20. Dezember 2010

On a collection of dragonflies from eastern Georgia, with the first record of *Sympetrum arenicolor* (Odonata: Libellulidae)

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Abstract

On a short field trip in 2006 to eastern Georgia, 14 Odonata species were recorded at six localities. A male of *Sympetrum arenicolor* was collected in the outskirts of Tbilisi. This species is new for the Georgian fauna. All species are annotated and a list of the sampled localities is given.

დასკვნა

2006 წელს აღმოსავლეთ საქართველოში ყოფნის მოკლე პერიოდში ექვს ადგილზე იქნა ნაპოვნი ნემსიყლაპიათა 14 სახეობა. *Sympetrum arenicolor* Jödicke, 1994 ახალია საქართველოს ფაუნისთვის. ყველა სახეობა და პოვნის ადგილი ჩამონათვალში იქნება აღწერილი და კომენტირებული.

შენიშვნები:
მნიშვნელოვანია, რომ ცნება ნემსიყლაპია ნათარგმნია ქართულ ოფიციალურ სამეცნიერო ენაზე და მისი შესატყვისი არ მოიპოვება ხალხურ ეტიმოლოგიაში, როგორც ეს არსებობს ცხოველთა ბევრი ჯგუფისთვის თითქმის ყველა ენაში.
Sympetrum arenicolor არის ნემსიყლაპიის სახეობის ლათინური დასახელება, რომელიც შეიცავს მისი პირველი აღმწერლის გვარს და გამოქვეყნების წელს.

Zusammenfassung

Libellen im östlichen Georgien, mit dem Erstnachweis von *Sympetrum arenicolor* (Odonata: Libellulidae) – Bei einem kurzen Aufenthalt 2006 im östlichen Georgien wurden an sechs Fundorten insgesamt 14 Libellenarten festgestellt. *Sympetrum arenicolor* ist neu für die georgische Fauna.

Introduction

The Caucasus region is among the 25 areas with the highest biological diversity worldwide and is home to the highest number of endemic species in temperate latitudes (Krever et al. 2001). Based on its high geomorphological diversity the area offers an amazing variety of different habitats, landscapes and microclimates on a small scale and is an overlapping and bordering area of several biogeographic units (Kovalev 2002). From an odonatological perspective the Caucasus generally and the Republic of Georgia in particular are one of the most complex and interesting European bordering areas. However, recent data about Georgian dragonflies are very scarce. To date no critical checklist for Georgia is available. Substantial contributions have been made by Shengelia (1953, 1964, 1975), Beutler (1983), Belyshev & Haritonov (1983) and Reinhardt (1992), whereas Shengelia's work is mainly based on Bartenev (1912, 1925, 1930a, 1930b, 1930c). More recently, Ketenchiev & Haritonov (1998) published an identification key to the dragonflies of the Caucasus and Skvortsov (2010) a very extensive and comprehensive illustrated guide to the dragonflies of eastern Europe and the Caucasus. The data presented therein for the Caucasus and Georgia unfortunately contain several uncritical adopted records of doubtful or erroneous species and taxa, which is why I recommend only a cautious use of those species lists. Ketenchiev & Haritonov (1998) for instance list *Coenagrion mercuriale* for Georgia, and Skvortsov (2010) for Armenia. However, this species has been rejected by Tally et al. (2004) from the checklist of Armenia, and Dijkstra (2006) considers all records of *C. mercuriale* from Eastern Europe to be erroneous. Hence, the occurrence of this western Mediterranean species in the Caucasus region generally seems to be most unlikely. Boudot et al. (1990) outlined the nature and distribution of the subspecies of *Onychogomphus forcipatus*, whereupon the taxon *O. f. unguiculatus* is confined to the western Mediterranean and is replaced by *O. f. albotibialis* in Asia Minor. Moreover, Reinhardt (1992) decidedly assigned specimens from Georgia to *O. f. albotibialis*. Therefore, *O. f. unguiculatus*, as it has been listed by Ketenchiev & Haritonov (1998) for Georgia and by Skvortsov (2010) for the Caucasus, is certainly not part of the regional fauna. Likewise, this applies for an old record of *Brachythemis impartita* Dijkstra & Matushkina, 2009 (sub *B. leucosticta*), and a record of the Moroccan endemic *Cordulegaster princeps* Morton, 1916, listed by Skvortsov (2010) for Georgia, both of which are beyond doubt erroneous.

