Butterflies observed on the western (European) slopes of the southern Ural Mountains during three spring visits in 2011, 2012 and 2014

(Lepidoptera, Papilionoidea)

by

Peter J. C. Russell & W. John Tennent

received 10.XII.2021

Summary: The western slopes of the south end of the Ural Mountains, Russian Federation were visited on three occasions in springtime. Nine species of Hesperiidae, three Papilionidae, 11 Pieridae, 23 Lycaenidae and 30 Nymphalidae were observed. Details of the sites visited and an annotated species list are provided. Some details of host-plants are given. Photographs of some unusual species and host-plants are presented.

Zusammenfassung: Die westlichen Abhänge des Süd-Urals in Rußland wurden bei drei Gelegenheiten in den Frühjahren 2011, 2012 und 2014 aufgesucht. Während dieser Aiufenthalte konnten neun Heseriidae-, drei Papilionidae-, 11 Pieridae-, 23 Lycaenidae- und 30 Nymphalidae-Arten beobachtet werden. Einzelheitenm über einige der aufgesuchten Biotope werden mitgeteilt, zusammen mit einer Liste aller beobachteten Arten. Einige seltene und ungewöhnliche Arten und Raupenfraßpflanzen werden abgebildet.

Introduction: The authors visited the southern Ural Mountains during the late springtime on three occasions: 24 May to 5 June 2011, 27 May to 10 June 2012 and 17 May to 31 May 2014. The main purpose of this fieldwork was to obtain egg batches of *Melitaea ornata* Christoph, 1893, from its Type Locality (TL: Guberlya, Orenburg Province, Russia), in order to examine post-diapause larvae to determine head carapace colour; black in *M. phoebe* ([Denis & Schiffermüller], 1775) and red-brown in *M. ornata* Christoph, 1893. Although this was not achieved, a batch of ova was obtained from each of 2 ♀♀ *M. arduinna* (Esper, 1783) and subsequently reared through to adults on potted *Centaurea marshalliana* Spreng (see Russell et al., 2017). All butterflies seen are listed, several of which are species not well known to western European entomologists. Some comments on their ecology and host-plants are provided. We have followed the Nomenclature of Wiemers et al. (2018). Overall distribution of species encountered has been taken from Higgins & Riley (1970) and Tshikolovets (2011).

A feature of our visits to the Urals was the number of butterfly species and individuals falling prey to "crab spiders" of the family Thomisidae, ambushing a variety of species on flower heads. This was presented previously in an illustrated note (Tennent & Russell, 2013).

Localities visited with dates:

Krasnoznamenka, Orenburgskaya Fig. 1: limestone hillocks and meadows to the South of the village (*c.* 51º 21' N., 57º 15' E.), 250-320 m. 29 & 31 May 2011; 31 May, 2 June 2012 & 19, 22 & 26 May 2014.

Donskoe, Orenburgskaya Fig. 2: sloping meadows and limestone hills to the West of the village, over-looking the Ural River, including a strip of damp woodland and wet meadows by the river (*c.* 51º 23' N., 56º 48.5' E.), 250-325 m. 30 May & 1 June 2011, 1 & 3 June 2012 & 20, 23, 25 May 2014.

Guberlya, Orenburgskaya Fig. 3: limestone hills to the Southwest of the village (*c.* 51º 16.5' N., 58º 10' E.), 175-225 m. Four visits 18, 21, 24 & 27 May 2014.

Asha, Chelyabinskaya Fig. 4: meadow slopes, damp meadow with dry stream bed and wooded area to the Southeast of the Village (*c.* 54º 69' N., 57º 18' E.), 250-300 m. Single visit on 2 June 2012.

Annotated species list

Hesperiidae

Pyrgus malvae (Linnaeus, 1758)
Distribution: widely distributed both to the west and east of the Urals; common at Krasnoznamenka, Donskoe and Guberlya.

Pyrgus sidae (Esper, 1782)
Distribution: common west of the southern Urals and east as far as the western Tien Shan; observed occasionally at Donskoe.

Pyrgus alveus (Hübner, [1803])
Distribution: North Africa, central Europe east to the Caucasus, Altai and Siberia; only 2 ♂♂ were seen, both at Donskoe.

Muschampia tessellum (Hübner, [1803])
Distribution: eastern Europe and east of the Urals as far as Siberia and Mongolia; observed singly at Krasnoznamenka.

Muschampia cribrellum (Eversmann, 1841)
Distribution: rare in eastern Europe (Dincă et al., 2010); west of the Urals extending to the Altai and Amur regions to the east; observed often at Krasnoznamenka and occasionally at Guberlya.

Carcharodus alceae (Esper, 1780)
Distribution: widespread both west and east of the Urals; seen quite commonly at Krasnoznamenka, Donskoe and Guberlya.

Carterocephalus palaemon (Pallas, 1771)
Distribution: both Palaearctic and Nearctic; seen occasionally at Asha, the most wooded habitat visited.

Thymelicus lineola (Ochsenheimer, 1808)
Distribution: throughout the Palaearctic region and introduced to the Nearctic; now frequent in southern Canada and northern USA; observed, often commonly, at all sites visited.

