

**BUTTERFLIES IN HUNGARY, 9-20 JULY 1999**ANDREW WAKEHAM-DAWSON<sup>1</sup>, TED BENTON<sup>2</sup> AND BERNARD WATTS<sup>3</sup><sup>1</sup> Mill Laine Farm, Offham, Lewes, East Sussex BN7 3QB.<sup>2</sup> 13 Priory Street, Colchester, CO1 2PY.<sup>3</sup> Thatch Cottage, Horstead, Norwich, NR12 7EF.

OUR SUMMER PLAN for 1999 was to go to Macedonia and Kosovo in late July to search for grayling butterflies (Satyrinae: *Hipparchia* and *Pseudochazara*), but the Serbian-Kosovar war put an abrupt end to the idea. So we contacted Tamás Hacz, a lepidopterist whom we had met on a Greek mountain in 1997 (Wakeham-Dawson, Benton & Barnham, 1999). Tamás soon had everything arranged and we flew on 9 July 1999 to Budapest, a city of magnificent buildings that spans the mighty River Danube. Tamás met us at the airport. The traffic had been terrible, and only one electric window on his car was working, but Tamás was on time, and ready to show us the butterfly-delights of his country.

It was mid-day already and very cloudy, but we were keen to get exploring the Hungarian butterfly fauna. Tamás, as always, had a plan. He looked darkly at the clouded sky and suggested: "We drink something now? A coffee, maybe?" This was an invitation that was to become pleasantly familiar. So we drank a coffee in a local cafe and headed for Budapest. Here we made our base in the leafy suburbs for the first few days at the flat kindly set aside for our visit by Imre Petezár, a coleopterist and friend of Tamás. During our stay we ate goulash-soup, drank "beers", were rained on, and mugged by bogus police officers. Huge thunder storms circled the city and Tamás told us about the month of hot, dry weather that they had been experiencing in Hungary before our arrival.

However, after a cloudy start on 10 July, we set out in weak sunlight to explore dry hills near Vác to the north of Budapest. In orchards, gardens, and abandoned meadows and quarries between 300 and 600 m above sea level, we saw a rich assortment of butterfly species. These included the closely similar fritillaries, *Mellicta britomartis*<sup>1</sup> and *Mellicta aurelia*, together with a number of lycaenids such as *Agrodiaetus admetus*, *Plebejus argyrognomon* and *Cupido osiris*. The last of these species has a very limited distribution in Hungary (Bálint, 1996). We hunted for *Neptis rivularis* among deciduous trees between the meadows, but found none. Tamás thought that we might have missed the flight, which could have been brought on early by the previous period of hot weather.

One of the most interesting butterflies present in the dry meadows was *Maculinea ligurica puntifera*. Higgins & Riley (1983) place this taxon as a subspecies of *Maculinea arion*, but Bálint (1996) elevates it to full specific status. Male *Maculinea ligurica* have brighter blue wings and are noticeably

<sup>1</sup> Butterfly nomenclature is based on Bálint (1996) and Tolman & Lewington (1997). Authors and dates of taxon descriptions are not included in the current paper as they can be found in these two publications.



larger than *Maculinea arion*, with which *Maculinea ligurica* is sympatric in Hungary. In fact we found both *Maculinea ligurica* and *Maculinea arion* flying together near Apátistvánfalva in the north-west of the country later in the expedition (13 July). They were present in dry areas among wet meadows where *Thymus* and *Oregano* were growing. The taxonomic status of *Maculinea ligurica* and its relationship to *Maculinea arion* is uncertain, and research on these, as well as other Hungarian forms of the *Maculinea* species, is clearly required.

On 11 July we headed south to an area of low-lying (c. 130 m) steppe grassland in the industrial suburbs of southern Budapest. This relatively small area of grassland and scrub bushes lies on the very edge of Budapest. Tamás had found *Colias chrysotheme* flying here in the past, and we were lucky too. Despite skudding clouds after a night of very heavy thunder and rain, we saw fast-flying male and female *Colias chrysotheme*. This species is similar to *Colias crocea* in appearance, but is typically smaller, has a yellow spot in the black "eye" of each upper forewing, and the costal margin of the forewings is markedly concave, giving them a more "pointed" appearance. Also flying with *Colias chrysotheme* were *Colias alfacariensis* and *Colias hyale*. Zsolt Bálint told us that in autumn in Hungary you can find an array of hybrids among these *Colias* species. However, the early broods of the following year are always pure to type again, and so he assumes that these hybrids are not fertile.

