

**A CATALOGUE OF THE TYPE SPECIMENS OF *COLIAS* FABRICIUS, 1807 DEPOSITED
IN THE MUSEUM FÜR NATURKUNDE AN DER HUMBOLDT-UNIVERSITÄT ZU BERLIN
(LEPIDOPTERA, PIERIDAE)**

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[Корб С.К. Каталог типовых экземпляров *Colias* Fabricius, 1807, хранящихся в естественно-историческом музее Университета им. Гумбольдта в Берлине (Lepidoptera, Pieridae)]

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Ключевые слова: *Colias*, типовые экземпляры, каталог, обозначения лектотипов, обозначения неотипов, естественно-исторический музей университета им. Гумбольдта в Берлине

Summary. A catalogue of the type specimens of *Colias* Fabricius, 1807 of the Museum für Naturkunde an der Humboldt-Universität zu Berlin is given, information about all type specimens of this genus and their labels is listed in alphabetical order (274 type specimens: 79 primary types (1 neotype, 7 holotypes, 32 syntypes, 39 lectotypes) and 195 secondary types (11 paratypes, 184 paralectotypes)). The lectotype and neotype specimens established in current paper are figured. Lectotypes of the following Holarctic taxa are designated: *Colias melinos* var. *alpina* Elwes, 1899, *Colias baeckeri* Kotsch, 1930, *Colias palaeno* var. *cretacea* Aurivillius, 1888, *Colias cocandica culminicola* Kotsch, 1936, *Colias aurora* var. *decolorata* Staudinger, 1898, *Colias erschoffi* Alphéraky, 1881, *Colias felderi* Grum-Grshimailo, 1891, *Colias heldreichi* Staudinger, 1862, *Colias helichtha* Lederer, 1853, *Colias sifanica herculeana* Bollow, 1930, *Colias lada* Grum-Grshimailo, 1891, *Colias libanotica* Lederer, 1858, *Colias marcopolo* Grum-Grshimailo, 1888, *Colias palaeno* var. *orientalis* Staudinger, 1892, *Colias palaeno poktussani* O.Bang-Haas, 1935, *Colias romanovi* Grumm-Grshimailo, 1885, *Colias sagartia* Lederer, 1869, *Colias ladakensis seitzii* Bollow, 1930, *Colias sieversi* Grum-Grshimailo, 1887, *Colias sifanica* Grum-Grshimailo, 1891, *Colias aurora thia* O.Bang-Haas, 1934, *Colias aurorina* var. *transcaspica* Christoph, 1887. Lectotypes of the following Neotropical taxa are designated: *Colias lesbia* var. *andina* Staudinger, 1894, *Colias lesbia* var. *arena* Staudinger, 1899. The neotype of *Colias aurora* var. *kenteana* Heyne, [1895] is designated. A replacement name is proposed to resolve the case of primary homonymy: *Colias arida hisilomeanus* Korb, **nom. nov.** pro *flavescens* Rühl, 1893, nec *flavescens* Gabrowski, 1892.

Резюме. Предлагается каталог типовых экземпляров *Colias* Fabricius, 1807 Музея естественной истории университета им. Гумбольдта в Берлине, информация обо всех хранящихся в Музее типовых экземплярах представлена в алфавитном порядке (274 типовых экземпляра: 79 номенклатурных типов (1 неотип, 7 голотипов, 32 синтипа, 39 лектотипов) и 195 прочих типов (11 паратипов, 184 паралектотипа)). Лектотипы и неотипы, обозначенные в настоящем сообщении, изображены. Обозначаются лектотипы следующих голарктических таксонов: *Colias melinos* var. *alpina* Elwes, 1899, *Colias baeckeri* Kotsch, 1930, *Colias palaeno* var. *cretacea* Aurivillius, 1888, *Colias cocandica culminicola* Kotsch, 1936, *Colias aurora* var. *decolorata* Staudinger, 1898, *Colias erschoffi* Alphéraky, 1881, *Colias felderi* Grum-Grshimailo, 1891, *Colias heldreichi* Staudinger, 1862, *Colias helichtha* Lederer, 1853, *Colias sifanica herculeana* Bollow, 1930, *Colias lada* Grum-Grshimailo, 1891, *Colias libanotica* Lederer, 1858, *Colias marcopolo* Grum-Grshimailo, 1888, *Colias palaeno* var. *orientalis* Staudinger, 1892, *Colias palaeno poktussani* O.Bang-Haas, 1935, *Colias romanovi* Grumm-Grshimailo, 1885, *Colias sagartia* Lederer, 1869, *Colias ladakensis seitzii* Bollow, 1930, *Colias sieversi* Grum-Grshimailo, 1887, *Colias sifanica* Grum-Grshimailo, 1891, *Colias aurora thia* O.Bang-Haas, 1934, *Colias aurorina* var. *transcaspica* Christoph, 1887. Обозначены лектотипы следующих неотропических таксонов: *Colias lesbia* var. *andina* Staudinger, 1894, *Colias lesbia* var. *arena* Staudinger, 1899. Обозначается неотип *Colias aurora* var. *kenteana* Heyne, [1895]. Предлагается замещающее название: *Colias arida hisilomeanus* Korb, **nom. nov.** pro *flavescens* Rühl, 1893, nec *flavescens* Gabrowski, 1892.

INTRODUCTION

The Museum für Naturkunde an der Humboldt-Universität zu Berlin is a depository of the largest and most important reference collection of Lepidoptera in Europe [Nekrutenko, 2000], containing the most important type specimens of O. Staudinger, A. and O. Bang-Haas, R. Püngeler and others. The complete description of this collection has been made by Y.P. Nekrutenko [2000].

This publication is one of the results of my research visits to the Museum für Naturkunde an der Humboldt-Universität zu Berlin in 2010–2014: 2010, October; 2011, December; 2012, April; 2013, January; 2014, February.

In the present publication the complete list of type specimens (including all type specimens categories: holotypes, paratypes, lectotypes, paralectotypes, neotypes

and syntypes) of *Colias* in the Museum für Naturkunde an der Humboldt-Universität zu Berlin is arranged in alphabetical order. The lectotypes are designated for several *Colias* taxa; all of these lectotype specimens are figured according to the Rec. 74B of the *Code*.

The *Colias* collection in the Museum für Naturkunde an der Humboldt-Universität zu Berlin now housed in the 3rd floor of the main Museum building at the address Invalidenstrasse 43, Berlin. It occupies 3 wooden cabinets (fig. 1A); the whole collection was rearranged and partly reorganized by J.Griehuber in the beginning of the current century (two cabinets: middle and lower) (fig. 1B). But it was done to O.Staudinger and A. and O. Bang-Haas collections; some other drawers are still in the old conditions (specimens are placed very compact, using ancient system and names, etc.) (upper cabinet) (fig. 1C).

In this paper 24 lectotypes (22 for Holarctic taxa, 2 for Neotropical taxa) and 1 neotype are designated. Altogether data about 274 type specimens are listed: 79 primary types (1 neotype, 7 holotypes, 32 syntypes, 39 lectotypes) and 195 secondary types (11 paratypes, 184 paralectotypes). The taxonomic status and position of every listed taxon is given, as well as the original combination and original description citation, and primary type designation data.



A



B



C

Fig. 1. A – C: the *Colias* collection in the Museum für Naturkunde an der Humboldt-Universität zu Berlin: A – cabinets; B – drawer of reorganized part; C – drawer of non-reorganized part.

LIST OF SPECIMENS

afghana O.Bang-Haas, 1927

Colias hyale afghana Bang-Haas, 1927: 42; pl. 5, fig. 23.

Taxonomic status and position: junior subjective synonym of *C. erate* (Esper, [1805]) [Griehuber et al., 2011: 36]. Very variable species with huge range of klnal variability, also known as a good migrant.

Holotype ♂: printed, white paper ‘ex coll. | BANG-HAAS’; printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 8.11.2001 .’; handwritten, white paper ‘C. hyale | afghana OBH’; handwritten, white paper ‘Pagman / August’; printed, pink paper ‘Type | O.Bang-Haas’; printed, numbers handwritten, white paper ‘Horae Macrolep. | Vol. I. abgebildet | t. 5 f. 13 | beschrieb. p. 42’; printed, red paper ‘Holotypus | *Colias erate* | afghana | bang-Haas, <sic!> 1927 | Griehuber det. | 12.05.2004’.

‡ *alba* Röber, 1909

[*Colias euxanthe*] ab. *alba* Röber, 1909: 90.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♀: printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 8.11.2001 .’; printed, white pa-

per 'infrasubspecific taxon | name bearing specimen of *Colias | flaveola euxanthe* [ab.] *alba* | Röber, 1909 | det. Grieshuber, 2007'; handwritten, white paper 'Huallat. | Garl.'; handwritten, white paper 'LECTOTYPE ♀ | *Colias flaveola* ab. | *alba* Röber, 1909 | By G.Lamas' 97'.

‡ **alba Staudinger, 1871**

[*Colias myrmidone*] ab. *alba* Staudinger, 1871: 6.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntypes 2♀: 1♀: printed, white paper 'ex coll. | Staudinger'; printed, pink paper 'Origin.'; handwritten, yellow paper 'Wien'; printed, white paper '[Wien] | infrasubspecific taxon | name bearing specimen of *Colias | myrmidone* [ab.] *alba* | Staudinger, 1871 | det. Grieshuber, 2007'; 1♀: printed, white paper 'ex coll. | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Wien'; white circle; printed, white paper '[Wien] | infrasubspecific taxon | name bearing specimen of *Colias | myrmidone* [ab.] *alba* | Staudinger, 1871 | det. Grieshuber, 2007'.

‡ **alba Röber, 1909**

[*Colias philodice*] ab. *alba* Röber, 1909: 91.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♀: printed, white paper 'Coll. Möschl.'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 2.11.2001 .'; handwritten, white paper 'Alba | ♀ Edw.'; handwritten, white paper 'LECTOTYPE ♀ | *Colias philodice* ab. | *alba* Röber, 1909 | By G.Lamas' 97'; handwritten, green paper 'Pensylv: | Sth. 72.'.

alexandra Röber, 1907

C.[olias] wiskotti alexandra Stgr. i.l., Röber, 1907: 70 see *rueckbeili* Lukhtanov, 1994

‡ **albina Röber, 1909**

[*Colias eurytheme*] ab. *albina* Röber, 1909:

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Lectotype ♀: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 2.11.2001 .'; handwritten, white paper 'ab. albina'; handwritten, white paper 'Verdi | Nevada'; handwritten, white paper 'LECTOTYPE ♀ | *Colias eurytheme* ab. | *albina* Röber, 1909 | by G.Lamas' 90'; printed, white paper 'infrasubspecific taxon | name bearing specimen of *Colias | eurytheme* [ab.] *albina* Röber, | 1909 | det. Grieshuber, 2007'.

alfacariensis Ribbe, 1905

Colias hyale ab. *alfacariensis* Ribbe, 1905: 137. Lectotype designated by: Reissinger, 1971: 156; Taf. 1, Fig. 1, 2.

Taxonomic status and position: a good species.

Lectotype ♂: printed, white paper 'ex coll. | R.Püngeler'; printed, yellow paper 'GART | Exemplar

und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 2.11.2001 .'; handwritten, pink paper 'Cotype | v. *alfacariensis* Ribbe | ♂ | vom Autor, | Püngeler'; printed (typewriter), orange paper 'public.: | Reissinger VIII.1971 | ATALANTA 3,4, pp. 156, | 158-160, 164, 165, pl. | I, fig. 1 u. 2'; printed (typewriter), white paper 'Genit.-Präp. | Nr. 3 | det.-Nr. 1632 | Reissinger'; printed, white paper 'Andalusien | Sierra de Alfacar | G.Ribbe.'; printed (typewriter), red paper 'Lectotypus ♂ | *Colias hyale* *alfacari-* | *ensis* Ribbe 1905 | = *C. alfacariensis* al- | *facariensis* Ribbe 1905 | det. Dr. Ed. Reissinger | det.-Nr. 1632'.

Paralectotype ♀: printed, white paper 'ex coll. | R.Püngeler'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 2.11.2001 .'; handwritten, pink paper 'Cotype | v. *alfacariensis* Ribbe ♀ | vom Autor, | Püngeler'; printed (typewriter), orange paper 'public.: | Reissinger VIII.1971 | ATALANTA 3,4, pp. 156, | 157, 160, 161, 164-167, | pl. I, fig. 3, 4, pl. II, | fig. 1.'; printed, white paper 'Andalusien | Sierra de Alfacar | G.Ribbe.'; printed (typewriter), red paper 'Lectoallotypus ♀ | *Colias hyale* al- | *facariensis* Ribbe | 1905 = *C. alfaca-* | *riensis* *alfacari-* | *ensis* Ribbe 1905, | det. Ed. Reissinger | det.-Nr. 1633'.

aliaska O.Bang-Haas, 1927

Colias nastes aliaska Bang-Haas, 1927: 41; pl. 5, figs. 24, 25.

Taxonomic status and position: a good subspecies of *C. nastes* Boisduval, 1832.

Holotype ♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11.2001 .'; printed, pink paper 'Type | O.Bang-Haas'; printed, red paper 'Holotypus | *Colias nastes* | *aliaska* | Bang-Haas, 1927 | Grieshuber det. | 12.05.2004'; handwritten, white paper 'C. nastes | *aliaska* OBH.'; handwritten, white paper 'July 8 | Rampart | Alaska'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I. abgebildet | t. 5 f. 24 | beschrieb. p 41'.

Paratype ♀: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11.2001'; printed, pink paper 'Type | O.Bang-Haas'; printed, red paper 'Allotypus | *Colias nastes* | *aliaska* | Bang-Haas, 1927 | Grieshuber det. | 12.05.2004'; printed, white paper, numbers handwritten 'Horae Macrolep. | Vol. I. abgebildet | t. 5, f. 25 | beschrieb. p. 44'; handwritten, white paper 'July 8 | Rampart | alaska'.

alpherakii Staudinger, 1882

Colias Alpherakii Staudinger, Bang-Haas, 1882: 164 – 166. Lectotype designated by: Grieshuber, Worthy, 2006: 71 – 72; fig. 26.

Taxonomic status and position: a good species.

Lectotype ♂: printed, numbers handwritten, white paper 'ex coll. 8/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, brown paper 'Samarkand alp | Hbhr. 81.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 06.-09.07.1881, | Haberhauer] | Lectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; handwritten, white paper '9/7'.

Paralectotypes 4♂, 7♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 1/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, brown paper 'Alai | 80. Hbhr.'; handwritten, blue paper '30/6 80'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; 1♂: printed, numbers handwritten, white paper 'ex coll. 2/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Alai | Hbhr.'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 3/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Alai | Hbhr.'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Alai | Hbhr.'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 5/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Alai | Hbhr.'; handwritten, blue paper '30/6 80'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 6/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Alai | Hbhr.'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 7/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Alai | Hbhr.'; printed, red paper '[Alai, 30.06.1980, | Haberbauer | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 9/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Samarkand alp | Hbhr. 81'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge,

| 06.-09.07.1881, | Haberhauer] | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; handwritten, white paper '1/7'; 1♀: printed, numbers handwritten, white paper 'ex coll. 10/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Samarkand alp | Hbhr. 81'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 06.-09.07.1881, | Haberhauer] | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 11/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Samarkand alp | Hbhr. 81'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 06.-09.07.1881, | Haberhauer] | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 12/12 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Samarkand alp | Hbhr. 81'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 06.-09.07.1881, | Haberhauer] | Paralectotype | *Colias alpherakii* | Staudinger, 1882 | desing. <sic!> by Grieshuber | & Worthy, 2006'.

alpina Elwes, 1899

Colias melinos, var. *alpina* Elwes, 1899: 304, 319-320.

Taxonomic status and position: junior objective synonym of *C. tyche* (Böber, 1812) [Grieshuber et al., 2011: 43].

Lectotype ♂ (col. pl. IX: 1-3), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, numbers handwritten, white paper 'ex coll. 1/6 | Staudinger'; printed, red paper 'Syntype | *Colias melinos* | [var.] *alpina* Etwes, 1899 | det. Grieshuber, 2007'; handwritten, white paper 'Melinos'; handwritten, white paper 'Lectotype ♂ | *alpina* Elwes | S.Korb des. 2014'; green circle; printed, date handwritten, white paper 'S.E.Altai. | Tchuja Mts. | 6-8000 ft. | 5.7.98 | H.J.Elwes.'.