Study region and method

The studied area was situated in eastern Georgia in the valleys of the major rivers Kura and Alazani, in the forest steppe zone of the Transcaucasian depression between the Greater Caucasus and the Trialeti Range, a part of the Lesser Caucasus

(Berg 1959). Generally the area is characterized by transition from Mediterranean to continental steppe climate (Berg 1959) with very hot summers and low annual precipitation. Due to the range of the Greater Caucasus in the north, which serves as climate divide and protects the area from cold northern air masses (Lydolph 1977), the winters are mild. Administratively, the collecting sites were located in the eastern Georgian regions of Kakheti, Mzcheta-Mtianeti, Tbilisi and Kwemo Kartli. Between 03-vi-2006 and 12-vi-2006 at six localities dragonflies were collected. The selection of the sampled localities was arbitrary and did not follow an underlying concept.

List of sampled localities

Locality 1
12-vi-2006
Steep brook valley of the river Tsavkisis-Tskhali, a tributary of river Kura (მტკვარი). The entire river stretch between the western border of Tbilisi Botanical Garden (თბილისის ბოტანიკური ბაღი) and the village of Tabakhmela (ტაბახმელა) was examined. The riverbed was partly shaded by lush bush and tree growth and the rocky river walls were partly overgrown with open thermophilic scrubland vegetation ("shiblyak").

Locality 2
07-vi-2006
Small spring brooklet in open landscape in the Alazani (ალაზანი) valley, 3 km southwest of Vardisubani, close to the border of Azerbaijan, Telavi Municipality (თელავის რაიონი), Kakheti (კახეთი).

Locality 3
11-vi-2006
Steppe meadows and scrub at an altitude of about 800 m a.s.l. on the slopes of Mtatsminda Ridge (მთაწმინდა) south of lake Kus Tba (კუს ტბა), an artificial lake 3 km southwest of Tbilisi.

Locality 4
05-vi-2006
Tbilisi Botanical Garden (თბილისის ბოტანიკური ბაღი) and a stretch of the river Tsavkisis-Tskhali (identical with loc. 1) within the area of the Botanical Garden. Collecting at this locality was generally not possible.

Locality 5
09-vi-2006
River Aragvi (არაგვი) near Mtskheta (მცხეთა), 2 km north of the river mouth.

Locality 6
03-vi-2006
Mountain river 300 m west of the park's headquarter at 350 m a.s.l. at the lower edges of the unique pristine beech forest of the southern slopes of the Greater Caucasus in the Lagodekhi National Park (ლაგოდეხის სახელმწიფო ნაკრძალი), Lagodekhi Municipality (ლაგოდეხის რაიონი), Kakheti (კახეთი).

Results

Belated analysis and determination of several collected fresh *Sympetrum* specimens revealed one male of *S. arenicolor* Jödicke, 1994**.** According to current knowledge this is the first record of *S. arenicolor* for Georgia. The species identity was confirmed by R. Jödicke (pers. comm.). Altogether 14 species were encountered and 127 specimens of ten species from six localities were collected (Tab. 1). All collected specimens are deposited in the collection of the author, except the specimen of *S. arenicolor*, which is deposited in coll. SMNG (Senckenberg-Museum für Naturkunde), Frankfurt, and one male *Onychogomphus flexuosus* and one male *Calopteryx splendens intermedia*, which are deposited in coll. J. Arlt, Delmenhorst.

