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CHECKLIST OF THE AQUATIC EMPIDIDAE RECORDED FROM SLOVENIA, WITH THE DESCRIPTION OF ONE NEW SPECIES (DIPTERA)

Bogdan HORVAT
Ljubljana

Abstract – An annotated checklist is given of 58 spp. of aquatic dance flies, along with the statements on their distribution (UTM, 10x10 km) and on their resp. status (IUCN categories) in Slovenia. 30 spp. are reported from Slovenia for the first time, 17 spp. are endemic or considered threatened. *Wiedemannia (Philolutra) pohoriana* sp.n. is described and illustrated (holotype ♂: Slovenia, Pohorje Mts, Pesek, alt. 1350 m, 28-X-1989; deposited at PMSL). It is closely related to *W. zwicki* Wagner and *W. kacanskae* Horvat.

Izvleček – Seznam vodnih muh poplesovalk najdenih v Sloveniji, z opisom nove vrste (Diptera: Empididae)

V seznamu v Sloveniji najdenih 58 vrst vodnih muh poplesovalk je navedena njihova razširjenost (UTM, 10x10 km) in njihov status (kategorije IUCN). 30 vrst je prvič zabeleženih za favno Slovenije,17 jih je endemičnih ali ogroženih. Opisana in ilustrirana je *Wiedemannia (Philolutra) pohoriana* sp.n. (holotip ♂: Slovenija, Pohorje, Pesek, 1350 m n.m., 28.X.1989; shranjen v PMSL). Je v bližnjem sorodstvu z vrstama *W. zwicki* Wagner in *W. kacanskae* Horvat.

Introduction

In spite of some recent papers devoted to the faunistics and to the descriptions of new species (HORVAT, 1990a, b, 1993a, b, HORVAT & WAGNER, 1990, WAGNER, 1981, 1984, WAGNER & HORVAT, 1993), the information of the aquatic Empididae in Slovenia is fragmentary.

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The present list is based on the examination of approximately 10.000 specimens from more than 300 localities, ascribed to 151 10x10km squares of the UTM grid (Fig. 1). One species is endangered, 3 are vulnerable, 11 are rare, and 2 are endemic. Apparently, 30 species (52 %) are new to the fauna of Slovenia.

Checklist

Clinocerinae

Bergenstammia Mik, 1881

1. *Bergenstammia carniolica* Horvat, 1993
   UTM coordinates: VM44, VM54. IUCN: endangered species.

2. *Bergenstammia nudipes* (Löw, 1858)
   UTM coordinates: VM05, VM44, VM54. IUCN: vulnerable species.

Clinocera Meigen, 1803

Subgenus *Clinocera* Meigen, 1803

3. *Clinocera* (*Clinocera*) *appendiculata* (Zetterstedt, 1838)
   UTM coordinates: VM05, VM54. New to the fauna of Slovenia.

4. *Clinocera* (*Clinocera*) *nigra* Meigen, 1804
   UTM coordinates: VM05, VM24, VM20, VM32, VL18, VL75, VL74, WL07.

5. *Clinocera* (*Clinocera*) *schremmeri* (Vaillant, 1964)
   UTM coordinates: UM94, VM05, VM04, VM03, VM14, VM24, VM54, VM83. New to the fauna of Slovenia.

Subgenus *Hydrodromia* Macquart, 1835

6. *Clinocera (Hydrodromia) stagnalis* (Haliday, 1833)
   UTM coordinates: UM93, VM24, VL04, VL14, VL13, VL26, VL35, VL44, VL65, VL74, VL85, VL84, VL83, WL07, WL06.

7. *Clinocera (Hydrodromia) wesmaeli* (Macquart, 1835)
   UTM coordinates: VM34, VM41, VM40, VM54, VM64, VM73, VM85, VM84, WM06, WM24, WM40, VL13, VL34, VL65, VL77, VL93, WL27.