Thymelicus sylvestris (Poda, 1761)
Distribution: the Ural Mountains are the eastern limit of this butterfly's distribution; it was encountered rarely at Krasnoznamenka.

Ochlodes sylvanus (Esper, 1777)
Distribution: very widely in the Palaearctic in Western Europe; it was observed occasionally at Krasnoznamenka, Donskoe and Asha. (Note: previously known as *Ochlodes venata* (Bremer & Grey, 1853) [TL: "environs of Pekin" – Beijing, China] – the name *sylvanus* was conserved in 2000 by ICZN Opinion 1944 [Bulletin of Zoological Nomenclature, **57** (1): 56].

Papilionidae

Papilio machaon Linnaeus, 1758
Distribution: numerous subspecies have been recognized throughout both the Palaearctic, in western Europe to Japan, and Nearctic from Alaska to the USA. Seen occasionally at all locations except Asha in 2011 and 2014.

Iphiclides podalirius (Linnaeus, 1758)
Distribution: widespread in the southern Palaearctic region, as far as western China; seen frequently at all locations except Asha.

Parnassius mnemosyne (Linnaeus, 1758)
Distribution: western Palaearctic. Distribution of some Russian populations are detailed in Bolotov et al. (2013); only observed at Asha, in some numbers along a stream bed below the forest where its host-plant, a species of *Corydalis*, occurred in profusion.

Pieridae

Aporia crataegi (Linnaeus, 1758)
Distribution: throughout the Palaearctic region; seen at all locations, sometimes in abundance.

Movement of *A. crataegi* (L.) was observed in late May and early June 2012. We arrived in Ufa (*c.* 53º 39.5' N., 55º 5' E.) on the evening of the 28th of May and stayed in a hotel close to the centre of the town. Over the next two days numbers were seen in the town centre, flying slowly 2-6 metres above street level. A ♂ was found fluttering on the inside of a hotel window and, although several presumed nectar sources in flower beds were available, none were seen feeding. No other butterfly species were seen in the town. We observed that several were seen flying in approximately the same direction, but the total number of butterflies was small and their direction did not seem particularly significant then.
We left by car for the hills west of Orsk on the morning of the 30th of May and as we neared the outskirts of Ufa began to see *A. crataegi* (L.) in larger numbers, moving across roads and built-up areas in increasing numbers. Our driver remarked that the "white butterflies" had suddenly appeared and were "eating all the plants in the gardens". The known host-plants of *A. crataegi* (L.) made this extremely unlikely, but it was notable that numbers in the town were sufficiently high to cause comment by the public.
We continued in an approximately southerly direction through the town of Sterlitamak (*c.* 53º 38.5' N., 55º 54' E.) some 275 km south of Ufa and then on towards Orenburg before turning southeast at the small town of Ira (*c.* 52º 46.5' N., 57º 6.5' E.), 450 km south of Ufa and making our way across country *via* a series of minor roads to Mednogorsk (*c.* 51º 20.5' N., 57º 35' E.). The whole journey, with stops for fuel and lunch, took some 6 hours. Numbers of *A. crataegi* (L.) between Ufa and Ira were remarkable. Every open area on both sides of the road had many dozens of *A. crataegi* (L.) of both sexes flying low across the grass, invariably in a westerly direction. There were hundreds of dead and injured specimens on the roadside, and in places where there were concentrations of flowers such as the nectar-rich *Vicia tenuifolia dalmatica* (A. Kern) Greuter, dozens of individual butterflies were present on each clump (Fig. 5). Several pairs were seen *in copula*.
What was clearly a significant migration seemed to decrease and then tapered off as we neared Mednogorsk where, although there were still moderately large numbers of *A. crataegi* (L.) in most habitats, no movement in any direction was discerned. No attempt was made to estimate total *A. crataegi* (L.) numbers, but it was clear that there was a major movement from east to west of very large numbers – at least tens of thousands – over some 550 km between Ufa (and perhaps further north) and the southern Urals.
We visited several localities in that area between the 31st of May and the 3rd of June, returning to Ufa by road over approximately the same route on the 4th of June. The occasional *A. crataegi* (L.) was seen on the southern sections but it was not until we turned north onto the main Orenburg/Ufa road at Ira that we became aware of larger numbers. However, individuals were far fewer in number than we had seen previously and there was no obvious movement in any direction. In Ufa town itself, the occasional specimen was seen during the next few days, but the migration was clearly at an end.

Pieris rapae (Linnaeus, 1758)
Distribution: throughout the Palaearctic and introduced to the Nearctic and Australasia; observed infrequently at Krasnoznamenka and Guberlya.

Pieris napi (Linnaeus, 1758)
Distribution: widespread throughout the Palaearctic; encountered only at Donskoe and Guberlya in 2014.

Euchloe ausonia (Hübner, 1805)
Distribution: southern and eastern areas of the Palaearctic region as far east as the Tien Shan and Tibet; a single second brood specimen was observed at Guberlya.

Pontia edusa (Fabricius, 1777)
Distribution: southeast and central Europe and the Middle East as a resident but migrates northwards as far as the Baltic States and southern Scandinavia; encountered fairly frequently in all four locations.