Paralectotypes 1♂, 2 ♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 2/6 | Staudinger'; printed, red paper 'Syntype | *Colias melinos* | [var.] *alpina* Etwes, 1899 | det. Grieshuber, 2007'; green circle; printed, date handwritten, white paper 'S.E.Altai. | Tchuja Mts. | 6-8000 ft. | 30.6.98 | H.J.Elwes.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 6/6 | Staudinger'; printed, red paper 'Syntype | *Colias melinos* | [var.] *alpina* Etwes, 1899 | det. Grieshuber, 2007'; green circle; printed, date handwritten, white paper 'S.E.Altai. | Tchuja Mts. | 6-8000 ft. | 11.7.98 | H.J.Elwes.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 5/6 | Staudinger'; printed, red paper 'Syntype | *Colias melinos* | [var.] *alpina* Etwes, 1899 | det. Grieshuber, 2007'; green circle; printed, date handwritten, white paper 'S.E.Altai. | Tchuja Mts. | 6-8000 ft. | 9.7.98 | H.J.Elwes.'.

alta Staudinger, 1886

Col.[ias] Hyale L. var. *Alta* Staudinger, 1886: 200 – 201. Lectotype designated by: Korb, 2012: 29.

Taxonomic status and position: a good species.

Lectotype ♂: printed, numbers handwritten, white paper ‘ex coll. 1/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; handwritten, white paper ‘Hyale var. Alta | Stgr.’; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; printed, red paper ‘LECTOTYPUS ♂ | *Colias alta* | Staudinger, 1886 | Stett. Ent.Z. 47: 201-202 | S.K.Korb design. 05-09.12.2011’.

Paralectotypes 6♂, 2♀: 1♂: printed, numbers handwritten, white paper ‘ex coll. 1/1 | Staudinger’; printed, pink paper ‘Origin.’; handwritten, white paper ‘hyale | alta ♂’; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; handwritten, brown paper ‘Alai | 85 Hbh.’; printed, with handwritten insertions (red pink), white paper ‘*Colias hyale* L. | ssp. *alta* Stgr. | ♂ | det.: Dr.Reissinger | Nr. 7957/2302’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 2/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 3/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 4/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; handwritten, white paper ‘hyale | alta ♂’; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 5/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; handwritten, white paper ‘hyale | alta ♂’; printed, red paper ‘[loc.: Kara Kasuk] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; handwritten, white paper ‘m. 17 | 6 | <unclear> 29’; handwritten, white paper ‘Kara Kazek 10000’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 6/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; handwritten, white paper ‘hyale | alta ♂’; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 7/8 | Staudinger’; printed, pink paper ‘Origin.’; brown circle; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’; 1♀: printed, pink paper ‘Origin.’; brown circle; handwritten, white paper ‘hyale | alta ♂’; printed, red paper ‘[loc.: Alai, 1885] | Syntype | *Colias hyale alta* | Staudinger, 1886 | Grieshuber det. | 12.05.2004’.

andina Staudinger, 1894

Colias Lesbia Fab. (var. *Andina*) Staudinger, 1894: 64.

Taxonomic status and position: a good subspecies of *C. lesbia* (Fabricius, 1775)

Lectotype ♂ (col. pl. XIII: 70-72), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, pink paper ‘Origin.’; printed, red paper ‘*Colias lesbia andina* | Staudinger, 1894 | Syntype | Grieshuber det. XII.2004’; handwritten, white paper ‘var. *Andina* | Stgr.’; handwritten, white paper ‘Lectotype ♂ | *andina* Stgr. | S.Korb des. 2014’; handwritten, white paper ‘Cocapata | Bolivia 3500 m. | 92 Garlepp’.

Paralectotypes 6♂, 3♀: 5♂: printed, pink paper ‘Origin.’; printed, red paper ‘*Colias lesbian andina* | Staudinger, 1894 | Syntype | Grieshuber det. XII.2004’; handwritten, white paper ‘Cocapata | Garl.’; 1♂: printed, pink paper ‘Origin.’; printed, red paper ‘*Colias lesbian andina* | Staudinger, 1894 | Syntype | Grieshuber det. XII.2004’; handwritten, white paper ‘Cocapata | Garl.’; printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 8.11.2001 .’; 2♀: printed, pink paper ‘Origin.’; printed, red paper ‘*Colias lesbian andina* | Staudinger, 1894 | Syntype | Grieshuber det. XII.2004’; handwritten, white paper ‘Cocapata | Garl.’; printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 8.11.2001 .’; 1♀: printed, pink paper ‘Origin.’; printed, red paper ‘*Colias lesbian andina* | Staudinger, 1894 | Syntype | Grieshuber det. XII.2004’; handwritten, white paper ‘Cocapata | Garl.’.

arena Staudinger, 1898

Colias Lesbia Fab. var. (?) *arena* Staudinger, 1898a: 23.

Taxonomic status and position: remains uncertain; possible a synonym of nominotypical subspecies.

Lectotype ♂ (col. pl. XIII: 73-75), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, pink paper ‘Origin.’; rounded white in green circle ‘~~PARA-~~ | LECTO- | TYPE’; printed, red paper ‘*Colias lesbina arena* | Staudinger, 1899 | Syntype | Grieshuber det. XII. 2004’; handwritten, white paper ‘Lectotype ♂ | *arena* Stgr. | S.Korb des. | 2014’; printed, white paper ‘Punta | Arenas’; printed, white paper ‘O.Norden- | skiöld’; handwritten, white paper ‘*C. Lesbia* | v. *arena* ♂.’; printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 2.11.R0 2001 .’; handwritten, white paper ‘*Lesbia* var. | *Arena* Stgr’.

aurantiaca Staudinger, 1892

Colias Wiskotti Stgr. var. (ab.) *Aurantiaca* Staudinger, 1892a: 230 – 232. Lectotype designated by: Grieshuber, Worthy, 2006: 57; fig. 7.

Taxonomic status and position: junior subjective

synonym of *C. wiskotti separata* Grum-Grshimailo, 1888 [Grieshuber, Worthy, 2006].

Lectotype ♂: printed, numbers handwritten, white paper 'ex coll. 1/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, brown paper 'Transalai | 86 Maurer'; printed, red paper '[Transalai, 1886, Maurer] | Lectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'.

Paralectotypes 5♂, 6♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 2/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Transalai | 86 Maurer'; brown circle; printed, red paper '[Transalai, 1886, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♂: printed, numbers handwritten, white paper 'ex coll. 3/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Transalai | 86 Maurer'; brown circle; printed, red paper '[Transalai, 1886, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/12 | Staudinger'; printed, pink paper 'Origin'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♀: printed, numbers handwritten, white paper 'ex coll. 5/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Transalai | 86 Maurer'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer <sic!>] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♀: printed, numbers handwritten, white paper 'ex coll. 6/12 | Staudinger'; printed, pink paper 'Origin'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♂: printed, numbers handwritten, white paper 'ex coll. 7/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, brown paper 'Kara Sagin | 89 Maurer'; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♂: printed, numbers handwritten, white paper 'ex coll. 8/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Kara Sagin | 89 Maurer'; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'; 1♂: printed, numbers handwritten, white paper 'ex coll. 9/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Kara Sagin | 89 Maurer'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006';

1♀: printed, numbers handwritten, white paper 'ex coll. 10/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Kara Sagin | 89 Maurer'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006';

1♀: printed, numbers handwritten, white paper 'ex coll. 11/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Kara Sagin | 89 Maurer'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006';

1♀: printed, numbers handwritten, white paper 'ex coll. 12/12 | Staudinger'; printed, pink paper 'Origin'; handwritten, white paper 'Kara Sagin | 89 Maurer'; brown circle; printed, red paper '[Kara Sagin, 1889, Maurer] | Paralectotype | *Colias wiskotti* | *aurantiaca* | Staudinger, 1892 | desing. <sic!> by Grieshuber & | Worthy, 2006'.

***aurea* Kotsch, 1936**

Colias wiskotti aurea Kotsch, 1936: 45. Lectotype designated by: Grieshuber, Worthy, 2006: 64; fig. 16.

Taxonomic status and position: according to J.Grieshuber and B.Worthy [2006: 65], "the taxon is provisionally accepted as a subspecies of *C. wiskotti*"; this opinion was not changed in the last *Colias* revision [Grieshuber et al., 2011: 54].

Paralectotypes 2♂, 1♀: 1♂: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 2.11.R0 2001 .'; printed, red paper 'Co-Type | e Collection | Kotsch'; printed, red paper 'Paralectotype | *Colias wiskotti aurea* | Kotsch, 1936 | desing. <sic!> by Grieshuber & | Worthy, 2006'; printed, white paper 'Nord-Ost-Hindukusch | Nuksan-Pass-Nordseite | Alpenwiesenzone | 3500-4000 m Mitte Juli | leg. H.&E.Kotsch'; handwritten, white paper 'wiscotti | aurea | Kotsch | ♂♀ 70 – m'; 1♂: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 2.11.R0 2001 .'; printed, red paper 'Co-Type | e Collection | Kotsch'; printed, red paper 'Paralectotype | *Colias wiskotti aurea* | Kotsch, 1936 | desing. <sic!> by Grieshuber & | Worthy, 2006'; printed, white paper 'Nord-Ost-Hindukusch | Nuksan-Pass-Nordseite | Alpenwiesenzone | 3500-4000 m Mitte Juli | leg. H.&E.Kotsch'; printed, white paper '736.'; 1♀: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 2.11.R0 2001 .'; printed, red paper 'Co-Type | e Collection | Kotsch'; printed, red paper 'Paralectotype | *Colias wiskotti aurea* | Kotsch, 1936 | desing. <sic!> by Grieshuber & | Worthy, 2006'; printed, white paper 'Nord-Ost-Hindukusch | Nuksan-Pass-Nordseite | Alpenwiesenzone | 3500-4000 m Mitte Juli | leg. H.&E.Kotsch'; printed, white paper '737.'; handwrit-

ten, white paper 'aurea ♂♀ Cotyp 55 -'; handwritten, white paper '6/7 wiskotti'.

baeckeri Kotsch, 1930.

Colias baeckeri Kotsch, 1930: 236 – 237.

Taxonomic status and position: junior subjective synonym of *C. wanda* Grum-Grshimailo, 1907 [Grieshuber, Churkin, 2003].

Lectotype ♂ (col. pl. IX: 4-6), **designated here** according to the Art. 61.1 and 74.1 of the Code: ♂: printed, red paper 'Co-Type | e Collection | Kotsch'; printed, white paper '734.'; printed, white paper 'Pass Dingtsiangmiao | Richthofengebirge | Kansu 2800 m'; printed, red paper 'Syntype | *Colias baeckeri* Kotsch, 1930 | det. Grieshuber, 2007'; handwritten, white paper 'Lectotype ♂ | *baeckeri* Kotsch. | S.Korb des. 2014'.

Paralectotype ♀: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 2.11.R0 2001 .'; printed, red paper 'Typus'; printed, red paper 'Co-Type | e Collection | Kotsch'; white paper '735.'; printed, white paper 'Pass Dingtsiangmiao | Richthofengebirge | Kansu 2800 m'; printed, red paper 'Syntype | *Colias baeckeri* Kotsch, 1930 | det. Grieshuber, 2007'; handwritten, white paper '734/5 *Colias arida* baeckeri ♂♀70 - | Cotypus'.

‡ banghaasi Bollow, 1930

[*Colias christophi*] f. *banghaasi* Bollow, 1930: 108.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 2.11.R0 2001 .'; printed, red paper 'Type'; printed, white paper '35.'; handwritten, white paper 'Col. christophi | v. bang-haasi | Bollow | Type'; printed, white paper 'infrasubspecific taxon | name bearing specimen of | *Colias christophi* [f.] banghaasi | Bollow, 1930 | det. Grieshuber, 2007'; printed, with handwritten insertions in second and third lines, white paper 'Самаркандская обл. <Samarkand Prov.> | верх. Вору. 5 в <upper Voru 5 v> | 1909 4.VII А.Гольбекъ <A.Golbek>'; handwritten, white paper 'christophi aberr | H/C braun ♂'.

blameyi Jörgensen, 1916

Colias blameyi Jörgensen, 1916: 508. Lectotype designated by: Lamas in Verhulst, 2000: 222.

Taxonomic status and position: a good subspecies of *C. weberbaueri* Strand, 1912.

Paralectotype ♀: handwritten, white paper 'Blameyi'; handwritten, white paper 'Yutoyaco | 25.1.1926'; printed, white paper in blue circle, rounded 'SYN- | TYPE'; printed, red paper '*Colias blameyi* | Jörgensen, 1916 | Paralectotype | des.: Lamas in Verhulst | (2000) | Grieshuber det. XII.2004'.

boothii Curtis, 1835

Colias Boothii Curtis, 1835: LXV – LXVI; pl. A, figs. 3-5.

Taxonomic status and position: probable, a subspecies of *C. tyche* (Böber, 1812) [Grieshuber et al., 2011: 63]. In the last revision of the genus *Colias* [Grieshuber et al., 2011: 62] the labelling of the syntypic specimen from the Museum listed incorrect: the red label listed as "Syntype...", but it is in fact "Paralectotype...".

Syntype ♂: printed, white paper 'ex coll. 1/1 | Staudinger'; printed, red paper 'Paralectotype | *Colias boothii* | Curtis, 1835 | det. Grieshuber, 2007'; handwritten, white paper 'Boothia Gebiet | Booth.'.

caucasica Staudinger, 1871

Colias Myrmidone v? *Caucasica* Staudinger, 1871: 6. Lectotype designated by: Nekrutenko, 1990: 99.

Taxonomic status and position: a good species.

Lectotype ♂: printed, numbers handwritten, white paper 'ex coll. 1/3 | Staudinger'; printed, white paper 'Coll. Led.'; printed, white paper 'void lectotype designation; | no syntype of | *Colias caucasica* Staudinger, | 1871 | det. Grieshuber 2007'; handwritten, white paper 'Helenendorf'; printed, handwritten name and author, yellow paper 'LECTOTYPUS ♂ | *caucasica* Stgr. | Y.Nekrutenko design.'; printed, name and author handwritten (Staudinger's hand), pink paper 'Origin. | *Caucasica* | Stgr.'.

Paralectotypes 1♂, 1♀, 1♂: printed, numbers handwritten, white paper 'ex coll. 3/3 | Staudinger'; printed, white paper 'Coll. Led.'; printed, white paper 'void lectotype designation; | no syntype of | *Colias caucasica* Staudinger, | 1871 | det. Grieshuber 2007'; printed, handwritten name and author, yellow paper 'PARALECTOTYPUS ♂ | *caucasica* Stgr. | Y.Nekrutenko design.'; printed, name and author handwritten (Staudinger's hand), pink paper 'Origin. | *Caucasica* | Stgr.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 2/3 | Staudinger'; printed, white paper 'Coll. Led.'; printed, white paper 'void lectotype designation; | no syntype of | *Colias caucasica* Staudinger, | 1871 | det. Grieshuber 2007'; printed, handwritten name and author, yellow paper 'PARALECTOTYPUS ♀ | *caucasica* Stgr. | Y.Nekrutenko design.'; printed, name and author handwritten (Staudinger's hand), pink paper 'Origin. | *Caucasica* | Stgr.'; handwritten, white paper 'Caucas'.

chlorocoma Christoph, 1888

Colias chlorocoma Christoph, 1888: 308. Lectotype designated by: Nekrutenko, 1990: 102.

Taxonomic status and position: a good species.

Paralectotypes 3♂: 1♂: printed, numbers handwritten, white paper 'ex coll. 1/3 | Staudinger'; handwritten, green paper 'Kasikoporan | Chr.'; printed, red paper 'Paralectotype | *Colias chlorocoma* | Christoph, 1888 | det. Grieshuber, 2007'; 1♂: printed, numbers handwritten, white paper 'ex coll. 2/3 | Staudinger';

handwritten, white paper '27 | 6'; handwritten, white paper '12 6 87 | Kasik'; handwritten, green paper 'Caucas. mer. | Christ.'; printed, red paper 'Paralectotype | *Colias chlorocoma* | Christoph, 1888 | det. Grieshuber, 2007'; 1♂: printed, numbers handwritten, white paper 'ex coll. 3/3 | Staudinger'; handwritten, white paper '3 | 7'; handwritten, white paper 'Caucas. mer. | Christ.'; printed, red paper 'Paralectotype | *Colias chlorocoma* | Christoph, 1888 | det. Grieshuber, 2007'; green circle.

***cretacea* Aurivillius, 1888**

C.[olias] Palaeno L. Var. *cretacea* Schilde, Aurivillius, 1888: 6. The authorship and publication date given to Aurivillius as he raised infrasubspecific status of ab. *cretacea* Schilde, 1884 to the subspecific rank.