Annotated list of records

***Calopteryx splendens* (Harris, 1780)**
Calopteryx splendens intermedia Selys, 1890
Calopteryx intermedium cecilica Bartenev, 1912
Calopteryx splendens cartvelicum Bartenev, 1928

All collected (15♂) and scrutinized male specimens from localities 1, 4 and 5 phenotypically matched the taxon *C. s. intermedia* according to the key given by Kalkman (2006). These specimens were phenotypically fairly uniform, showed entirely coloured apices and prominent wing spots extending well beyond the nodi. The basal edges of the wingspots were distinctly convex. Basally 14-15 antenodal cells in the forewings were hyaline and distally 13-14 antenodal cells coloured. The underside of the appendices inferiores, S9 and S10 were distinctly yellow. No androchromic females were encountered (Dumont 2004). Listed as *C. splendens cartvelicum* for Tbilisi by Shengelia (1975), *C. s. intermedia* has also been reported from adjacent Azerbaijan (Dumont 2004) and Armenia (Tailly 2004). Specimens of the "*xanthostoma*-type" stated by Reinhardt (1992) from the river Vera at the northern outskirts of Tbilisi and from Azureti, 40 km northwest of Tbilisi, most probably pertained to *C. s. intermedia* as well.

Table 1. Schedule of species, collected between 03-vi- and 12-vi-2006 in eastern Georgia at six localities. – Tabelle 1. Übersicht der Arten, die vom 03.06. bis zum 12.06.2006 im östlichen Georgien an sechs Fundorten gesammelt wurden. loc locality, Fundort; vouch voucher specimens available, Belegexemplare vorhanden.

Species	vouch	loc 1	loc 2	loc 3	loc 4	loc 5	loc 6
Calopteryx splendens	X	X	X	-	X	X	-
Epallage fatime	X	X	-	-	-	-	-
Coenagrion puella complex	-	-	-	-	X	-	-
Ischnura elegans	-	-	-	-	X	-	-
I. pumilio	X	X	-	-	-	-	-
Caliaeschna microstigma	X	X	-	-	-	-	X
Onychogomphus flexuosus	X	X	-	-	X	-	-
O. forcipatus albotibialis	X	X	-	-	-	-	-
Lindenia tetraphylla	-	X	-	X	-	-	-
Orthetrum albistylum	-	X	-	-	X	-	-
O. anceps	X	-	X	-	-	-	-
O. brunneum	X	X	-	X	X	-	-
Sympetrum arenicolor	X	-	-	X	-	-	-
S. striolatum	X	-	-	X	-	-	-

Calopteryx splendens ssp. [trans *intermedia* ad *waterstoni*]

Male specimens collected (10♂) and observed at locality 2 appeared to be phenotypically not uniform and showed hyaline wing apices and reduced wingspots in the forewings to varying degrees. Also the shape of the basal edges of the wingspots varied strikingly, being rather straight lined or convex, not even reaching or extending up to eleven cells beyond the nodi. Moreover, these traits appeared to be randomly distributed and not clustered. While at least two of the collected individuals matched the taxon *C. s. amasina* as defined by Kalkman (2006), one specimen still sufficiently corresponded with *C. s. intermedia*. Interestingly, the wingspots of the forewings of at least one caught and three more observed individuals were strongly reduced, thus generally resembling *C. s. erevanensis* Akramowski, 1948. Moreover, the wingspots of two other collected specimens did not even reach the hind margins of the wings, which in turn is said to be typical for *C. s. mingrelica* Bartenev, 1869. Obviously the heterogenic phenotypical overall appearance of this population indicated ongoing hybridisation. However, as nature and spatial distribution of all six local taxa of the *C. splendens* complex are far from clear, it appears pointless to deliberate about which taxa were involved here and due to which taxons' influence the wingspots in these individuals were reduced. A further complication might be that according to Kalkman

