

UDC 595.7

S. K. Ryndevich¹, X. L. Truong², A. O. Lukashuk³, A. V. Derunkov⁴¹Education Institution “Baranavichy State University”, 21 Voykova str.,
225404 Baranavichy, the Republic of Belarus, ryndevichsk@mail.ru²Institute of Biology, Vietnam Academy of Science and Technology,
18 Hoang Quoc Viet, Hanoi, Vietnam, txlam.iebr@gmail.com³State Environmental Institution “Berezinsky Biosphere Reserve”, 3 Tsentralnaya str., 211188 Domzheritsy,
Lepel distr., Vitebsk reg., the Republic of Belarus, lukashukao@tut.by⁴State Research and Production Association “Scientific and Practical Center of the National Academy of Sciences of
Belarus for Bioresources”, 27 Akademicheskaya str., 220072 Minsk, the Republic of Belarus, alex_derunkov@tut.by**NEW RECORDS OF CORYDALIDAE
(INSECTA: MEGALOPTERA) FROM CENTRAL VIETNAM**

Representatives of the Megaloptera order are quite widespread in the world and number 380 modern species. Among them the family Corydalidae Leach 1815 that includes two subfamilies (Corydalinae Leach 1815 and Chauliodinae Davis, 1903) and 25 genera. They consist of more than 200 species. The fauna of Vietnam currently includes 29 species of Corydalidae.

The study of the insect fauna of Central Vietnam during the joint Belarusian-Vietnamese expedition made it possible to make additional finds of Corydalidae on the territory of the Pu Hoat Nature Reserve and Pu Mat National Park (Nghe An Province). The material for this article was the authors' collection during April and May, 2025. All the collected species belong to the subfamily Corydalinae — dobsonflies. The subfamily is distributed in the temperate, subtropical and tropical areas of North and South America, Africa, Australia, New Zealand, East and Southeast Asia.

The research resulted in new finds of three species of Corydalidae from protected natural areas in Central Vietnam. The coloration of the head and pronotum of these species is illustrated. Three species of dobsonflies are listed from Pu Mat National Park and two species are recorded from Pu Hoat Nature Reserve. *Neoneuromus orientalis* Liu & Yang, 2004 and *Nevromus exterior* Navás, 1927 are indicated for the first time for Nghe An Province.

Key words: Insecta; Megaloptera; Corydalidae, fauna; Vietnam.

Fig. 11. Ref.: 7 titles.

С. К. Рындевич¹, С. Л. Чуонг², А. О. Лукашук³, А. В. Дерунков⁴¹Учреждение образования «Барановичский государственный университет», ул. Войкова, 21,
225404 Барановичи, Республика Беларусь, ryndevichsk@mail.ru²Институт биологии Вьетнамской академии наук и технологий,
18 Хоанг Куок Вьет, Ханой, Вьетнам, txlam.iebr@gmail.com³Государственное природоохранное учреждение «Березинский биосферный заповедник», ул. Центральная, 3,
211188 д. Домжерицы, Лепельский р-н, Витебская обл., Республика Беларусь, lukashukao@tut.by⁴Государственное научно-производственное объединение «Научно-практический центр Национальной
академии наук Беларуси по биоресурсам», ул. Академическая, 27, 220072 Минск, Республика Беларусь,
alex_derunkov@tut.by**НОВЫЕ УКАЗАНИЯ CORYDALIDAE (INSECTA: MEGALOPTERA)
ИЗ ЦЕНТРАЛЬНОГО ВЬЕТНАМА**

Представители отряда Megaloptera довольно широко распространены в мире и насчитывают 380 современных видов. Среди них семейство Corydalidae Leach 1815 включает два подсемейства (Corydalinae Leach 1815 и Chauliodinae Davis, 1903) и 25 родов. Они насчитывают более 200 видов. Фауна Вьетнама на данный момент включает 29 видов Corydalinae.