Taxonomic status and position: junior objective synonym of *C. palaeno lapponica* Staudinger, 1861.

Lectotype ♀ (col. pl. IX: 7-9), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♀: printed, numbers handwritten, white paper 'ex coll. 6/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Kusamo 6/16] | Syntype | *Colias palaeno* [var.] | *cretacea* Aurivillius, | 1888 | det. Grieshuber, 2007'; printed, white paper '[Kusamo 6/16] | infrasubspecific taxon | name bearing specimen of *Colias* | *palaeno* [ab.] *cretacea* Schilde, | 1884 | det. Grieshuber, 2007'; handwritten, green paper 'Kuusamo | Schilde'; handwritten, white paper 'ab. *Cretacea* | Schilde'; handwritten, white paper 'Kūsanu'; handwritten, white paper 'Lectotype ♀ *cretacea* Aur. | S.Korb des. | 2014'.

Paralectotypes 2♀: 1♀: printed, numbers handwritten, white paper 'ex coll. 7/16 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Kusamo 7/16] | Syntype | *Colias palaeno* [var.] | *cretacea* Aurivillius, | 1888 | det. Grieshuber, 2007'; printed, white paper '[Kusamo 7/16] | infrasubspecific taxon | name bearing specimen of *Colias* | *palaeno* [ab.] *cretacea* Schilde, | 1884 | det. Grieshuber, 2007'; green circle; handwritten, white paper 'Kūsanu'; 1♀: printed, numbers handwritten, white paper 'ex coll. 8/16 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Kusamo 8/16] | Syntype | *Colias palaeno* [var.] | *cretacea* Aurivillius, | 1888 | det. Grieshuber, 2007'; printed, white paper '[Kusamo 8/16] | infrasubspecific taxon | name bearing specimen of *Colias* | *palaeno* [ab.] *cretacea* Schilde, | 1884 | det. Grieshuber, 2007'; green circle; handwritten, white paper 'Kūsanu'.

***culminicola* Kotsch, 1936**

Colias cocandica culminicola Kotsch, 1936: 44–45.

Taxonomic status and position: a subspecies of *C. cocandica* Erschoff, 1874 [Grieshuber et al., 2011]; should be revised using molecular and statistical data.

Lectotype ♂ (col. pl. IX: 10-12), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, yellow paper 'GART | Exemplar und Etiketten dokumentiert | specimen and label | data docu-

mented | R0 | 2.11. 2001 .'; printed, red paper 'Co-Type | e Collection | Kotsch'; printed, white paper '738.'; printed, red paper 'Syntype | *Colias cocandica* | *culminicola* Kotsch, 1936 | det. Grieshuber, 2007'; handwritten, white paper 'Lectotype ♂ | *culminicola* Kotsch. | S.Korb des. 2014'; printed, white paper 'West-Hindukusch | Andarab | Geröllzone | 4000-4500 m Mitte August | leg. H. & E.Kotsch'.

Paralectotype ♀: printed, yellow paper 'GART | Exemplar und Etiketten dokumentiert | specimen and label | data documented | R0 | 2.11. 2001 .'; printed, red paper 'Co-Type | e Collection | Kotsch'; printed, white paper '739.'; printed, red paper 'Syntype | *Colias cocandica* | *culminicola* Kotsch, 1936 | det. Grieshuber, 2007'; handwritten, white paper 'Lectotype ♂ | *culminicola* Kotsch. | S.Korb des. 2014'; printed, white paper 'West-Hindukusch | Andarab | Geröllzone | 4000-4500 m Mitte August | leg. H. & E.Kotsch'; handwritten, white paper '*culminicola* ♂♀ Cotype 72 50'; handwritten, white paper '8/9 Col.'.

***decolorata* Staudinger, 1898**

Col.[ias] Aurora Esp. und var. (ab.) *Decolorata* Staudinger, 1898b: 322.

Taxonomic status and position: junior subjective synonym of *C. heos heos* (Herbst, 1792).

Lectotype ♂ (col. pl. IX: 13-15), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, numbers handwritten, white paper 'ex coll. 2/9 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Kentei] | Syntype | *Colias aurora* [var.] | *decolorata* Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Kentei | 89 Dörr.'; handwritten, white paper 'Lectotype ♂ | *decolorata* Stgr. | S.Korb des. 2014'.

Paralectotypes 7♂, 11♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 1/9 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Aurora var. | *Decolorata* | Stgr.'; handwritten, white paper 'ab. | *Decolorata* | Altai?'; green circle; printed, red paper '[Kentei] | Syntype | *Colias aurora* [var.] | *decolorata* Staudinger, | 1898 | det. Grieshuber, 2007'; 1♀: printed, numbers handwritten, white paper 'ex coll. 3/9 | Staudinger'; printed, red paper '[Kentei] | Syntype | *Colias aurora* [var.] | *decolorata* Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Kentei | 89 Dörr.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/9 | Staudinger'; printed, red paper '[Kentei] | Syntype | *Colias aurora* [var.] | *decolorata* Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Kentei | 89 Dörr.'; 1♂: printed, numbers handwritten, white paper 'ex coll. 5/9 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | *decolorata* Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; 1♂: printed, numbers

handwritten, white paper 'ex coll. 6/9 | Staudinger'; printed, pink paper 'Origin'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; green circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 7/9 | Staudinger'; printed, pink paper 'Origin'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; green circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 8/9 | Staudinger'; printed, pink paper 'Origin'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; green circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 9/9 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; green circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 1/6 | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'alle vom Apfelgebirge | Dörries 1896'; handwritten, white paper 'Aurora var. | Decolorata | Stgr.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 2/6 | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | 1896 Dörr.'; green circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 3/6 | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/6 | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | 1896 Dörr.'; green circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 5/6 | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | 1896 Dörr.'; green circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 6/6 | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Kentei | 93 Dörr.'; handwritten, white paper 'Apfelgeb. | 1896 Dörr.'; 1♂, 2♀: printed, white paper 'ex coll. | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, white paper 'Apfelgeb. | Sibir. or |

96 Dörr.'; green circle; 1♂: printed, white paper 'ex coll. | Staudinger'; printed, red paper '[Apfelgebirge] | Syntype | *Colias aurora* [var.] | decolorata Staudinger, | 1898 | det. Grieshuber, 2007'; handwritten, green paper 'Apfelgeb. | Sibir. or | 96 Dörr.'; handwritten, white paper 'Aurora | <unclear>'.

diva Grum-Grshimailo, 1891

Colias Diva Grum-Grshimailo, 1891: 449–450. Lectotype designated by: Grieshuber, Churkin, 2003: 245–246.

Taxonomic status and position: a good species.

Paralectotypes 1♂, 4♀: 1♂: handwritten, white paper 'Aurora var.?'; handwritten, brown paper 'Thibet | Dschachar mont | 90 Gr. Gr.'; printed, red paper '[loc. Dzhakhar, Mudzhik] | Paralectotype | *Colias diva* | Grum-Grshimailo, 1891 | Horae Soc. ent. ross. | 25: 229-450, designated | by J.Grieshuber & | S.Churkin, 2003'; 1♀: printed, numbers handwritten, white paper 'ex coll. 2/5 | Staudinger'; handwritten, white paper 'Diva | mil <sic> Silberfl.'; handwritten, white paper 'р. Муджикъ <r.[iver] Mudzhik> | 9.VII 90'; handwritten, white paper 'Amdo'; printed, red paper '[loc. Dzhakhar, Mudzhik] | Paralectotype | *Colias diva* | Grum-Grshimailo, 1891 | Horae Soc. ent. ross. | 25: 229-450, designated | by J.Grieshuber & | S.Churkin, 2003'; 1♀: printed, numbers handwritten, white paper 'ex coll. 3/5 | Staudinger'; handwritten, white paper '9.VII.90'; handwritten, white paper 'Муджикъ <Mudzhik>'; printed, red paper '[loc. Dzhakhar, Mudzhik] | Paralectotype | *Colias diva* | Grum-Grshimailo, 1891 | Horae Soc. ent. ross. | 25: 229-450, designated | by J.Grieshuber & | S.Churkin, 2003'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/5 | Staudinger'; printed, red paper '[loc. Dzhakhar, Mudzhik] | Paralectotype | *Colias diva* | Grum-Grshimailo, 1891 | Horae Soc. ent. ross. | 25: 229-450, designated | by J.Grieshuber & | S.Churkin, 2003'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 5/5 | Staudinger'; printed, red paper '[loc. Dzhakhar, Mudzhik] | Paralectotype | *Colias diva* | Grum-Grshimailo, 1891 | Horae Soc. ent. ross. | 25: 229-450, designated | by J.Grieshuber & | S.Churkin, 2003'; brown circle.

eos Herrich-Schäffer, 1848

Colias Eos Herrich-Schäffer, 1848: pl. 81, figs. 395, 396; pl. 82, figs. 397, 398. Lectotype designated by: Grieshuber et al., 2011: 94.

Taxonomic status and position: junior subjective synonym of *C. thisoa* Ménétriès, 1832.

Lectotype ♀: printed, white paper 'ex coll. | Staudinger'; printed, red paper 'Syntype | *Colias eos* Herrich- | Schäffer, 1848 | Grieshuber det. XII. 2004'; printed, numbers and anagram HS handwritten, pink paper 'Origin | HS | 365.'; handwritten, yellow paper 'Ararat. | Wgnr.'

ermak Groum-Grshimailo, 1890

Colias Myrmidone var. *Ermak* Groum-Grshimailo, 1890: 252, 301 (footnotes). Lectotype designated by: Grieshuber, 2006a: 93 – 94; pl. 16, fig. 3.

Taxonomic status and position: junior subjective synonym of *C. myrmidone myrmidone* (Esper, [1781]) [Grieshuber, 2006a].

Paralectotype ♂: printed, white paper ‘ex coll. | Staudinger’; handwritten, green paper ‘Ural. m. or. | Alph.’; 2 lines printed, 3rd line handwritten, white paper: ‘Ural | (Mias) | 25 Junii 1876.’; printed, red paper ‘Paralectotype | *Colias myrmidone ermak* | Grum-Grshimailo, 1890 | In Romanoff: Mémoires | sur les Lépidoptères | 4: 252, footnote 114, | and 301, footnote 159. | design. J.Grieshuber | 2006’.

erschoffi Alphéraky, 1881

Colias Erschoffi Alphéraky, 1881: 362 – 365; pl. 14, fig. 1, 2.

Note. Different specimens from the type series were named as “lectotype” [Tshikolovets, 2005: pl. 36, fig. 13] or even “paratype” [Verhulst, 1991: fig. 5]. S.Alphéraky did not provide any holotype designation, so paratypes are impossible in his type series; no valid lectotype designations have been published too, so “lectotype” is also impossible. Valid lectotype designation is given below.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. IX: 16-18), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, numbers handwritten, white paper ‘ex coll. 1/2 | Staudinger’; printed, red paper ‘Syntype | *Colias erschoffii* | Alphéraky, 1881 | det. Grieshuber, 2007’; handwritten, white paper ‘Lectotype ♂ | erschoffi Alph. | S.Korb des. | 2014’; handwritten, brown paper ‘Tian Schan | Alph.’; handwritten, white paper ‘15 V 1879. | Tian-chan’.

Paralectotype ♀: printed, numbers handwritten, white paper ‘ex coll. 2/2 | Staudinger’; printed, red paper ‘Syntype | *Colias erschoffii* | Alphéraky, 1881 | det. Grieshuber, 2007’; handwritten, white paper Archczii | (Tian Chan.) | 8000’.

felderi Grum-Grshimailo, 1891

Colias Felderi Grum-Grshimailo, 1891: 448 – 449.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. X: 19-21), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper ‘ex coll. | Staudinger’; printed, red paper ‘Syntype | *Colias felderi* Grum- | Grshimailo, 1891, | Horae Soc. ent. | ross. 25: 448-449, | det. J.Grieshuber & | S.Churkin, 2004’; handwritten, white paper ‘Lectotype ♂ | felderi Gr.Gr. | S.Korb des. | 2014’; handwritten, brown paper ‘Thibet | Sinin Alp | 90 Gr. Gr.’.

hisilomeanus Korb, nom. nov.

Colias arida hisilomeanus Korb, **nom. nov.** pro

C. arida flavescens Rühl, 1893, nec *C. myrmidone flavescens* Gabrowski, 1892.

Taxonomic status and position: a good subspecies of *C. arida* Alpheraky, 1889.

Etymology: “To the west of Thangorodrim lay Hisilóme, the Land of Mist, for so it was named by the Noldor in their own tongue because of the clouds that Morgoth sent thither during their first encampment...” [Tolkien, 2013: 109].

Holotype (by monotypy) ♂: printed, red paper ‘Holotype | *Colias eogene flavescens* | Rühl, 1893 | det. Grieshuber, 2007’; handwritten, white paper ‘E 543.’; handwritten, white paper ‘eogene – 31. | flavescens | Rühl’; handwritten, white paper ‘Turkestan’.

fontainei Reissinger, 1989

Colias alfacariensis fontainei Reissinger, 1989: 141 – 145; Taf. 39, Fig. 3; Taf. 41, Fig. 5 – 8; Taf. 42, Fig. 1 – 16; Taf. 43, Fig. 1 – 3, 5 – 11, 13, 14; Taf. 44, Fig. 1 – 14; Taf. 47, Fig. 3; Taf. 76, Fig. 9; Taf. 77, Fig. 9.

Taxonomic status and position: junior objective synonym of nominotypical *C. alfacariensis* Ribbe, 1905.

Paratypes 2♂, 1♀: 1♂: printed (typewriter), year handwritten, red paper: ‘Det.-Nr. 13280 | Paratypus ♂ | *Colias alfacariensis fontainei*, gen. aest. | fontainei Reissinger | 1989 | det. Dr. Ed. Reissinger’; handwritten, white paper ‘Tbilissi | 16.7.1966’; 1♂: handwritten, red paper ‘Paratypus ♂ | Det. Nr. 1635 | *Colias alfacariensis fontainei* Rssgr. 1989 | g. III. | det. Reissinger’; printed, numbers handwritten, white paper ‘Genital-Präparat | Nr. | Det.-Nr. 1635 | Dr. Reissinger’; handwritten, white paper ‘Caucasus’; green circle; printed, white paper ‘Coll. Led.’; 1♀: printed (typewriter), year handwritten, printed “Allo” changed to handwritten “Para”, red paper ‘Det.-Nr. 1636 | Paratypus ♀ | *Colias alfacariensis fontainei*, g. I (vern.) | antefontainei Rssgr. | 1989 | det. Dr. Ed. Reissinger’; handwritten, white paper ‘16/5’; handwritten, green paper ‘Abbastuman | Hbhr. 82.’.

‡ guatemalena Röber, 1909

C.[olias] philodice guatemalena Röber, 1909: 91. Lectotype designated by: Lamas, 1993: 140.

Taxonomic status and position: listed as infrasubspecific taxon [Verhulst, 2000].

Lectotype ♂: printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 2.11. 2001 .’; printed, white paper in green circle, rounded ‘~~Para-~~ | lecto- | type’; handwritten, white paper ‘Guatem.’; handwritten, white paper ‘Philodice var. | Guatemalena’.

heldreichi Staudinger, 1862

Colias Heldreichi Staudinger, 1862: 257 – 264.

Taxonomic status and position: a good subspecies of *C. aurorina* Herrich-Schäffer, 1850.

Lectotype ♂ (col. pl. X: 22-24), **designated here**

according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, handwritten numbers, white paper 'ex coll. 3/6 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias heldreichi* | Staudinger, 1862 | det. Grieshuber, 2007'; handwritten, white paper 'Veluchi | Kr.'; yellow circle; handwritten, white paper 'Lectotype ♂ | heldreichi Stgr. | S.Korb des. 2014'.

Paralectotypes 2♂, 3♀: 1♂: printed, handwritten numbers, white paper 'ex coll. 1/6 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias heldreichi* | Staudinger, 1862 | det. Grieshuber, 2007'; handwritten, yellow paper 'Veluchi | Kr.'; handwritten, white paper '5/7'; 1♂: printed, handwritten numbers, white paper 'ex coll. 2/6 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias heldreichi* | Staudinger, 1862 | det. Grieshuber, 2007'; handwritten, white paper 'Veluchi | Kr.'; yellow circle; 1♀: printed, handwritten numbers, white paper 'ex coll. 4/6 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias heldreichi* | Staudinger, 1862 | det. Grieshuber, 2007'; handwritten, white paper 'Veluchi | Kr.'; yellow circle; handwritten, white paper '15/7'; 1♀: printed, handwritten numbers, white paper 'ex coll. 5/6 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias heldreichi* | Staudinger, 1862 | det. Grieshuber, 2007'; handwritten, white paper 'Veluchi | Kr.'; yellow circle; 1♀: printed, handwritten numbers, white paper 'ex coll. 6/6 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias heldreichi* | Staudinger, 1862 | det. Grieshuber, 2007'; handwritten, white paper 'Veluchi | Kr.'; yellow circle; green rectangle.

