**Литература**

Амолин А.В. Фауна и биономия одиночных сладчатокрылых ос подсемейства Eumeninae (Hymenoptera: Vespidae) Донецкой области // Изв. Харьковск. энтомол. об-ва. - 2000. - Том. 8, вып. 2. - С. 10-12.

Амолин А.В. Эколого-фаунистический обзор ос подсемейства Eumeninae (Hymenoptera: Vespidae) Юго-Восточной Украины. - Донецк: ДонНУ, 2009. - 123 с.

Иванов С.П., Филатов М.А., Фатерыга А.В., Амолин А.В., Проценко Ю.В., Дроздовская А.В. Перепончатокрылые насекомые (Insecta, Hymenoptera) в Красной книге Крыма: проект // Заповедники Крыма. Биоразнообразие и охрана природы в Азово-Черноморском регионе. - Матер. VI Междунар. науч.-практич. конф. (Симферополь, 20-22 октября 2011 г.). - Симферополь, 2011. - С. 287-292.

Песенко Ю.А. Принципы и методы количественного анализа в фаунистических исследованиях. - М.: Наука, 1982. - 287 с.

Фатерыга А.В. Складчатокрылые осы подсемейства Eumeninae (Hymenoptera, Vespidae) как индикаторы территорий с высоким уровнем биоразнообразия в Крыму // Вопросы развития Крыма. - Науч.-практич. дискусс.-аналитич. сб. - Симферополь, 2003 (2004). - Вып. 15. - С. 105-110.

Фатерыга А.В. Складчатокрылые осы (Hymenoptera: Vespidae) Тарханкутского полуострова // Заповедники Крыма: Заповедное дело. Биоразнообразие. Экообразование. - Матер. III науч. конф. (Симферополь, 22 апреля 2005 г.). - Ч. 2. - Симферополь, 2005. - С. 91-96.

Фатерыга А.В. Роль заповедных территорий в охране складчатокрылых ос (Hymenoptera, Vespidae) Крыма // Заповедники Крыма. Теория, практика и перспективы заповедного дела в Черноморском регионе. - Матер. V Междунар. науч.-практич. конф. (Симферополь, 22-23 октября 2009 г.). - Симферополь, 2009 а. - С. 350-354.

Фатерыга А.В. Наблюдения над гнездованием одиночной осы *Tropidodynerus interruptus* (Brullй, 1832) (Hymenoptera, Vespidae, Eumeninae) в Крыму // Евразиатск. энтомол. журн. - 2009 б. - Т. 8, № 4. - С. 381-385 + 380 + VI.

Фатерыга А.В. Ландшафтное распределение одиночных складчатокрылых ос подсемейства Eumeninae (Hymenoptera: Vespidae) Крыма // Тр. Русск. энтомол. об-ва. - 2010. - Т. 82, № 2. - С. 74-82.

Фатерыга А.В., Иванов С.П. Результаты 100-летнего изучения фауны складчатокрылых ос Карадагского природного заповедника и прилегающих территорий // Запов. справа в Україні. - 2009. - Т. 15, вип. 1. - С. 65-70.

Фатерыга А.В., Иванов С.П. "Краснокнижные" виды складчатокрылых ос (Hymenoptera, Vespidae) на карте Крыма // Экосистемы, их оптимизация и охрана. - 2010. - Вып. 3. - С. 180-192.

Червона книга України. Тваринний світ. - К.: Глобалконсалтинг, 2009. - 624 с.

Arens W. Zum Verhalten von *Tropidodynerus interruptus* (Brullé 1832) (Vespoidea, Eumenidae) und seines Brutparasiten *Chrysis jaxartis* Sem. am Nest // Linzer Biol. Beitr. - 1999. - Bd. 31, Hf. 1. - S. 147-158.

Dvořák L., Castro L. New and noteworthy records of vespid wasps (Hymenoptera: Vespidae) from the Palaearctic region // Acta Entomol. Mus. Nat. Pragae. - 2007. - Vol. 47. - P. 229-236.

Kostylev G. Espčces novivelles et peu connues de Vespides, d'Euménides et de Masarides paléarctiques (Hymenoptera) II // Bull. Soc. Nat. Moscou. Sect. Biol. - 1940. - Vol. 49, N 5-6. - P. 24-42.