Pontia chloridice (Hübner, 1813)
Distribution: the central Palaearctic, centred in Russia and Kazakhstan. Observed quite commonly at Donskoe (Fig. 6) and also occasionally at Guberlya. *En route* back to Ufa a single specimen was seen at Chebotarevo, at 210m [*c.* 51° 40.1' N, 56° 60' E.] on 4 June 2012. A potential larval host-plant – *Sisimbrium polymorphum* (Murray) Roth (Fig. 7) was common on the slopes at Donskoe . Bartel (1914: 6) indicated that the host-plant in the Urals was *S. junceum*, currently considered a synonym of *S. polymorphum*.

Anthocharis cardamines (Linnaeus, 1758)
Distribution: found commonly throughout the Palaearctic, from Western Europe to China; a single ♂ was seen at Asha.

Gonepteryx rhamni (Linnaeus, 1758)
Distribution: throughout the Palaearctic from western Europe to eastern Asia; overwintered specimens seen only in a low, shrubby, area at Donskoe, where its presumed host-plant, a *Rhamnus* sp., was observed.

Colias hyale (Linnaeus, 1758)
Distribution: widely distributed in the Palaearctic zone except the Iberian Peninsula, Italian Peninsula, Peloponnese and southern Balkans; seen in all locations except Asha.

Colias croceus (Geoffroy, 1785)
Distribution: widely distributed in the Palaearctic from North Africa, including the Atlantic Islands (Macaronesia) and southern Europe, through central Europe to Siberia and India, absent from Central Asia; unusually for such a common butterfly only a single ♂ was seen, at Krasnoznamenka.

Leptidea sinapis (Linnaeus, 1758)
Distribution: this species has a very wide Palaearctic distribution from Europe extending eastwards through the Middle East and Asia as far as southern Siberia and the Baikal region; seen only at Guberlya.

Lycaenidae

Callophrys rubi (Linnaeus, 1758)
Distribution: throughout the majority of the Palaearctic, reaching Siberia, Amurland and Chitral but not China or Japan; we found this species at Guberlya and Krasnoznamenka.

Neolycaena rhymnus (Eversmann, 1832)
Distribution: south and central Russia, southern Siberia to the Altai and Kazakhstan; quite common at the top of a cliff overlooking the Ural River at Donskoe (adult Figs 8A-C), where its host-plant *Caragana frutex* (L.) K. Koch (Russian pea shrub, Fabaceae) (host-plant Fig. 9) (Bartel, 1914: 14) was growing on the slopes; the butterflies were carried upwards by the updraft created by the cliff face.

Satyrium acaciae (Fabricius, 1787)
Distribution: widely scattered colonies in the western Palaearctic, from southern Europe through Turkey, Transcaucasia as far as the Urals; observed occasionally at Krasnoznamenka and Donskoe.

Satyrium ilicis (Esper, 1779)
Distribution: widely throughout the western Palaearctic reaching the Urals and southern Siberia; seen only once at Krasnoznamenka near a shrubby windbreak in one of the valleys.

Satyrium pruni (Linnaeus, 1758)
Distribution: trans-Palaearctic in localised colonies to Mongolia and Japan but absent from southern Europe and the Mediterranean islands; observed at Asha, the only wooded locality.

Lycaena dispar (Haworth, 1802)
Distribution: middle latitudes (*c.* 40-60°N) of the western Palaearctic, reaching Amur and Korea in the east; a colony was found close to the Ural River (in an area which floods in the early spring when the snow melts) at Donskoe.

Lycaena virgaureae (Linnaeus, 1758)
Distribution: from western Europe to Mongolia in the east, generally at elevations between 600 and 2000m but lower in the east; recorded only at Asha.

Lycaena alciphron (Rottemburg, 1775)
Distribution: western Europe and North Africa in a number of different subspecies, eastwards to Altai; only seen at Krasnoznamenka.

Lycaena tityrus (Poda, 1761)
Distribution: from northern Spain through western, central and eastern Europe, the Caucasus and southern Russia to the Altai region; seen at Krasnoznamenka and Guberlya.

Lycaena thersamon (Esper, 1784)
Distribution: a wide distribution from Italy, southeast Europe, Turkey and the Caucasus to the Altai region; seen only at Krasnoznamenka and Donskoe.

Phengaris arion (Linnaeus, 1758)
Distribution: throughout the Palaearctic but local; it was found in small numbers at Krasnoznamenka, Donskoe and Guberlya but not seen at Asha.

Pseudophilotes vicrama (Moore, 1865)
Distribution: eastern Europe and the eastern Palaearctic to China; encountered at all locations except Asha.

Pseudophilotes bavius (Eversmann, 1832)
Distribution: North Africa, eastern Europe to southern Russia and northern Kazakhstan in localised colonies; observed on calcareous soils at three localities, but not Asha.

Scolitantides orion (Pallas, 1771)
Distribution: widely distributed in southern Europe through Russia, eastwards to Japan; a small colony was encountered at Guberlya.

