

**New localities of southern darter *Sympetrum meridionale* (SELYS, 1841)
and banded darter *S. pedemontanum* (MÜLLER in ALLIONI, 1766)
(Odonata: Libellulidae) in northern Poland**

Nowe stanowiska szablaka południowego *Sympetrum meridionale* (SELYS, 1841)
oraz szablaka przepasanego *S. pedemontanum* (MÜLLER in ALLIONI, 1766)
(Odonata: Libellulidae) w północnej Polsce

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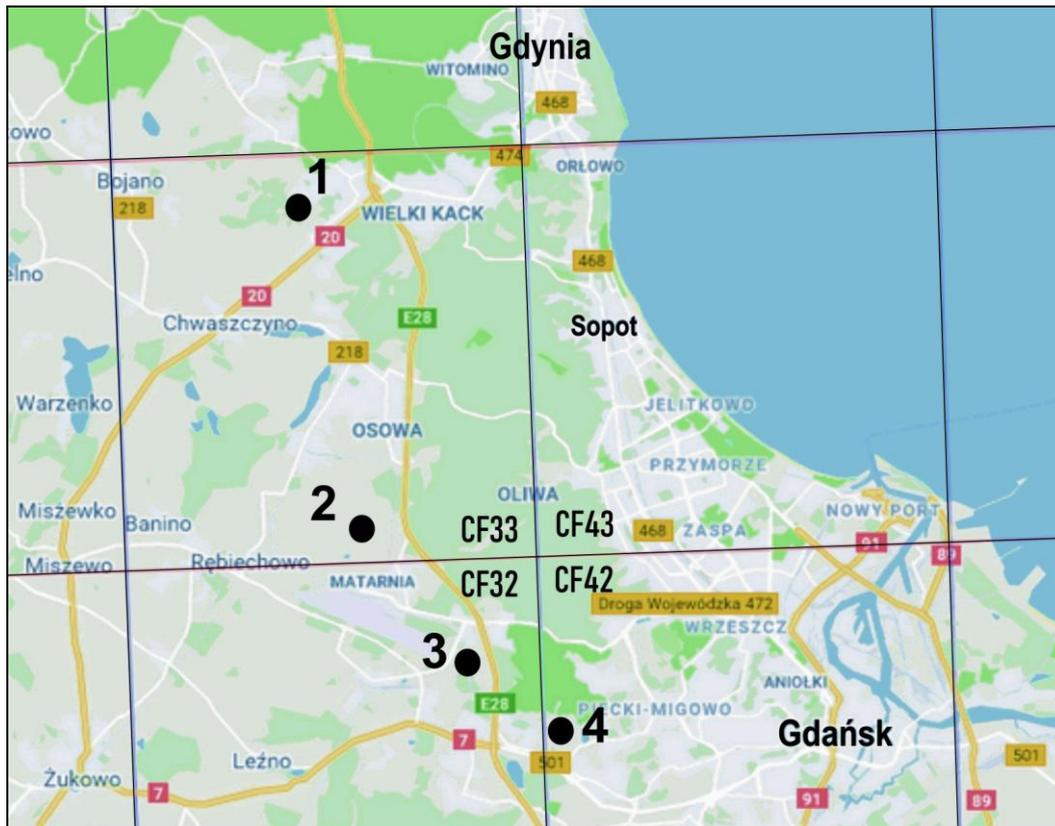
Abstrakt: Komunikat odnosi się do obserwacji jednego samca szablaka południowego *Sympetrum meridionale* (SELYS, 1841) w dn. 28.08.2018 przy stawie w Gdyni Dąbrowie (UTM: CF33) oraz dwóch samców i jednej samicy szablaka przepasanego *S. pedemontanum* (MÜLLER in ALLIONI, 1766) w dniach od 14 do 29.09.2018 w trzech dzielnicach (i kwadratach UTM: CF32, CF33, CF42) Gdańska.

Key words: Dragonflies, Odonata, *Sympetrum meridionale*, *Sympetrum pedemontanum*, new records, northern Poland

Sympetrum meridionale (SELYS, 1841) is a Ponto-Caspian/Ponto-Mediterranean species with a Palaearctic distribution extending from north-eastern China and Mongolia, across central Asia, and the Caspian and Black Seas, to Europe, where it is common in France, northern Italy, the Balkans and Greece (KALKMAN et al. 2015). There are increasing reports of sightings from Belgium and The Netherlands, where short-lived populations have been established: in 2018 nearly 400 individuals were sighted in Belgium (<https://waarnemingen.be>) and over 860 in The Netherlands (<https://waarneming.nl>). The species has been found in all of the German states except Schleswig-Holstein, Bremen and Berlin (ROLAND and STÜBING 2014). Although the southern darter is very likely to have reached the U.K. in the last few years, there have not yet been any definitive reports of it from there, probably because of the difficulty in distinguishing it in the field from other darter species (D. HEPPER (quoting from A. PARR), pers. comm.). In the eastern part of Europe, obviously migrating individuals of *S. meridionale* have been trapped on the Curonian Spit on the Baltic coast over a number of years (SHAPOVAL and SHAPOVAL 2017), but the species has not been found in the interior of the Kaliningrad region of Russia or in neighbouring Lithuania (GLIWA and ŠVITRA 2016) or Latvia (KALNIŅŠ 2017).