Изучение энтомофауны Центрального Вьетнама в ходе совместной белорусско-вьетнамской экспедиции позволило сделать дополнительные находки Corydalidae на территории заповедника Пу Хоат и национального парка Пу Мат (провинция Нгеан). Материалом для статьи послужили сборы авторов в апреле и мае 2025 года. Все собранные виды относятся к подсемейству Corydalinae — коридалин. Подсемейство распространено в умеренных, субтропических и тропических зонах Северной и Южной Америки, Африки, Австралии, Новой Зеландии, Восточной и Юго-Восточной Азии.

В результате исследований сделаны находки трех видов Corydalidae с охраняемых природных территорий Центрального Вьетнама. Проиллюстрирована окраска головы и переднеспинки этих видов. Три вида коридалов обнаружены в национальном парке Пу Мат, а два вида зарегистрированы в природном заповеднике Пу Хоат. *Neoneuromus orientalis* Liu & Yang, 2004 и *Nevromus exterior* Navás, 1927 впервые указаны для провинции Нгеан.

Ключевые слова: Insecta; Megaloptera; Corydalidae; фауна; Вьетнам.

Рис. 11. Библиогр.: 7 назв.

Introduction. Currently, 380 species and 35 genera of the order Megaloptera are known in the world, including 21 fossil species [1].

The family Corydalidae includes two subfamilies (Corydalinae and Chauliodinae) and 25 genera. They consist of more than 200 species. The Corydalidae species composition of Vietnamese fauna includes 29 species [2—7].

The study of the insect fauna of Central Vietnam during the joint Belarusian-Vietnamese expedition made it possible to make additional finds of Corydalidae on the territory of Pu Hoat Nature Reserve and Pu Mat National Park. All the collected species belong to the subfamily Corydalinae — dobsonflies. The subfamily is distributed in the in temperate, subtropical and tropical areas of North and South America, Africa, Australia, New Zealand, East and Southeast Asia. Imago live in the coastal zone of watercourses and other water bodies. Larvae develop in fresh watercourses and have a characteristic appearance due to their large size and feathery tracheal gills on 7—8 abdominal segments. They lead a predatory lifestyle, hunting aquatic invertebrates. Development lasts about two years. They usually pupate in the soil on the coast, less often in wood.

Material and methods. The material for this article was the authors' collection during the expedition to Vietnam in April and May, 2025.

The collection of Corydalidae was carried out with the use of a light trap (Figure 1). Insects were killed by ethyl acetate ether or were fixed in 90 %-alcohol. The material is in the authors' collections.

The material was examined with the use of a Nikon SMZ-745T stereomicroscope.

The figures were prepared with the help of Photoshop CS5 program.

Results and discussion. Previously, two species of Corydalidae were listed for Pu Mat National Park [7]. There were no records of dobsonflies for Pu Hoat Nature Reserve.

During the research, 4 species of Corydalidae (from 3 genera) from Pu Hoat Nature Reserve and Pu Mat National Park were found. Below is an annotated list of these species, their localities and distribution in Vietnam are indicated.