Kretania pylaon (Fischer von Waldheim, 1832)
Distribution: southern Russia and the Middle East to Iran; found fairly commonly at the top of a ridge at Donskoe and occasionally at Krasnoznamenka; not seen at Asha or Guberlya. Reported by Bartel (1914:15) from the southern Urals, the host-plant, *Astragalus varius* S. G. Gmel., was found growing on the escarpment facing the Ural River at Donskoe. Figures of butterfly (Figs 10A-D) and host-plant (Fig. 11).

Plebejus argus (Linnaeus, 1758)
Distribution: Europe and temperate Asia to Japan; it was encountered at both Donskoe and Asha.

Plebejus idas (Linnaeus, 1761)
Distribution: circumpolar in temperate regions from Europe through Russia to Yakutia, the U.S.A. and Canada; fairly common at Krasnoznamenka and Donskoe.

Plebejus argyrognomon (Bergsträsser, [1779])
Distribution: central France and Italy northeastwards through Turkey, the Caucasus, Russia to Amur region; the species was observed at both Krasnoznamenka and Donskoe.

Cyaniris semiargus (Rottemburg, 1775)
Distribution: widely from North Africa, throughout the Palaearctic, including Scandinavia, to Korea and Japan; only seen in the damp meadows at Asha.

Neolysandra coelestina (Eversmann, 1843)
Distribution: only Greece in western Europe, Turkey, Caucasus, Russia and south through Kurdistan to Iran; found commonly around shrubby windbreaks at Krasnoznamenka and Donskoe; seen occasionally at Guberlya but not at Asha (Figs 12A-D).

Polyommatus amandus (Schneider, 1792)
Distribution: North Africa and Spain throughout most of Europe and western Asia to Iran; found at Krasnoznamenka and Donskoe.

Polyommatus icarus (Rottemburg, 1775)
Distribution: throughout the western Palaearctic with the exception of the Atlantic and some of the Mediterranean islands, the Middle East and eastwards as far as Korea; found commonly in all localities except Guberlya (most specimens encountered were in poor condition; we thought possibly between broods).

Polyommatus thersites (Cantener, 1834)
Distribution: North Africa and southern Europe, through the Middle East and Russia to Siberia and Tian-Shan; recorded from all locations except Guberlya.

Nymphalidae – Limenitidinae

Neptis rivularis (Scopoli, 1763)
Distribution: from Switzerland northeastwards across S. Russia, reaching Japan; only observed in a colony within a thin strip of woodland near the Ural River which floods in early spring. A potential host-plant *Filipendula ulmaria* (L.) Maxim was present on the woodland edge nearest the river.

Limenitis camilla (Linnaeus, 1764)
Distribution: absent from North Africa, southern Spain and Portugal; widespread in the remainder of Europe across to China and Japan; a solitary specimen was captured on the woodland edge at Asha, it was not seen elsewhere.

Nymphalidae – Nymphalinae

Fabriciana adippe ([Denis & Schiffermüller], 1775)
Distribution: throughout the Palaearctic in various subspecies from southwest Europe through central Europe, southern Scandinavia, Russia, China and Japan; a single individual, of form *cleodoxa*, was seen on the edge of the woods at Asha.

Issoria lathonia (Linnaeus, 1758)
Distribution: a very widespread migrant from North Africa and some of the Atlantic Islands, through Europe, except northern Scandinavia to Mongolia and western China in the eastern Palaearctic; only one rather worn specimen was seen at Krasnoznamenka.

Brenthis hecate ([Denis & Schiffermüller], 1775)
Distribution: southern Europe, Turkey and the Caucasus through southern Russia to the Altai; seen infrequently at both Krasnoznamenka and Donskoe.

Brenthis ino (Rottemburg, 1775)
Distribution: from southwest Europe in the mid-latitudes through the Caucasus, southern Russia, temperate Asia to northern China and Japan; observed only at Asha in the damp area along the banks of a stream.

Brenthis daphne ([Denis & Schiffermüller], 1775)
Distribution: from continental Europe, except Scandinavia, to the eastern Palaearctic in China and Japan; seen in small numbers in a shrubby area with blackberries (*Rubus fruticosus* L.) the host-plant, at the base of the hills at Donskoe.

Boloria titania (Esper, [1793])
Distribution: a circumpolar species in the Palaearctic in alpine regions and damp habitats in western Europe, reaching Siberia and the Altai region and in the Nearctic from subalpine Canada to the Rocky Mountains in Mexico; found flying with *B. ino* in a damp area near the stream at Asha.

Melitaea cinxia (Linnaeus, 1758)
Distribution: a widespread species from North Africa, Europe and central Asia; we found this butterfly commonly on the limestone grasslands of Krasnoznamenka, Donskoe and Guberlya but not encountered at Asha.

Melitaea phoebe ([Denis & Schiffermüller], 1775)
Distribution: trans-Palaearctic from southwest Europe to China and Japan but absent from North Africa and the Atlantic and Mediterranean Islands; ♂♂ were just emerging at Krasnoznamenka and Donskoe in 2012 and 2014 (Fig. 13).

