

**The Conceptual History of *Melitaea nycteis* Doubleday, [1847] (Nymphalidae), with the Designation of a Lectotype and a Portrait of Its Collector, David Dyson (1823–1856)**

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THE CONCEPTUAL HISTORY OF *MELITAEA NYCTEIS* DOUBLEDAY, [1847] (NYMPHALIDAE),  
WITH THE DESIGNATION OF A LECTOTYPE AND A PORTRAIT OF ITS COLLECTOR,  
DAVID DYSON (1823-1856)

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**ABSTRACT.** Long thought to be based on a holotype, evidence indicates that the concept of the nominal taxon *Melitaea nycteis* Doubleday was actually based on four female syntypes, which were collected in Ohio in 1843 by the English naturalist David Dyson. A lectotype is designated to stabilize usage and establish a sole name-bearing type of this nominal taxon. The type locality is suggested to be the vicinity of Cincinnati, Hamilton County, Ohio. A previously unknown portrait of David Dyson, depicting him collecting Lepidoptera, was discovered in the possession of his great-grandnephew and is reproduced for the first time.

**Additional key words:** Jean B. A. D. de Boisduval, Edward Doubleday, syntypes

In 1847, the English entomologist Edward Doubleday (1811–1849) published a figure of a new species of butterfly, which he named *Melitaea nycteis* (currently *Chlosyne nycteis*) (Doubleday [1847]) (Fig. 1). This hand-colored lithographic illustration of a female specimen was based on a drawing by the English artist-naturalist William C. Hewitson (1806–1878). No written description accompanied the figure, but Doubleday (1848) issued separate text that attributed the species to “United States (Middle States).” A copy of Doubleday’s figure, and a reference to the occurrence of the species in the United States, subsequently appeared in Lucas ([1851–1852]).

An old female specimen, identified as the “Type” of *M. nycteis*, is currently deposited in The Natural History Museum, London (BMNH) (Figs. 2, 3). This specimen was presumably selected as the type by N. D. Riley and A. G. Gabriel, who attempted to catalog and label all the butterfly type specimens in the British Museum (Natural History) (Riley & Gabriel 1924). A label, most likely created by Gabriel, designates the specimen as “B.M. TYPE / No. Rh8433” (Fig. 4). Gabriel probably also prepared the red-bordered “Type” label, but he incorrectly recorded the specimen as a male in his published list of nymphalid types (Gabriel 1927). This specimen is nearly identical to the figure of *Melitaea nycteis* in Doubleday ([1847]) (Figs. 1, 2), thus it undoubtedly served as the model for the illustration. Most authors (e.g. Higgins 1960; Miller & Brown 1981; Calhoun et al. 2005) considered this specimen to represent the holotype of *M. nycteis*, but evidence indicates that the type series actually consists of four specimens.

In his list of butterfly specimens in the British Museum, Doubleday ([1845]) included four specimens (“a–d”) of an unidentified species of *Melitaea* from

“Ohio, U. S.” Two years later, he named and figured *Melitaea nycteis* from “United States (Middle States)” (Doubleday [1847]). The proximity of these events suggests that the specimens from Ohio represent syntypes of *M. nycteis*. This connection is supported by Doubleday’s (1848) reference to “Middle States.” In 1848, the United States extended westward to Iowa, Missouri, Arkansas, and Texas. At that time, Ohio was literally located in the middle of the country. A large locality label affixed to the type of *M. nycteis* (Fig. 4), reading “United States. / (Middle States),” evidently was prepared by a later museum worker based on Doubleday (1848).

**Type specimen.** The type of *M. nycteis* bears a small round label that reads, “U.S.” On the verso of this label is written “44 / 1” (Fig. 4), which corresponds to accession number “1844–1” in the museum’s register books, denoting the first lot of specimens received by the museum in the year 1844. This lot comprised 81 Lepidoptera specimens from the United States that were purchased from “Mr. Dyson.” Also affixed to this specimen is a round label that reads, “2633 / d” (Fig. 4). Such alphanumeric labels on old butterfly specimens in BMNH correspond to entries in an eight-volume manuscript, written by Doubleday, which is thought to be a partial draft for his published list of specimens in the British Museum (Entomology Library, BMNH) (see Harvey 1996). Doubleday assigned a number to each entry in his manuscript and he cited many of these numbers in his published list, especially the second volume (Doubleday 1847a). The corresponding specimen labels were conceivably created by Doubleday himself. In this case, a transcription error is to blame for the reference to 2633, as this corresponds to an entry in Doubleday’s manuscript for a single specimen (“a”) of an unidentified species of *Thecla*.