***helichtha* Lederer, 1853**

Colias Helichtha Lederer, 1853: 18, 33.

Taxonomic status and position: junior subjective synonym of *C. erate* (Esper, [1805]) [Grieshuber et al., 2011].

Lectotype ♂ (col. pl. X: 25-27), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper 'ex coll. | Staudinger'; printed, white paper 'Coll. Led.'; handwritten, white paper 'Lectotype ♂ | helichta <sic!> Led. | S.Korb des. | 2014'; printed, red paper 'Syntype | *Colias helichtha* | Lederer, 1853 | det. Grieshuber, 2007'.

Paralectotype ♀: printed, white paper 'ex coll. | Staudinger'; printed, white paper 'Coll. Led.'; printed, red paper 'Syntype | *Colias helichtha* | Lederer, 1853 | det. Grieshuber, 2007'.

***herculeana* Bollow, 1930.**

C.[olias] sifanica herculeana Bollow, 1930: 109; pl. 7, row f.

Taxonomic status and position: junior subjective synonym of *C. sifanica sifanica* Grum-Grshimailo, 1891.

Lectotype ♂ (col. pl. X: 28-30), designated here

according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 2.11. 2001 .'; printed, red paper 'Syntypus | *Colias sifanica | herculeana* | Bollow, 1930 | Grieshuber det. | 12.05.2004'; handwritten, white paper 'Lectotype ♂ | herculeana Boll. | S.Korb des. 2014'; printed, brown paper 'Type'; handwritten, white paper 'Col. sifanica | herculeana'; printed, white paper 'Richthofen Gbg. | westl. Liang-tsichou | Kansu sept. China | Juli 2500 m.'.

***herzi* Staudinger, 1901**

Colias Melinos v. *herzi* Staudinger, 1901: 16. Lectotype designated by: Grieshuber, 2006b: 79.

Taxonomic status and position: uncertain; the last revisional papers about *C. tyche* (Böber, 1812) [Grieshuber, 1998a, 1998b, 1998c] made by using only external features, not even one type specimen have been dissected, no genitalia figures have been published; also no DNA data have been sequenced and used. According to these facts I can conclude that all "revisional" data regarding this extremely variable species are useless; it is strongly needed to revise *C. tyche* by using both genital armatures of type specimens and DNA sequences of their fresh topotypes to resolve the real situation within its subspecific composition.

Lectotype ♂: printed, numbers handwritten, white paper 'ex coll. 1/2 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'Melinos v. | Herzi Stgr.'; printed, red paper 'Lectotype | *Colias tyche herzi* | Staudinger, 1901 | Catalog. Lep. pal. | Faunengeb. [3]: 16 | design. J.Grieshuber 2006'; handwritten, white paper 'Podeibi | 27 | 15 6 88'; handwritten, green paper 'Witim | s:G. or. s | Herz'.

Paralectotypes 1♂, 1♀: 1♂: printed, white paper 'ex coll. | R.Püngeler'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 2.11. 2001 .'; printed, red paper 'Paralectotype | *Colias tyche herzi* | Staudinger, 1901 | Catalog. Lep. pal. | Faunengeb. [3]: 16 | design. J.Grieshuber 2006'; printed, white paper 'Witim'; handwritten, pink paper 'Cotype | v. Herzi Stgr. ♂ | (von Otto Herz) | Püngeler'; handwritten, white paper 'Sibir. s. or. | (Witim)'; handwritten, white paper 'Podeibi | 01/19. 6 88'; 1♀: printed, pink paper 'Origin.'; printed, red paper 'Paralectotype | *Colias tyche herzi* | Staudinger, 1901 | Catalog. Lep. pal. | Faunengeb. [3]: 16 | design. J.Grieshuber 2006'; printed, white paper 'ex coll. 2/2 | Staudinger'.

‡ *holbomi* Bang-Haas, 1916

Colias sulitelma ab. *holbomi* Bang-Haas, 1916: 194; Taf. 10, fig. 6.

Taxonomic status and position: an infrasubspecific taxon.

Syntypes 1♂, 1♀: 1♂: printed, white paper 'ex coll.

| BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11. 2001 .'; printed, white paper 'Lule | Lappmark'; printed, pink paper 'Origin.'; printed, white paper 'infrasubspecific taxon | name bearing specimen of Colias | sulitelma [ab.] holmbomi | Bang-Haas, 1916 | det. Grieshuber, 2007'; handwritten, white paper 'sulitelma | ab. holmbomi | O.BH'; 1♀: printed, white paper 'ex coll | Staudinger'; printed, pink paper 'Origin.'; printed, white paper 'infrasubspecific taxon | name bearing specimen of Colias | sulitelma [ab.] holmbomi | Bang-Haas, 1916 | det. Grieshuber, 2007'; handwritten, white paper 'sulitelma | ab. holmbomi | O.BH'; handwritten, green paper 'Altan | Norwegen | 17.7.60'.

hyrcanica Reissinger, 1989

Colias alfajariensis hyrcanica Reissinger, 1989: 131 – 137; Taf. 34, Fig. 1 – 8; Taf. 35, Fig. 1 – 9; Taf. 35a, Fig. 6 – 9; Taf. 36, Fig. 1 – 9; Taf. 39, fig. 1, 2; Taf. 40, Fig. 1, 2, 4; Taf. 47, Fig. 1, 2, 4; Taf. 76, Fig. 7; Taf. 77, Fig. 7.

Taxonomic status and position: according to the opinion of J.Grieshuber et al. [2011] it is a junior subjective synonym of *C. alfajariensis alfajariensis* Ribbe, 1905.

Paratype ♀: printed, red paper 'Paratypus ♀ | det. Nr. 2273 ER | *Colias alfajariensis | hyrcanica REISSINGER, 1989 | gen. II hyrcanica | det. E. REISSINGER*'; handwritten, yellow paper 'Astrabad | Chr.'; handwritten, white paper 'Ast'; printed, orange paper 'Paratypus ♀ | det. Nr. 2273 ER | publiz. u. fig. in | REISSINGER, 1989 | N.E.N., 26: 252, | XXXVI, XXXVIa, f. 4'; printed (typewriter), red paper 'det.-Nr. 2273 | Paratypus | Col. alfajariensis | hyrcanica, g. II. | hyrcanica Rgr. ♀ | (f. inversa A.) | dt.E.J.Reissinger | XII.1977 | Typ.-Nr. 5613'.

kenteana Heyne, [1895]

Colias aurora var. *kenteana* Heyne, [1895]: 731.

Taxonomic status and position: junior subjective synonym of *C. heos heos* (Herbst, 1792).

Note. J.Grieshuber et al. [2011] shown that the original type specimens of *kenteana* were impossible to identify; only one specimen of uncertain status was found in O.Staudinger's collection. To resolve this situation (because "impossible to identify" = "lost") I designate the neotype of *kenteana* below.

Neotype ♂ (col. pl. XIII: 67-69), **designated here** according to the Art. 71 of the Code: **1♂**: printed, red paper: 'uncertain status | ? Syntype ? | *Colias aurora* [var.] | *kenteana* Heyne, 1895 | det. Grieshuber, 2007'; printed, white paper '31375'; handwritten, white paper 'Aurora | v. kenteana | Kentei Geb. | ♂ 100 ♀ 300 | Thiele'; printed, red paper 'Neotype ♂ | *kenteana* Heyne, 1895 | des. Korb 2014'.

‡ kostlani Strand, 1911

Colias electo L. ab. *Kostlani* Strand, 1911: 140.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♀: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 2.11. 2001 .'; printed, red paper 'Type'; printed, white paper 'infrasubspecific taxon | name bearing specimen of Colias | electo [ab.] kostlani Strand, | 1911 | det. Grieshuber, 2007'; printed, blue paper 'Abessinien | Eli i Marocko | Alf. Kostlan S.'; handwritten, with printed "Strand det.", white paper: 'Colias | electo L. | ab. Kostlani | Strand det. | ♀. m.'; handwritten, white paper 'Colias | electo L. | ab. ♀. nov.'; handwritten, white paper '16/9 08 auf | Wiese'; handwritten, white paper 'P. leg. Kostlan | l. Eli i Marock'.

lada Grum-Grshimailo, 1891

Colias Lada Grum-Grshimailo, 1891: 447 – 448.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. X: 31-33), **designated here** according to the Art. 61.1 and 74.1 of the Code: **1♂**: printed, numbers handwritten, white paper 'ex coll. 1/2 | Staudinger'; printed, red paper 'Syntype | *Colias lada* Grum- | Grshimailo, 1891, | Horae Soc. ent. | ross. 25: 447-448, | det. J. Grieshuber & | S. Churkin, 2004'; handwritten, white paper '45.'; handwritten, white paper 'Lectotype ♂ | *lada* Gr.Gr. | S.Korb des. | 2014'; handwritten, brown paper 'Thibet | Sinin Alp | 90 Gr.Gr.'; handwritten, white paper '22.V.90'; handwritten, white paper 'Мынданьша <Myndansha>'.

Paralectotype ♀: printed, numbers handwritten, white paper 'ex coll. 2/2 | Staudinger'; printed, red paper 'Syntype | *Colias lada* Grum- | Grshimailo, 1891, | Horae Soc. ent. | ross. 25: 447-448, | det. J. Grieshuber & | S. Churkin, 2004'; handwritten, white paper '30V90'; handwritten, handwritten, white paper 'Мынданьша <Myndansha>'; brown circle.

‡ languidus Bang-Haas, 1927

Colias eogene eogene Feld. ab. *languidus* Bang-Haas, 1927: 42, 112; t. 6, fig. 20.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, pink paper 'Type | O.Bang-Haas'; printed, white paper '145.'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I. abgebildet | t. 6, f. 20 | beschrieb. p. 112'; printed, white paper 'Sasser Pass | Shyok River | Ladak Himal. | 4000 m Juli'; printed, white paper 'infrasubspecific taxon | name bearing specimen of Colias | eogene eogene [ab.] languidus | Bang-Haas, 1927 | det. Grieshuber, 2007'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11. 2001 .'; handwritten, white paper 'C. eogene | ab. languidus | OBH.'.

lapponica Staudinger, 1861

Colias Palaeno L. var. *Lapponica* Staudinger, 1861:

3. Lectotype designated by: Grieshuber et al., 2011: 140.

Taxonomic status and position: junior subjective synonym of *C. palaeno palaeno* (Linnaeus, 1761).

Lectotype ♂: printed, white paper ‘ex coll. | Staudinger’; printed, red paper ‘[Lapponia] | Syntype | *Colias palaeno* [var.] | lapponica Staudinger, 1871 | det. Grieshuber, 2007’; handwritten, white paper ‘Alten | m.’.

Paralectotypes 1♂, 2♀: 1♂: printed, white paper ‘ex coll. | Staudinger’; printed, red paper ‘[Lapponia] | Syntype | *Colias palaeno* [var.] | lapponica Staudinger, 1871 | det. Grieshuber, 2007’; handwritten, light-blue paper ‘Lapponia’; 2♀: printed, white paper ‘ex coll. | Staudinger’; printed, red paper ‘[Lapponia] | Syntype | *Colias palaeno* [var.] | lapponica Staudinger, 1871 | det. Grieshuber, 2007’; handwritten, white paper ‘Lapponia’.

***libanotica* Lederer, 1858**

Colias libanotica Lederer, 1858: 140 – 141; pl. 2, figs. 1, 2.

Taxonomic status and position: a good subspecies of *C. aurorina* Herrich-Schäffer, 1850.

Lectotype ♀ (col. pl. XI: 34-36), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♀: printed, white paper, handwritten numbers ‘ex coll. 1/1 | Staudinger’; printed, white paper ‘Coll. Led.’; handwritten, white paper ‘Libanon’; printed, pink paper ‘Origin.’; handwritten, white paper ‘Lectotype ♀ | libanotica Led. | S.Korb des. 2014’; printed, red paper ‘Syntype | *Colias libanotica* | Lederer, 1858 | det. Grieshuber, 2007’.

‡ *maculata* Röber, 1909

[*Colias romanovi*] f. *maculata* Röber, 1909: 66.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♂: handwritten, red paper ‘infrasubsp. | “Type”’; handwritten, white paper ‘Col. Romanovi | v. maculata’; handwritten, white paper ‘*Colias* | romanovi Gr-Gr. | f. maculata ♂ | Turkestan’.

***maja* Grum-Grshimailo, 1891**

Colias Cocandica var. *Maja* Grum-Grshimailo, 1891: 447. Lectotype designated by: Grieshuber, Churkin, 2003: 257.

Taxonomic status and position: a good subspecies of *C. cocandica* Erschoff, 1874.

Paralectotypes 2♂: 1♂: printed, white paper, handwritten numbers ‘ex coll. 1/2 | Staudinger’; handwritten, brown paper ‘Thibet | Boro Choro | 90 Gr.Gr.’; printed, red paper ‘[loc.: “Thibet, Boro | Choro, 90, Gr. Gr.”] | Paralectotype | *Colias cocandica* | maja Grum-Grshimailo, | 1881, Horae Soc. ent. | ross. 25: 447, | designated by | J.Grieshuber & S.Churkin, | 2003’; 1♂: printed, white paper, handwritten numbers ‘ex coll. 2/2 | Staudinger’; handwritten, white paper ‘Thibet | Boro Choro | 90 Gr.Gr.’; printed, red paper ‘[loc.: “Thibet, Boro | Choro, 90, Gr. Gr.”] | Paralec-

totype | *Colias cocandica* | maja Grum-Grshimailo, | 1881, Horae Soc. ent. | ross. 25: 447, | designated by | J.Grieshuber & S.Churkin, | 2003’; brown circle.

***marcopolo* Grum-Grshimailo, 1888**

Colias Marco-Polo Grum-Grshimailo, 1888: 304 – 305.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. XI: 37-39), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, numbers handwritten, white paper ‘ex coll. 2/8 | Staudinger’; handwritten, white paper ‘Lectotype ♂ | marcopolo Gr.Gr. | S.Korb des. | 2014’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; handwritten, white paper ‘Beикъ <Beik Pass> | 16.7.87’.

Paralectotypes 2♂, 5♀: 1♂: printed, numbers handwritten, white paper ‘ex coll. 1/8 | Staudinger’; handwritten, brown paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; handwritten, white paper ‘Marco Polo | Gr.Gr.’; ♀: printed, numbers handwritten, white paper ‘ex coll. 3/8 | Staudinger’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 4/8 | Staudinger’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 5/8 | Staudinger’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 6/8 | Staudinger’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 7/8 | Staudinger’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 8/8 | Staudinger’; brown circle; handwritten, white paper ‘Hindukusch or. | 87 Gr.Gr.’; printed, red paper ‘Syntype | *Colias marcopolo* Grum- | Grshimailo, 1888 | det. Grieshuber, 2007’.

***maureri* Staudinger, 1901**

Colias Staudingeri v. *Maureri* Staudinger, 1901: 18. Lectotype designated by: Grieshuber et al., 2011: 150.

Taxonomic status and position: junior subjective synonym of *C. staudingeri* Alphéraky, 1881.

Lectotype ♂: printed, pink paper ‘Origin.’; print-

orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Kentei | 89 Dörr.'; green circle; 1♂: printed, numbers handwritten, white paper 'ex coll 7/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Kentei] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Kentei | 89 Dörr.'; green circle; 1♀: printed, numbers handwritten, white paper 'ex coll 8/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Kentei] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Kentei | 89 Dörr.'; green circle; 1♂: printed, numbers handwritten, white paper 'ex coll 9/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, blue paper 'Ussuri | Dörr.'; 1♀: printed, numbers handwritten, white paper 'ex coll 10/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Ussuri | Dörr.'; blue circle; 1♀: printed, numbers handwritten, white paper 'ex coll 11/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Ussuri | Dörr.'; 1♂: printed, numbers handwritten, white paper 'ex coll 12/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Ussuri | Dörr.'; blue circle; 1♂: printed, numbers handwritten, white paper 'ex coll 13/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Ussuri | Dörr.'; blue circle; 1♀: printed, numbers handwritten, white paper 'ex coll 14/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Ussuri | Dörr.'; 1♀: printed, numbers handwritten, white paper 'ex coll 15/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Ussuri] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, white paper 'Ussuri'; blue circle; handwritten, white paper 'v. Orientalis'; 1♀: printed, numbers handwritten, white paper 'ex coll 16/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Bikin] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; blue circle; handwritten, blue paper 'Bikin | 87 Dörr.'; green rectangle; 1♂:

printed, numbers handwritten, white paper 'ex coll 17/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Balogweschtschensk <sic!>] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, blue paper 'Blagow | Hed.'; handwritten, blue paper '15/7. 77. | Blagowes | tschensk | Amur. mer.'; 1♂: printed, numbers handwritten, white paper 'ex coll 18/18 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Raddefskaja] | Syntype | Colias palaeno [var.] orientalis | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, blue paper 'Raddefskaja | Chr.'; handwritten, white paper '29/6'.

orthocalida Reissinger, 1974

Colias alfacariensis orthocalida Reissinger, 1974: 1 – 7; pl. 7, figs. 1 – 4; pl. 8, figs. 1 – 22.