Corydalidae Leach in Brewster, 1815

Corydalinae Leach in Brewster, 1815

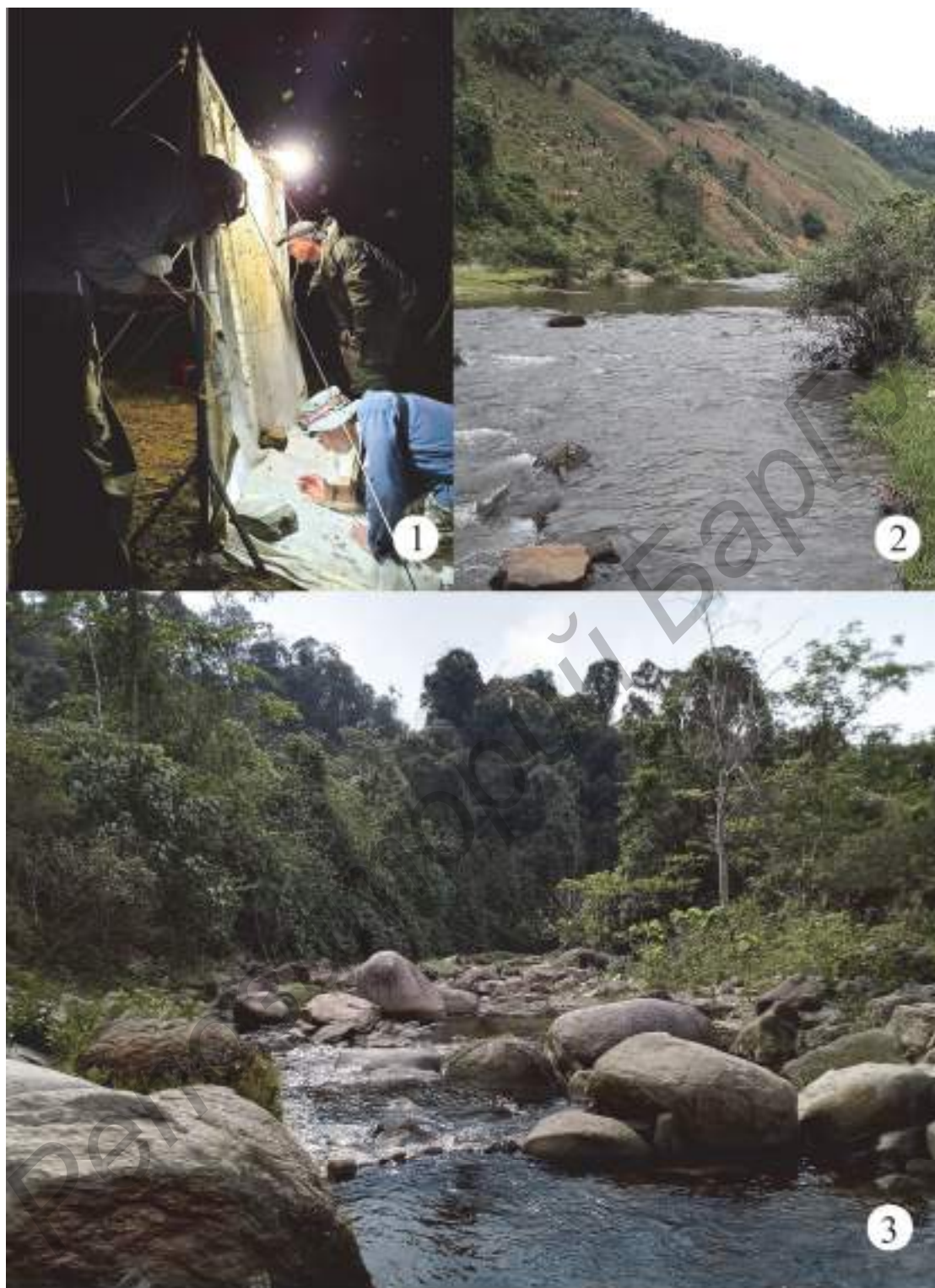
Neoneuromus ignobilis Navás, 1932

Published records. C-Vietnam: Nghe An Province, border of Pu Mat National Park Khe Kem waterfall [7].

Distribution. Vietnam (Da Nang, Gai Lai, Ha Noi, Kon Tum, Lao Cai, Lam Dong, Nghe An, Thua Thien-Hue) [3; 7].