(2006) the name *C. s. mingrelica* is sometimes used as a synonym of *C. s. amasina* Bartenev, 1912. According to Boudot (2005) in Rüppell et al. (2005: 207) the Transcaucasian depression, where these particular specimens were collected, is part of a large merging zone of both *C. s. intermedia* and *C. s. amasina*. Western Georgia, roughly west of the Likhi Range (ლიხის ქედი), however, is frequented by *C. s. mingrelica*. This fits perfectly to the records of *C. s. mingrelica* listed by Shengelia (1975), which were all taken in the Colchic depression of western Georgia. In adjacent Armenia, where the situation is of similarly complex character, Tailly et al. (2004: 96) considered only *C. s. intermedia*, sensu Dumont et al. (1987). All other taxa previously listed for this country by Akramowski (1948), namely *C. s. cartvelica*, *C. s. erevanensis* and *C. s. tshaldirica*, are assumed to be hybrids between *C. s. intermedia* and *C. s. waterstoni* (Schneider, 1984), a taxon of *C. splendens* with entirely hyaline wings. Likewise, *C. s. mingrelica* is considered to be of this origin. Following this line of argument, all specimens that could not be assigned to *C. s. intermedia* are therefore tentatively regarded here as hybrid forms between *C. s. intermedia* and *C. s. waterstoni*. Specimens of *C. splendens* resembling the nominate taxon were reported by Reinhardt (1992) from Tbilisi Botanical Garden. These individuals probably pertained to the above-mentioned hybrids. Curiously, the river that runs through the Botanical Garden is identically to the one described in locality 1, and during this study this river was the source for the collected uniform specimens that are considered as typical *C. s. intermedia*.

Epallage fatime (Charpentier, 1840)

The species was collected (5♂2♀) and observed at locality 1, where it was recorded as abundant. Along the entire river stretch more than 40 males were counted. Additional records of this species from Georgia are scarce, however, records from the Armasis-Chewi range at the western outskirts of Mtskheta given by Shengelia (1975) are situated only some 20 km north of this population. According to the latter author, *E. fatime* is found in Georgia up to 1,700 m a.s.l.

Together with populations from southeastern Bulgaria (Beshovski 1989), these Georgian records mark the species' northern distribution limit (see also Reinhardt et al. 2000). *Epallage fatime* was reported recently from Azerbaijan (Dumont 2004) and Armenia (Tailly 2004). In adjacent Turkey it is considered to be common in the south and distributed countrywide (Kalkman 2006).

Coenagrion puella species complex

Several individuals of an as yet unidentified member of the *puella* species complex were encountered at artificial ponds of locality 4. No less than three members of the *C. puella* complex have been found in Transcaucasia so far: *Coenagrion australocaspium* (Dumont & Heidari, 1995), *C. ponticum* (Bartenev, 1929) and *C. puella* (Linnaeus, 1758). *Coenagrion ponticum* has previously often been considered to be a synonym of *C. syriacum* (Morton, 1924) (Shengelia 1975; Dumont 1977; Beutler 1987), but both taxa are now widely considered to be

separate species (Dumont 2004; Tailly 2004; Kalkman et al. 2004, 2006; Dijkstra 2006; Boudot et al. 2009). According to current knowledge only *C. ponticum* was recorded in Georgia so far. Shengelia (1975) compiled all hitherto known records and Beutler (1987) caught specimens at the locus typicus at the Black Sea Coast in Abkhazia. While from Armenia surprisingly solely true *C. puella* were reported (Tailly 2004), both *C. australocaspium* and *C. ponticum* are known from adjacent Azerbaijan (Dumont 2004). Thus it appears likely that also in Georgia more than one representative of the *C. puella* complex should be present. Unfortunately none of the observed individuals in Tbilisi Botanical Garden could be collected or examined more thoroughly, therefore it remains open which taxon was involved here.

Ischnura elegans (Vander Linden, 1820)

At least nine individuals were encountered but unfortunately could not be collected. Hence, these records of *I. elegans* could not be assigned to a certain subspecies. Spatial distribution and taxonomical status of several taxa allied to *I. elegans* are largely unknown (Boudot et al. 2009: 64). Beutler (1987) and Kalkman (2006) consider Georgian *I. elegans* to pertain to the subspecies *I. e. pontica* Schmidt, 1938, whereas Shengelia (1975) did not give any indication of infraspecific assignment for specimens recorded in Tbilisi and for additional listed Georgian records. Dumont (2004) mentioned *I. e. pontica* for Azerbaijan, and according to Tailly et al. (2004) in adjacent Armenia exclusively *I. e. pontica* is found.

