

УДК 595.722

DOI: 10.33910/2686-9519-2019-11-4-309-313

<http://zoobank.org/References/42EBB578-7801-4EC3-AD3D-D286D7B4034B>

FAUNISTIC NOTES ON THE GENUS *SCIAPUS* ZELLER (DIPTERA, DOLICHOPODIDAE) OF MOROCCO

M. Nourti¹, K. Kettani¹, I. Ya. Grichanov²✉¹ Université Abdelmalek Essaâdi, Quarter M'haneche II, Avenue Palestine, Tétouan BP 2117, Morocco² All-Russian Institute of Plant Protection, 3 Podbelskogo Rd., 196608, Pushkin, Russia

Authors

Mohamed NourtiE-mail: nourti.mohamed2@gmail.com

Scopus Author ID: 57211662639

Kawtar KettaniE-mail: kettani.ka@gmail.com

Scopus Author ID: 6506577326

Igor Ya. GrichanovE-mail: grichanov@mail.ru

SPIN: 1438-5370

ORCID: 0000-0002-7887-7668

ScopusID: 8672518800

ResearcherID: A-1406-2013

Copyright: © The Authors (2019).

Published by Herzen State Pedagogical

University of Russia. Open access under

CC BY-NC License 4.0.

Abstract. During recent surveys conducted in Morocco, many species of Dolichopodidae (Diptera, Brachycera) new for the country have been collected. In this paper a review of Moroccan *Sciapus* Zeller, 1842 fauna is given. *Sciapus heteropygus* Parent, 1926 and *S. holoxanthos* Parent, 1926 are found in the country for the first time. An annotated checklist of Moroccan fauna is compiled, including 9 species. In addition, available information on geographical distribution for each species is included.

Keywords: Dolichopodidae, *Sciapus*, Morocco, new records, checklist.

ФАУНИСТИЧЕСКИЕ ЗАМЕТКИ О ХИЩНЫХ МУХАХ- ЗЕЛЕНУШКАХ РОДА *SCIAPUS* ZELLER (DIPTERA, DOLICHOPODIDAE) ИЗ МАРОККО

М. Ноурти¹, К. Кеттани¹, И.Я. Гричанов²✉¹ Университет Абдельмалика Ас-Саади, квартал Мханеш II, пр. Палестины, г. Тетуан, 2117, Марокко² Всероссийский НИИ защиты растений, ш. Подбельского, д. 3, 196608, г. Пушкин, Россия

Сведения об авторах

Ноурти МохамедE-mail: nourti.mohamed2@gmail.com

Scopus Author ID: 57211662639

Кеттани КавтарE-mail: kettani.ka@gmail.com

Scopus Author ID: 6506577326

Гричанов Игорь ЯковлевичE-mail: grichanov@mail.ru

SPIN: 1438-5370

ORCID: 0000-0002-7887-7668

ScopusID: 8672518800

ResearcherID: A-1406-2013

Права: © Авторы (2019). Опубликовано Российским государственным педагогическим университетом им. А. И. Герцена. Открытый доступ на условиях лицензии CC BY-NC 4.0.

Аннотация. В статье приведены обзор и новые данные о распространении в Марокко 9 видов мух-зеленушек рода *Sciapus* Zeller, 1842 (Diptera, Brachycera). Два вида, *S. heteropygus* Parent, 1926 и *S. holoxanthos* Parent, 1926 впервые отмечаются в фауне страны. Составлен аннотированный список видов, известных из Марокко. Даны также сведения о глобальном распространении каждого вида.

Ключевые слова: Dolichopodidae, *Sciapus*, Марокко, новые указания, список видов.

INTRODUCTION

Moroccan Dolichopodidae fauna is receiving an increasing interest in the last few years, compensating for the long dated lack of knowledge. Many of the newly recorded species for the country have been published recently by Ebejer et al. 2019; Grichanov 2019; Nourti et al. 2019a, 2019b. Nevertheless, the Moroccan dolichopodid fauna is still undercollected, including the genus *Sciapus* Zeller, 1842. For example, 17 species of the genus are known from Italy (Grichanov, Negrobov 2014), and the Mediterranean Sea Region as a whole is obviously a centre of *Sciapus* diversity in the West Palaearctic. In this paper we review the known records of the *Sciapus* species in Morocco, adding two species to the regional fauna.