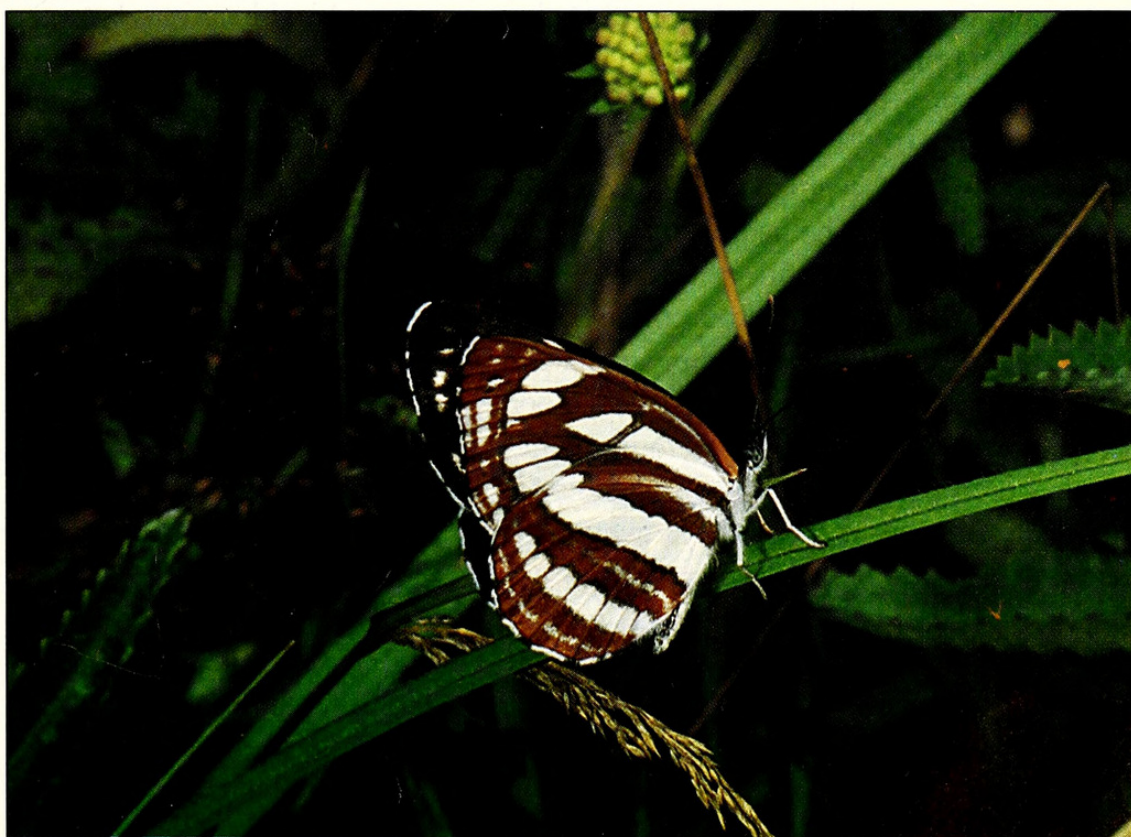
The next day we drove west to the extreme north-western corner of Hungary towards Tamás' village of Hegyhátszentjakob, via the Bakony Mountains. We stopped in the mountains and set off in thick fog to explore meadows (400-500 m) below pine trees in these limestone hills. The sun broke through the fog and we saw many butterfly species including *Everes argiades*, *Glaucopsyche alexis*, *Mellicta britomartis*, *Mellicta aurelia*, *Melitaea didyma*, *Hipparchia semele* (one pristine male) and *Maculinea xerophylla* laying eggs on cross-leaved gentian (*Gentiana cruciata*). The relationship between the last of these taxa and three other Carpathian *Maculinea* taxa: *alcon*, *rebeli* and *tolistus* (= *Maculinea alcon sevastos*?) is very uncertain. Later in the week (see below) we discussed this at length with Zsolt Bálint and László Peregovits at the Hungarian Natural History Museum. They suggest that these taxa may be forms of a "*Maculinea alcon*-superspecies", a genetically "plastic" complex of taxa that is in a process of evolution. *Maculinea xerophylla*, *M. tolustus* and *Maculinea rebeli* tend to be dry habitat forms (often in hills and mountains), feeding on *Gentiana cruciata*, while *Maculinea alcon* is a wet habitat form (usually in lowland areas), feeding on marsh gentian (*Gentiana pneumonanthe*). To date agriculture has been less intensive in the Carpathian basin than in Western Europe. In Western Europe, habitat fragmentation has resulted in lowland *Maculinea alcon* and upland *Maculinea rebeli* populations being clearly separated (Munguira, Martin & Rey, 1991), allowing clear speciation of these





**Plate A.** *Maculinea telejus*. Male. Hegyhátszentjakob, Hungary, July 1999.

Photograph © Ted Benton



**Plate B.** *Neptis sappho*. Female. Fertő-Hanság Nemzeti Park, Hungary, July 1999.

Photograph © Ted Benton



*Maculinea* butterflies. Habitat fragmentation has been less severe in Hungary and accordingly there is less clear speciation among the *Maculinea*, and apparently more taxa.