# CURRENT STATUS OF THE DRAGONFLY (INSECTA, ODONATA) FAUNA OF THE KANIV NATURE RESERVE AND VICINITIES


**N.A. Matushkina, D.D. Buy, N.N. Borysenko**

*National Taras Shevchenko University of Kyiv, Kaniv Nature Reserve*



**CURRENT STATUS OF THE DRAGONFLY (INSECTA, ODONATA) FAUNA OF THE KANIV NATURE RESERVE AND VICINITIES. Matushkina N.A., Buy D.D., Borysenko N.N. - Nature Reserves in Ukraine. 2012. 18 (1-2): 87-91. -** Forty dragonfly species are recorded from the Kanev Natural Reserve and vicinities, three of which (*Erythromma viridulum*, *Somatochlora flavomaculata*, and *Stylurus flavipes*) were reported for the first time. Notes on biogeographic affinities, ecology and behaviour were added for these species. Current findings of some dragonfly species (*Sympecma fusca*, *Aeshna affinis, Brachytron pratense*, *Somatochlora metallica, Crocothemis erythraea,* and *Orthetrum albistylum*), rare or locally distributed in the Reserve, are added. Current status of the odonatofauna of the Reserve is discussed from the position of environment changes.


**Key words:** Odonata, Nature Reserve, habitat, protected species, conservation, Kaniv, Ukraine.



**СУЧАСНИЙ СТАН ОДОНАТОФАУНИ КАНІВСЬКОГО ПРИРОДНОГО ЗАПОВІДНИКА ТА ЙОГО ОКОЛИЦЬ (INSECTA, ODONATA). Матушкіна Н.О., Буй Д.Д., Борисенко М.М. - Заповідна справа в Україні. 2012. 18 (1-2): 87-91. -** В роботі наведено дані про три види бабок, що були знайдені вперше у Канівському природному заповіднику та його околицях: *Erythromma viridulum*, *Somatochlora flavomaculata* і *Stylurus flavipes*. Додатково наведено сучасні знахідки *Sympecma fusca, Aeshna affinis, Brachytron pratense, Gomphus vulgatissimus, Somatochlora metallica, Crocothemis erythraea* і *Orthetrum albistylum,* що раніше відмічалися на території заповідника спорадично чи локально. Таким чином, в досліджуваному регіоні зареєстровано 40 видів бабок. Сучасний стан одонатофауни заповідника обговорюється з позиції зміни навколишнього середовища.


**Ключові слова**: бабки, природний заповідник, середовище існування, охоронювані види, збереження, Канів, Україна



**СОВРЕМЕННОЕ СОСТОЯНИЕ ОДОНАТОФАУНЫ КАНЕВСКОГО ПРИРОДНОГО ЗАПОВЕДНИКА И ЕГО ОКРЕСНОСТЕЙ (INSECTA, ODONATA). Матушкина Н.А., Буй Д.Д., Борисенко Н.Н. - Заповідна справа в Україні. 2012. 18 (1-2): 87-91. -** В работе приведены данные о трёх видах стрекоз, найденных впервые в Каневском природном заповеднике и его окрестностях: *Erythromma viridulum*, *Somatochlora flavomaculata* и *Stylurus flavipes*. Дополнительно приведены современные находки *Sympecma fusca, Aeshna affinis, Brachytron pratense, Gomphus vulgatissimus, Somatochlora metallica, Crocothemis erythraea* и *Orthetrum albistylum,* ранее отмечавшихся на территории заповедника спорадически или локально. Таким образом, в исследованном регионе зарегистрировано 40 видов стрекоз. Современное состояние одонатофауны заповедника обсуждается с позиции изменения окружающей среды.


**Ключевые слова**: стрекозы, природный заповедник, среда обитания, охраняемые виды, сохранение, Канев, Украина


Documentation about dragonfly distribution throughout Ukraine still is scanty, in spite of evident progress in the respective studies during last quarter of a century (see review by Khrokalo, 2005). It was well studied in some north-eastern, eastern and southern regions (e.g. Khrokalo, Davydenko, 2002; Martynov, Martynov, 2004; Dyatlova,

2004, 2005; Matushkina, 2006). There are several recent publications about the species diversity of Odonata of the protected territories (reviewed by Ridey, Khrokalo, 2006; Khrokalo, Nazarov, 2008), including the Middle Dnieper area, which seems to be one of the best studied regions.