MATERIAL AND METHODS

The material of the newly recorded species has been collected using Malaise traps placed in the Talassemtane National Park (35°8'6.11"N, 5°8'18.06"W) and the Bouhachem Natural Park (35°13'32.30"N, 5°19'24.35"W; Fig. 1), then transferred to bottles using aspirators or eclectors (Černý, von Tschirnhaus 2014) and stored

in 70% alcohol. It is housed at the Laboratoire Ecologie, Systématique et Conservation de la Biodiversité, Faculté des Sciences, Université Abdelmalek Essaâdi, Tétouan, Morocco and the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia. The following abbreviations are used in the list for the Moroccan natural areas: the North (Rif), Atlantic Plains (AP) and Anti Atlas (AA) (Rankou et al. 2015). The general species distribution is given after Grichanov (2017). Type localities are provided, and country lists are arranged alphabetically.

RESULTS

Sciapodinae

Sciapus Zeller, 1842

Sciapus adumbratus Becker, 1902

References: Grichanov, Negrobov 2014, AP, near Essaouira, AA, Aït Melloul pr Oued Sous, near Ouarzazate (1100 m).

Type locality: [Egypt:] "Siala". Originally published as "Kairo, Assiut, Alexandrien, Wüste bei Siala".

Distribution: Egypt, Iraq, Iran, Morocco, Oman, Tunisia, Turkmenistan, United Arab Emirates.



Fig. 1. Malaise trap placed in the locality of Adrou at Jbel Bouhachem (Bouhachem Natural Park)

Sciapus costae (Mik, 1890)

References: Ebejer et al. 2019, **Rif**, Oued Laou (30 m).

Type locality: Italy: Sicily.

Distribution: Italy, France, Morocco, Tunisia.

Notes: *Sciapus costae* was identified by females only (Ebejer et al. 2019). The species presence in Morocco must be confirmed, as the most part of Mediterranean species of the genus can be distinguished by only males (Grichanov, Negrobov 2014).

Sciapus euzonus (Loew, 1859)

References: Parent 1927, **Rif**, El-Mahadi; Séguy 1930, **Rif**, Tanger; Séguy 1941, **AA**, Taroudant.

Type locality: Italy: Sicily.

Distribution: Algeria, the Czech Republic, France, Greece, Italy, Morocco, Spain, former Yugoslavia (?).

Sciapus glaucescens (Loew, 1856)

References: Grichanov, Negrobov 2014, **AP**, Oualidia.

Type locality: Egypt.

Distribution: Abkhazia, Bulgaria, Croatia, Egypt, France, Israel, Italy, Morocco, Portugal (Madeira, Azores), Spain (Canary Is.), Russia (Crimea), Turkey.

Sciapus heteropygus Parent, 1926

Material. Morocco: 1♂, **Rif**, Talassem-tane National Park, forest, Malaise trap, 35°8'6.11"N, 5°8'18.06"W, 1696 m, 7.06–17.10.2014, leg. K. Kettani.

Type locality: France: Ardennes, “Mézières”.

Distribution: The Czech Republic, Denmark, France, Germany, Greece, Hungary, Iran, Israel, Portugal, Romania, Slovakia, Spain, Switzerland, Turkey, UK. First record for Morocco.

Notes. Original pictures of the species hypopygium were shown very schematically, somewhat differing from each other (Parent 1926, Fig. 3; Parent 1938, Figs. 970–971). The *Diptera.info* site contains photos of *Sciapus heteropygus* collected in Portugal and Greece, e.g. https://diptera.info/photogallery.php?photo_id=5257.

Sciapus holoxanthos Parent, 1926

Material. Morocco: 7♂, 12♀, **Rif**, Jbel Bouhachem, Adrou (forest), PPNB [Projet du Parc Naturel de Bouhachem], 35°13'32.30"N, 5°19'24.35"W, 556 m, 14.07–15.08.2013, leg. K. Kettani; 1♂, 2♀, **Rif**, Talassem-tane National Park, forest, Malaise trap, 35°8'6.11"N, 5°8'18.06"W, 1696 m, 7.06–17.10.2014, leg. K. Kettani.

Type locality: France: Hyères; Apt.

Distribution: France, Portugal, Spain, Turkey. First record for Morocco.

Notes. Original pictures of the species hypopygium were shown very schematically, somewhat differing from each other (Parent 1926, Fig. 4; Parent 1938, Figs. 972–973). The *Diptera.info* site contains photos of *Sciapus holoxanthos* collected in Spain (Catalonia), e.g. https://diptera.info/forum/viewthread.php?forum_id=5&thread_id=55476

Sciapus laetus (Meigen, 1838)

References: Grichanov 2009, **AA**, 40 km S Larache (0–20 m); Ebejer et al. 2019, **Rif**, Martil (9 m).