We arrived at Tamás' village (c. 250 m) in the late afternoon, and found Tamás had arranged lodgings for us at the home of his friend and close neighbour (a pharmacist, who supplied his entomological chemicals). Tamás' garden ran down to lush meadows and deciduous woodland. *Maculinea telejus* (Plate A) and *Maculinea nausithous* were abundant in the *Sanguisorba major*-rich meadows. This dispelled our earlier incredulity at Tamás' casual remark that these species (which are endangered in Western Europe) "fly in my back garden". BW and TB worked late into the evening, attempting to get a photograph of *Maculinea nausithous* with wings open and dorsal wing surfaces showing, but were far from successful as this species tends to feed with its wings closed. A species of tiny but unidentified invertebrate bit both photographers on the hands, leaving painful wounds.

Our brief stay in the village enabled us to visit the nearby Fertő-Hanság Nemzeti Park, an ecological "paradise" on the border with Austria. Tamás and his young son (Tamás junior) took us to meet Márta Havas, the young woman in charge of the park, which had been established to maintain traditional pastoral agriculture in the region and conserve the associated wildlife. We searched for *Colias myrmidone* in the hay meadows. According to Tamás, this species appears to form mobile populations that change geographical locations between years. We found its larval food-plant, *Genista tinctoria*, growing in some profusion, but there was no sign of larvae or adult *Colias myrmidone*. Tolman & Lewington (1997) record that *Colias myrmidone* may be extinct in Hungary, but Andreás Máté, warden of the Kiskunsági Nemzeti Park (see below), told us a few days later that he had captured a specimen in the recent past.

The weather was fitful, with frequent and sometimes heavy rain, but we found what appeared to be a colony of *Leptidea morsei major*. Tamás was delighted to see *Leptidea morsei* so close to his home, as it is considered to be a very rare species in Hungary. These wood-white butterflies were flying even in the rain and we identified them in the field as distinct from *Leptidea sinapis* (with which they were flying) by their falcate fore wings and concave fore wing margins below the apex. However, AWD later examined the genitalia of a male "*Leptidea morsei*" (preparation: AWD433) and found that it was most probably "*Leptidea sinapis*". The genitalia of specimen 433 resembled a drawing of *Leptidea sinapis* genitalia in Higgins (1975) and the genitalia of a *Leptidea sinapis* specimen from Sussex, England (preparation: AWD434). However, distinguishing between the genitalia of these two species is difficult and can probably only be done reliably by biometric analysis of a series of specimens (Mazel & Leestmans, 1999).

On the morning of 14 July, TB and BW rose at dawn determined to improve on their earlier photographs of the *Maculinea* species. They were rewarded



with beautiful views of male *Maculinea telejus* opening their wings as the first rays of sunlight caught the dew-laden grasses in which they had been roosting. *Maculinea nausithous*, however, remained on their *Sanguisorba* flowerheads, occasionally moving their wings back and forth in a parallel motion, but never opening them except to fly. They always positioned themselves sideways to the sun, suggesting that they use their dark undersides to “sunbathe” without needing to open their wings. In the same meadow were several *Heteropterous morpheus* flying with their distinctive “looping” motion at 7.00am, well before either of the *Maculinea* species were active.

BW and TB moved on to a woodland-edge site that Tamás had pointed out as a good place to see one of our main “target” species, the lovely “glider”, *Neptis sappho* (Plate B). The site was a wet meadow, bounded by a cart track and a tall hedge (consisting mainly of the larval host-plant of *Neptis sappho* in this area, *Robinia pseudacacia*) at the margin of extensive deciduous woodland. On arrival (at about 8.30am), BW and TB saw two *Neptis sappho* nectaring at about a height of 3-4 m on flowers of alder buckthorne (*Frangula alnus*). Soon these were joined by other *Neptis sappho*, which soared along the hedge and come down to settle on the tangle of *Rubus fruticosus* and *Rubus idaeus* plants between the hedge and open grassland. The butterflies may have been sipping juice from the fruits of *Rubus idaeus*, but were also imbibing dew from leaves, as well as “sunbathing” with widespread wings. By 9.30am, the *Neptis sappho* were flying out into the meadow, and nectaring from the blossoms of an abundant yellow bedstraw (*Galium verum*?). Up to four at a time were eagerly sipping sweat from TB’s clothes. BW also noticed one “mud-puddling” on the cart track as the photographers headed back along the track to Tamás’s home for a magnificent breakfast, which included an unprecedented 25-egg omelette.