Since the establishment of the Kaniv Nature Reserve (KNR) in 1923, the dragonfly fauna from the protected territories and their vicinities have been studied by Gorb, Khrokalo, and Matushkina (Gorb, 1991, 1992; Khrokalo, Matushkina, 1999; Matushkina, 2006). As a result, 37 dragonfly species were revealed altogether. In the present work we provide new data on the dragonflies of KNR and vicinities, and discuss current status of same dragonfly species from this region.

## Materials and Methods

The Kaniv Nature Reserve (KNR) is situated in the Middle Dnieper area (Kaniv District, Cherkassy Province), mainly on the right bank of the river (ca. 49°46'N, 31°28'E). The dominant waters of KNR are lower part of the Kaniv Reservoir, main stream and former river-bed of the Dnieper River, temporal flood waters, and forest streams. The collecting localities are generally close to the main stream of the Dnieper River. The materials were collected during May-November 2007–2012. The dragonfly imagoes were caught with an entomological net. Final larvae and exuviae of *Stylurus flavipes* were picked up manually on the sandy river bank. All final larvae were reared in the laboratory to the imago in order to prove species identifications. Pictures of several dragonfly species were taken by BN using Canon 450d equipped with lens Canon 100/2.8 Macro USM. The materials are deposited in entomological collection at zoological department of the National Taras Shevchenko University of Kyiv. Nomenclature of taxa is given by World Species List – ODONATA (http://www.calopteryx.de/idf/). Biology of the species is reviewed after Schorr (1990), Askew (2004), Dijkstra (2006), and Clausnitzer (2009). Species new for KNR and vicinities are marked with an asterisk.

## List of records

***Sympecma fusca* (Vander Linden, 1820).**

KNR, Mariina Gora, 16.11.2010, 1 female (Borysenko), steading of KNR, 31.03.2011, 1 female, photo (Borysenko), surroundings of KNR, ca. 1 km NE to Pekari village, 21.04.2011, 1 male photo (Borysenko), surroundings of KNR, ca. 1 km N to Pekari village, 11.04.2012, 1 female (Borysenko); surroundings of KNR, ca. 1 km NE to Liplyava village, 7.06.2012, 1 female (Buy); KNR, locality "Velyke Skifske Gorodishche", 14.09.2012, 1 male (Borysenko); same place, 19.09.2012, several adults, photo (Borysenko).

Note: *Sympecma fusca* is common in large parts of Europe extending to central Asia. It is currently expanding rapidly on the northern edge of its range, although populations appear to be scarce and fluctuating. *Sympecma* is the only European damselfly genus that overwinters as adult. Breeding occurs in spring. Larvae inhabited oligotrophic pools. Pre-reproductive adults leave the breeding sites in autumn and move to woods and copses, usually rather open in character, with a ground layer of tall grass. Here they overwinter, thereafter return to the water in springtime and become reproductively active. *S.fusca* was previously recorded from Kaniv District by Gorb (1992).

***Erythromma viridulum* (Charpentier 1840).***

Surroundings of KNR, ca. 1 km E to Zmiini Islands, reed bush, 4.06.2012, 1 male (Buy); KNR, Volchii Skoty, raspberry-canes, 24.06.2012, 1 female (Matushkina).

Note: This thermophilic species is distributed mainly in the Mediterranean region of Europe and Africa. However it extends northwards last years that increases the area of distribution. Adults fly around still backwaters of rivers and small lakes, close to the surface of open water, where they seem to be associated with floating vegetation. Unlike many other coenagrionid damselflies, larvae of *E.viridulum* hatch on plants floating on the water surface. This is the first record of the species from KNR and vicinities.

***Aeshna affinis* Vander Linden, 1820.**

Surroundings of KNR, ca. 1 km N to Pekari village, 10–20.06.2012, 1 male (Lukashov).

Note: This species is generally distributed in southern Europe and Asia. Larvae develop in standing waters. Adults exhibit a migratory potential, and therefore are able turn up in different habitats. In surroundings of KNR, *A.affinis* was previously recorded from Pekari village and sand right bank of Dnieper River by Gorb (1991).

***Brachytron pratense* (Müller, 1764).**

Surroundings of KNR, ca. 1,5 km NE to Liplyave village, 4.06.2011, 1 male (Matushkina); steading of KNR, sand bank of Dnieper River, 8.06.2011, 2 dried males (Matushkina).