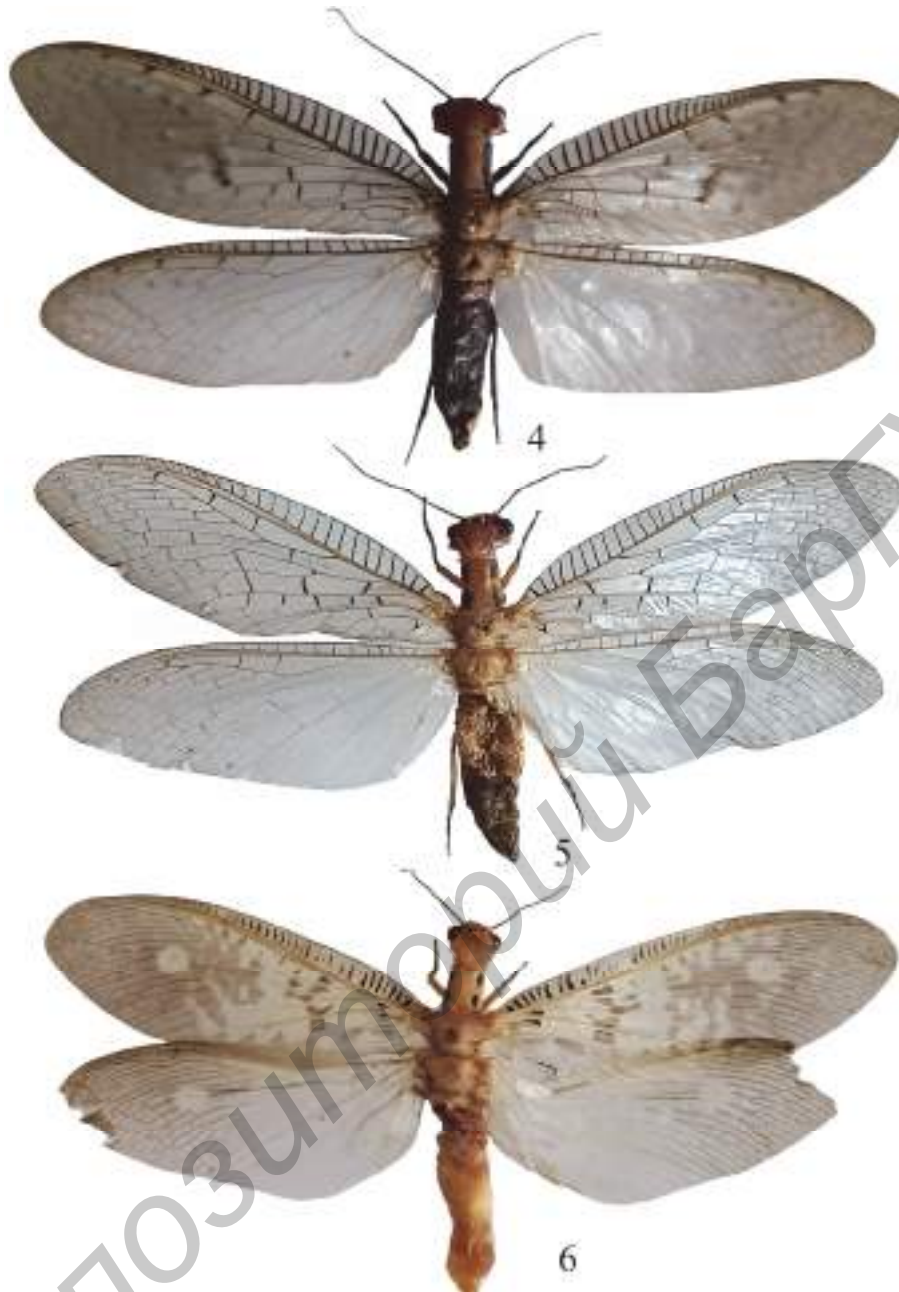
Neoneuromus orientalis Liu & Yang, 2004 (Figures 2—4, 9)

Material examined. C Vietnam, Nghe An Province, Con Cuong District, Pu Mat National Park, at light, N18°58'16,1", E104°50'05,7", $h = 208$ m, 30.IV.2025, leg. Ryndevich S., 2 specimens; C Vietnam, Nghe An Province, Que Phong District, Pu Hoat Nature Reserve, Dong Van Commune, at light, N19°48'31,0", E105°05'40,7", $h = 240$ m, 7.V.2025, leg. Ryndevich S., 1 specimens.