Type locality: Germany: Kiel.

Distribution: Belgium, the Czech Republic, France, Germany, Morocco, the Netherlands, UK.

Sciapus longulus (Fallén, 1823)

References: Pârvu et al. 2006, **AP**, Merja Zerga.

Type locality: Sweden: Scania.

Distribution: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Kyrgyzstan, Latvia, Lithuania, Morocco, the Netherlands, Norway, Poland, Romania, Russia (Belgorod, Kabardino-Balkaria, Krasnodar, Kursk, Leningrad, Lipetsk, Moscow, Novgorod, Novosibirsk, Rostov, Ryazan, Saratov, Voronezh), Slovakia, Spain, Sweden, Switzerland, UK, Ukraine (Cherkasy, Odessa).

Notes: *Sciapus longulus* was identified by females only (Pârvu et al. 2006). The presence in Morocco must be confirmed, as the most part of Mediterranean species of the genus can be distinguished by males only (Grichanov, Negrobov 2014).

Sciapus negrobovi Naglis et Barták, 2015

References: Nourti et al. 2019a, Rif, Stihat (0 m), Kitane (49 m) (as *Sciapus* aff. *negrobovi*).

Type locality: Portugal: Valhelhas.

Distribution: Morocco, Portugal.

Notes: The hypopygium morphology of Moroccan specimens (Nourti et al. 2019a) is practically identical to Fig. 3 (Naglis, Barták 2015). We consider some fine differences relating to individual variability or inaccuracy of the description.

CONCLUSION

As a result of this study, *S. heteropygus* and *S. holoxanthos* are found in Morocco for the first time. An annotated checklist of Moroccan fauna of the genus *Sciapus* is compiled, including 9 species. The presence of *S. costae* and *S. longulus* in Morocco must be confirmed. In total, the genus *Sciapus* contains 78 mainly Palaearctic recognized species (about 40 from Europe) including one Holarctic, six Nearctic, two Oriental, one Afrotropical species and two species known from the Palaearctic Region and Afrotropical Arabia (Grichanov 2017). About 20 *Sciapus* species are known from the neighbouring Iberian Peninsula; it means that more new for Morocco species are anticipated.

Most Moroccan species are confined to the Mediterranean Sea basin. *Sciapus longulus* has the widest distribution, reaching Norway and Sweden in the north, Kyrgyzstan and No-

vosibirsk Region of Russia in the east. *Sciapus heteropygus* is spread across Europe and Middle East to Iran; it has not been known in Africa previously. *Sciapus adumbratus* has not been reported from Europe, being at present known in Palaearctic North Africa and Central Asia and Afrotropical Arabia (Oman and United Arab Emirates). Most Moroccan species inhabit the forest belt of the Atlas Mountains, and some of them are known from the Atlantic plains.

ACKNOWLEDGEMENTS

The work was performed within the Program for Basic Scientific Researches in the Russian Federation for the Long-Term Period (2013–2020) approved by Order No. 2538-r of the Government of the Russian Federation dated December 27, 2012, and supported by the All-Russian Institute of Plant Protection project no. 0665-2019-0014.

БЛАГОДАРНОСТИ

Данная работа выполнена в рамках Программы фундаментальных научных исследований Российской Федерации на долгосрочный период (2013–2020 годы) в соответствии с Распоряжением Правительства Российской Федерации №2538-р от 27 декабря 2012 г. и при поддержке Всероссийского института защиты растений в рамках проекта № 06665-2019-0014.

References

- Černý, M., von Tschirnhaus, M. (2014) New records of Agromyzidae (Diptera) from the Afrotropical Region, with a checklist. *Acta Musei Silesiae, Scientiae Naturales*, vol. 63, no. 2, pp. 159–176. DOI: 10.2478/cszma-2014-0017 (In English)
- Ebejer, M. J., Kettani, K., Gatt, P. (2019) First records of families and species of Diptera (Insecta) from Morocco. *Boletín de la Sociedad Entomológica Aragonesa*, vol. 64, pp. 143–153. (In English)
- Grichanov, I. Ya. (2009) New records for Mediterranean Dolichopodidae (Diptera). *An International Journal of Dipterological Research*, vol. 20, no. 4, pp. 207–215. (In English)
- Grichanov, I. Ya. (2017) Alphabetic list of generic and specific names of predatory flies of the epifamily Dolichopodoidae (Diptera). 2nd ed. Saint Petersburg: All-Russian Research Institute of Plant Protection Publ., 563 p. (Plant Protection News. Supplements. Iss. 23). DOI: 10.5281/zenodo.884863 (In English)
- Grichanov, I. Ya. (2019) New records of long-legged flies (Diptera, Dolichopodidae) from Morocco. *Amurian Zoological Journal*, vol. XI, no. 2, pp. 126–130. DOI: 10.33910/2686-9519-2019-11-2-126-130 (In English)