Note: Adults of this European species breeds in stagnant or slow-flowing fresh waters with presence of dead vegetation that is commonly used by female for oviposition. Flight period is spring and early summer. In surroundings of KNR, *B.pratense* was previously recorded from Pekari village by Gorb (1991).

***Gomphus vulgatissimus* (Linnaeus, 1758).**

Steading of KNR, sand bank of Dnieper River, 7.06.2007, 1 exuvium (Matushkina); KNR, Mariina Gora, 20.06.2009, 1 male (Matushkina);

Note: West Palaearctic species that is generally associated with clean, streaming, meandering rivers and creeks with sandy soil. Adults perch on bushes as well as on the ground. Flight period begins in May and ends in July. In Kaniv District, *G.vulgatissimus* was previously recorded from Ros River by Gorb (1992).

***Stylurus flavipes* (Charpentier, 1825).***

Steading of KNR, sand bank of Dnieper River, 19.06–4.07.2007, 4 exuviae (Matushkina); KNR, Mariina Gora, 20.06.2009, 1 male (Matushkina); steading of KNR, sand bank of Dnieper River, 27.05–26.06.2012, 12 exuviae (Matushkina); same locality, 28.06.2012, 3 larvae (F–0) (Matushkina); vicinities of KNR, motor road along the Dnieper River, 24.06.2012, 1 teneral male (Maruschak, Muravinets); same place, 25.06.2012, 1 male (Kovbasiuk); KNR, Mariina Gora, 25.06.2012, 1 female (Kienko, Katsubo).

Note: This is an eastern Palaerctic species that seems to be declined in numbers in Europe. In Ukraine it was regarded as common in first half of 20th century, but become rarer in the last decades (Gorb et al., 2000). Recently mass

hatching has been observed on banks of the Dnieper River from Kyiv Province, Vyshgorod District (Matushkina, 2006). This is the first record of *S. flavipes* from KNR.

***Somatochlora flavomaculata* (Vander Linden, 1825).***

Surroundings of KNR, ca. 2 km S to Keleberda village, floodplains of Dnieper River, 15.06.2011, 1 female (Lukashov).

Note: This Eurosibiric species is generally represented by isolated populations. Adults can be found in summer near small ponds, marshes, boggy meadows, dykes and ditches, where they prefer to fly near rank vegetation without to stop. This is the first record of *S. flavomaculata* from Kaniv District of Cherkassy Province.

***Somatochlora metallica* (Vander Linden, 1825).**

Surroundings of KNR, ca. 1 km E to Zmiini Islands, 23.05.2011, 1 male (Buy); same locality, 22.05.2012, 1 male (Buy).

Note: Distributed in Northern and central Europe to E of the Volga River, and SE to Greece and Asian Minor. Adults fly near isolated stagnant and slow-flowing waters and lakes. Larvae are ground dwellers. In Kaniv District, *S. metallica* was previously recorded from two localities on the left bank of Dnieper River: ca. 1 km NE to Kaniv (a canal near former Reshidki tract) by Gorb (1992) and from surroundings of Liplyave village by Khrokalo and Matushkina (1999).

***Orthetrum albistylum* Selys, 1848.**

Surroundings of KNR, ca. 1,5 km NE to Liplyave village, 4.06.2011, 1 male (Matushkina); surroundings of KNR, ca. 2 km E to Zmiini Islands, 4.06.2012, 1 female; same locality, 12.06.2012, 1 female (Buy).

Note: Distributed predominantly in eastern Palaearctic, where is becomes progressively more numerous through Austria, the Balkans and southern Russia. Inhabits open ponds and lakes, less commonly associated with streams and rivers. This is apparently thermophilic species. In vicinities of of KNR, *O.albistylum* was previously recorded from the lake near Keleberda village by Gorb (1992).