Melitaea ornata Christoph, 1893
Distribution: western Palaearctic from Spain, southeast France, Hungary, north and central peninsular Italy, the Balkans to Turkey, Middle East & Caucasus to southern Russia and Iran in the east (Russell, 2018). Only two worn ♀♀ were captured at Krasnoznamenka, indicating that this species has an earlier emergence time than that of *M. phoebe*; a single fresh ♂ (Fig. 14) was seen at Guberlya in 2014. Unfortunately, this meant we were not able to investigate the larval stages, which had been our primary target in Russia. [Morphological wing characteristics of *M. phoebe* and *M. ornata* can be seen from Figs 13 & 14.]

Melitaea arduinna (Esper, 1783)
Distribution: from the Balkans, southeast Europe, northwest Kazakhstan, the Caucasus, Transcaucasia, the Near East, northeast Iraq and Iran to the mountains of Central Asia. Fresh ♂♂ but no ♀♀ were observed at Krasnoznamenka and Donskoe in 2011, whereas at Guberlya in 2014 both sexes were abundant with many individuals of both sexes recently emerged (Fig. 15). Two egg batches were obtained from ♀♀ placed into a netted pot of *Centaurea marshalliana* Spreng and these were successfully reared through to adults the following year (Russell et al.: 2017).

Melitaea didyma (Esper, 1778)
Distribution: North Africa and southwestern Europe, throughout the southern regions of the Palaearctic to western China; seen at Krasnoznamenka and Donskoe.

Melitaea trivia ([Denis & Schiffermüller], 1775)
Distribution: from northern Spain and Portugal, through southeast France, peninsular Italy, the Balkans, Turkey and Central Asia. Subspecies *robertsi* Butler, 1880 [TL: 'Candahar', Afghanistan], given species status (Kuznetsov, 2011 & Korb & Bolshakov, 2016), occurs in the southern Urals (for detailed life-history see Kuznetsov, 2011) and has been shown from molecular studies to be a form of *M. trivia* (Kuznetsov, et al., 2014). The Type Locality for *M. uvarovi* Gorbunov, 1995, another form closely associated with *robertsi*, is the hills west of Donskoe. An egg batch (Fig. 16) was obtained from a ♀ netted over the host-plant, *Verbascum phoenicium* L. (Fig. 17), but the larvae perished.

Melitaea diamina (Lang, 1789)
Distribution: widely spread from northern Spain through France and central Europe, absent from northern Scandinavia and the Atlantic and Mediterranean islands, reaching eastwards through China to Japan; seen only in damp areas at Asha.

Melitaea athalia (Rottemburg, 1775)
Distribution: from France, the UK and Scandinavia with a continuous distribution throughout the Palaearctic to Japan; only observed at Asha.

Nymphalis xanthomelas ([Denis & Schiffermüller], 1775)
Distribution: central Europe (but often migrates westwards) east through the eastern Palaearctic to Japan; observed in small numbers at all sites except Guberlya. On the edge of the small wooded strip near the Ural River there were young *Populus alba* L. trees (Fig. 18), a potential host-plant for *N. xanthomelas* (Figs 19A-C), seen in this location.

Polygonia c-album (Linnaeus, 1758)
Distribution: trans-Palaearctic from North Africa and Spain through Eastern Europe to China and Japan; seen at Krasnoznamenka and Donskoe.

Aglais urticae (Linnaeus, 1758)
Distribution: all of western Europe to North Cape, absent from North Africa and the Atlantic Islands through the eastern Palaearctic to Japan; observed in all locations except Guberlya.

Vanessa cardui (Linnaeus, 1758)
Distribution: a strong migrant with a cosmopolitan distribution; absent from Australasia and South America; seen in all locations except Asha.

Nymphalidae – Satyrinae

Proterebia afra (Fabricius, 1787)
Distribution: Dalmatia, Caucasus, the southern Urals, Kazakhstan and Asia Minor; in 2014 present in some numbers at Krasnoznamenka, Donskoe and Guberlya; noticeably less frequent in 2011 and 2012.

Coenonympha phryne (Pallas, 1771)
Distribution: Ukraine, western Caucasus, European Russia east to Central Asia; is regarded as under threat as a result of diminishing natural grasslands. It was particularly common at Donskoe and Guberlya (Figs 20A-D) but less so at Krasnoznamenka; 1 ♀ was

observed ovipositing (Fig. 21) at Donskoe on dry grass stems close to the ground. The larvae feed on *Stipa* sp. and overwinter as pupae (Tuzov et al., 2000)

Coenonympha pamphilus (Linnaeus, 1758)
Distribution: all of Europe to Turkey and central Asia; found at all locations except Asha.

Coenonympha glycerion (Borkhausen, 1788)
Distribution: widely distributed in the western Palaearctic (except the Iberian Peninsula and Western France) through to Central Asia; encountered only infrequently in Krasnoznamenka and Asha.

Coenonympha leander (Esper, 1874)
Distribution: from Hungary and the Balkans through Turkey and southern Russia to Kazakhstan and Iran; common at all locations except Asha, where it was absent.