Ischnura pumilio (Charpentier, 1825)

Two males were collected in open thermophilic riverside scrub.

Previous records of *I. pumilio* from Tbilisi are mentioned in Shengelia (1975), confirmed Georgian records from elsewhere additionally by Beutler (1987) and Reinhardt (1992). The species was recently recorded in adjacent Armenia (Tailly et al. 2004) and Azerbaijan (Dumont 2004).

Caliaeschna microstigma Selys, 1883

One fresh male was collected at locality 1 and three exuviae were found at locality 6. From both sites it has been reported previously: from Tbilisi by Reinhardt (1992) and from Lagodekhi National Park by Shengelia (1975). Further data from western Georgia and northeastern Georgia, respectively, are given by the latter and by Beutler (1987). The few records obtained during this study probably did not mirror reality and it can be assumed that this species is more abundant as both localities perfectly matched with the species' habitat requirements as I have recorded them in other regions.

According to Kalkman (2006), *C. microstigma* is common across Turkey. Elsewhere in the region, however, the species seems to be notably scarce. It is not listed for Azerbaijan by Kalkman (2006), but a record from Lenkoran is mentioned by Bartenev (1912). In Armenia the species seems to be rare as well and has not been recorded since 1963 (Tailly et al. 2004).

***Onychogomphus flexuosus* (Schneider, 1845)**

This species was surprisingly abundant at locality 1, where several specimens were collected (15♂7♀) and a total of at least 50 individuals estimated. Additionally one copula was observed at the adjacent river stretch of the Botanical Garden Tbilisi (locality 4). From the latter locality it has also been recorded previously by Beutler (1987) and additional data from Tbilisi were provided by Shengelia (1975).

The individuals observed were mainly found perching on bare ground at sparsely vegetated spots. Especially a sandy path along the northern river wall, about 20 m above the river, was most attractive for the species. A total of five mating wheels were encountered, finally resting on bushes at heights of roughly 1.5 to 2 m. Notably, other than *O. forcipatus albotibialis*, not a single individual of *O. flexuosus* was observed perching directly along the river.

In Turkey *O. flexuosus* is local and scarce (Kalkman 2006) and in adjacent Armenia it has not been recorded since 1963 (Tailly et al. 2004). Also for Azerbaijan no current data is available (Dumont 2004) and the only records go back to Bartenev (1912). In view of these facts the abundant occurrence of this species in the area of Tbilisi is noteworthy.

***Onychogomphus forcipatus albotibialis* Schmidt, 1954**

According to identification features given by Boudot et al. (1990), Suhling & Müller (1996) and Kalkman (2006), all collected males (21♂; additionally 5♀) clearly pertained to *O. f. albotibialis*, judging from the shape of the knobs of the lower appendages. The tibiae typically exhibited yellow to white vertical stripes and, compared to specimens of the nominate taxon from Germany and Finland, the black pattern of the thorax was clearly reduced. Reinhardt (1992) was the first who stated the presence of this taxon in Georgia and in Tbilisi in particular, whereas records of *O. forcipatus* previously mentioned were either not assigned to a particular taxon or erroneously stated as *O. f. unguiculatus* (Vander Linden, 1825) (Shengelia 1975; Ketenchiev & Haritonov 1998). It is noteworthy, however, that a series of exuviae collected in Tbilisi by K. Reinhard according to Suhling & Müller (1996) contained both albotibialis and the nominate taxon, indicating that the contact zone of both subspecies might run through the area. Together with *O. flexuosus* this species was the dominant dragonfly at locality 1 and strikingly abundant here. Contrary to *O. flexuosus*, male *O. f. albotibialis* were found to perch on almost any streamside rock or suitable structure available close to the riverbed. There were clear indications that the space along the river was separated spatially between the two species, and despite a comparatively high individual density in the steep river gorge only few cases of interspecific interaction were noticed. Like the preceding species, *O. f. albotibialis* seems to be remarkably scarce in Armenia (Tailly et al. 2004), where the species generally hasn't been encountered since at least 1963 (Tailly et al. 2004). Recent records referring decidedly to *O. f. albotibialis*, however, are available from adjacent Azerbaijan (Du-

mont 2004) and Turkey, where this taxon is considered to be common (Kalkman 2006).

