

INCISALIA SCUDDER<sup>1</sup>, A HOLARCTIC GENUS  
(LEPIDOPTERA: LYCAENIDAE)<sup>2</sup>

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Recently I have compared specimens of *Ahlbergia frivaldszkyi* (Lederer), the generitype of *Ahlbergia*, and *Incisalia niphon* (Hübner), the generitype of *Incisalia*. The genitalia and external facies of these species indicate that they are congeneric, and examination of other species of *Incisalia* further supports this conclusion. I therefore propose the following synonymy for the genus *Incisalia*:

*Incisalia* Scudder

*Incisalia* Scudder, 1872, 4th Ann. Rept. Peabody Acad. Sci., 1871:31. Generitype: *Lycus niphon* Hübner, by original designation.

*Thecla*, div. auct., nec Fabricius, 1840, in Illiger, Magazin für Insektenkunde, 6:286 (generitype *Papilio betulae* Linnaeus, designation by Swainson, 1821, Zoological Illustrations, (1) 2, pl. 69), part.

*Lycus* Hübner, [1819], Verzeichniss bekannter Schmettlinge [!] (generitype *Papilio rubi* Linnaeus, designation by Scudder, 1875, Proc. Amer. Acad. Sci., Boston, 10:210), part.

*Licis* Hübner, [1819], Beiträge zur Sammlung exotischer Schmetterlinge, 2:7, no. 102 (generitype *Papilio rubi* Linnaeus, designation by Scudder, 1872, 4th Ann. Rept. Peabody Acad. Sci., 1871:52), part.

*Satsuma* Murray, nec Adams, 1874, Ent. Mon. Mag., 11:168. Generitype: *Lycaena ferrea* Butler (= *Thecla frivaldszkyi* Lederer), monobasic. **New Synonymy.**

<sup>1</sup>Scudder is the author of this genus, not Minot; see dos Passos (1943).

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*Ahlbergia* Bryk, 1946, Ark. för Zool., 38A(3):50. Geniotype: *Thecla frivaldszkyi* Lederer, by original designation. **New Synonymy.**

#### Generic Description Based on the Adults

*External facies.* The ground color above is gray to orange brown in most of the Nearctic species. In the Palearctic species it is blue to iron gray with the exception of *chalybea pluto* Leech and *circe* Leech. In *chalybea pluto* the ground color is a deep black and in *circe* the distal area is dark while the basal area is dusted with bright metallic blue. The hindwings lack the "tails" characteristic of many genera and species of Theclinae, and usually have somewhat scalloped outer margins. The inner margins are often concave above the anal angles, and these are prolonged and bent downward at right angles. The ground color of the underside is a shade of brown, sometimes suffused with gray on the outer half of the hindwing. The eyes are hairy and large.