Coenonympha arcania (Linnaeus, 1761)
Distribution: throughout the western Palaearctic, except southern Iberia, to Central Asia including northern Turkey and the Caucasus; found only rarely in damp places at Donskoe and Asha.

Melanargia russiae (Esper, 1784)
Distribution: occurs in isolated pockets from the northern Iberian Peninsula, peninsular Italy and Sicily through the Balkans to Southern Russia and Central Asia; seen occasionally in dry grassland locations (Krasnoznamenka, Donskoe and Guberlya) but not at Asha.

Oeneis tarpeia (Pallas, 1771)
Distribution: southern European Russia, northern Kazakhstan, eastwards to temperate western and central Asia; encountered occasionally at Krasnoznamenka, Donskoe and Guberlya (Figs. 22A-D).

Satyrus ferula (Fabricius, 1793)
Distribution: scattered colonies in North Africa, southwestern Europe, southern Turkey, through southern Russia: southern Urals to the Altai; a single very fresh ♂ seen at Donskoe suggested it was just emerging.

Hyponephele lupina (Costa, 1836)
Distribution: from North Africa and the Iberian Peninsula through southeast France, Italy and the Balkans to southern Russia and central Asia; quite common at Krasnoznamenka and Donskoe.

Acknowledgements: The authors thank Gennadiy Kuznetsov (Volgograd, Russia) for providing information on Russian butterflies and Pavel Gorbunov (Russian Academy of Sciences, Ekaterinburg, Russia) for providing detailed maps of the Kuvandyk area, enabling us to find the sites at Krasnoznamenka and Donskoe. Kiril Korol is thanked for his driving skills (occasionally across ditches when directed by his 'satnav.'!), pleasant company and for negotiating potential difficulties with the local Politsiya. A friendly farmer (unfortunately we failed to note his name) at Donskoe is thanked profusely for allowing us access to his farm on limestone hills west of the village of Donskoe near the Ural River, notwithstanding the fact that hidden spikes he placed on the tracks in 2014 punctured every tyre of Kiril's vehicle. His repair abilities were outstanding! James Pateman (Tangmere, UK) is thanked for making genitalia preparations to aid identification of some *Melitaea* species.

References

Bartel, M. (1914): Ueber einige Lepidopteren-Arten der Uralsteppen. - Mitt. Müncher Ent. Ges. **5** (1-4): 5-25, München.

Bolotov, I. N., Gofarov, M. Y., Rykov, A. M., Frolov, A. A. & Y. I. Kogut (2013): Northern boundary of the range of the Clouded Apollo butterfly *Parnassius mnemosyne* (L.) (Papilionidae): climate influence or degradation of larval host plants? - Nota Lepidopterologica **36** (1): 19-33, Sofia.

Dincă, V., Kolev, V. & R. Verovnik (2010): The distribution, ecology and conservation status of the Spinose Skipper Muschampia cribrellum (Eversmann, 1841) at the western limit of its range in Europe (Hesperiidae). - Nota Lepidopterologica **33**: 39-57, Sofia.

Higgins, L. G. & N. D. Riley (1970): A field guide to the butterflies of Britain and Europe. - Collins, London.

International Commission on Zoological Nomenclature (2000): Bulletin of Zoological Nomenclature. **57** (1): 56. - London.

Korb, S. K. & L. V. Bolshakov (2016): A systematic catalogue of butterflies of the former Soviet Union (Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kyrgyzstan, Kazakhstan, Latvia, Lituania (sic), Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan) with special account to their type specimens (Lepidoptera: Hesperioidea, Papilionoidea), Monograph. Zootaxa **4160** (1): 1-324, Auckland.

Kuznetsov, G. V. (2011): Some data about biology *Melitaea telona* Fruhstorfer, 1908 and *Melitaea robertsi uvarovi* Gorbunov, 1995 (Lepidoptera: Nymphalidae) on Volgograd region. - Caucasian Entomological Bulletin **7** (1): 83-84 + 2 colour plates, Moscow.

Kuznetsov, G. V., Stradomsky, B. V. & Fomina, E. S. (2014): Two forms of *Melitaea trivia* ([Denis & Schiffermüller], 1775) (Lepidoptera: Nymphalidae) from Volgograd Region (Russia): the systematic position on the basis of molecular genetic studies. - Caucasian Entomological Bulletin **10** (1): 119-120, Moscow.

Russell, P. J. C. (2018): The extensive distribution of *Melitaea ornata* Christoph, 1893 (Lepidoptera: Nymphalidae), exemplified by recent records. - Entomologist's Gazette **69**: 255-267, Iver, Buckinghamshire.