Lindenia tetraphylla (Vander Linden, 1825)

Lindenia inkiti Bartenev, 1929

Four fresh single males of this species were observed in open landscape perching on bare ground. They behaved extraordinarily shyly and therefore could not be collected. Three of the four males were encountered close to the lake Kus Tba, an artificial lake 3 km southwest of Tbilisi. This swimming lake in a local recreational area had good water quality, riparian vegetation and standings of *Phragmites australis*, and seemed appropriate as a potential reproduction site for *L. tetraphylla.* Data of this species from the Caucasus region is generally scarce. Since the records from Abkhazia, which subsequently led to the designation of the doubtful taxon *L. inkiti* Bartenev, 1929, which is here, following Ketenchiev & Haritonov (1998) and Kalkman (2004), tentatively considered as conspecific with *L. tetraphylla*, no further records of this species from Georgia were published. Whilst a handful of healthy populations are known from adjacent Turkey (Kalkman 2006), *L. tetraphylla* is notably absent from Armenia (Tailly et al. 2004). Several mainly older records from Dagestan and eastern Azerbaijan are mentioned by Schorr et al. (1998). However, more recently one female was reported by Dumont (2004) from Baku in Azerbaijan.

Orthetrum anceps (Schneider, 1854)

Nine male specimens and four exuviae were collected at locality 2. Records from Lagodekhi mentioned in Shengelia (1975) were located only a few kilometres away from this site. Reinhardt (1992) found *O. anceps* in the northern outskirts of Tbilisi. In view of body colouration and shape of the anterior lamina, all nine collected specimens were typical *O. anceps*, even though the position of the anterior lamina in relation to the body axis in two individuals was surprisingly perpendicular respectively even angled slightly obtusely, thus pointing cranially. The taxonomic status of *O. anceps* remains unclear to a large extent and depends on the respective concept (Schneider 1985; Mauersberger 1994; Marinov 2001; Dyatlova 2006). For pragmatic reasons it is listed here under species rank.

Orthetrum albistylum (Selys, 1848)

One male was caught and one mating wheel was observed close to the brook running through localities 1 and 4. Apart from a record from the Black Sea Coast, Beutler (1987) previously reported one female from this particular brook. Shengelia (1975) listed additional scattered records countrywide.

Orthetrum brunneum (Fonscolombe, 1837)

Several individuals of *O. brunneum* were collected and observed in Tbilisi and surroundings, mainly at sparsely vegetated calm-water stretches of running wa-

ters. Previous records from Tbilisi are given by Shengelia (1975) and Reinhardt (1992), further records from elsewhere in Georgia by the former authors and Beutler (1987).

***Sympetrum arenicolor* Jödicke, 1994**

New to the fauna of Georgia. On 15-vi-2006 one fresh male of this species was collected in a gathering of numerous freshly emerged *S. striolatum* on steppe meadows at slopes of Mtatsminda ridge south of lake Kus Tba at an altitude of about 800 m a.s.l. in the southwestern outskirts of Tbilisi. Taxonomic status and nature of the decolorate vicariant *Sympetrum* species *arenicolor* and *sinaiticum* have been confusing for a long time and were clarified only recently (Jödicke et al. 2000). According to current knowledge the range of the central asian *S. arenicolor* stretches from Pakistan, Kyrgyzstan, Kazakhstan, Tajikistan, Uzbekistan and Turkmenistan in the east across Iran and Iraq to northeastern Syria and eastern Turkey in the west (Jödicke et al. 2000, 2009; Borisov 2006; Schröter 2010). However, only recently *S. arenicolor* was recorded for the first time in Azerbaijan in the Shirvan lowland (Jödicke et al. 2009). To date these records represent the northernmost population. The first record presented for Georgia from the vicinities of Tbilisi, however, was situated north of the 41° latitude and over 250 km north of the Azerbaijani population, thus extending the species range considerably. The Georgian specimen was fresh and emerged most likely only the day before. Due to a highly specialized life cycle with postponed reproductive maturation and seasonal migration to mountainous aestivation refuges, *S. arenicolor* usually emerges in spring or early summer, whereas reproduction takes place in autumn (Borisov 2006). The closely related *S. sinaiticum* features an analogue phenology (Jödicke et al. 2000). According to my own observations in Kyrgyzstan (Schröter 2010), the emerging date in Mid-June of the particular Georgian specimen might even be considered as late. Reproduction of this species in Central Asia is basically connected to artificial lowland ponds (Borisov 2006), and *S. arenicolor* is actually considered to be a mountainous species, which only secondarily colonized lower altitudes in historic times, due to increased supply of artificial waterbodies for irrigation. As the Georgian specimen was caught in a terrestrial habitat its place of origin is unfortunately not known. The first records for Azerbaijan (Jödicke et al. 2009), however, referred to specimens photographed at artificial ponds in the Shirvan lowland along the Caspian Sea and might thus support this fact.