Taxonomic status and position: junior subjective synonym of *C. alfacariensis alfacariensis* Ribbe, 1905.

Paratypes 1♂, 1♀: 1♂: handwritten, red paper 'Paratypus ♂ | Col. alfacariensis | orthocalida Reis.- | singer, 1974 | g. II orthocalida | det. Nr. 1203'; printed, numbers handwritten, white paper 'Oberstdorf (All- | gäu) 28.VII.21 | 1100 m W.Kühne'; printed, with handwritten insertions (red ink), white paper 'Col. australis ♂ | ssp. calida Vrty. | g. aestiv | det.: Dr.Reissinger | Nr. 1957/1203'; 1♀: handwritten, red paper 'Paratypus ♀ | Col. alfacar. | orthocalida | Reissinger, 1974 | g. I. ante-ortho- | calida | Det.-Nr. 1204'; printed, with handwritten insertions (red ink), white paper 'Col. australis ♀ | ssp. calida Vrty. | g. v. rernalis | det.: Dr.Reissinger | Nr. 1957/1204'; handwritten, white paper 'Colias | hyale | v. alba | Oberstdorf | 25.VI.14'.

‡ pallida Staudinger, 1861

[*Colias erate*] ab. *Pallida* Staudinger, 1861: 3.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♀: printed, numbers handwritten, white paper 'ex coll. 1/1 | Staudinger'; printed, pink paper 'Origin.'; handwritten, green paper 'Sarepta'; handwritten, white paper 'Pallida'; printed, white paper 'infrasubspecific taxon | name bearing specimen of Colias | erate [ab.] pallida Staudinger, | 1861 | det. Grieshuber, 2007'.

pamira Groum-Grshimailo, 1890

Colias Staudingeri Alph. var. *Pamira* Groum-Grshimailo, 1890: 334 – 335; pl. 4, fig. 2.

Taxonomic status and position: a good subspecies of *C. staudingeri* Alphéraky, 1881.

Syntype ♂: printed, numbers handwritten, white paper 'ex coll 1/1 | Staudinger'; handwritten, brown paper 'Zalai Pamir | 85. Grumm.'; printed, red paper 'Syntype | Colias staudingeri [var.] pamira | Grum-Grshimailo, 1890 | det. Grieshuber, 2007'; handwritten, white paper '20.VII.84.'; handwritten, white pa-

per 'Kapa <Kara> | 04.'

‡ **parva Hoyningen-Huene, 1901**

Colias palaeno ab. *parva* Hoyningen-Huene, 1901: 460.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♂: printed, white paper 'ex coll. | Bang-Haas'; printed, white paper 'infrasubspecific taxon | name bearing specimen of *Colias* | palaeno [ab.] parva Hoyningen- | Huene, 1901 | det. Grieshuber 2007'; handwritten, orange paper 'ab parva Hn'; printed, light-blue paper 'Estonia | Lechts | Fr. V. Huene'; handwritten, white paper 'ab. Parva Hn. | N.Gesellsch. Dorpat XII | p. 462'.

poktussani O.Bang-Haas, 1935

Colias palaeno poktussani O.Bang-Haas, 1935: 183.

Taxonomic status and position: a good subspecies of *C. palaeno* (Linnaeus, 1761).

Lectotype ♂ (col. pl. XI: 43-45), **designated here** according to the Art. 61.1 and 74.1 of the Code: **1♂**: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11.2001'; printed, pink paper 'Type | O.B.-Haas'; printed, white paper 'Corea sept. | Poktussan | 2500 m. Juli'; printed, white paper '*Colias palaeno* poktussani O. B.=Haas'; printed, red paper 'Syntypus | *Colias palaeno* | poktussani | Bang-Haas, 1935 | Grieshuber det. | 12.05.2004'; handwritten, white paper 'Lectotype | poktussani B.H. | S.Korb des. 2014'.

Paralectotypes 1♂, 1♀: **1♂**: printed, white paper 'ex coll. | BANG-HAAS'; printed, red paper 'Syntypus | *Colias palaeno* | poktussani | Bang-Haas, 1935 | Grieshuber det. | 12.05.2004'; printed, white paper 'Corea sept. | Poktussan | 2500 m. Juli'; **1♀**: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11.2001'; printed, pink paper 'Type | O.B.-Haas'; printed, red paper 'Syntypus | *Colias palaeno* | poktussani | Bang-Haas, 1935 | Grieshuber det. | 12.05.2004'; printed, white paper 'Corea sept. | Poktussan | 2500 m. Juli'; printed, white paper 'ab. avinoffi Ver. (Rhop. p. 346)'; rectangular piece of paper with fragment of abdomen.

richthofeni Bang-Haas, 1927

Colias richthofeni Bang-Haas, 1927: 42; Taf. 6, Fig. 1 – 3.

Taxonomic status and position: a good subspecies of *C. nebulosa* Oberthür, 1894.

Holotype ♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11.2001'; printed, pink paper 'Type | O.Bang-Haas'; printed, red paper 'Holotypus | *Colias* [nebulosa] | richthofeni | Bang-

Haas, 1927 | Grieshuber det. | 12.05.2004'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I. abgebildet | t. 6 f. 1 | beschrieb. p. 42'; printed, white paper 'Richthofen Gbg. | westl. Liang-tschou | Kansu sept.China | Juli 2500 m.'; handwritten, white paper 'C. cocandica | richthofeni | OBH.'

Paratypes 2♀: **1♀**: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11.2001'; printed, pink paper 'Type | O.Bang-Haas'; printed, red paper 'Allotypus | *Colias* [nebulosa] | richthofeni | Bang-Haas, 1927 | Grieshuber det. | 12.05.2004'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I. abgebildet | t. 6 f. 2 | beschrieb. p. 42'; printed, white paper 'Richthofen Gbg. | westl. Liang-tschou | Kansu sept.China | Juli 2500 m.'; **1♀**: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11.2001'; printed, pink paper 'Type | O.Bang-Haas'; printed, red paper 'Paratypus | *Colias* [nebulosa] | richthofeni | Bang-Haas, 1927 | Grieshuber det. | 12.05.2004'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I. abgebildet | t. 6 f. 3 | beschrieb. p. 42'; printed, white paper 'Richthofen Gbg. | westl. Liang-tschou | Kansu sept.China | Juli 2500 m.'; handwritten, white paper 'ab. melanitica | OBH'.

romanovi Grumm-Grshimailo, 1885

C.[olias] romanovi Grumm-Grshimailo, 1885: 229.

Taxonomic status and position: a good species. J.Grieshuber et al. [2011: 190]: "seems to be very closely related to *C. erschoffi*... Much further investigation is needed before this problem can be resolved". I did these investigations: dissected males of both species [see: Korb, 2012: figs. 91, 97]. These taxa have very good differences in male genitalia (in *romanovi* aedoeagus is equal to valva in length, in *erschoffi* aedoeagus at least 30 % longer than valva; other small differences are also present).

Lectotype ♂ (col. pl. XI: 46-48), **designated here** according to the Art. 61.1 and 74.1 of the Code: **1♂**: printed, numbers handwritten, white paper 'ex coll. 4/7 | Staudinger'; printed, red paper 'Syntype | *Colias romanovi* Grum- | Grshimailo, 1885 | det. Grieshuber, 2007'; brown circle; handwritten, white paper 'Lectotype ♂ | romanovi Gr.Gr. | S.Korb des. | 2014'; handwritten, white paper 'S.W.Alai | 85 Grum.'; handwritten, white paper '27.VI.84'; handwritten, white paper 'Балджуан <Baldshuan>'.

Paralectotypes 2♂, 4♀: **1♂**: printed, numbers handwritten, white paper 'ex coll. 1/7 | Staudinger'; printed, red paper 'Syntype | *Colias romanovi* Grum- | Grshimailo, 1885 | det. Grieshuber, 2007'; handwritten, brown paper 'Süd Alai | 85 Grum.'; **1♀**:

printed, numbers handwritten, white paper ‘ex coll. 2/7 | Staudinger’; printed, red paper ‘Syntype | Colias romanovi Grum- | Grshimailo, 1885 | det. Grieshuber, 2007’; handwritten, brown paper ‘S.W.Alai | 85 Grum.’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 5/7 | Staudinger’; printed, red paper ‘Syntype | Colias romanovi Grum- | Grshimailo, 1885 | det. Grieshuber, 2007’; brown circle; handwritten, white paper ‘S.W.Alai | 85 Grum.’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 6/7 | Staudinger’; printed, red paper ‘Syntype | Colias romanovi Grum- | Grshimailo, 1885 | det. Grieshuber, 2007’; brown circle; handwritten, white paper ‘S.W.Alai | 85 Grum.’; 1♀: printed, numbers handwritten, white paper ‘ex coll. 7/7 | Staudinger’; printed, red paper ‘Syntype | Colias romanovi Grum- | Grshimailo, 1885 | det. Grieshuber, 2007’; handwritten, brown paper ‘Zalai | Grum.’; handwritten, white paper ‘1’; handwritten, white paper ‘20.VII.84.’; handwritten, white paper ‘Kapa <Kara> | 84’; 1♂: printed, red paper ‘Syntype | Colias romanovi Grum- | Grshimailo, 1885 | det. Grieshuber, 2007’; brown circle; handwritten, white paper ‘S.W.Alai | 85 Grum.’.

roschana Grum-Grshimailo, 1893

Colias Alpherakii var. *Roschana* Grum-Grshimailo, 1893: 381.

Taxonomic status and position: junior subjective synonym of *C. alpherakii* Staudinger, 1882.

Syntype ♀: printed, white paper ‘ex coll. 1/1 | Staudinger’; handwritten, white paper ‘Col Alpheraki | var’; printed (“syn” handwritten), red paper ‘Syn-~~Paralectotype~~ | Colias alpherakii | roschana Grum-Grshimailo, | 1893 | Grieshuber det. XII. 2004’; handwritten, brown paper ‘Afghanistan | Gr.Gr.’; handwritten, white paper ‘Кудара <Kudara> | 15.VI.87’; abdomen, slightly damaged (pinned).

rueckbeili Lukhtanov, 1994

Colias wiskotti rueckbeili Lukhtanov, Lukhtanov, 1994: 74.

Taxonomic status and position: a good subspecies of *C. wiskotti* Staudinger, 1882.

Syntype ♂: printed, white paper, numbers handwritten ‘ex coll. 1/1 | Staudinger’; handwritten, white paper ‘var. Alexandra | Stgr. in l.’; printed, red paper ‘Syntype | Colias wiskotti | rueckbeili Lukhtanov, 1994 | nec. “Alexandra” Röber, | 1907 (unavailable) | nec. “rückbeili” Bang- | Haas, 1927 (unavail.) | Grieshuber det. XII.2004’; handwritten, white paper ‘v. Chrysoptera Gr.Gr. | falsch | wohl= v. Draconis Gr.Gr.’; handwritten, brown paper ‘Alex. Geb. | 99. Rckbl.’.

sagartia Lederer, 1869

Colias Sagartia Lederer, 1869: 75 – 76; pl. 4, figs. 1, 2.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. XII: 49-51), **designated here**

according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper, numbers handwritten ‘ex coll. 2/5 | Staudinger’; printed, pink paper ‘Origin.’; handwritten, white paper ‘Hadschyabad’; printed, red paper ‘[2/5] | Syntype | Colias sagartia Lederer, 1869 | det. Grieshuber, 2007’; printed, white paper ‘Coll. Led.’; handwritten, white paper ‘Lectotype ♂ | sagartia Led. | S.Korb des. 2014’.

Paralectotypes 4♀: 1♀: printed, white paper, numbers handwritten ‘ex coll. 4/5 | Staudinger’; printed, pink paper ‘Origin.’; handwritten, white paper ‘Hadschyabad’; printed, red paper ‘[4/5] | Syntype | Colias sagartia Lederer, 1869 | det. Grieshuber, 2007’; 1♀: printed, white paper, numbers handwritten ‘ex coll. 5/5 | Staudinger’; printed, pink paper ‘Origin.’; printed, white paper ‘Coll. Led.’; handwritten, white paper ‘Hadschyabad’; printed, red paper ‘[5/5] | Syntype | Colias sagartia Lederer, 1869 | det. Grieshuber, 2007’; 1♀: printed, white paper, numbers handwritten ‘ex coll. 3/5 | Staudinger’; printed, pink paper ‘Origin.’; printed, white paper ‘Coll. Led.’; handwritten, white paper ‘Hadschyabad’; printed, red paper ‘[3/5] | Syntype | Colias sagartia Lederer, 1869 | det. Grieshuber, 2007’; 1♀: printed, white paper, numbers handwritten ‘ex coll. 1/5 | Staudinger’; printed, pink paper ‘Origin.’; printed, white paper ‘Coll. Led.’; handwritten, white paper ‘Hadschyabad’; printed, red paper ‘[1/5] | Syntype | Colias sagartia Lederer, 1869 | det. Grieshuber, 2007’.

sareptensis Alpheraky, 1875

Colias Hyale L. var. *Sareptensis* Alpheraky, 1875: 153 – 154 (raising status of taxon [*Colias*] *Hyale* ab. (an hibr?) *Sareptensis* Staudinger, 1871).

Taxonomic status and position: junior subjective synonym of *C. erate* (Esper, [1805]). The separation of taxa *sareptensis* Alpheraky and *sareptensis* Staudinger by J.Grieshuber et al. [2011] was based on the wrong assumption that S.Alpheraky described his own subspecies basing on own material; in fact, and it is clearly stated in the Russian text of S.Alpheraky’s paper, he just raised status of O.Staudinger’s ‘aberration’ clearly to ‘variety’. According to this fact, lectotype designation of *sareptensis* Alpheraky, 1875 from S.Alpheraky’s specimens [Grieshuber et al., 2006: 110; fig. 1] is invalid; it was fixed by correct lectotype designation from O.Staudinger’s specimens [Korb, 2013: 250].

Lectotype ♂: printed, numbers handwritten, white paper ‘ex coll. 1/6 | Staudinger’; printed, white paper ‘name-bearing specimen | (infrasubspecific) | “[Colias] Hyale ... ab. (an hibr?) | Sareptensis” | Staudinger, 1871 | det. Grieshuber, 2006’; printed, red paper ‘Paralectotype | Colias hyale var. sareptensis | Alpheraky, 1875 | Trudy Russ. ent. Obsch. 8: 153-154 | designated by J.Grieshuber, R. | Worthy & G.Lamas, 2006’; printed, pink paper ‘Origin.’; handwritten,

white paper 'sareptensis ♂'; handwritten, green paper 'Sarepta'; handwritten, red paper 'Lectotype designation | of J.Grieshuber | from S.Alpheraky's | specimens is wrong. | It should be | selected from | original Staudinger | material'; printed, name and author handwritten, red paper 'LECTOTYPUS ♂ | sareptensis | Stgr. | S.K.Korb des. 08-16.01.2013'.