Russell, P., Tikhonov, V., Kuznetsov, G., Tennent, W. J. & J. Pateman (2017): A review of the nominal subspecies of *Melitaea arduinna* (Esper, [1873]) (Lepidoptera: Nymphalidae), with observations on host-plants, male genitalia and early stages from the Orenburg and Volgograd Regions of the Russian Federation, the Caucasus, Serbia, Republic of Macedonia and Greece -

Entomologist's Gazette **68**:187-221, Iver, Buckinghamshire.
Tennent, W. J. & P. J. C. Russell (2010): Designation of a neotype for the nominal taxon *Papilio phoebe* [Denis & Schiffermüller], 1775 (Lepidoptera, Nymphalidae). - Entomologist's Gazette **61**: 147-153, Iver, Buckinghamshire.
Tennent, W. J. & P. J. C. Russell (2013): Lepidoptera: regular prey of crab spiders (Arachnida: Thomisidae) that are "ambush predators", with observations from the southern Ural Mountains in early summer 2012. - Entomologist's Gazette **64** (2): 79-83, Iver, Buckinghamshire.
Tshikolovets, V. V. (2011): Butterflies of Europe & the Mediterranean area. - Pardubice, Czech Republic.
Tuzov, V. K., Bogdanov, P. V., Churkin, S. V., Dantchenko, A. V., Devyatkin, A. L., Murzin, V. S., Samodurov, G. D. & A. B. Zhdanko (1997 & 2000): Guide to the Butterflies of Russia and adjacent territories Vol. I (1997: 1-480), Vol. II (2000: 1-580). Pensoft, Sofia.
Wiemers, M., Balletto, E., Dincă, V., Fric, Z. F., Lamas, G., Luhktanov, V., Munguira, M. L., van Sway, C. A. M., Vila, R., Vliegenthart, A., Wahlberg, N. & R. Verovnik (2018): An updated checklist of European Butterflies (Lepidoptera, Papilionoidea). - Zookeys **811**: 9-45, Sofia.

Peter J. C. Russell
Oakmeadow, Wessex Avenue
East Wittering
West Sussex PO20 8NP, U.K.
peterjcrussell@yahoo.co.uk
(Corresponding author)

W. John Tennent
Department of Life Sciences
The Natural History Museum
London SW7 5BD, U.K.
johntennent@hotmail.co.uk

Fig. 1: Limestone hillocks south of Krasnoznamenka, Orenburgskaya, Russian Federation, 26 May 2014.

Fig. 2; West of Donskoe Village, Orenburgskaya, Russian Federation, limestone ridge overlooking the River Ural, 30 May 2011.

Fig. 3: Limestone hills, west of Guberlya village, Orenburgskaya, Russian Federation, 21 May 2014.

Fig. 4: Meadow and Forest area above Asha Village, Chelyabinskaya, Russian Federation, 2 June 2012.

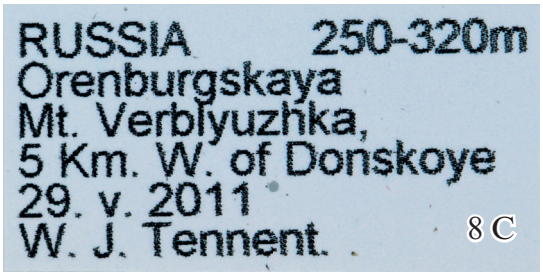


Fig. 5: Congregation of *Aporia crataegi* nectaring on *Vicia tenuifolia*, roadside verge between Ufa and Orenburg, Russian Federation, 30 May 2012.
Fig. 6: *Pontia chloridice* (Hübner, 1813) – ♂ upperside; W. of Donskoe, 1.VI.2012.
Fig. 7: *Sysymbrium polymorphum* Donskoe, Orenburgskaya, Russian Federation 3 June 2012.
Fig. 8: *Neolycaena rhymnus* (Eversmann, 1832) – A: ♂ upperside; B: ♂ underside; C: data label.
Scalebar: 1 cm.

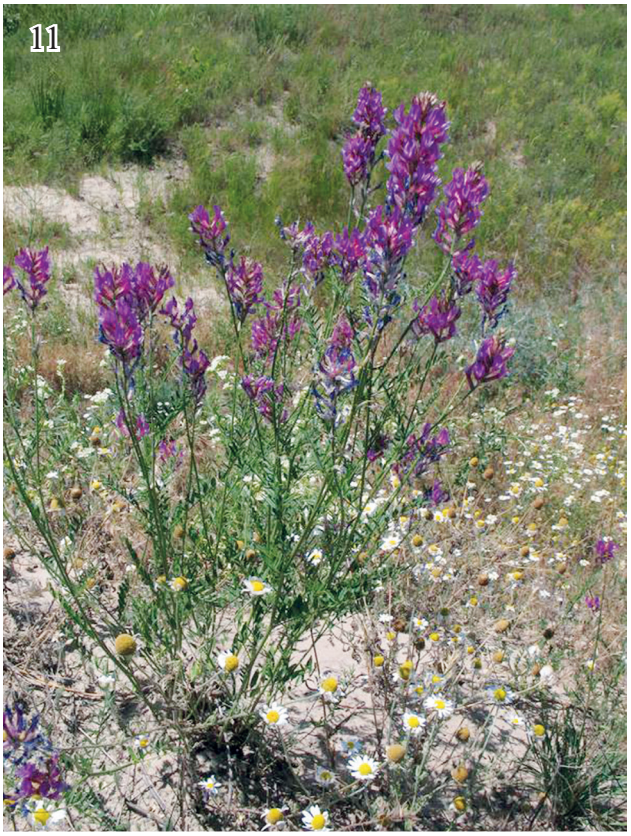


Fig. 9: *Caragana frutex*, Donskoe, Orenburgskaya, Russian Federation 30 May 2011.