***Sympetrum striolatum* (Charpentier, 1840)**

Dozens of freshly emerged *S. striolatum* were encountered perching in steppe meadows at the slopes of Mtatsminda ridge in the outskirts of Tbilisi. All collected specimens pertained to the nominate taxon. Previous records from Tbilisi were provided by Shengelia (1975), Beutler (1987) and Reinhardt (1992). The former also listed a large number of further records nationwide.

Discussion

The sampled localities were chosen by pure chance and all collecting activities mainly depended on the scope of the respective opportunity to enter a particular area. Needless to say that the data of this small collection obtained in just six days especially in view of the species composition are barely representative. The current state of odonatological research in Georgia's neighbouring countries varies widely - for a detailed overview see Kalkman et al. (2004). Adjacent Armenia and especially Turkey might be considered comparatively well explored, both countries having comprehensively revised checklists (Tailly et al. 2004; Kalkman 2006) and, to various extent, were the subject of mapping projects. From Azerbaijan, however, generally only very little data is available (more recently Dumont 2004; Kalkman 2006; Jödicke et al. 2009). Although the knowledge about the Georgian dragonfly fauna is considerably better, the actual state of odonatological exploration in Georgia remains at a very low level and the majority of available data are old, several of them doubtful or even obviously erroneous. For several species, like the three regional members of the *Coenagrion puella* complex and the closely related taxa pair *C. ornatum* and *C. vanbrinkae* no recent valuable information about the occurrence in Georgia is available at all. The same goes for virtually all taxa of *Ischnura*.

Whilst Georgia with *Cordulegaster mzymtae* Bartenev, 1929 even comes up with a *Cordulegaster* species, whose description inter alia – Bartenev (1929) only refers to a female from Sochi, Russia – is based on male specimens from Georgia (Akramowski & Schengelia 1967), this genus generally must be considered as very poorly studied in the region, especially with respect to recent progress in the systematical and ecological understanding of this group (Boudot 2001; Kalkman 2006). According to the preliminary checklist compiled by Kalkman (2006), it could be tentatively concluded that Georgia is home to at least 70 species of Odonata. However, this approximate value surely is not exhaustive as almost every Georgian dragonfly record still could be considered a discovery and even a snapshot of the Georgian odonate fauna, as presented here, may reveal a new species for the country.

Acknowledgement

I am especially grateful to Lili Tschcheidse for her warm-hearted hospitality and to Zurab Schewardnadse for guidance and patiently taking care of the exalted needs of a dragonfly collector in Georgia - both made the trip an unforgettable experience. Reinhard Jödicke, Oleg Kosterin, Klaus Reinhardt and Florian Weihrauch corrected the manuscript and gave valuable comments. Martin Schorr once more readily provided literature. Jean-Pierre Boudot gave helpful comments on taxonomical formalities concerning *Calopteryx*. Irma Berscheid-Kimeridze translated the Georgian abstract and checked the spelling of the Georgian toponyms. I am indebted to them all. Last but not least I am grateful to Sabrina Scheitweiler, who once more was reason and motivation for this trip.

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Manuskripteingang: 9. September 2010