Subgenus *Kowarzia* Mik, 1881

8. *Clinocera (Kowarzia) barbatula* Mik, 1880
   UTM coordinates: UM94, VM04, VM03, VM24, VM21, VM20, VM34, VM31,VM44,

VM54, VM50, VM71, VM70, VM92, VM91, WM20, WM32, WM30, WM42,WM41, WM52, VL15, VL13, VL24, VL39, VL35, VL49, VL48, VL43, VL66, VL75, VL74, VL93, WL09, WL05, WL27, WL38, WL37, WL48, WL47.

9. *Clinocera (Kowarzia) bipunctata* (Haliday, 1833)
UTM coordinates: WM42, WM41, VL13, WL07.

10. *Clinocera (Kowarzia) madicola* (Vaillant, 1964)
UTM coordinates: VL04, VL14, VL13, WL07.

11. *Clinocera (Kowarzia) plectrum* Mik, 1880
UTM coordinates: VM05, VM04, VM24, VM34, VM32, VM31, VM44, VM41, VM54, VM64, VM74, VM72, VM70, VM85, VM84, VM80, VM95, VM94, VM92, WM06, WM24, WM20, WM34, WM30, VL39, VL75, WL27. New to the fauna of Slovenia.

12. *Clinocera (Kowarzia) tibiella* Mik, 1880
UTM coordinates: UM94, UM90, VM05, VM04, VM24, VM34, VM32, VM44, VM54, VM53, VM50, VM83, VM92, WM06, WM13, WM20, VL39, VL75. New to the fauna of Slovenia.

Subgenus *Phaeobalia* Mik, 1881

13. *Clinocera (Phaeobalia) elongata* Wagner, 1982
UTM coordinates: VM05, VM04, VM14. IUCN: rare species. New to the fauna of Slovenia.

14. *Clinocera (Phaeobalia) inermis* Löw, 1861
UTM coordinates: VM03, VM54, VM53, WM24.

Dolichocephala Macquart, 1823

15. *Dolichocephala bellstedti* Joost, 1985
UTM coordinate: WM24. IUCN: rare species. New to the fauna of Slovenia.

16. *Dolichocephala engeli* Niesiolowski, 1992
UTM coordinates: VM74, VM90, WM24, WM40, VL77, VL85. New to the fauna of Slovenia.

17. *Dolichocephala guttata* (Haliday, 1833)
UTM coordinates: UM82, UM93, VM20, VM31, VM44, VM74, WM24, WM44, VL75, VL85.

18. *Dolichocephala irrorata* (Fallen, 1816)
UTM coordinate: VM74. New to the fauna of Slovenia.

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19. *Dolichocephala ocellata* (Costa, 1854)
UTM coordinates: VL14, VL13.

Roederiodes Coquillett, 1901

20. *Roederiodes oldenbergi* (Engel, 1918)
UTM coordinates: UM90, VM24, VM34, VM54, VL29, VL39, VL49, VL75, VL93. New to the fauna of Slovenia.

Wiedemannia Zetterstedt, 1838

Subgenus *Wiedemannia* Zetterstedt, 1838

21. *Wiedemannia (Wiedemannia) braueri* (Mik, 1880)
UTM coordinates: UM82, VM01, VM00, VM10, VM30, VM40, VM93, WM40, VL09, VL19, VL25, VL44, VL53.
New to the fauna of Slovenia.

22. *Wiedemannia (Wiedemannia) kroatica* Wagner, 1981
UTM coordinates: VL74, VL84, VL83, VL94, VL93, WL03, WL13. IUCN:endemic species. New to the fauna of Slovenia.

23. *Wiedemannia (Wiedemannia) rhynchops* (Nowicki, 1868)
UTM coordinates: UM83, UM91, UM90, VM00, VM12, VM10, VM24, VM23, VM21, VM20, VM30, VM43, VM42, VM41, VM40, VM54, VM53, VM52, VM63, VM74, VM73, VM72, VM85, VM84, VM83, VM82, VM81, VM96, VM95, VM94, VM93, VM92, VM91, WM06, WM05, WM04, WM00, WM16, WM13, WM25, WM23, WM20, WM35, WM44, VL09, VL19, VL14, VL29, VL39, VL49, VL68, VL67, VL79, VL74, VL89, VL84, WL09, WL27, WL37.

