European imprimatur, this monograph was not widely distributed outside of institutional libraries among the world's lepidopterists. In 1993 D'Abrera published a photofolio of Palaearctic Lycaenidae which has since been widely distributed. Even though D'Abrera had been furnished a copy of Johnson 1992 while putting together his photofolio, he gave only a cursory treatment of the region's elfin butterflies, overlooking 21 species, and either misspelling or wrongly attributing names to three others. Elfins, and other unglamorous lycaenids, are as scientifically

important as any other Lepidoptera. It is therefore imperative that these errors be corrected. Thus, the corrective comments which follow are not meant as an attack on D'Abrera's useful photofolio work, but are only presented to correct his errors as required by the ICZN Code. Further, it is likely that had D'Abrera's publication not followed so soon after mine, he would have avoided many of these problems.

D'Abrera (1993: 436-437) did not recognize that, due to actual publication date, *Ahlbergia* Bryk has priority over *Ginzia* Okano. He did state, however, that as of the time of his writing, the problem of priority in generic names for elfin butterflies had not been "stabilised" [sic].

The following species were omitted by D'Abrera even tough their type material is at The Natural History Museum (NHM) in London: ***Ahlbergia***: *bimaculata* Johnson, *korea* Johnson, *leei* Johnson, *arquata* Johnson, *unicolora* Johnson, *caerulea* Johnson, *prodiga* Johnson, *caesius* Johnson, *lynda* Johnson; ***Novosatsuma***: *collosa* Johnson, *magnasuffusa* Johnson, *plumbagina* Johnson, *oppocoenosa* Johnson, *magnapurpurea*, Johnson, *cibdela* Johnson, *monstrabila* Johnson; ***Cissatsuma***: *halosa* Johnson, *crenata* Johnson.

The following species were omitted by D'Abrera but do not have type material at the NHM: ***Ahlbergia***: *pictila* Johnson, *haradai* Igarashi; ***Novosatsuma***: *matusiki* Johnson.

Given the fact that many of these species are spectacularly distinctive, D'Abrera may have inadvertently overlooked the NHM drawers in which their type material is deposited. Or, he may not have had the time to include them in his photography schedule. This appears likely because D'Abrera did include the following three species described by Johnson with type material at the NHM: *Cissatsuma tuba*, *C. contexta,* and *Ahlbergia kansuensis*.

D'Abrera misspelled the species name *A. chalybeia* as *"Ginzia chalybaea."* Two other names, *Ginzia* "*wellsorum*" and *Ginzia* "*kimi,"* were introduced by D'Abrera into the literature as *nomen nudum* because they have never been described and, as such, have no validity under the International Code for Zoological Nomenclature (ICZN Code). It should be noted that the specimen identified by D'Abrera as "*wellsorum*" is an *A. bimaculata* and the specimens noted by D'Abrera as "*kimi*" are *A. korea*.

### *Species Group Placement of A. hsui*

The rudimentary invaginations comprising the lamella postvaginalis suggest relationship to the diverse northern *ferrea* species group (Johnson 1992), in which such invaginations are strongly sclerotized into a prominent lamellae postvaginalis. Since, due to their cryptic colorations, there is extreme homoplasy in wing pattern and coloration in all elfin-like Eumaeini throughout the world, I tend to follow morphology for placing species in groups. Accordingly, I would tentatively place *A. hsui* in the *ferrea* group noting that its distribution represents a southern "outlier" for this group and its morphology may be primitive – comprising characters of both the more southern *chalybeia* group and more northern *ferrea* group.

## ACKNOWLEDGMENTS

Thanks are due Dr. Yu-Feng Hsu for providing the type material for study and description, and to Ron Gatrelle (International Lepidoptera Survey) for photo processing of holotype for color reproduction.

## LITERATURE CITED

D'ABERA, B. 1993. *Ginzia* Okano, pp. 436-437 in: Butterflies of the Holarctic Region. III. Nymphalidae (concl.), Libytheidae, Riodinidae, and Lycaenidae. Hill House, Victoria (Australia).

JOHNSON. 1992. The Palaearctic "Elfin" Butterflies (Lycaenidae, Theclinae). Neue Entomologische Nachricten 29. 142 pp.

# *The Taxonomic Report*

is a publication of ***The International Lepidoptera Survey (TILS).***

(A Tax Exempt Non-Profit Scientific Organization )


**TILS Purpose.** TILS is devoted to the worldwide collection of Lepidoptera for the purpose of scientific discovery, determination, and documentation, without which there can be no preservation of Lepidoptera.
**TILS Motto.** As a world community, we can not protect that which we do not know.

***The Taxonomic Report*** is projected for publication at the rate of 10 issues a year. Subscription/ dues for Volume Two are $50 US for domestic and $65 US for overseas subscribers. The subscription year follows the calendar year. All issues are mailed 1st class. At the end of each year, subscribers receive that year's volume on a record-only compact disc (CDR) for permanent archiving and reproduction for personal use (i.e. a museum or university may make as many copies as needed in whatever format desired). Non-members may receive individual issues in print any time for $10 per issue. Individual issues on CDR to non-members are $25 per issue post paid. **Subscriptions** and **individual issue** orders should be made payable to **TILS;** and **mailed to:** Scott D. Massey, Editor, 126 Wells Road, Goose Creek, SC USA 29445-3413.

**Articles for publication are sought.** They may deal with any area of taxonomic research on Lepidoptera. Before sending a manuscript, simply write **TILS** at the above address to set up discussion on how to best handle your research for publication.

---

Everyday around the world, in jungles and urban areas alike, insect species and subspecies are becoming extinct. Every year scores of taxa are lost that have not even been scientifically discovered and documented. Thus, their extinction is unnoticed because their existence is unknown. They are unknown simply because they have not been collected and systematically identified. Without systematic taxonomy there is nothing. Without the collection, and exchange of specimens (information) there will be no systematic taxonomy. Without amateur collectors the majority of the undiscovered species/subspecies will vanish before they are discovered. Be it butterflies or moon rocks, collecting is the first step of access to all other scientific information – and protection.

**Donations are needed to support and further our efforts to discover and protect butterflies worldwide. All donations are US tax deductible. Please help generously.**

Donations should be mailed to: **Scott D. Massey, Treasurer, 126 Wells Rd., Goose Creek, SC 29445.**
Checks should be made payable to: **TILS.** Please indicate if you need an individual receipt.


***TTR*** thanks Mr. Bryant Mather, 213 Mt. Salus Dr., Clinton, Mississippi 39056, for editing the text of this issue.