Figures 1—3. — Collection of Corydalidae and their habitats: 1 — collection of Corydalidae at light; 2 — habitat of *Neoneuromus orientalis* Liu & Yang and *Nevromus exterior* Navás (Pu Mat National Park); 3 — habitat of *Neoneuromus orientalis* Liu & Yang and *Protohermes lii* Liu, Hayashi & Yang (Pu Hoat Nature Reserve)

Рисунки 1—3. — Сбор *Corydalidae* и их места обитания: 1 — сбор *Corydalidae* на свет; 2 — местообитание *Neoneuromus orientalis* Liu & Yang и *Nevromus exterior* Navás (национальный парк Пу Мат); 3 — местообитание *Neoneuromus orientalis* Liu & Yang и *Protohermes lii* Liu, Hayashi & Yang (природный заповедник Пу Хоат)

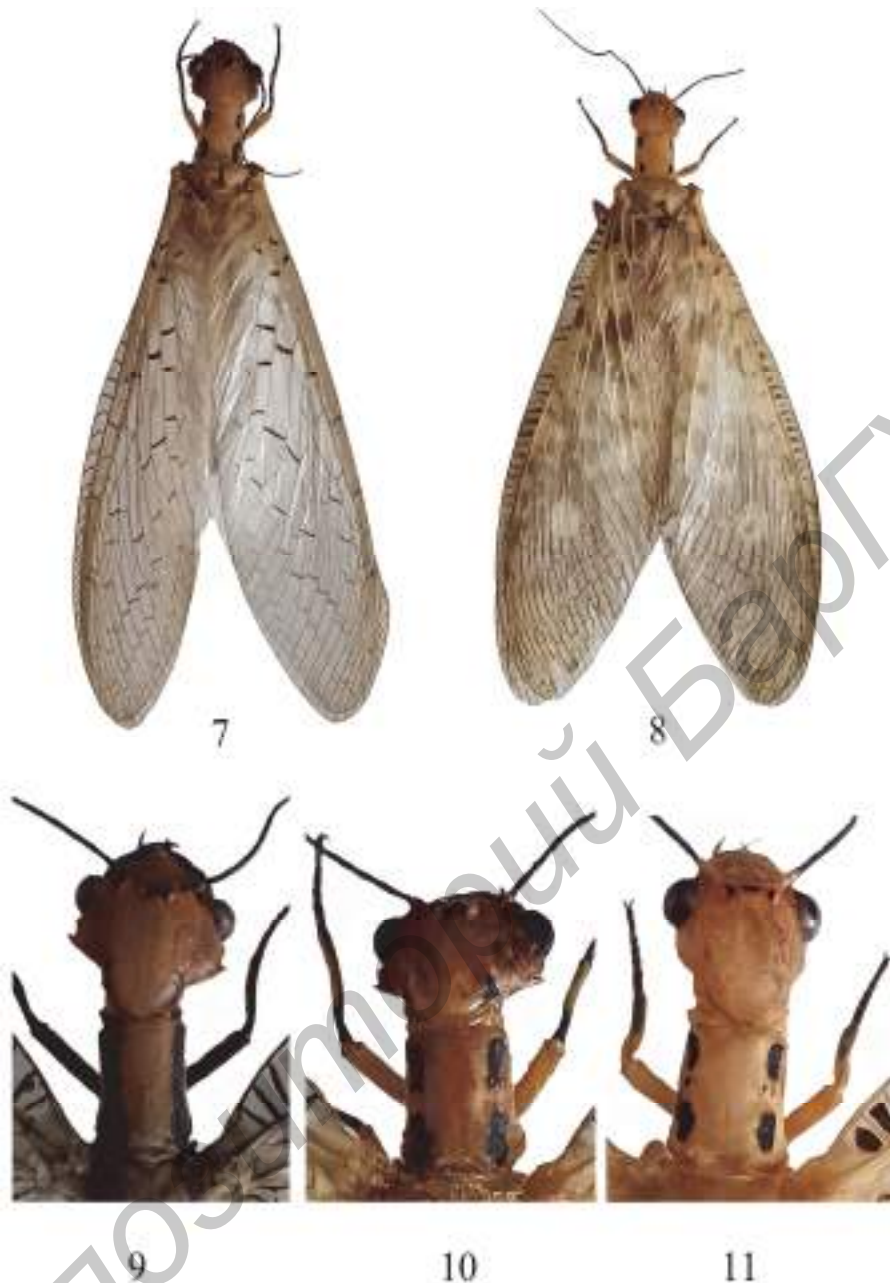


Figures 4—6. — Habitus of Corydalidae: 4 — *Neoneuromus orientalis*;
5 — *Nevromus exterior*; 6 — *Protohermes lii*

Рисунки 4—6. — Внешний вид Corydalidae: 4 — *Neoneuromus orientalis*;
5 — *Nevromus exterior*; 6 — *Protohermes lii*

Distribution. Vietnam (Gia Lai, Lao Cai, Nghe An, Phu Tho, Vinh Phuc) [3; 7]. New record for Nghe An Province and Pu Hoat Nature Reserve.

Remarks. Wingspan of the collected specimens 88—115 mm. Coloration of head and pronotum (Figures 4, 9). Specimens from Central Vietnam have an incomplete lateral dark stripe on the head. Most often head yellowish brown, laterally with black markings. Sometimes head with black markings reduced or absent. Pronotum yellowish brown, laterally with a pair of black vittae [4].



Figures 7—11. — Habitus and coloration of head and pronotum of Corydalidae: 7, 8 — habitus; 9—11 — head and pronotum; 7, 10 — *Nevromus exterior*; 8, 11 — *Protohermes lii*; 9 — *Neoneuromus orientalis*