The following day we returned to Budapest via Imre Petezár’s weekend “villa” on the north shores of Lake Balaton. The weather had improved, and, appreciating yet another example of unfailing Hungarian hospitality, we enjoyed wine, bread and cheese in the shade of some large, leafy trees. The villa was situated at about 250 m looking down on the glistening blue lake. *Plebejus idas* and *Everes decoloratus* were flying during our visit and Imre told us that *Iolana iolas* flies in the area with *Parnassius mnemosyne* in June. This is an unusually low altitude and dry habitat for the last of these species, which is more often associated with mountain habitats in the southwest of Europe.

The somewhat unpredictable and picaresque character of our trip continued, as we were asked by Imre if we would take an opera-singer friend of his back to Budapest, where he was singing a Mozart bass part. We collected the seven-foot tall singer from a bar near Imre’s summer-house, but not before the singer had finished his game of pool.





**Plate C.** *Argynnis laodice* Female. Zemplen Mountains, Hungary, July 1999.

Photograph © Ted Benton



**Plate D.** Zemplen, Hungary, July 1999. Habitat of *Argynnis laodice*, *Maculinea arion*, *M. telejus* and many other species.

Photograph © Ted Benton



After a night in Budapest, we headed northeast to the Zemplen Mountains. As we drove into the centre of Budapest on route to collect Stephan, a forester and fellow entomologist who was coming with us to the mountains, we were surprised to see many police cars speeding past us with their lights and sirens indicating serious trouble. Soon we learned that Stephan had set-off a burglar alarm by mistakenly trying to enter a bar that was in fact closed. Fortunately, Tamás, whose resourcefulness seemed unlimited, “had a word” with the police, and Stephan was released. Soon we were on the road again, AWD in the lead car, with Tamás and Stephan. Tamás’ car still had only one window working, and Stephan, a Charles Bronson look-alike, smoked with a fury. On one occasion AWD offered him water from his bottle. Stephan shook his wild mane of black hair in disgust: “I am man, not animal; I drink beers, not water”.

Gábor Hegyessy, an entomologist from the Kazinczy Ferenc Museum joined us in the wooded hills of the Zemplen. The area is an entomologist’s dream, and we soon found our “target” species – the fine fritillary, *Argynnis laodice* (Plate C). This fritillary is similar to *Argynnis paphia* (with which it flies), and their location in the Zemplen Mountains marks the extreme western edge of *Argynnis laodice*’s range that extends eastward into Russia. *Argynnis laodice* can easily be distinguished from *Argynnis paphia* by the more compact, “square” shape of its wings, the distinctive distribution of the androconial scales in the males, and a small, triangular white patch near the apex of the forewings in the females. The undersides are strikingly beautiful, especially in the females, which have the post-discal area of the hindwings washed with purple. These butterflies were frequent along woodland rides, and on the open, scrubby meadows nearby, often sunning themselves with open wings, or nectaring from *Rubus*, or various types of Labiatae (*Thymus*, *Prunella*, and *Stachys* species). Also present were a few newly emerged specimens of the very dark eastern form (*rubra*) of *Erebia aethiops*, and two quite distinct forms of green-veined whites were flying in the woods, distinguished as *Pieris napi* and *Pieris bryonae* by the local lepidopterists. We were treated to two brief views of late-flying *Limenitis populi* and a single *Nymphalis antiopa*, which obligingly posed for the photographers on the path in front of us. Other species noted included *Minois dryas* (mainly freshly emerged males), *Lycaena virgaureae*, *Erynnis tages*, *Hamearis lucina*, *Mellicta athalia*, *Pararge aegeria*, *Aphantopus hyperantus*, and *Artogeia ergane*. In the nearby meadows, *Argynnis laodice* was accompanied by *Maculinea telejus*, *Maculinea arion*, *Maculinea ligurica punctifera*, *Pseudophilotes vicrama*, *Polygonum c-album*, *Argynnis aglaja*, *Clossiana selene*, *Brenthis ino*, *Mellicta britomartis*, *Melanargia galathea*, and others already mentioned in the area. AWD was lucky enough to hear and then see a Black Stork *Ciconia nigra* flying over a forest ride to its nest at the top of a tall pine tree.