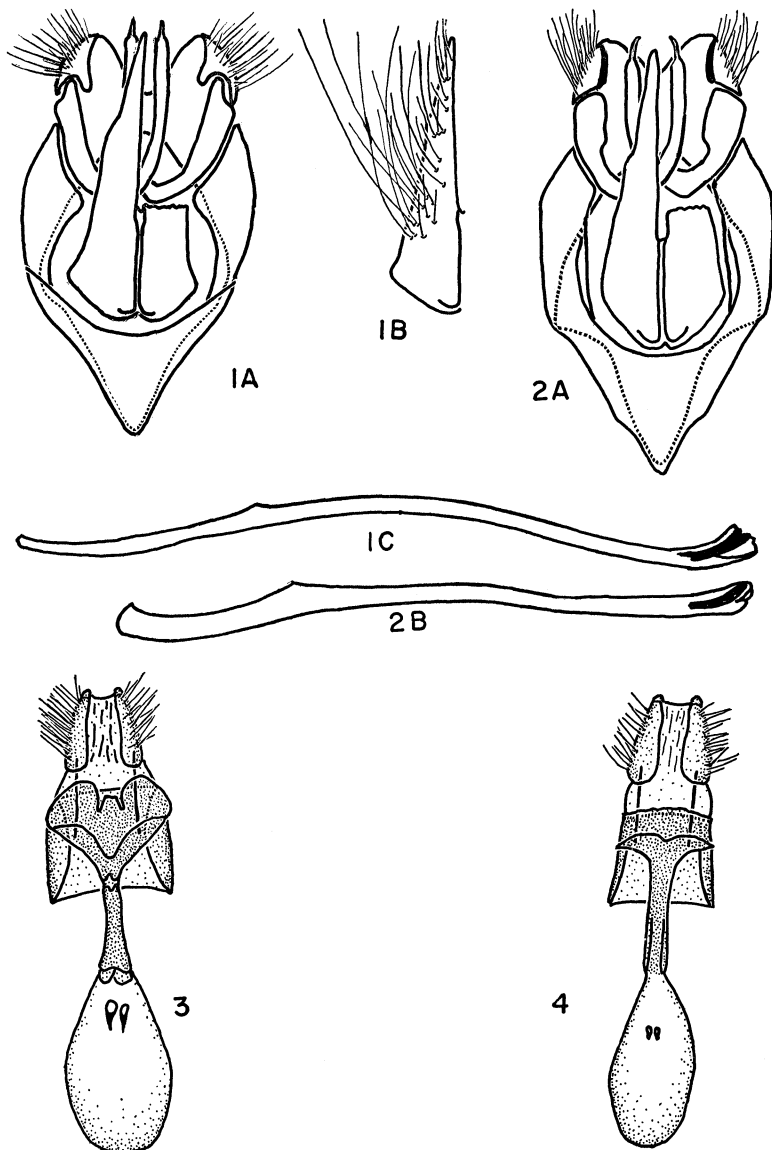
*Male genitalia* (figs. 1 and 2). Labides (paired, rounded, hairy, dorsal projections) projecting shortly, but deep dorsoventrally. Falces (heavily chitinized, paired, sharp, subdorsal structures which, with the paired labides, characterize the Lycaenidae) of fairly even width subterminally; tapering to a point terminally. Saccus short, thick, and without any pronounced angling. Aedeagus very long and slender.

*Female genitalia* (figs. 3 and 4). Ostium flaring into a

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#### EXPLANATION OF PLATE 15

Fig. 1. Male genitalia of *Incisalia nippon* (Hübner) from Waltham, Mass. (30×). A. Ventral view with aedeagus removed and hairs of harpes not shown. B. Inset of a harpe showing hairs. C. Lateral view of aedeagus. Fig. 2. Male genitalia of *Incisalia frivaldszkyi* (Lederer) from South Korea (30×). A. Ventral view with aedeagus removed and hairs of harpes not shown. B. Lateral view of aedeagus. Fig. 3. Female genitalia of *I. nippon* (Hübner) from Tyngsboro, Mass., ventral view (9.9×). Fig. 4. Female genitalia of *I. frivaldszkyi* (Lederer) from Okeanskaja, Ussuri, ventral view (9.9×). All specimens in the collection of the Museum of Comparative Zoology, Cambridge.



wide, lipped, transverse band caudally. The ventral lip partially covers the more dorsal band which is sometimes strongly folded along its caudal edge. Ductus bursae rather long, narrow, and even in width. It is sclerotized throughout most of its length. Bursa copulatrix elongate, and bearing two signa. Ovipositor lobes narrow and somewhat pointed terminally.

### Life History

The life histories of most of the North American species are known, but I can find none recorded for the Palearctic species. Because of this I defer inclusion of life history notes in my generic description until this information becomes available. Descriptions of the early stages of the eastern North American species are available in Klots (1951), and further references may be found in Hy. Edwards (1889), Davenport and Dethier (1938), and Dethier (1946). The foodplants of the larvae are varied, including conifers (*Picea*, *Juniperus* etc.) and flowering plants (*Kalmia*, *Arctostaphylos*, *Vaccinium*, *Prunus* etc.).

### Distribution

In North America this genus ranges from east to west coasts. It is found well north into Canada, whence it ranges south to Florida, Texas, and southern California. In Asia it is found from Siberia, the Amur basin, and Japan south through China to the Khasia Hills of Assam. It ranges westward to the Altai Mountains, and its Asiatic metropolis is central and western China, where the greatest number of species occur.