In Poland, the southern darter has a stable distribution in the south and south-east of the country (BERNARD et al. 2009), but this region lies at the northernmost edge of its known contiguous breeding range in eastern Europe. The species has been sighted in some numbers further north – in the province of Wielkopolska (ŻURAWLEW et al. 2010, ŻURAWLEW 2013) and in the province of Łódź (ŻURAWLEW 2011). But further north still, on the Baltic coast, any southern darters encountered, like this one in Gdynia, must surely be vagrants or migrants, especially in the light of the data from the Curonian Spit (SHAPOVAL and SHAPOVAL 2017), which is only 160 km or so from Gdynia as the crow flies.

These more northerly observations relate mostly to males, some exhibiting territorial behaviour, and a few females. As these sightings are becoming regular, colonisation of these areas may well be in progress, although there are no reports as yet of confirmed breeding beyond its regular range in Poland. One reason for this, as indicated above, may be that identification of this species is sometimes problematic. Unlike most other *Sympetrum* species, *S. meridionale* does not normally have any dark markings near the tip of the abdomen, a feature that can be quite difficult to observe, especially in bright sunlight, unless one can view the insect from directly above. Another is that rather few people study/observe/photograph dragonflies in this country, so that this species may simply be going unnoticed.



Map showing the site locations
Mapa lokalizacji stanowisk

The first part of this communication relates to an observation of a southern darter *Sympetrum meridionale* in Gdynia, northern Poland. It is probably the northernmost record of this species in Poland since an observation on the Gulf of Gdańsk coast at Siekierki (UTM: CF92) on the Vistula Spit in September 2006 (unpublished record from ŁUKASIK (pers. comm.), included in BERNARD et al. 2009). The exact details are:

Sympetrum meridionale, Gdynia Dąbrowa (UTM: CF33); 54°28'2"N, 18°26'54"E; Kashubian Lake District (Pojezierze Kaszubskie) (**Site 1**); 1 ♂, 28.08.2018. The dragonfly was perching on a concrete post sticking out of the water 2-3 m from the pond shore. I was unable to get closer to the insect, even wearing Wellington boots, as the bottom of the pond was covered in thick mud. I observed it for some 10 minutes, during which time it frequently took off to chase away intruding dragonflies, mostly male *Sympetrum vulgatum* (LINNAEUS, 1758) and occasionally a male *Aeshna mixta* LATREILLE, 1805.



Site 1. Pond in Gdynia Dąbrowa (CF33); 54°28'2"N, 18°26'54"E; Kashubian Lake District (Pojezierze Kaszubskie)



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The pond in question, now ca 3900 m² in area, lies on the site of an earlier, probably natural, pond 560 m² in area. At some time between 1996 and 2008 (two years for which satellite photographs are available on <http://gdynia.retromapy.pl>) the partially wooded area to the east of the original pond became flooded. Since the pond has no outflow, the water remained and the trees died off, leaving the many stumps that still protrude above the water surface. Access to the waterside is very limited. The surrounding mixed woodland reaches right to the water's edge, and the marshy shores elsewhere, once open, have become thickly overgrown with emergent vegetation (*Phragmites australis* (CAV.) TRIN. ex STEUD., *Typha latifolia* L. and *T. angustifolia* L.) and willow scrub (*Salix* sp.). There is floating vegetation only close to the shore and none whatsoever in the middle of the pond; I could not see any submerged vegetation.

All the more surprising, therefore, that *S. meridionale* should have been seen here, apparently exhibiting territorial behaviour. This species, like others of its genus, lays its eggs in vegetation growing in ephemeral water bodies that partially or completely dry up during summer (KALKMAN 2014), but are subsequently inundated by autumn rains and/or spring snow-melt. The pond where it was sighted has a stable water level, but the terrain between this pond and the neighbouring one might possibly qualify as a suitable breeding area.

With the characteristic brown bands across its wings, *Sympetrum pedemontanum* (MÜLLER in ALLIONI, 1766) is immediately distinguishable from its congeners. It is a Palaearctic species with an extensive distribution ranging from western Europe (roughly a line joining Calais and Marseilles in France) all the way across Asia to Japan. With a few exceptions, it has not been found in Scandinavia, or in the southern half of Italy, the countries of the former Yugoslavia, Greece and Turkey. The northern range boundary runs across central Russia, while the southern one encroaches into Transcaucasia and the central Asian republics (KALKMAN 2015). Like *S. meridionale*, small numbers of this species are regularly trapped on the Curonian Spit (SHAPOVAL and SHAPOVAL 2017).