- Grichanov, I. Ya., Negrobov, O. P. (2014) *Palearctic species of the genus Sciapus Zeller (Diptera: Dolichopodidae)*. Saint Petersburg: All-Russian Research Institute of Plant Protection Publ., 84 p. (Plant Protection News. Supplements. Iss. 13). (In English)
- Naglis, S., Barták, M. (2015) Dolichopodidae (Diptera) from the Iberian Peninsula, with description of three new species. *Zootaxa*, vol. 3964, no. 1, pp. 125–137. DOI: 10.11646/zootaxa.3964.1.9 (In English)
- Nourti, M., Grichanov, I. Ya., Kettani, K. (2019a) New records of long-legged flies (Diptera, Dolichopodidae) from Morocco. *Acta Biologica Sibirica*, vol. 5, no. 3, pp. 118–130. DOI: 10.14258/abs.v5.i3.6514 (In English)
- Nourti, M., Grichanov, I. Ya., Kettani, K. (2019b) A new species of *Teuchophorus* (Dolichopodidae, Diptera) from Morocco. *Nature Conservation Research*, vol. 4, no. 4, pp. 106–110. DOI: 10.24189/ncr.2019.064 (In English)
- Parent, O. (1926) Sept espèces nouvelles de Dolichopodidés européens. In: *Encyclopédie entomologique (III) Diptera*. Vol. 1. Paris, pp. 23–40. (In French)
- Parent, O. (1927) Contribution a l'étude de la distribution géographique de quelques espèces de Dolichopodides. In: *Comptes rendus du Congrès national des sociétés savantes de Paris et des départements tenu a Poitiers en 1926. Section des sciences*. Paris: Imprimerie nationale, pp. 449–484. (In French)
- Parent, O. (1938) *Faune de France. Vol. 35: Diptères Dolichopodidae*. Paris: Paul Lechevalier et fils, 720 p. (In French)
- Pârvu, C., Popescu-Mirceni, R., Zaharia, R. (2006) Faunistic data on some dipterian families (Insecta, Diptera) from Morocco (Results of “Hamada” Expedition 2005). *Travaux du Muséum National d'Histoire Naturelle “Grigore Antipa”*, vol. XLIX, pp. 271–281. (In English)
- Rankou, H., Culham, A., Sghir Taleb, M. et al. (2015) Conservation assessments and Red Listing of the endemic Moroccan flora (monocotyledons). *Botanical Journal of the Linnean Society*, vol. 177, no. 4, pp. 504–575. DOI: 10.1111/boj.12258 (In English)
- Séguy, E. (1930) Contribution à l'étude des Diptères du Maroc. *Mémoires de la Société des Sciences Naturelles du Maroc*, vol. XXIV, pp. 1–206. (In French)
- Séguy, E. (1941) Récoltes de R. Paulian et A. Villiers dans le haut Atlas marocain, 1938 (XVII^e note) Diptères. *Revue française d'Entomologie*, vol. 8, pp. 25–33. (In French)

For citation: Nourti, M., Kettani, K., Grichanov, I. Ya. (2019) Faunistic notes on the genus *Sciapus* Zeller (Diptera, Dolichopodidae) of Morocco. *Amurian Zoological Journal*, vol. XI, no. 4, pp. 309–313. DOI: 10.33910/2686-9519-2019-11-4-309-313

Received 2 December 2019; reviewed 12 December 2019; accepted 15 December 2019.

Для цитирования: Ноурти, М., Кеттани, К., Гричанов, И. Я. (2019) Фаунистические заметки о хищных мухах-зеленушках рода *Sciapus* Zeller (Diptera, Dolichopodidae) из Марокко. *Амурский зоологический журнал*, т. XI, № 4, с. 309–313. DOI: 10.33910/2686-9519-2019-11-4-309-313

Получена 2 декабря 2019; прошла рецензирование 12 декабря 2019; принята 15 декабря 2019.