Paralectotypes 3♂, 1♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 2/6 | Staudinger'; printed, pink paper 'Origin.'; printed, white paper 'name-bearing specimen | (infrasubspecific) | "[Colias] Hyale ... ab. (an hibr?) | Sareptensis" | Staudinger, 1871 | det. Grieshuber, 2006'; printed, red paper 'Paralectotype | Colias hyale var. sareptensis | Alphéraky, 1875 | Trudy Russ. ent. Obshch. 8: 153-154 | designated by J.Grieshuber, R. | Worthy & G.Lamas, 2006'; green circle; handwritten, white paper 'als hyale | sareptensis | in coll Stgr'; 1♂: printed, numbers handwritten, white paper 'ex coll. 3/6 | Staudinger'; printed, pink paper 'Origin.'; printed, white paper 'name-bearing specimen | (infrasubspecific) | "[Colias] Hyale ... ab. (an hibr?) | Sareptensis" | Staudinger, 1871 | det. Grieshuber, 2006'; printed, red paper 'Paralectotype | Colias hyale var. sareptensis | Alphéraky, 1875 | Trudy Russ. ent. Obshch. 8: 153-154 | designated by J.Grieshuber, R. | Worthy & G.Lamas, 2006'; green circle; handwritten, white paper 'erate ♂ | sareptensis | Sarepta'; 1♀: printed, numbers handwritten, white paper 'ex coll. 5/6 | Staudinger'; printed, pink paper 'Origin.'; printed, white paper 'name-bearing specimen | (infrasubspecific) | "[Colias] Hyale ... ab. (an hibr?) | Sareptensis" | Staudinger, 1871 | det. Grieshuber, 2006'; printed, red paper 'Paralectotype | Colias hyale var. sareptensis | Alphéraky, 1875 | Trudy Russ. ent. Obshch. 8: 153-154 | designated by J.Grieshuber, R. | Worthy & G.Lamas, 2006'; green circle; handwritten, white paper 'sareptensis | ♀'; 1♂: printed, pink paper 'Origin.'; printed, white paper 'name-bearing specimen | (infrasubspecific) | "[Colias] Hyale ... ab. (an hibr?) | Sareptensis" | Staudinger, 1871 | det. Grieshuber, 2006'; printed, red paper 'Paralectotype | Colias hyale var. sareptensis | Alphéraky, 1875 | Trudy Russ. ent. Obshch. 8: 153-154 | designated by J.Grieshuber, R. | Worthy & G.Lamas, 2006'; green circle; handwritten, white paper 'Erate ♂ | sareptensis | Sarepta'.

‡ **saturata Röber, 1909**

C.[olias] flaveola Bl. ab. *saturata* Röber, 1909: 93.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntype ♀: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 2.11 2001 .'; handwritten, white paper 'Malaga | Garl.'; printed, white paper 'infrasubspecific taxon | name bearing specimen

of *Colias | flaveola* [ab.] *saturata* Röber, | 1909 | det. Grieshuber, 2007'; handwritten, white paper 'LECTOTYPE ♀ | *Colias flaveola* ab. | *saturata* Röber, 1909 | By G.Lamas' 97'.

schildei Staudinger, 1892

Colias Palaeno L. var. *Schildei* Staudinger, 1892b: 310.

Taxonomic status and position: junior subjective synonym of *C. palaeno palaeno* (Linnaeus, 1761).

Syntypes 3♂, 1♀: 1♂: printed, white paper, numbers handwritten 'ex coll. 1/16 | Staudinger'; printed, pink paper 'Origin.'; handwritten, white paper 'ab. Schildei | Stgr.'; printed, white paper '[Kusamo 1/16] | infrasubspecific taxon | name bearing specimen of *Colias | palaeno* [var.] *schildei* | Staudinger, 1892 | det. Grieshuber, 2007'; handwritten, green paper 'Kusamo | Schilde'; handwritten, white paper 'Kuusamo.'; 1♀: printed, white paper, numbers handwritten 'ex coll. 2/16 | Staudinger'; printed, pink paper 'Origin.'; printed, white paper '[Kusamo 2/16] | infrasubspecific taxon | name bearing specimen of *Colias | palaeno* [var.] *schildei* | Staudinger, 1892 | det. Grieshuber, 2007'; green circle; handwritten, white paper 'Kuusamo.'; handwritten, yellow paper 'Zu Pelidne leitend'; 1♂: printed, white paper, numbers handwritten 'ex coll. 4/16 | Staudinger'; printed, pink paper 'Origin.'; printed, white paper '[Kusamo 4/16] | infrasubspecific taxon | name bearing specimen of *Colias | palaeno* [var.] *schildei* | Staudinger, 1892 | det. Grieshuber, 2007'; green circle; handwritten, white paper 'Kūsamo.'; 1♂: printed, white paper, numbers handwritten 'ex coll. 3/16 | Staudinger'; printed, pink paper 'Origin.'; printed, white paper '[Kusamo 3/16] | infrasubspecific taxon | name bearing specimen of *Colias | palaeno* [var.] *schildei* | Staudinger, 1892 | det. Grieshuber, 2007'; green circle; handwritten, white paper 'Kuusamo.'

seitzi Bollow, 1930

C.[olias] ladakensis suisp. <sic!> *seitzi* Bollow, 1930: 119.

Taxonomic status and position: junior subjective synonym of *C. ladakensis ladakensis* Felder et Felder, 1865.

Lectotype ♂ (col. pl. XII: 52-54), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, red paper 'Type'; handwritten, white paper 'Lectotype ♂ | seitzi Bollow | S.Korb des. | 2014'; handwritten, white paper 'Colias ladakensis | subsp. seitzi | Type Bollow'; printed, red paper 'Syntypus | *Colias ladakensis* | seitzi | Bollow, 1931 | Grieshuber det. | 12.05.2004'; printed, white paper 'Thibet occid. | Churmurti | Shilang | (Shiring) Pass | August 4800 m.'

Paralectotype ♀: printed, white paper 'ex coll. | BANG-HAAS'; printed, red paper 'Type'; handwritten, white paper 'C. ladakensis | subsp. seitzi | Type Bollow'; printed, red paper 'Syntypus | *Colias*

ladakensis | seitzii | Bollow, 1931 | Grieshuber det. | 12.05.2004'; printed, white paper 'Thibet occid. | Churmurti | Butpo Pass | Juli 5000 m.'; printed, red paper 'Type'; printed, white paper '675.'

sieversii Grum-Grshimailo, 1887

Colias Sieversi Grum-Grshimailo, 1887: 388, 397–398.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. XII: 55-57), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: numbers handwritten, white paper 'ex coll. 1/6 | Staudinger'; labelled: printed, red paper 'Syntype | *Colias sieversi* Grum-Grshimailo, 1887 | det. Grieshuber, 2007'; handwritten, brown paper 'Darwas | 85 Grumm.'; handwritten, white paper '013/2014K'; handwritten, white paper 'Lectotype ♂ | sieversi Gr. Gr. | S.Korb des. /14'; handwritten, white paper '1.VII | 85'; handwritten, white paper 'Бездани <Bezdanii>'.

Paralectotypes 3♂, 2♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 2/6 | Staudinger'; brown circle; printed, red paper 'Syntype | *Colias sieversi* Grum-Grshimailo, 1887 | det. Grieshuber, 2007'; handwritten, white paper 'Darwas | 85 Grumm.'; 1♂: printed, numbers handwritten, white paper 'ex coll. 3/6 | Staudinger'; handwritten, white paper '27/VI.85'; brown circle; handwritten, white paper 'Jn Yrizeks.'; printed, red paper 'Syntype | *Colias sieversi* Grum-Grshimailo, 1887 | det. Grieshuber, 2007'; handwritten, white paper 'Darwas | 85 Grumm.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/6 | Staudinger'; brown circle; printed, red paper 'Syntype | *Colias sieversi* Grum-Grshimailo, 1887 | det. Grieshuber, 2007'; handwritten, white paper 'Darwas | 85 Grumm.'; 1♂: printed, numbers handwritten, white paper 'ex coll. 6/6 | Staudinger'; brown circle; printed, red paper 'Syntype | *Colias sieversi* Grum-Grshimailo, 1887 | det. Grieshuber, 2007'; handwritten, white paper 'Darwas | 85 Grumm.'.

sifanica Grum-Grshimailo, 1891

Colias Sifanica Grum-Grshimailo, 1891: 447.

Taxonomic status and position: a good species.

Lectotype ♂ (col. pl. XII: 58-60), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper 'ex coll. 1/2 | Staudinger'; printed, red paper 'Syntype | *Colias sifanica* Grum-Grshimailo, 1891 | det. Grieshuber, 2007'; handwritten, white paper 'Lectotype ♂ | sifanica Gr.Gr. | S.Korb des. 2014'; handwritten, brown paper 'Thibet | Sinin Alp | 90. Gr.Gr.'.

Paralectotype ♂: printed, white paper 'ex coll. 2/2 | Staudinger'; printed, red paper 'Syntype | *Colias sifanica* Grum-Grshimailo, 1891 | det. Grieshuber, 2007'; handwritten, white paper 'Lectotype ♂ | sifan-

ica Gr.Gr. | S.Korb des. 2014'.

‡ **standfussi Röber, 1909**

C.[olias] pelidne Bdv. form *standfussi* Röber, 1909: 91.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntypes 3♂: 1♂: printed, white paper 'ex coll. | Staudinger'; printed, white paper 'infrasubspecific taxon | name bearing specimen of *Colias | pelidne* [f.] *standfussi* Röber, | 1909 | det. Grieshuber, 2007'; handwritten, blue paper 'Labrad.[or] | E. 59.'; 1♂: printed, white paper 'ex coll. | Staudinger'; printed, white paper 'infrasubspecific taxon | name bearing specimen of *Colias | pelidne* [f.] *standfussi* Röber, | 1909 | det. Grieshuber, 2007'; handwritten, green paper 'Labrad.[or] | E. 70.'; handwritten, white paper 'Pelidne | & Nastes | hybrid.?'; printed first line, handwritten second line, white paper 'Coll. Möschl. | als Pelidne'; 1♂: printed, white paper 'ex coll. | Staudinger'; printed, white paper 'infrasubspecific taxon | name bearing specimen of *Colias | pelidne* [f.] *standfussi* Röber, | 1909 | det. Grieshuber, 2007'; handwritten, green paper 'Labrad.[or] | E. 70.'.

staudingeri Alphéraky, 1881

C.[olias] Staudingeri Alphéraky, 1881: 368–373; pl. 14, figs. 3–4. Lectotype designated by: Grieshuber et al., 2004: 38–39; pl. 2, fig. 1.

Taxonomic status and position: a good species.

Paralectotypes 5♂, 2♀: 1♂: printed, numbers handwritten, white paper 'ex coll. 1/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; handwritten, brown paper 'Tian Schan | Alph'; 1♂: printed, numbers handwritten, white paper 'ex coll. 2/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; brown circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 3/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; brown circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 4/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; brown circle; handwritten, white paper 'VI 1879. | Tian-chan.'; 1♂: printed, numbers handwrit-

ten, white paper 'ex coll. 5/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 6/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; 1♀: printed, numbers handwritten, white paper 'ex coll. 7/7 | Staudinger'; printed, red paper '[loc.: [China, | Xinjiang] "Tian-chan"] | Paralectotype | *Colias staudingeri* | Alphéraky, 1881, Horae | Soc. ent. ross. 16: | 368-373, pl. XIV, f. | 3, 4, designated by J. | Grieshuber, S.Churkin, | R.Worthy, 2004'; brown circle.

‡ **strandi Röber, 1924**

Colias strandi Röber, 1924: 90.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Holotype ♂: labelled: printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 2.11. 2001 .'; printed, red paper '*Colias strandi* Röber, | 1924 | Holotype by monotypy | Grieshuber det. XII.2004'; handwritten, white paper 'Titicaca'; handwritten, white paper 'Strandi ♂'; printed, white paper in red circle, rounded 'Holo- | type'.

tamerlana Staudinger, 1897

Colias Tamerlana Staudinger, 1897: 152 – 153; pl. 5, figs. 1, 3. Lectotype designated by: Korb, 2012: 28; pl. 4, figs. 10, 11.

Taxonomic status and position: a good subspecies of *C. cocandica* Erschoff, 1874; it has no priority over the name *mongola* Alphéraky, 1897 because the last name was published two months earlier than the name *tamerlana* [Gorbunov, 2012].

Lectotype ♂: printed, numbers handwritten, white paper 'ex coll. 2/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; microvial with genitalia preparate in glycerin, with glued label 'Studied by S.Korb | ZMHB | 0096K/2011'; handwritten, white paper 'Lectotype | tamerlana Stgr. | S.Korb des.'.

Paralectotypes 5♂, 6♀: 1♂: printed, numbers handwritten, white paper 'ex coll 1/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, brown paper 'Thian. or. | 96 Hbhr.'; 1♀: printed, numbers handwritten, white paper 'ex coll 3/12 | Staudinger'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber,

2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♀: printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♂: printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; handwritten (two lines black ink, one line pencil), white paper 'v.? Tamerlana | Stgr. | Thian. or.'; 1♂: printed, numbers handwritten, white paper 'ex coll. 6/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 10/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 12/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 11/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 9/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♂: printed, numbers handwritten, white paper 'ex coll. 7/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 4/12 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper 'Syntype | *Colias tamerlana* Staudinger, | 1897 | det. Grieshuber, 2007'; handwritten, white paper 'Thian. or. | 96 Hbhr.'; brown circle.

tatarica O.Bang-Haas, 1915

Colias cocandica tatarica O.Bang-Haas, 1915: 98 – 99. Lectotype designated by: Grieshuber, Churkin, 2003: 260 – 261; pl. 15, fig. 7.

Taxonomic status and position: a good subspecies of *C. cocandica* Erschoff, 1874.

Paralectotypes 2♂, 1♀: 1♂: printed, white paper 'ex coll. BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 22.11.R0 2001 .'; printed, pink paper 'Origin.'; printed, white paper 'Schahidulla

| Chotan mer. | Juni 4500 m. '; handwritten, white paper 'cocandica | tatarica | O.B.H. '; printed, red paper 'Paralectotype | Colias cocandica | tatarica O. Bang-Haas, | 1915, Deut. Ent. Z. | Iris 29: 98-99, | designated by | J.Grieshuber & S.Churkin, | 2003'; 1♂, 1♀: printed, white paper 'ex coll. BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | 22.11.R0 2001 .'; printed, pink paper 'Origin. '; printed, white paper 'Schahidulla | Chotan mer. | Juni 4500 m. '; printed, red paper 'Paralectotype | Colias cocandica | tatarica O. Bang-Haas, | 1915, Deut. Ent. Z. | Iris 29: 98-99, | designated by | J.Grieshuber & S.Churkin, | 2003'.

thia O.Bang-Haas, 1934

Colias aurora thia O.Bang-Haas, 1934: 109 – 110.

Taxonomic status and position: junior subjective synonym of *C. diva vespera* O.Bang-Haas, 1927 [Grieshuber, 1996a].

Lectotype ♂ (col. pl. XII: 61-63), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, red paper 'Syntypus | Colias aurora thia | O.bang-Haas, 1934 | Grieshuber det. | 12.05.2004'; handwritten, white paper 'Lectotype ♂ | thia B.H. | S.Korb des. | 2014'; printed, white paper 'Colias aurora thia O.B.=Haas'; printed, white paper 'Kansu mer. or. | Meitshuan | 2000 m. Anfg. Juli'.

Paralectotype ♀: printed, white paper 'ex coll. | BANG-HAAS'; printed, pink paper 'Co-Type | e Collection | Bang-Haas'; printed, red paper 'Syntypus | Colias aurora thia | O.bang-Haas, 1934 | Grieshuber det. | 12.05.2004'; printed, white paper 'Kansu mer. or. | Meitshuan | 2000 m. Anfg. Juli'.

tkatschukovi O.Bang-Haas, 1936

Colias chlorocoma tkatschukovi O.Bang-Haas, 1936: 287. Lectotype designated by: Nekrutenko, 1990: 102.

Taxonomic status and position: junior subjective synonym of nominotypical *C. chlorocoma* Christoph, 1888.

Lectotype ♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11.2001 .'; printed, pink paper 'Co-Type | e Collection | Bang-Haas'; printed, name and author handwritten, yellow paper: 'LECTOTYPUS ♂ | tkatschukovi O.B.-H. | Y.Nekrutenko design. '; handwritten, white paper 'Colias chlorocoma | v. tkatschukovi | OB-Haas'; handwritten, white paper 'Russ. Armenien | Daralages | Pagod Sultanbek | Juni'.

Paralectotype ♀: printed, white paper 'ex coll. | BANG-HAAS'; printed, name and author handwritten, yellow paper: 'PARALECTOTYPUS ♀ | tkatschukovi O.B.-H. | Y.Nekrutenko design. '; handwritten, white paper 'Russ. Armen. | Sultanbek | Daralages | 24 Juni'.

transcaspica Christoph, 1887

Colias Aurorina var. *Transcaspica* Christoph, 1887: 162.

Taxonomic status and position: a good subspecies of *C. aurorina* Herrich-Schäffer, 1850.