### Synonymy

Prior to the beginning of this century, a large majority of the "hairstreaks" were assigned by most authors to the catchall genus *Thecla*, even though a number of other generic names were available. In many places, such as South America, this is still the case, and it is only in the last fifty years that some attempt has been made to break the hairstreaks up into more natural groupings. Hübner included *Incisalia niphon* (Hübner) in his genera *Lycus*

and *Licus* with one or two unrelated species. Later authors either missed or disregarded this reference, and generally assigned the species of *Incisalia* to *Thecla*. In 1872 Scudder erected the genus *Incisalia* for *niphon* and its allies, while in 1874 Murray created the genus *Satsuma* for *Lycaena ferrea* Butler<sup>3</sup>. Leech was aware of Murray's genus, and towards the end of the 19th Century described several new species as belonging to it. In 1946 Bryk pointed out that *Satsuma* Murray, 1874, was a homonym of *Satsuma* Adams (Mollusca), 1868. He therefore proposed the name *Ahlbergia* to replace *Satsuma* Murray. My own studies show that *frivaldskyi* is congeneric with *niphon*. For this reason I am placing *Satsuma* and *Ahlbergia* in the synonymy of *Incisalia*, the senior name.

#### Synopsis of Species

The following synopsis is based on current American references for Nearctic species and on Seitz (1910) for Palearctic species. No attempt has been made to determine whether or not any of these should be synonymized.

*Incisalia niphon* (Hübner), [1819], Verzeichniss bekannter Schmettlinge [!], (5):74. Type locality and sex not stated.

*Incisalia irus* (Godart), 1823, in Latreille, Encyclopedie Methodique, Histoire Naturelle Entomologie, etc., 9:674. Type locality: America (?), male.

*Incisalia augustinus* (Westwood), 1852, in Doubleday and Westwood, The Genera of Diurnal Lepidoptera, 2:486. Type locality: northern parts of North America.

*Incisalia iroides* (Boisduval), 1852, Ann. Soc. Ent. France, Series 2, 10:289. Type locality: California, sex not stated.

*Incisalia eryphon* (Boisduval), 1852, *ibid.*, p. 290. Type locality: California, sex not stated.

<sup>3</sup>There is some disagreement on the specific distinctness of *ferrea* from *Incisalia frivaldskyi* (Lederer). I have examined the genitalia of Japanese specimens referable to *ferrea* and Asiatic specimens referable to *frivaldskyi* and can find no differences that would warrant keeping them separate as species. Therefore, I regard these names as concerning the same species.

- Incisalia frivaldszkyi* (Lederer), 1855, Ver. zool.-bot. Ver. Wien, 5:100. Type locality: Ust-Buchtarminsk, Altai Mtns., male.
- Incisalia henrici* (Grote & Robinson), 1867, Trans. Amer. Ent. Soc., 1:174. Type locality: Maine to Philadelphia, Pa., male and female.
- Incisalia fotis* (Strecker), 1877, Lepidoptera, Rhopaloceres & Heteroceres, indigenous & exotic, No. 14:129. Type locality: Arizona, sex not stated.
- Incisalia mossii* (Hy. Edwards), 1881, Papilio, 1:54. Type locality: Esquimalt, Vancouver Is., British Columbia, male.
- Incisalia chalybea* (Leech), 1890, Entomologist, 23:43. Type locality: Chang-Yang, Central China, male.
- Incisalia pratti* (Leech), 1890, *ibid.*, p. 44. Type locality: Ichang, China, male.
- Incisalia leechii* (de Nicéville), 1892, Bombay Nat. Hist. Soc., 7:335. Type locality: Khasia Hills, Assam, female.
- Incisalia circe* (Leech), 1893-94, Butterflies from China, Japan & Corea, 2:354. Type locality: Ta-chien-lu, China, male and female.
- Incisalia nicévillei* (Leech), 1893-94, *ibid.*, p. 355. Type locality: Chang-Yang, Central China, male and female.
- Incisalia polios* Cook & Watson, 1907, Can. Ent., 39:202. Type locality: Lakewood, New Jersey, males and females.
- Incisalia hadros* Cook & Watson, 1909, *ibid.*, 41:181. Type locality: unknown, perhaps Houston, Texas, male and female.
- Incisalia lanoraieensis* Sheppard, 1934, *ibid.*, 66:141. Type locality: Lanoraie, Quebec, male and females.
- Incisalia doudoroffi* dos Passos, 1940, *ibid.*, 72:168. Type locality: Big Sur, Monterey Co., California, males and females.

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