Fig. 10: *Kretania pylaon* (Fischer von Waldheim, 1832) – A: ♂ upperside; B: ♀ upperside; C: ♀ underside; D: data label.

Fig. 11: *Astragalus varius*, Donskoe, Orenburgskaya, Russian Federation 1 June 2011.

Fig. 12: *Neolysandra coelestina* (Eversmann, 1843) – A: ♂ upperside; B: ♀ upperside.

Scalebar: 1 cm.

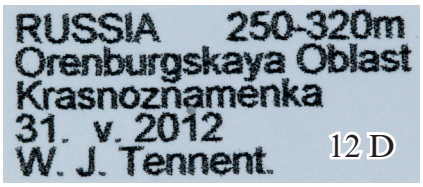
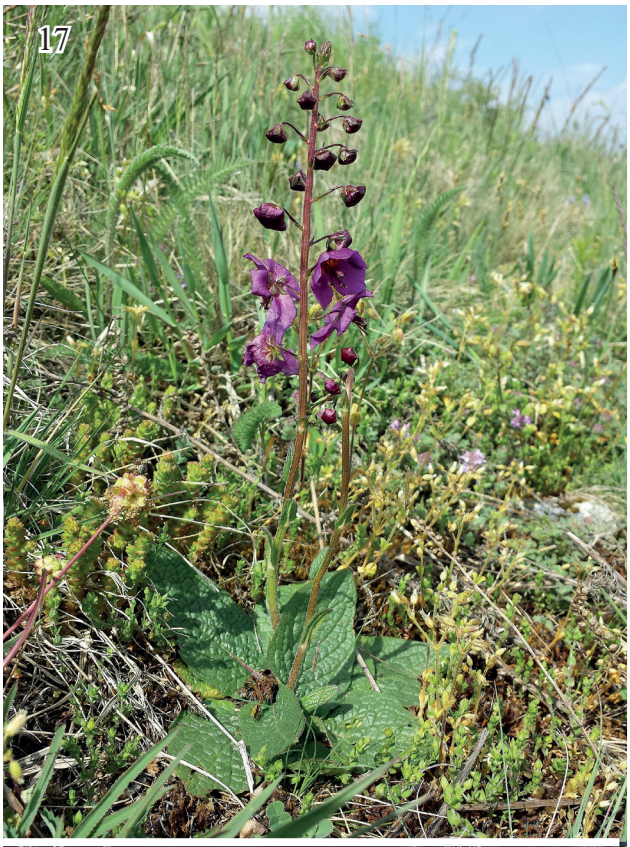


Fig. 12: *Neolysandra coelestina* (Eversmann, 1843) – C: ♀ underside; D: data label.
Fig. 13: *Melitaea phoebe* ([Denis & Schiffermüller], 1775), ♂ underside Krasnoznamenka, Orenburgskaya, Russian Federation, 2 June 2012.
Fig. 14: *Melitaea ornata* Christoph, 1893, ♂ underside, Guberlya, Orenburgskaya, Russian Federation, 18 May 2014.
Fig. 15: *Melitaea arduinna* (Esper, 1783), ♂ on *Centaurea marshalliana*, Guberlya, Orenburgskaya, Russian Federation, 21 May 2014.
Fig. 16: Egg batch of *Melitaea trivia uvarovi* Gorbunov, 1995, Donskoe, Orenburgskaya, Russian Federation, 25 May 2014.



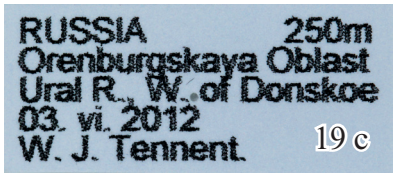


Fig. 17: *Verbascum phoenicium* Donskoe, Orenburgskaya, Russian Federation, 20 May 2014.
Fig. 18: Saplings of *Populus alba*, edge of wooded area near River Ural, Donskoe, Orenburgskaya, Russian Federation.
Fig. 19: *Nymphalis xanthomelas* ([Denis & Schiffermüller], 1775) – A: ♂ upperside; B: ♂ underside; C: data label.
Scalebar: 1 cm.

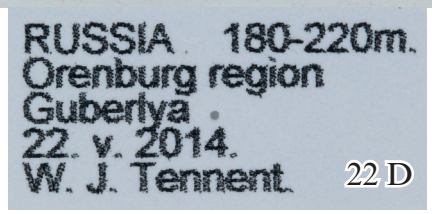


Fig. 20: *Coenonympha phryne* (Pallas, 1771) – A: ♂ upperside; B: ♂ underside; C: ♀ upperside; D: data label.
Fig. 21: *Coenonympha phryne* (Pallas, 1771), ♀ ovipositing on dry grass stem, Donskoe, Orenburgskaya, Russian Federation, 23 May 2014.
Fig. 22: *Oeneis tarpeia* (Pallas, 1771) – A:♂ upperside; B: ♂ underside; C: ♀ upperside; D: data label.
Scalebar: 1 cm.