Lectotype ♂ (col. pl. XII: 64-66), **designated here** according to the Art. 61.1 and 74.1 of the Code: 1♂: printed, numbers handwritten, white paper 'ex coll. 3/4 | Staudinger'; printed, red paper 'Syntype | Colias aurorina | [var.] transcaspica | Christoph, 1887 | det. Grieshuber, 2007'; handwritten, white paper 'Lectotype | transcaspica Chr. | S.Korb des. 2014'; handwritten, white paper '14 6 82 | Хохурь <Nokhur>'.

Paralectotypes 2♀: 1♀: printed, numbers handwritten, white paper 'ex coll. 4/4 | Staudinger'; printed, red paper 'Syntype | Colias aurorina | [var.] transcaspica | Christoph, 1887 | det. Grieshuber, 2007'; handwritten, white paper '14 6 82 | Хохурь <Nokhur>'; yellow circle; 1♀: printed, numbers handwritten, white paper 'ex coll. 2/4 | Staudinger'; printed, red paper 'Syntype | Colias aurorina | [var.] transcaspica | Christoph, 1887 | det. Grieshuber, 2007'; handwritten, white paper '14 6 82 | Хохурь <Nokhur>'; handwritten, yellow paper 'Nochur Teke' | Chr.'.

tsurpuana Grieshuber, 1996

Colias nina tsurpuana Grieshuber, 1996b: 557 – 558; pl. 1, figs. 1 – 9.

Taxonomic status and position: junior subjective synonym of *C. nina* Fawcett, 1904 [Grieshuber et al., 2011].

Paratype ♀: printed (day and month handwritten), red paper 'Paratypus | C. nina tsurpuana Grieshuber | TIBET, 60 km NW Lhasa | Tsurpu, 3900 – 4000 m | 03.07.1994 | leg. J.Grieshuber'.

vespera O.Bang-Haas, 1927

Colias aurora vespera O.Bang-Haas, 1927: 44; pl. 6, figs. 14, 15.

Taxonomic status and position: junior subjective synonym of *C. diva* Grum-Grshimailo, 1891.

Holotype ♂: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11.2001 .'; printed, pink paper 'Type | O.Bang-Haas'; printed, white paper 'Lanchowfu | Kansu'; printed, red paper 'Holotypus | Colias aurora | vespera | bang-Haas, <sic!> 1927 | Grieshuber det. | 12.05.2004'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I. abgebildet | t. 6 f. 14 | beschrieb. p. 44'; handwritten, white paper 'aurora | vespera | OBHaas'.

Paratype ♀: printed, white paper 'ex coll. | BANG-HAAS'; printed, yellow paper 'GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11.2001 .'; printed, pink paper 'Type | O.Bang-Haas'; printed, white paper 'Lanchowfu | Kansu'; printed, red paper 'Allotypus | Colias aurora | vespera | bang-Haas, <sic!> 1927 | Grieshuber det. | 12.05.2004'; printed, numbers handwritten, white paper 'Horae Macrolep. | Vol. I.

abgebildet | t. 6 f. 15 | beschrieb. p. 44’.

viridis Bollow, 1930

C.[olias] tyche Form *viridis* Bollow, 1930: 108; pl. 7, row e.

Taxonomic status and position: junior subjective synonym of nominotypical *C. montium* Oberthür, 1886.

Holotype ♂ (by monotypy): printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | R0 | 22.11. 2001 .’; printed, white paper ‘viridis (O.B.=H i. l.) Bollow’; printed, white paper ‘Colias montium ab. ♀’; handwritten, white paper ‘Colias melinos | viridis Bollow | Type ♂’; printed, red paper ‘Holotypus | Colias tyche | viridis Bollow, 1930 [= *C. montium* | viridis] | Grieshuber det. | 12.05.2004’; printed, white paper ‘Kansu sept occ | Hsining | Nanchan mont. | Tatum | Nadelholzzone | August 2000 m’.

wanda Grum-Grshimailo, 1907

Colias eogene wanda Grum-Grshimailo, 1907: 13, 363, 424. Lectotype designated by: Grieshuber, Churkin, 2003: 250 – 251.

Taxonomic status and position: a good species.

Paralectotypes 1♂, 2♀: 1♂: printed, numbers handwritten, white paper ‘ex coll 1/3 | Staudinger’; handwritten, white paper ‘Eogene var.’; handwritten, brown paper ‘Thibet | Kuku Noor Alp. | 90 Gr.Gr.’; printed, red paper ‘Paralectotype | Colias wanda | Grum-Grshimailo, 1907 | Izdanie imp. Russk. | Geogr. obstsh. III: | 363, 424, designated by | J.Grieshuber & S.Churkin, | 2003’; 1♀: printed, numbers handwritten, white paper ‘ex coll 3/3 | Staudinger’; handwritten, white paper ‘Arida ♀ | nigricans | Kuku Noor Alp’; printed, red paper ‘Paralectotype | Colias wanda | Grum-Grshimailo, 1907 | Izdanie imp. Russk. | Geogr. obstsh. III: | 363, 424, designated by | J.Grieshuber & S.Churkin, | 2003’; handwritten, brown paper ‘Thibet | Kuku Noor Alp. | 90 Gr.Gr.’; handwritten, white paper ‘Kuku-Noor’; handwritten, white paper ‘Хара Мори <Khara Mori> | 30.VII.90’; 1♀: printed, numbers handwritten, white paper ‘ex coll 2/3 | Staudinger’; printed, red paper ‘Paralectotype | Colias wanda | Grum-Grshimailo, 1907 | Izdanie imp. Russk. | Geogr. obstsh. III: | 363, 424, designated by | J.Grieshuber & S.Churkin, | 2003’; handwritten, white paper ‘26.VII.90’; handwritten, white paper ‘Ю. Кук. Н-оп. <Yu. Kuk. N-or [South Kuku-Noor]>’; brown circle.

‡ **weneri Geest, 1905**

Colias Chrysotheme Esp. ab. *Weneri* Geest, 1905: 379.

Taxonomic status and position: an infrasubspecific taxon, thus unavailable.

Syntypes, 2♂, 1♀: 1♀: printed, white paper ‘ex coll. | BANG-HAAS’; printed, yellow paper ‘GART

| Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11. 2001 .’; printed, white paper ‘infrasubspecific taxon | name bearing specimen of Colias | chrysotheme [ab.] weneri Geest, | 1905 | det. Grieshuber, 2007’; printed, red paper ‘Type’; handwritten, white paper ‘Neus. fauz | 25/8 906’; 1♂: printed, white paper ‘ex coll. | BANG-HAAS’; printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11. 2001 .’; printed, red paper ‘Type’; printed, white paper ‘infrasubspecific taxon | name bearing specimen of Colias | chrysotheme [ab.] weneri Geest, | 1905 | det. Grieshuber, 2007’; handwritten, white paper ‘ab. Weneri (Geest) | Original ♂♂♀’; 1♂: printed, white paper ‘ex coll. | BANG-HAAS’; printed, yellow paper ‘GART | Exemplar und Eti- | ketten dokumentiert | specimen and label | data documented | RD | 22.11. 2001 .’; printed, red paper ‘Type’; printed, white paper ‘infrasubspecific taxon | name bearing specimen of Colias | chrysotheme [ab.] weneri Geest, | 1905 | det. Grieshuber, 2007’; handwritten, white paper ‘ab. ♂ Weneri | Gst’.

wiskotti Staudinger, 1882

Colias Wiskotti Staudinger, Bang-Haas, 1882: 166 – 167; Taf. 2, Fig. 9 – 10. Lectotype designated by: Grieshuber, Worthy, 2006: 48.

Taxonomic status and position: a good species.

Lectotype ♂: printed, numbers handwritten, white paper ‘ex coll. 1/14 | Staudinger’; printed, pink paper ‘Origin.’; printed, red paper ‘[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer] | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006’; handwritten, brown paper ‘Samarkand Alp | Hbhr. 81’; microvial with genitalia preparate.

Paralectotypes 6♂, 7♀: 1♂: printed, numbers handwritten, white paper ‘ex coll. 2/14 | Staudinger’; printed, pink paper ‘Origin.’; printed, red paper ‘[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer] | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006’; brown circle; handwritten, white paper ‘Samarkand alp | Hbhr. 81’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 3/14 | Staudinger’; printed, pink paper ‘Origin.’; printed, red paper ‘[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer] | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006’; brown circle; handwritten, white paper ‘Samarkand alp | Hbhr. 81’; handwritten, white paper ‘6/7’; 1♂: printed, numbers handwritten, white paper ‘ex coll. 4/14 | Staudinger’; printed, pink paper ‘Origin.’; printed, red paper ‘[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer] | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by

Grieshuber & | Worthy, 2006'; brown circle; handwritten, white paper 'Samarkand alp | Hbhr. 81'; 1♂: printed, numbers handwritten, white paper 'ex coll. 5/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; handwritten, white paper 'Samarkand alp | Hbhr. 81'; handwritten, white paper '6/7'; 1♂: printed, numbers handwritten, white paper 'ex coll. 6/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; brown circle; handwritten, white paper 'Samarkand alp. | Hbhr. 81'; 1♀: printed, numbers handwritten, white paper 'ex coll. 7/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; handwritten, white paper 'Samarkand alp | Hbhr. 81'; 1♂: printed, numbers handwritten, white paper 'ex coll. 8/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; brown circle; handwritten, white paper 'Samarkand alp | Hbhr. 81'; 1♀: printed, numbers handwritten, white paper 'ex coll. 9/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; brown circle; handwritten, white paper 'Samarkand alp | Hbhr. 81'; 1♀: printed, numbers handwritten, white paper 'ex coll. 10/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; brown circle; blue square; handwritten, white paper 'Samarkand Alp. | Hbhr. 81'; 1♀: printed, numbers handwritten, white paper 'ex coll. 11/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; brown circle; handwritten, white paper 'Samarkand alp | Hbhr. 81'; 1♀: printed, numbers handwritten, white paper 'ex coll. 12/14 | Staudinger'; printed, pink paper 'Origin.'; printed, red paper '[Samarkand Alpen (Haz- | reth Sultan Gebirge, | 1881, Haberhauer) | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & |

Worthy, 2006'; brown circle; handwritten, white paper 'Leuca | Stgr.'; handwritten, brown paper 'Samarkand | Alp. | 81 Haberh.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 13/14 | Staudinger'; printed, handwritten name and author, pink paper 'Origin. | Wiskotti | Stgr.'; printed, red paper '[Alai, 1880, Haberhauer] | Paralectotype | Colias wiskotti | Staudinger, 1882 | desing. <sic!> by Grieshuber & | Worthy, 2006'; handwritten, brown paper 'Alai | 80 Hbhr.'; 1♀: printed, numbers handwritten, white paper 'ex coll. 14/14 | Staudinger'; printed, handwritten name and author, pink paper 'Origin. | Wiskotti | Stgr.'; printed, red paper '[Alai, 1880, Haberhauer] | Paralectotype | Colias wiskotti | Staudinger, 1882 | (f. "leuca" Stgr. 1882) | desing. <sic!> by Grieshuber & | Worthy, 2006'; brown circle.

ACKNOWLEDGMENTS

I am deeply grateful to the curator of the lepidopterological collections of the Museum für Naturkunde an der Humboldt-Universität zu Berlin Dr. W.Mey for the opportunity to study the collections.

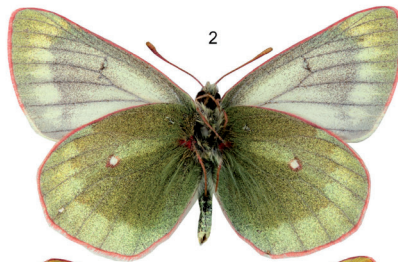
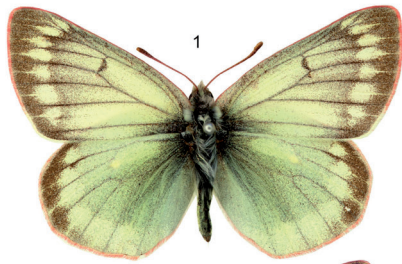
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scale bar: 1 mm



Lectotype ♂
alpina Elwes
S.Korb des. 2014

Melinos

S. E. Altaï,
Tschuja Mts.
C. 880 ft.
5. 7. 88
H.J. Elwes.

Syntype
Colias melinos
[var.] *alpina* ELWES, 1899
det. GRIESHUBER, 2007

ex coll. 116
STAUDINGER

3



Syntype
Colias baeckeri KOTZSCH, 1930
det. GRIESHUBER, 2007

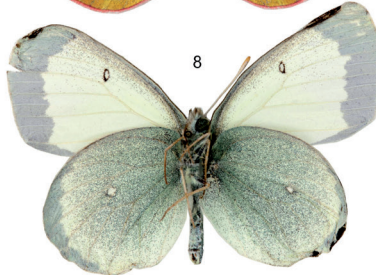
Pass Dingtsiangman
Richtthofengebirge
Kansu 2500m

734.

Lectotype ♂
baeckeri Kotzsch.
S.Korb des. 2014

Co-Type
Collection
Kotzsch

6



ab. *Cretacea*
Schilder

[Kusamo 6/16]

Syntype
Colias palaeno [var.]
cretacea AURIVILLIUS,
1888
det. GRIESHUBER, 2007

infra-specific name bearing specific name *Colias palaeno* [ab.] 1884
det. GRIESHUBER, 2007

[Kusamo 6/16]

Origin.
ex coll. 4/16
STAUDINGER

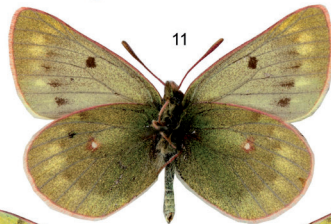
Kusamo
Schilder
Kusamo

Lectotype ♂
cretacea Aur.
S.Korb des. 2014

9



x0.3



Syntype
Colias cocandica
culminicola KOTZSCH, 1936
det. GRIESHUBER, 2007

Lectotype ♂
culminicola Kotz.
S.Korb des. 2014.

GART
Exemplar und Etiketten dokumentiert
specimen and label data documented
2/11/2001

West-Hindukusch
Andarab
Gerrilions
4000-4500m Mitte August
leg. H & E. Kotzsch

Co-Type
Collection
Kotzsch

738.

12



Lectotype ♂
decolorata Stgr.
S.Korb des. 2014

[Kentel]
Syntype
Colias aurora [var.]
decolorata STAUDINGER,
1898
det. GRIESHUBER, 2007

Kentel
Bydon.

ex coll. 219
STAUDINGER

Origin.

15



Lectotype ♂
erschoffii Alph.
S.Korb des.
2014

Syntype
Colias erschoffii
ALPHERAKY, 1881
det. GRIESHUBER, 2007

ex coll. 112
STAUDINGER

15 V 1877.
Tian-chan.

18

1-18. Primary types of *Colias* species: 1-3 – *C. melinos* var. *alpina* Elwes, 1899, lectotype male; 4-6 – *C. baeckeri* Kotsch, 1930, lectotype male; 7-9 – *C. palaeno* var. *cretacea* Aurivillius, 1888, lectotype male; 10-12 – *C. cocandica* *culminicola* Kotsch, 1936, lectotype male (10, 11 – 30% enlarged); 13-15 – *C. aurora* var. *decolorata* Staudinger, 1898, lectotype male; 16-18 – *C. erschoffii* Alphéraký, 1881, lectotype male.

scale bar: 1 mm



19



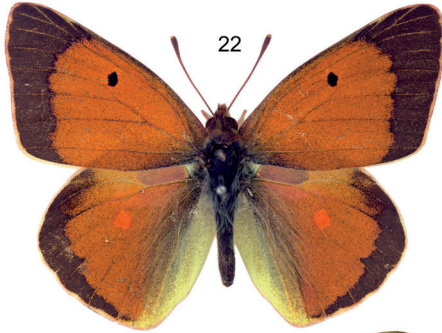
20

Lectotype ♂
felderi Gr. Gr.
S. Korb des. 2014

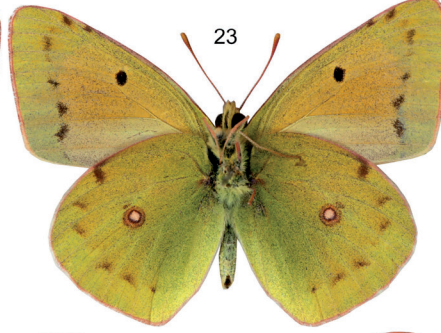
Syntype
Colias felderi GRUM-GRSHIMAILO, 1891,
Horae Soc. ent. ross. 25: 448-449,
det. J. GRIESHUBER & S. CHURKIN, 2004

ex coll. STAUDINGER

21



22



23

Lectotype ♂
heldreichi Stgr.
S. Korb des. 2014

Syntype
Colias heldreichi STAUDINGER, 1862
det. GRIESHUBER, 2007

ex coll. 3/6 STAUDINGER

Origin. Veluchii Kr.