FIGS. 1-9. Published figure, specimens, and collector associated with *Melitaea nycteis*. 1, figure from Doubleday ([1847]). 2, female *C. nycteis* (BMNH), herein designated as the lectotype of *Melitaea nycteis*<sup>°</sup>. 3, ventral aspect of lectotype<sup>°</sup>. 4, labels affixed to lectotype<sup>°</sup>; at center is the round locality label, shown recto (left) and verso. 5, female paralectotype (BMNH)<sup>°</sup>. 6, labels affixed to paralectotype (BMNH)<sup>°</sup>; round locality label shown recto (top) and verso. 7, female paralectotype (USNM). 8, female paralectotype (USNM). 9, detail of portrait of David Dyson by J. A. Wasse (courtesy Norman D. Dyson); inset at top left shows the entire composition; at bottom is Dyson's signature from one of his letters (Univ. of Cambridge). (°Courtesy The Natural History Museum, London).

However, entry 2333 lists four specimens of *Melitaea* from Ohio, "Bt. [bought] of Dyson." The presence of the letter "d" on the label reveals that this female is presumably the fourth specimen of *Melitaea* from Ohio as listed by Doubleday ([1845]).

David Dyson (1823–1856) (Fig. 9) was an English naturalist who spent nearly the entire year of 1843 in the United States, where he reportedly obtained an estimated 18,000 specimens of insects, birds, shells, and plants (Anonymous 1856a; Jackson 1908). Dyson sold his American butterfly specimens to the British Museum during a visit to London in early January 1844. In a letter to the English naturalist Hugh E. Strickland, dated 12 January 1844, Dyson wrote, "I have been to London to dispose of my insects...on my paying a visit to the British Museum I got in company with several gentlemen personally known to you" (H. E. Strickland correspondence, Univ. of Cambridge). One of the gentlemen that Dyson met was Edward Doubleday, who was employed as an Assistant in the Zoology Department of the British Museum. Not long after Dyson's visit to the museum, Doubleday (1844) described him as "an intelligent young man, originally a weaver from Oldham, whose zeal for entomology carried him out last year to the United States." Dyson is better known for his expeditions to "Honduras" (Belize) in 1844–1845 and Venezuela in 1846, both sponsored by the British Museum. Referring to these expeditions, White (1847) declared, "There has not been a more active or intelligent collector in this country than Mr. Dyson." Many of the specimens obtained during Dyson's trips were later described as new species, including *Euterpe dysoni* (now *Leodonta dysoni*), which Doubleday (1847b) named in Dyson's honor. Dyson purportedly served for a time as the curator of the natural history collections of Edward Smith Stanley, 13th Earl of Derby (Anonymous 1856a). Ives (1905) claimed that Dyson could not read or write, but obviously this is erroneous, as some of his letters were published (Anonymous 1912–1914) and others are preserved in various library collections. Dyson is the source of additional butterflies from Ohio in BMNH, including the state's only known specimen of *Chlosyne gorgone* (Hübner), which Doubleday ([1845]) listed as *Melitaea ismeria* Boisduval & Le Conte (Calhoun 2003a). This specimen also was among those sold to BMNH in 1844. Coincidentally, both Dyson and Doubleday died before the age of 40.

**Second syntype.** Another female specimen of *C. nycteis*, bearing an analogous "44 /1" label, was discovered in the general collection of BMNH (Fig. 5). Unlike the type specimen, this second female bears a handwritten rectangular label that reads "Ohio" (Fig. 6).

I have found this style of locality label, with handwritten block letters and two parallel black lines, on other specimens in BMNH (Calhoun 2003a, 2003b). John E. Chainey, Curator of Lepidoptera at BMNH (pers. comm.), believes these labels were originally used as drawer labels, placed with a series of specimens from the same locality. Similar labels are still present in portions of the collection that have received little curatorial attention in recent years. This would explain why only one of the two old specimens of *C. nycteis* possesses such a label. The "Ohio" label was obviously created (possibly during the late 19th century) to reflect the relationship between these specimens and Doubleday's manuscript entry of four *Melitaea* from Ohio.

**Remaining syntypes.** Only two syntypes of *M. nycteis* were found in BMNH, implying that the other two Ohio specimens listed by Doubleday ([1845]) either were lost or represented a different species. However, Scudder (1868) stated that he had compared specimens with "types of *M. nycteis* in Boisduval's collection, received directly from Doubleday." Doubleday, who was harshly criticized for removing material from collections under his care, often exchanged specimens with the French entomologist Jean B. A. D. de Boisduval (1799–1879). Doubleday died only two years after he figured *M. nycteis*, increasing the likelihood that the specimens he sent to Boisduval did indeed represent the two missing syntypes from Ohio, not just "typical" specimens.