In Poland, the banded darter is widespread, mainly in the east of the country and in the Pomeranian and Masurian Lake Districts. It is nowhere common. The "Distribution atlas of dragonflies (Odonata) in Poland" (BERNARD et al. 2009) shows no records of *S. pedemontanum* anywhere in the ca 100 x 100 km UTM square CF in the north of the country. However, the sighting of a young male at the mouth of the River Vistula (UTM: CF62) in August 2009 is

recorded on the <http://www.wazki.pl> website, and one record from Gdynia Chwarzno (CF34) (3.10.2012) was recently published (SENN 2018). The present ones are from three further UTM squares. The details are as follows:

- 1) Gdańsk Matarnia (CF33), 54°23'53"N, 18°27'41"E. Kashubian Lake District (Pojezierze Kaszubskie)(**Site 2**); 2♂, 14.09.2018. I photographed these banded darters on an overgrowing concrete path by the marshy end of the Klukowo balancing pond. A very slow-flowing stream exits this pond along a shallow ditch. Other dragonflies present nearby: *Sympetrum vulgatum*, *Aeshna grandis* (LINNAEUS 1758).



Site 2. Gdańsk Matarnia (CF33); 54°23'53"N, 18°27'41"E; Kashubian Lake District (Pojezierze Kaszubskie); the "Klukowo" balancing pond



Site 2. Gdańsk Matarnia (CF33); 54°23'53"N, 18°27'41"E; Kashubian Lake District (Pojezierze Kaszubskie); ditch at the end of the "Klukowo" balancing pond

- 2) Gdańsk Matarnia (CF32), 54°21'39"N, 18°30'47"E. Kashubian Lake District (Pojezierze Kaszubskie)(**Site 3**); 1♂, 18.09.2018. This specimen was flying near a shallow ditch at the edge of some wet grassland at one end of the large Kiełpinek balancing pond. Accompanying dragonfly species: *Sympetrum danae* (SULZER, 1776).



Site 3. Gdańsk Matarnia (CF32); 54°21'39"N, 18°30'47"E; Kashubian Lake District (Pojezierze Kaszubskie); the "Kiełpinek" balancing pond.



Site 3. Gdańsk Matarnia (CF32); 54°21'39"N, 18°30'47"E; Kashubian Lake District (Pojezierze Kaszubskie); ditch at the far end of the "Kiełpinek" balancing pond.

- 3) Gdańsk Piecki-Migowo (CF42), 54°21'9"N, 18°32'41"E. Kashubian Lake District (Pojezierze Kaszubskie)(**Site 4**); 1♀, 29.09.2018. I came across this female on a sandy, overgrowing path between a railway embankment and waste ground. On the other side of the embankment there is a large balancing pond (Jasień). Some 40-50 m from this locality, a trickle of water flows in a ditch parallel to the railway line, then passes under it and into the pond on the other side. No other dragonflies were present at this site.



Site 4. Gdańsk Piecki-Migowo (CF42); 54°21'9"N, 18°32'41"E; Kashubian Lake District (Pojezierze Kaszubskie); the "Jasień" balancing pond.



Site 4. Gdańsk Piecki-Migowo (CF42); 54°21'9"N, 18°32'41"E; Kashubian Lake District (Pojezierze Kaszubskie); the "Jasień" balancing pond. The ditch is on the other side of the bridge, visible in the photo on the left.

All three balancing ponds were constructed on the sites of former wetlands. All of them have areas of grassland and shallow ditches with trickles of water in their immediate vicinities which may become temporarily flooded in winter/early spring but dry out in summer. These habitats correspond with those described in the literature as being suitable for breeding (KALKMAN 2015, DIJKSTRA 2006, GALLIANI et al. 2017).

One aspect of this species' biology worth examining is the tendency for its populations to fluctuate widely, as reported by BYSTROWSKI (2003). Unfortunately, this author does not state or suggest any specific causes for such fluctuations, apart from a severe hailstorm that occurred one year soon after the species' emergence. Of course, these differences in population size may simply be due to the fact that, as mentioned above, few people study/observe/photograph dragonflies in this country and that localities where *S. pedemontanum* has been found are not systematically monitored over a number of years. Again, the pioneering nature of this species necessarily associates it with sites where the vegetation is in the early stages of succession. So barring disastrous events, its populations in such localities should persist until the vegetation becomes too lush for it, when it moves on. Yet another possibility is that, since its larval development can take place in drainage ditches, these may be acting as ecological traps: in a drought year, the larvae from the previous year's eggs will perish, the population will crash, and may only start to recover when migrating/dispersing individuals come across this site again. One of these causes, other as yet unknown causes or some combination of them might account for the species' actual and/or perceived patchy distribution. All three sites where I came across the banded darter in Gdańsk are relatively fresh ones, so *S. pedemontanum* may well be present there in coming seasons. Their regular monitoring should show whether it has colonised them or whether the individuals I found were migrants from the south (the whole summer of 2018 was very

warm and dry with a high frequency of southerly winds). One of my records is of a female, so breeding is a possibility to be explored.

The records of both *Sympetrum meridionale* and *S. pedemontanum* were documented photographically.

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