24



25



26

Lectotype ♂
helichtha Led.
S. Korb des. 2014

Syntype
Colias helichtha LEDERER, 1853
det. GRIESHUBER, 2007

ex coll. STAUDINGER

Coll. Led. 27



28



29

GART
Exemplar und Etiketten dokumentiert
specimen and label data documented
22.11.2001

Type

Syntypus
Colias sifanica herculeana BOLLW, 1930
GRIESHUBER det. 12.05.2004

Col. sifanica herculeana

Lectotype ♂
herculeana Boll.
S. Korb des. 2014

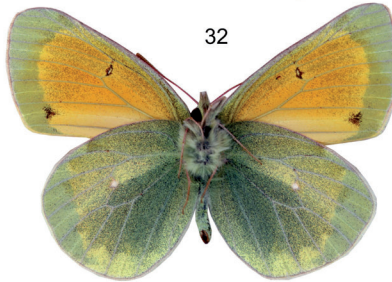
Richtshofen Gbg. westl. Liang-tschou Kansu sept. China Juli 2500m.

ex coll. BANG-HAAS

30



31



32

Syntype
Colias lada GRUM-GRSHIMAILO, 1891,
Horae Soc. ent. ross. 25: 447-448,
det. J. GRIESHUBER & S. CHURKIN, 2004

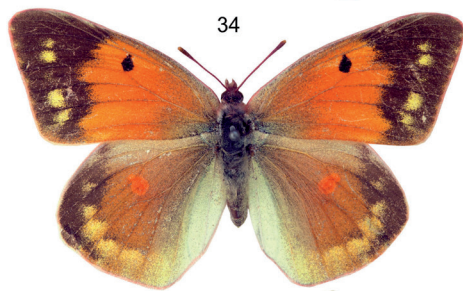
Lectotype ♂
lada Gr. Gr.
S. Korb des. 2014

ex coll. STAUDINGER

33

19-33. Primary types of *Colias* species: 19-21 – *C. felderi* Grum-Grshimailo, 1891, lectotype male; 22-24 – *C. heldreichi* Staudinger, 1862, lectotype male; 25-27 – *C. helichtha* Lederer, 1853, lectotype male; 28-30 – *C. sifanica herculeana* Bollow, 1930, lectotype male; 31-33 – *C. lada* Grum-Grshimailo, 1891, lectotype male.

scale bar: 1 mm



34



35

Lectotype ♀
Libanotica Led.
S. Korb des. 2014

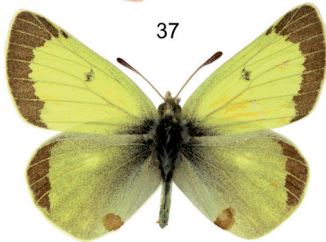
Syntype
Colias libanotica
LEDERER, 1858
det. GRIESHUBER, 2007

ex coll. 1/11
STAUDINGER

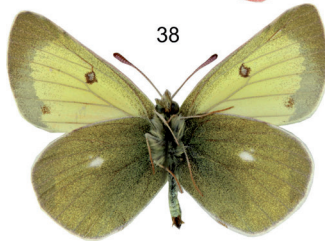
Origin.
Siberian

Coll. Led.

36



37



38

Lectotype ♂
marcopolo Gr. Gr.
S. Korb des.
2014

Syntype
Colias marcopolo GRUM-
GRSHIMAILO, 1888
det. GRIESHUBER, 2007

ex coll. 2/1
STAUDINGER

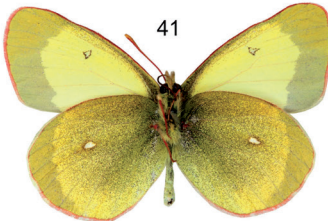
Origin.
Himalayas or
Gr. Gr.

Coll. S. Korb

39



40



41

var. *Orientalis*
Stgr.

Origin.

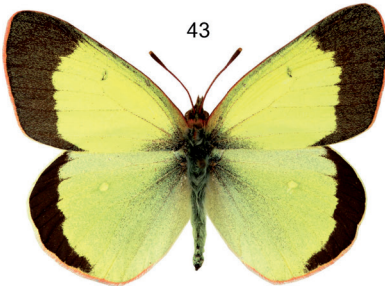
Lectotype ♂
orientalis Stgr.
S. Korb des. 2014

[Kentei]
Syntype
Colias palaeno [var.] *orientalis*
STAUDINGER, 1892
det. GRIESHUBER, 2007

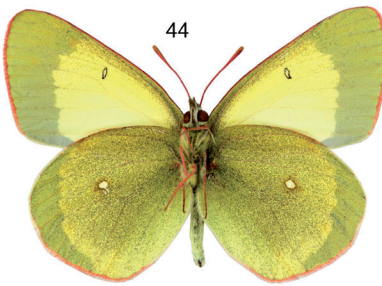
ex coll. 1/11
STAUDINGER

Kentei
89.2.2001

42



43



44

Colias palaeno poktussani O. B.-Haas

Syntypus
Colias palaeno
poktussani
BANG-HAAS, 1935
GRIESHUBER det.
12.05.2004

Type
O. B.-Haas

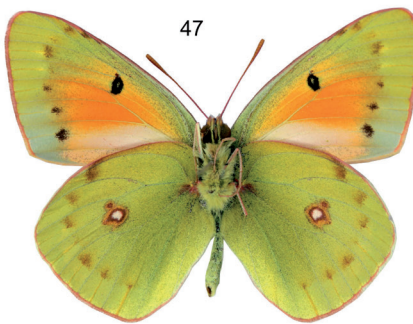
ex coll.
BANG-HAAS

GART
Exemplar und Et-
ketten dokumentiert
specimen and label
data documented
22.11. 2001

45



46



47

Lectotype ♂
romanovi Gr. Gr.
S. Korb des.
2014

Syntype
Colias romanovi Grum-
Grshimailo, 1885
det. GRIESHUBER, 2007

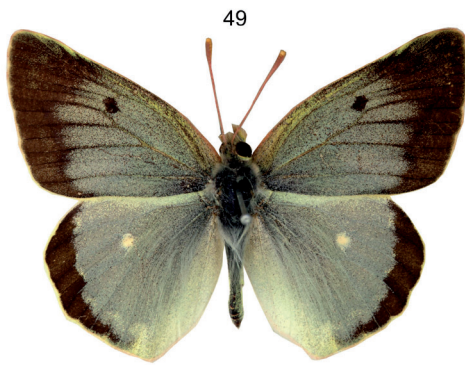
ex coll. 4/7
STAUDINGER

S. W. Flai
85 Grum.

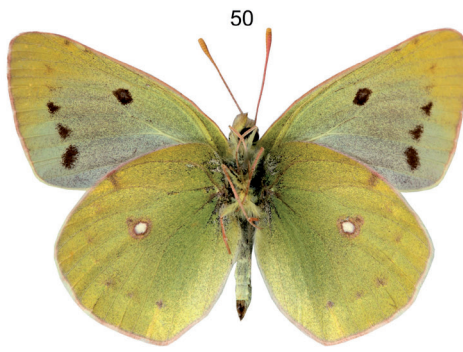
48

34-48. Primary types of *Colias* species: 34-36 – *C. libanotica* Lederer, 1853, lectotype female; 37-39 – *C. marcopolo* Grum-Grshimailo, 1888, lectotype male; 40-42 – *C. palaeno* var. *orientalis* Staudinger, 1892, lectotype male; 43-45 – *C. palaeno poktussani* Bang-Haas, 1935, lectotype male; 46-48 – *C. romanovi* Grum-Grshimailo, 1885, lectotype male.

scale bar: 1 mm



49



50

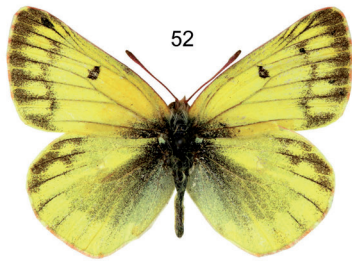
Lectotype ♂
Sagartia Led.
S. Korb des. 2014

[2/5]
Syntype
Colias sagartia LEDERER, 1869
det. GRIESHUBER, 2007

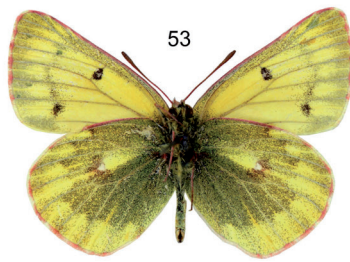
ex coll. 215 Coll. Led.
STAUDINGER

Origin. Hladchynabad

51



52



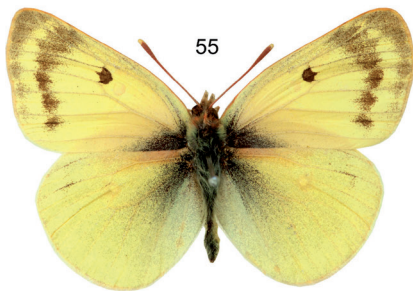
53

54 Syntypus
Colias ladakensis
seitzi
BOLLOW, 1931
GRIESHUBER det.
12. 05. 2004

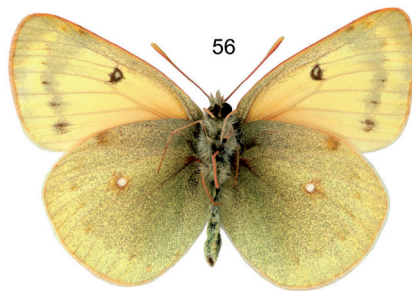
Lectotype ♂
seitzi Bollow
S. Korb des.
2014

Type Thibet ooid.
Churmurti
Shilang
(Shiring) Pass
August 4800 m.

Colias ladakensis
subsp. seitzi
Type Bollow



55



56

Lectotype ♂
sieversi Gr. Gr.
S. Korb des. 114

Syntype
Colias sieversi GRUM-
GRSHIMAILO, 1887
det. GRIESHUBER, 2007

ex coll. 116
STAUDINGER

57



58



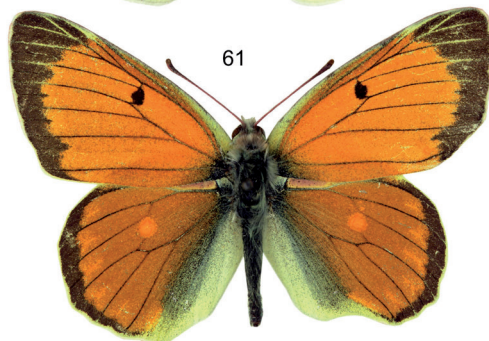
59

Lectotype ♂
sifanica Gr. Gr.
S. Korb des. 2014

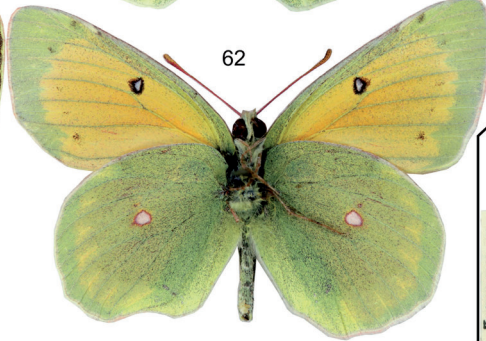
Syntype
Colias sifanica GRUM-
GRSHIMAILO, 1891
det. GRIESHUBER, 2007

ex coll. 212
STAUDINGER

60



61



62

Colias aurora
thia O. B. = Haas

Syntypus
Colias aurora thia
O. BANG-HAAS, 1934
GRIESHUBER det.
12. 05. 2004

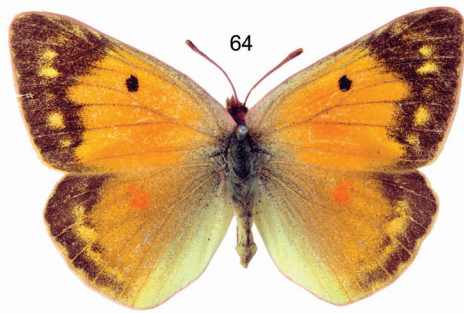
Lectotype ♂
thia B.H.
S. Korb des.
2014

ex coll. BANG-HAAS
Kansu mer. or.
Meitshuan
2000m. Aufg. Juli

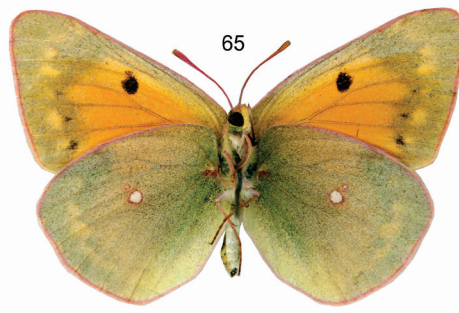
63

49-63. Primary types of *Colias* species: 49-51 – *C. sagartia* Lederer, 1869, lectotype male; 52-54 – *C. ladakensis seitzi* Bollow, 1930, lectotype male; 55-57 – *C. sieversi* Grum-Grshimailo, 1887, lectotype male; 58-60 – *C. sifanica* Grum-Grshimailo, 1891, lectotype male; 61-63 – *C. aurora thia* Bang-Haas, 1934, lectotype male.

scale bar: 1 mm



64



65

66 Lectotype
transcaspica Chr.
S. Korb des. 2014.

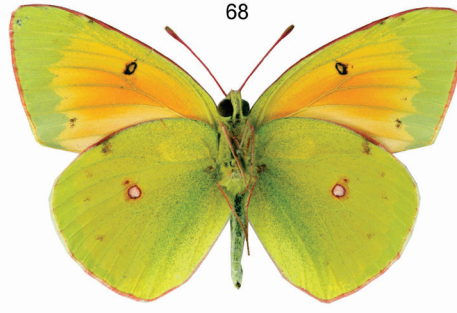
Syntype
Colias aurorina
[var.] *transcaspica*
CHRISTOPH, 1887
det. GRIESHUBER, 2007

ex coll 3/4
STAUDINGER

14631
F. G. M.



67



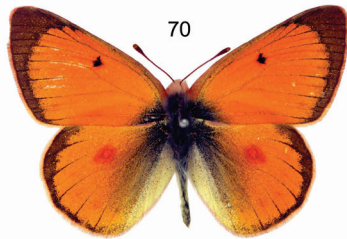
68

69 uncertain status
? Syntype ?
Colias aurora [var.]
kenteana HEYNE, 1895
det. GRIESHUBER, 2007

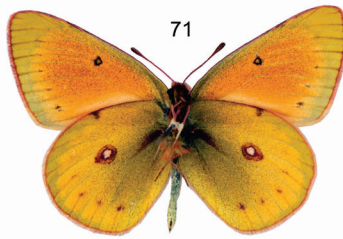
31375

Aurora
v. *kenteana*
Kentei Gub.
1000-800 Thule

Neotype
kenteana Heyne, 1895
des. Korb 2014



70



71

var. *Andina* Stgr.

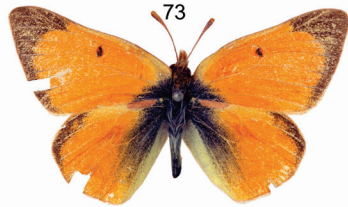
Origin.

Cocapata
Bolivia 3500m.
92 Bartlett

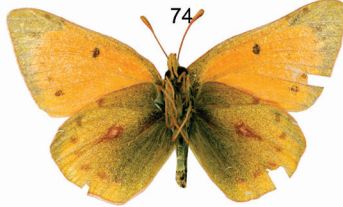
Colias lesbia andina
STAUDINGER, 1894
Syntype
GRIESHUBER det. XII.2004

Lectotype ♂
andina Stgr.
S. Korb des. 2014

72



73



74

75

Lectotype ♂
arena Stgr.
S. Korb des.
2014

Lesbia var.
Arenasyn

GART
Exemplar und Etiketten dokumentiert
specimen and label data documented
2.11.2001

O. Norden-steroid

Origin.

Colias lesbia arena
STAUDINGER, 1899
Syntype
Grieshuber det. XII.2004

C. Lesbia
v. *arena* ♂

64-75. Primary types of *Colias* species: 64-66 – *C. aurorina* var. *transcaspica* Christoph, 1887, lectotype female; 67-69 – *C. aurora* var. *kenteana* Heyne, 1895, neotype male; 70-72 – *C. lesbia* var. *andina* Staudinger, 1894, lectotype male; 73-75 – *C. lesbia* var. *arena* Staudinger, 1899, lectotype male.