Check-list of the dragonfly species of the Kaniv Nature Reserve and its vicinities

| Species | First report | Protected status | |
|---|---|---|---|
| | | RB* | BC |
| **Calopterygidae** | | | |
| *Calopteryx splendens* (Harris, 1782) | Gorb, 1992 | | |
| **Lestidae** | | | |
| *Chalcolestes parvidens* (Artobolevskii, 1929) | Khrokalo, Matushkina, 1999 | | |
| *Lestes barbarus* (Fabricius, 1798) | Gorb, 1991 | | |
| *L. sponsa* (Hansemann, 1823) | Gorb, 1991 | | |
| *L. virens* (Charpentier, 1825) | Gorb, 1991 | | |
| *Sympecma fusca* (Vander Linden, 1820) | Gorb, 1992 | | |
| *S. paedisca* (Brauer, 1877) | Khrokalo, Matushkina, 1999 | | + |
| **Platycnemididae** | | | |
| *Platycnemis pennipes* (Pallas, 1771) | Gorb, 1992 | | |
| **Coenagrionidae** | | | |
| *Coenagrion puella* (Linnaeus, 1758) | Gorb, 1992 | | |
| *C. pulchellum* (Vander Linden, 1825) | Gorb, 1991 | | |
| *Enallagma cyathigerum* (Charpentier, 1840) | Gorb, 1991 | | |
| *Erythromma najas* (Hansemann, 1823) | Gorb, 1991 | | |
| *E. viridulum* (Charpentier, 1840) | this paper | | |
| *Ischnura elegans* (Vander Linden, 1820) | Gorb, 1991 | | |
| *I. pumilio* (Charpentier, 1825) | Khrokalo, Matushkina, 1999 | | |
| **Aeshnidae** | | | |
| *Aeshna affinis* Vander Linden, 1820 | Gorb, 1991 | | |
| *A. grandis* (Linnaeus, 1758) | Khrokalo, Matushkina, 1999 | | |
| *A. isosceles* (Müller, 1767) | | | |
| *A. mixta* Latreille, 1805 | Khrokalo, Matushkina, 1999 | | |
| *Anax imperator* Leach, 1815 | Gorb, 1991 | V | |
| *Brachytron pratense* (Müller, 1764) | Gorb, 1991 | | |
| **Gomphidae** | | | |
| *Stylurus flavipes* (Carpentier, 1825) | this paper | | + |
| *Gomphus vulgatissimus* (Linnaeus, 1758) | Gorb, 1992 | | |
| **Corduliidae** | | | |
| *Cordulia aenea* (Linnaeus, 1758) | Gorb, 1992 | | |
| *Epitheca bimaculata* (Charpentier, 1825) | Gorb, 1992 | | |
| *Somatochlora flavomaculata* (Vander Linden, 1825) | this paper | | |
| *S. metallica* (Vander Linden, 1825) | Gorb, 1992 | | |
| **Libellulidae** | | | |
| *Crocothemis erythraea* (Brülle, 1832) | Matushkina, 2006 | | |
| *Leucorrhinia caudalis* (Charpentier, 1840) | Khrokalo, Matushkina, 1999 | | + |
| *L. pectoralis* (Charpentier, 1825) | Gorb, 1992 | | + |
| *L. rubicunda* (Linnaeus, 1758) | Matushkina, 2006 | | |
| *Libellula depressa* Linnaeus, 1758 | Khrokalo, Matushkina, 1999 | | |
| *L. fulva* Мьller, 1764 | Khrokalo, Matushkina, 1999 | | |
| *L. quadrimaculata* Linnaeus, 1758 | Gorb, 1991 | | |
| *Orthetrum albistylum* (Selys, 1848) | Gorb, 1992 | | |
| *O. cancellatum* (Linnaeus, 1758) | Gorb, 1992 | | |
| *Sympetrum flaveolum* (Linnaeus, 1758) | Gorb, 1991 | | |
| *S. meridionale* (Selys, 1841) | Gorb, 1992 | | |
| *S. sanguineum* (Müller, 1764) | Gorb, 1991 | | |
| *S. vulgatum* (Linnaeus, 1758) | Gorb, 1991 | | |

* RB - Red Book of Ukraine, 2009; BC - Convention of the Conservation…, 2002; V - vulnerable

***Libellula fulva* (Müller, 1764).**

Surroundings of KNR, ca. 1 km E to Zmiini Islands, 30.05.2008, 1 male (Matushkina); same locality, 27.05.2012, 1 male (Buy).

Note: This is widespread but local species in Europe. Adults fly near slow-flowing waters, where they can form plentiful colonies. Females lay eggs on open water surface without floating vegetation. In vicinities of of KNR, *L.fulva* was previously recorded from Liplyave village and of Pekari village by Khrokalo and Matushkina (1999).