Рисунки 7—11. — Внешний вид и окраска головы и переднеспинки Corydalidae: 7, 8 — внешний вид; 9—11 — голова и переднеспинка; 7, 10 — *Nevromus exterior*; 8, 11 — *Protohermes lii*; 9 — *Neoneuromus orientalis*

Nevromus exterior Navás, 1927 (Figures 2, 5, 7, 10)

Material examined. C Vietnam, Nghe An Province, Con Cuong District, Pu Mat National Park, at light, N18°58'16,1", E104°50'05,7", $h = 208$ m, 30.IV.2025, leg. Ryndevich S., Lukashuk A., 6 specimens.

Distribution. Vietnam (Gia Lai, Kon Tum, Nghe An, Thanh Hoa, Tuyen Quang) [7]. New record for Nghe An Province and Pu Mat National Park.

Remarks. Wingspan of the collected specimens 97—105 mm. Coloration of head and pronotum (Figures 5, 7, 10).

Protohermes lii Liu, Hayashi & Yang, 2007 (Figures 3, 6, 8, 11)

Material examined. C Vietnam, Nghe An Province, Que Phong District, Pu Hoat Nature Reserve, Dong Van Commune, at light, N19°48'31,0", E105°05'40,7", $h = 240$ m, 7.V.2025, leg. Ryndevich S., 2 specimens.

Published records. C-Vietnam: Nghe An Province, border of Pu Mat National Park Khe Kem waterfall [7].

Distribution. Vietnam (Gia Lai, Ha Tay, Hoa Binh, Nghe An, Phu Tho, Thanh Hoa, Thua Thien-Hue, Vinh Phuc) [3; 7]. New record for Pu Hoat Nature Reserve.

Remarks. Wingspan of the collected specimens 95—97 mm. Coloration of head and pronotum (Figures 6, 8, 11).

Conclusion. The research resulted in new finds of three species of Corydalidae from protected natural areas in Central Vietnam. Three species of dobsonflies are listed from Pu Mat National Park and two species are recorded from Pu Hoat Nature Reserve. *Neoneuromus orientalis* and *Nevromus exterior* are indicated for the first time for Nghe An Province.