In the National Museum of Natural History (Smithsonian Institution, Washington, D.C.; USNM) are two female specimens of *C. nycteis* that were once owned by Boisduval (Calhoun 2006) (Figs. 7, 8). Boisduval bequeathed his collection in 1876 to the French lepidopterist Charles Oberthür, whose collection was sold in 1924. The American lepidopterist William Barnes obtained numerous North American specimens from this sale, and his own collection was acquired by USNM in 1930. The specimens of *C. nycteis* in USNM are of a similar condition to those in BMNH, supporting the theory that all four were collected together. A series of female syntypes also would explain why Doubleday ([1847]) portrayed a female to represent *M. nycteis*, when males were usually preferred for this purpose. Doubleday evidently retained two specimens for the museum and sent the remaining two to Boisduval in Paris. This most likely occurred between October 1847 (when Doubleday figured *M. nycteis*) and Doubleday's death in December 1849.

**Type locality.** Edward Doubleday explored portions of the United States in 1837 and 1838 and his journey

was documented in a series of accounts, which were published in a popular entomological periodical (Doubleday 1838). Doubleday arrived in New York City and traveled as far west as St. Louis. From Pittsburgh, Pennsylvania, he traveled down the Ohio River, stopping to collect insects along the way, including in the vicinity of Cincinnati, Ohio. Undoubtedly having read about Doubleday's exploits, the 20-year old David Dyson probably chose a portion of the same route for his own exploration of the country. Like Doubleday, Dyson arrived in New York City (Jackson 1908) and his trip was described as "across the Allegheny Mountains, and as far as St. Louis" (Anonymous 1856a). In a letter dated 28 February 1844 (Univ. of Cambridge), Dyson referred to "my friends at Cincinnati," thereby establishing the vicinity of Cincinnati as the most likely origin of Dyson's specimens from Ohio. Founded in 1788, Cincinnati already was a thriving hub of commerce by 1840, with a population of nearly 50,000 and as many as 30 steamboats arriving and departing at any given time (Goss 1912). The four syntypes of *M. nycteis* are consistent with females of this taxon currently found in southern Ohio (J. Calhoun unpubl.).

**Lectotype designation.** To stabilize the usage of the name *Melitaea nycteis*, [1847], and to establish a sole name-bearing type of this nominal taxon, the syntype long recognized as the "Type" is designated as lectotype and labeled accordingly (Figs. 2–4). This specimen bears six labels: 1) rectangular, "B.M. TYPE / No. Rh8433 / *Melitaea / nycteis*, / ♀ D.& H." (printed and handwritten); 2) round, "TYPE" (printed; BMNH), with "*Melitaea / nycteis / Doubl.*" (handwritten); 3) rectangular, "United States / (Middle States)" (handwritten); 4) round, "2633 / d" (handwritten); 5) round, "U.S." (recto) and "44 / 1" (verso) (handwritten); and 6) rectangular, "♀ / ♀" (printed). Two additional labels have been added to reflect the status of the specimen: 1) rectangular, "LECTOTYPE / *Melitaea nycteis* / Doubleday [1847] / Designated by / John V. Calhoun, 2010" (printed), and 2) round, "LECTO- / TYPE" (printed; BMNH). The three remaining specimens are considered to be paralectotypes. The type locality is suggested to be the vicinity of Cincinnati, Hamilton County, Ohio. In response to an application to suppress the problematic name *Melitaea ismeria* Boisduval & Le Conte, [1835] (Calhoun et al. 2005), ICZN Opinion 2160 conserved the name *Melitaea nycteis*, Doubleday, [1847] and placed it in the Official List of Specific Names in Zoology (ICZN 2006).

**Portrait of David Dyson.** I recently discovered a portrait of David Dyson in the possession of his great-grandnephew, Norman David Dyson of Essex, England.

Rendered in 1857 by John Angelo Wasse (1817–1885), the watercolor measures 60 x 50 cm (24 x 20 in) in size. It portrays an introspective (and implausibly well-dressed) Dyson relaxing with a cigar during a successful day of collecting Lepidoptera (Fig. 9). Wasse's grandson, Mike Wasse of Cambridgeshire, England, revealed (pers. comm.) that this painting was exhibited in 1857 at Peel Park Museum, Salford, England, as part of an exhibition of local artists. John A. Wasse was a portrait and miniature painter who also became involved in carte de vista photography (Wasse 2010). Previously, the only published likeness of Dyson was a lithographed bust portrait reproduced by Ives (1905) and Jackson (1908). This lithographed portrait also was created by J. A. Wasse in 1857, when he announced, "The friends of the late Mr. David Dyson, of Manchester, have proposed a subscription to procure lithograph copies of his portrait...to preserve a memento of this enthusiastic Naturalist" (Wasse 1857a). Wasse probably executed the lithographed portrait strictly for public consumption, while the larger composition was presented to the Dyson family. Wasse and Dyson obviously were acquainted, as they both resided in Manchester and were members of the Northern Entomological Society (Anonymous 1856b, 1857). Wasse published at least one article on insects (Wasse 1857b) and was the father of the celebrated artist Arthur C. J. Wasse (1854–1930). During the 1850s, J. A. Wasse exhibited artwork at the Royal Manchester Institution, the predecessor of the Manchester Art Gallery (R. Milner pers. comm.).

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