***Crocothemis erythraea* (Brullé, 1832).**

Surroundings of KNR, ca. 1 km E to Zmiini Islands, 18.06.2007, 1 female (Matushkina); same locality, 26.07.2008, adults in mass, tandems (Matushkina); same locality, 7.06.2011, 2 males, 1 female (Matuskina); same locality, 6.06.2012, several adults (photo by BN).

Note: Palaearctic-Afrotropical-Oriental species that was common and widespread in the Mediterranean region of Europe and recently demonstrate wide north expansion on the territory. Adults can form large aggregations. They fly near shallow, still waters like small ponds and stagnant drainage channels. Since 2004, this species is regularly observed in KNR and vicinities (Matushkina, 2006).

## Discussion

A total of 40 dragonfly species are recorded from the Kaniv Nature Reserve and its vicinities that represent more than a half of the odonatofauna of Ukraine (Table). They include five species with a conservation status. Emperor Dragonfly *Anax imperator* is considered as a vulnerable species in Ukraine (Red Book of Ukraine, 2009). Siberian Winter Damsel *Sympecma paedisca*, Yellow-legged Dragonfly *Stylurus flavipes*, Lilypad Whiteface *Leucorrhinia caudalis* and Yellow-Spotted Whiteface *Leucorrhinia pectoralis* are listed in the Bern Convention (Convention on the Conservation…, 2002) and require protection of their habitats.

Dragonflies are indicators of the environment changes of different origins including global climatic changes (Schindler et al., 2003; Ott, 2005). Impact of climatic changes on the insect fauna is a matter of intensive debates. Most often it is reflected in a distribution pattern of the species. Indeed, during the last decades the northward expansion has been shown for many dragonfly species in Europe, including those from the fauna of Ukraine (Ott, 2005). A most well-known example is Broad Scarlet *Crocothemis erythraea* (Libellulidae), the mediterranean species that expanded to Central and Northern Europe. In Ukraine, it was collected in South and South-west till the middle of the 20th century (Gorb et al., 2000). Recently, *C. erythraea* is regularly observed in several localities from Central and Northern Ukraine (Khrokalo, Matushkina, 2005; Matushkina, 2006; Khrokalo, 2010). One of these localities is situated near Zmiini Islands of the Kaniv Nature Reserve since 2004. Three other dragonfly species from the Reserve, Common Winter Damsel *Sympecma fusca* (Lestidae), Small Red-eye *Erythromma viridulum* (Coenagrionidae), and White-tailed Skimmer *Orthetrum albistylum* (Libellulidae), demonstrate the similar but less intensive expansion trend both in Europe and in Ukraine (Clausnitzer, 2009; Gorb et al., 2000).

Another example of species distribution changes is provided by *Stylurus flavipes* (Gomphidae). It was considered as frequent species in many regions of Ukraine before the middle of 20th century, whereas in the last decades it was sporadically found in the central and south regions mainly, and noted as rare (Gorb et al., 2000). However, there are two current records of mass hatching of *S.flavipes* from the Dnieper River (Matushkina, 2006), including new findings from the Kaniv Nature Reserve. Extension of *S.flavipes* is observed in Germany, where it was considered rather as a consequence of a better water quality in rivers, than the effect of a change in temperature or climate (Ott, 2005). It is difficult to estimate now whether similar tendency can be traced in Ukraine, as well as to reveal factors which can be responsible for this phenomenon, if it exists.

Recent data indicate an increase of biodiversity of the Reserve, nevertheless the dragonfly fauna may also be negatively affected from the environment changes. For example, *Leucorrhinia caudalis* and *Chalcolestes parvidens*, both species associated with marshes, small forest waters and isolated non-fish ponds, are rarely observed last few years. Reasons of this rareness need further investigation. In this context it must be considered, that the long-term monitoring of the dragonfly fauna of the Reserve is highly required both to timely reveal the potential risks for the species and to manage the conservation activity.

## Acknowledgements

We thank our colleagues, V. Gorobchishin, D. Lukashov, Yu. Protsenko, and students of the National Taras Shevchenko University of Kyiv for their help in collecting of some materials.

## Literature

Askew R.R. The Dragonflies of Europe (revised ed.). - Harley Books, 2004. - 308 p.