After an interesting tour of the local museum, we set off on 18 July, for our return journey to Budapest. The last unbroken electric window in Tamás’s car finally broke: mercifully stuck partly open. “Lucky for you it open”, growled



Stephan, "or you be smoked like fish before Budapest". We reached Budapest by evening after two stops on the way. The first was in the Matra Mountains, the tallest peak of which is c 1000m and the tallest mountain in Hungary. At 700 m, we searched in abandoned meadows for *Clossiana titania* which was once captured here (some 20 years ago) and represented by three specimens in the Budapest Museum, but we found only *Clossiana dia*. However, there were other interesting species at this spot. *Gentiana cruciata* was abundant on higher, drier slopes, and most plants were festooned with eggs of *Maculinea xerophylla*, though the adult butterflies themselves were not in evidence: presumably having past their flight period. Species flying in the meadows included *Issoria lathonia*, *Mellicta aurelia*, *Mellicta britomartis*, *Melitea didyma*, *Argynnis aglaja*, *Lycaena virgaureae*, *Lycaena alciphron*, *Everes argiades*, *Maculinea alcon* (in lower, damp areas close to a small stream), *Maculinea arion*, *Maculinea ligurica punctifera*, *Cyaniris semiargus*, *Plebejus argus*, *Maniola jurtina*, *Aphantopus hyperantus* and many more species.

Our second stop, on the way back to Budapest, was near Katalinpuszta, where freshly emerged second brood *Lycaena dispar* were flying, with *Everes antalcetas*, *Plebejus argus*, *Polyommatus icarus* and *Erynnis tages*, in weak evening sunshine. The next call was to the bar in Stephan's village. Here a small wall case of butterflies marked his reserved seat. Eventually we arrived at Stephan's home to be greeted warmly by his family, and treated to a superb supper. The conversation flowed over many memorable adventures shared by Tamás, Stephan and Zsolt Bálint on their travels in Rumania and overseas. A pet tarantula spider brought back from Peru by Stephan had escaped in the house while he had been away on a visit to Transylvania. The spider had lived in a hole under the sink until Stephan's return, but was safely caged again during our visit.

Our final excursion (19 July) of this visit to Hungary was a day at the Kiskunsági Nemzeti National Park, near Kumpezer, southwest of Budapest. This lowland area has marshes that are kept wet by hydrological control. László Peregovits, Andreás Málé (the park's warden) and several research students joined us on this trip. Our main butterfly interest was in *Maculinea alcon*, which has a large population here. As we had hoped, the butterfly was already on the wing (this species flies later than the dry habitat *Maculinea*), and flying with *Maculinea telejus*. This caused some confusion at first, but *Maculinea alcon* has a weaker, more "lazy" flight than its relative *Maculinea telejus*. Several *Maculinea alcon* females were observed ovipositing on the tips of spikes of *Gentiana pneumonanthe*, which were just coming into flower. BW had the best entertainment of the day as a student deftly netted a pristine *Maculinea alcon* just as TB was about to photograph it. However, there were compensations to this disappointment, in the shape of a tiny green tree frog in the marsh vegetation, and a yellow female of *Colias erate* (another of BW and TB's "target species"). AWD also observed Great Bustards *Otis tarda* in the drier areas of the plain.



We retired to a local pub for lunch, and had a fascinating discussion about research (involving captive rearing and capture-recapture studies) on the life histories and taxonomy of the Hungarian *Maculinea* taxa. After lunch we embarked on what seemed an interminable drive along rough tracks, led by a much-derided Trabant "car", which performed exceptionally well. Our final destination was an area planted with lucerne *Medicago sativa*, a favoured habitat of *Colias erate*. While our Hungarian companions wisely sat and talked in the shade of a tree, the mad-dog Englishmen chased after the fast-flying clouded yellows that ranged over the fields. *Colias erate* (mainly males) were flying with *Colias afalcariensis*, but were readily distinguished from the latter by the brighter "butter" yellow of their upperside and unbroken black borders (in the males). *Colias erate* males also proved to be more powerful in flight, covering large expanses of territory, a meter or so above the ground, and diverting frequently to nectar, or investigate plants (for settled females?). One pair was observed *in copula*.

Before leaving for our flight, on the following day (20 July) there was just time to see the fine reference collection established by Tamás and his colleagues, and to visit Zsolt Bálint at Budapest Museum. He generously offered help and advice regarding our own discoveries and remaining doubts following our fantastic tour through Hungary.

Attentive as ever, Tamás accompanied us to the airport to see us safely on the plane. We were at a loss as to how to thank him or repay him for laying on a truly memorable adventure: the generosity and hospitality of Tamás and his friends rivalled the wonderful habitats we visited and species we saw in making this the trip of a lifetime.

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