We are very grateful to D. D. Nguyen and D. D. Tran (Institute of Biology, Vietnam Academy of Science and Technology, Ha Noi, Vietnam) their assistance in conducting the research.

The work was carried out with the financial support of the Belarusian Republican Foundation for Fundamental Research (project B24V-008) and Vietnam Academy of Science and Technology (project QTBY01.02/24-25).

References

1. Zhang Z.-Q. Phylum Arthropoda In: Zhang, Z.-Q. (Ed.) Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013). *Zootaxa*, 2013, vol. 3703, pp. 1—82.
2. Liu X.-Y., Hayashi F., Yang D. Notes on the genus *Protohermes* van der Weele (Megaloptera: Corydalidae) from Vietnam, with description of two new species. *Zootaxa*, 2009, vol. 2146, pp. 22—34.
3. Letardi A., Hayashi F., Liu X. Notes on some dobsonflies and fishflies (Megaloptera: Corydalidae) from northern Vietnam. *Entomotaxonomia*. 2012, vol. 34, no. 4, pp. 641—650.
4. Yang F., Chang W., Hayashi F. et al. Evolutionary history of the complex polymorphic dobsonfly genus *Neoneuromus* (Megaloptera: Corydalidae). *Systematic Entomology*, 2018, vol. 43, pp. 568—595.
5. Liu X.-Y., Dobosz R. Asian Megaloptera in the Upper Silesian Museum Collection Poland, with description of a new species of *Protohermes* van der Weele (Corydalidae Corydalinae) from Vietnam. *Zootaxa*, 2019, vol. 4544, pp. 178—188.
6. Liu X.-Y., Hayashi F., Letardi A. A new species of the fishfly genus *Ctenochauliodes* van der Weele (Megaloptera: Corydalidae) from Vietnam. *Oriental Insects*, 2022, vol. 56, no 2, pp. 160—170.
7. Letardi A. New data on some dobsonflies and fishflies (Megaloptera: Corydalidae) from Vietnam. *Onychium*, 2025, vol. 18, no. 2, pp. 51—63.

Список цитируемых источников

1. Zhang, Z.-Q. Phylum Arthropoda In: Zhang, Z.-Q. (Ed.) Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013) / Z.-Q. Zhang // *Zootaxa*. — 2013. — Vol. 3703. — P. 1—82.
2. Liu, X.-Y. Notes on the genus *Protohermes* van der Weele (Megaloptera: Corydalidae) from Vietnam, with description of two new species / X.-Y. Liu, F. Hayashi, D. Yang // *Zootaxa*. — 2009. — Vol. 2146. — P. 22—34.
3. Letardi, A. Notes on some dobsonflies and fishflies (Megaloptera: Corydalidae) from northern Vietnam / A. Letardi, F. Hayashi, X. Liu // *Entomotaxonomia*. — 2012. — Vol. 34, no. 4. — P. 641—650.
4. Evolutionary history of the complex polymorphic dobsonfly genus *Neoneuromus* (Megaloptera: Corydalidae) / F. Yang, W. Chang, F. Hayashi [et al.] // *Systematic Entomology*. — 2018. — Vol. 43. — P. 568—595.
5. Liu, X.-Y. Asian Megaloptera in the Upper Silesian Museum Collection Poland, with description of a new species of *Protohermes* van der Weele (Corydalidae Corydalinae) from Vietnam / X.-Y. Liu, R. Dobosz // *Zootaxa*. — 2019. — Vol. 4544. — P. 178—188.
6. Liu, X.-Y. A new species of the fishfly genus *Ctenochauliodes* van der Weele (Megaloptera: Corydalidae) from Vietnam / X.-Y. Liu, F. Hayashi, A. Letardi // *Oriental Insects*. — 2022. — Vol. 56, no 2. — P. 160—170.
7. Letardi, A. New data on some dobsonflies and fishflies (Megaloptera: Corydalidae) from Vietnam / A. Letardi // *Onychium*. — 2025. — Vol. 18, no. 2. — P. 51—63.

Received by editorial staff 08.06.2025.