Clausnitzer V., 2009. *Sympecma fusca*. *Orthetrum albistylum* In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1. <www.iucnredlist.org>. Downloaded on 15 September 2012.

Convention on the Conservation of European Wildlife and Natural Habitats. http://conventions.coe.int/Treaty/FR/Treaties/Html/104-2.htm#Arthropods/Arthropodes (Status in force since 1 March 2002.)

Dijkstra K.-D.B. Field guide to the Dragonflies of Britain and Europe. - Gillingham: British Wildlife Publishing, 2006.- 320 p.

Dyatlova E.S. New data on fauna of dragonflies (Insecta: Odonata) from the lower Danube [Новые сведения о фауне стрекоз (Insecta: Odonata) Придунайского региона] // Contemporary problems of zoology and ecology: Proceedings of international conference. Odessa, Phoenix, 2005.- P. 81-84. [in Russian]

Dyatlova E.S. New Records of *Cercion lindeni* (Odonata, Coenagrionidae) in the Basins of Lower Danube, Dniestr and Dnieper Rivers in the South of Ukraine // Vestnik zoologii.- 2004.- Vol. 38 (5).- P.10.

Gorb S.N. Dragonflies (Odonata) of the Kanev Reserve and its vicinities. I [Стрекозы (Odonata) Каневского заповедника и его окрестностей. I] // Problems of general and molecular biology. - 1991. - Vol. 9. - P. 48-51. [in Russian]

Gorb S.N. Dragonflies (Odonata) of the Kanev Reserve and its vicinities. II [Стрекозы (Odonata) Каневского заповедника и его окрестностей. II] // Problems of general and molecular biology. - 1992. - Vol. 10. - P. 11-13. [in Russian]

Gorb S.N., Pavljuk R.S., Spuris Z.D. Odonata of Ukraine: a faunistic review [Стрекозы Украины: фаунистический обзор] // Vestnik zoologii.- 2000.- Suppl. 15.- P. 3-155.
Khrokalo L. A. Annotated bibliography of the odonatological papers of Ukraine // IDF-Report.- 2005.- Vol. 8.- P. 1-51.
Khrokalo L.A. Expansion of *Crocothemis erythraea* in Ukraine // BioRisk. - 2010. - Vol. 5. - P. 211-223.
Khrokalo L., Nazarov N. Dragonflies (Odonata) of the Poliskyi Nature Reserve, Ukraine // IDF-Report. - 2008. - 13. - P. 17-28.
Khrokalo L.A., Davydenko E.V. Notes on dragonflies (Insecta: Odonata) of Dnipropetrovs'k region // Ecology and Noospherology.- 2002.- Vol. 11(1-2).- P. 91-94.
Khrokalo L.A., Matushkina N.O. Dragonflies (Insecta: Odonata) of Kaniv Dnieper district [Бабки (Insecta: Odonata) Канівського Придніпров'я] // The Kharkov Entomological Society Gazette.- 1999. - Vol.7 (2).- 27-32. [in Ukranian]
Khrokalo L.A., Matushkina N.O. Expansion of *Crocothemis erythraea* in Ukraine // Abstracts Book 4th WDA International Symposium of Odonatology, Pontevedra 26-30 July 2005.- P. 72-73.
Martynov V., Martynov A. Interesting Findings of Dragonflies (Insecta, Odonata) from Ukraine [Интересные находки стрекоз (Insecta, Odonata) на территории Украины] // Vestnik zoologii.- 2004.- Vol. 38(5).- P. 38. [in Russian]
Matushkina N. New records of rare Odonata in Ukraine (Insecta) / / Proceedings of the Zoological Museum of Kyiv. T. Shevchenko Univ.- 2006.- Vol. 4.- P. 155-161.
Ott J. The effects of Climatic Changes for the distribution of dragonflies in Europe and their possible effects on the biocoenosis of the waters // Abstracts Book 4th WDA International Symposium of Odonatology, Pontevedra 26-30 July 2005.- P. 49.
Red Book of Ukraine. Animals. [Червона книга України. Тваринний світ] - K.: Ukr. Globalconsalting, 2009. - 624 p. [in Ukrainian]
Ridey N., Khrokalo L. National Ecological Net of Ukraine and state of study of Odonatofauna from protected territories // "Ochrona owadow w Polsce Badania...", 3-5 VII 2006, Zwierzyniec. - 2006. - P. 14-15.
Schindler M., Fesl C., Chovanec A. Dragony associations (Insecta: Odonata) in relation to habitat variables: a multivariate approach // Hydrobiologia . - 2003. - Vol. 497. - P. 169-180.
Schorr M. Grundlagen zu einem Artenhilfsprogramm Libellen der Bundesrepublik Deutschland. - Bilthoven: Ursus, 1990. - 512 S.

# ПАУКИ ШАЦКОГО НАЦИОНАЛЬНОГО ПРИРОДНОГО ПАРКА, CEM. LINYPHIIDAE

**В.А. Гнелица**
*Киевский национальный университет имени Тараса Шевченко*

**SPIDERS (LINYPHIIDAE) FROM SHATSKY NATIONAL PARK. Gnelitsa V.A. - Nature Reserves in Ukraine. 2012. 18 (1-2): 91-95. -** The annotated list of 98 spider species of the Linyphiidae family from Shatsky nature park is presented.
**Keywords:** spiders, Linyphiidae, Shatsky nature park.

**ПАВУКИ ШАЦЬКОГО НАЦИОНАЛЬНОГО ПРИРОДНОГО ПАРКУ, РОДИНА LINYPHIIDAE. Гнелиця В.А. - Заповідна справа в Україні. 2012. 18 (1-2): 91-95. -** Подано анотований список 98 видів павуків родини Linyphiidae Шацького нацыонального природного парку.
**Ключові слова:** павуки, Linyphiidae, Шацький нацыональний природний парк.

**ПАУКИ ШАЦКОГО НАЦИОНАЛЬНОГО ПРИРОДНОГО ПАРКА, CEM. LINYPHIIDAE. Гнелица В.А. - Заповідна справа в Україні. 2012. 18 (1-2): 91-95. -** Представлен аннотированый список 98 видов пауков семейства Linyphiidae Шацкого национального природного парка.
**Ключевые слова:** пауки, Linyphiidae, Шацкий национальный природный парк.

Территория Шацкого национального природного парка лежит на крайнем северо-западе Украины и находится в Верхнеприпятском физико-географическом районе физико-географической области "Волынское Полесье" в зоне смешанных лесов (Физико-географичесое районирование..., 1968).

Важной особенностью этого региона является то, что господствующей коренной основой здесь служат отложения мергелей и мела. Они-то и определяют характерные ландшафтные черты природы региона, такие как: значительное распространение озер карстового происхождения, наличие относительно плодородных, дерново-карбонатных почв, и как следствие, довольно больших участков дубово-грабовых и сосново-дубовых лесов.

На плоской слегка волнистой низменности медленное течение рек способствовало образованию долин с широкими поймами и надпойменными террасами. Умеренно и плохо дренированные надпойменно-террасовые равнины с постоянно переувлажненными и заболоченными землями занимают господствующее положение и покрыты сосновыми, березовыми и ольховыми лесами.

Сосновые боры являются здесь преобладающим типом леса. На супесчаных почвах при близком залегании мергелей развиваются сосново-дубовые и дубово-сосновые леса. На еще более богатых почвах встречаются уже дубово-грабово-сосновые и грабово-сосновые леса. Ольшанники, также довольно распространенные на исследуемой территории, занимают пониженные влажные заболоченные урочища. На месте вырубленных ольшанников или подсушенных болот располагаются луга.

Мягкие зимы со средней температурой января около 5° и теплое лето со средней температурой июля 17°–18° при 600 мм осадков в году позволяют существовать во флоре таким любителям мягкого климата, как как явор, черешня, ежевика коротковолосая, колосняк песчаный и др.

Шацкий национальный природный парк образован в декабре 1983 г. с площадью 32830 га, в 1999 г. площадь парка была увеличена до 48997 га. Рельеф парка равнинный с незначительным уклоном на север. Для данной территории характерными являются карстовые и денудационные формы рельефа. Карстовые формы выглядят как понижения разной формы и глубины. Более глубокие из них заполнены водой, образуя значительное число озер, среди которых наибольшим является озеро Свитязь (2,6 тыс. га, глубина 58,4 м). Эоловые формы рельефа представлены грядами, горбами и дюнами.

Грунты на территории парка преимущественно дерново-подзолистые, песчаные и супесчанные. Значитель-