24. *Wiedemannia (Wiedemannia) tricuspidata* (Bezzi, 1905)
UTM coordinates: VM12, WM40, VL83, VL94, WL13.

Subgenus *Chamaedipsia* Mik, 1881

25. *Wiedemannia (Chamaedipsia) aequilobata* Mandaron, 1964
UTM coordinates: VM14, VM24, VM63, VM72. New to the fauna of Slovenia.

26. *Wiedemannia (Chamaedipsia) alpina* (Engel, 1918)
UTM coordinates: VM04, VM03, VM01, VM14, VM24. New to the fauna of Slovenia.

27. *Wiedemannia (Chamaedipsia) ariadne* Wagner, 1981
UTM coordinate: VL83, WL13. IUCN: rare species. New to the fauna of Slovenia.

28. *Wiedemannia (Chamaedipsia) beckeri* (Mik, 1889)
UTM coordinates: VM43, VM54, VM64, VM95. New to the fauna of Slovenia.

29. *Wiedemannia (Chamaedipsia) longicornis* (Mik, 1887)
UTM coordinates: VM71, VM70, VM81, VM92, VM91, WM05, WM04, WM13, WM10, VL79, VL74. New to the fauna of Slovenia.

30. *Wiedemannia (Chamaedipsia) lota* Haliday, 1851
UTM coordinate: VL49. New to the fauna of Slovenia.

31. *Wiedemannia (Chamaedipsia) mikiana* (Bezzi, 1899)
UTM coordinates: UM94, VM03, VM34, VM44, VM54, VM64, VM63. New to the fauna of Slovenia.

32. *Wiedemannia (Chamaedipsia) thienemanni* Wagner, 1982
UTM coordinates: VM32, VM44, VM54, VM64, VM74, VM72, VM96, VM95, VM94, WM06, WM24, WM20, WM30, WL27. New to the fauna of Slovenia.

Subgenus *Eucelidia* Mik, 1881

33. *Wiedemannia (Eucelidia) zetterstedti* (Fallen, 1826)
UTM coordinates: UM83, UM90, VM03, VM00, VM10, VM31, VM42, VM71, M82, VM81, VM96, VM93, VM92, VM91, WM05, WM03, WM16, WM22, WM32, M30, WM41, WM40, WM62, UL99, VL09, VL08, VL04, VL18, VL17, VL16, VL15, VL13, VL29, VL28, VL26, VL25, VL24, VL39, VL35, VL43, VL53, VL68, VL74, VL88, VL93, WL09, WL19, WL27, WL26, WL38.

Subgenus *Philolutra* Mik, 1881

34. *Wiedemannia (Philolutra) aquilex* (Löw, 1869)
UTM coordinates: UM93, VM04, VM03, VM14, VM23, VM44, VM53, VM63, VM74. New to the fauna of Slovenia.

35. *Wiedemannia (Philolutra) bohemani* (Zetterstedt, 1838)
UTM coordinates: UM83, UM82, UM92, UM91, UM90, VM02, VM00, VM11, VM10, VM23, VM21, VM32, VM30, VM44, VM42, VM41, VM54, VM50, VM73, VM72, VM85, VM84, VM82, VM92, WM00, WM13, VL19, VL18, VL29, VL39, VL47, VL56, VL68, VL75, VL74, VL84, VL93, WL05. New to the fauna of Slovenia.

36. *Wiedemannia (Philolutra) fallaciosa* (Löw, 1873)
UTM coordinates: UM83, UM82, UM94, VM03, VM01, VM14, VM12, VM10, VM24, VM30, VM44, VM40, VM54, VM52, VM63, VM83, VM96, VM95, VM93, WM16, VL79. New to the fauna of Slovenia.

37. *Wiedemannia (Philolutra) hygrobia* (Löw, 1858)
UTM coordinates: UM83, UM94, UM93, VM04, VM03, VM01, VM15, VM14,

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VM12, VM24, VM23, VM34, VM32, VM44, VM43, VM42, VM54, VM53, VM64, VM63, VM74, VM73, VM72, VM85, VM84, VM83, VM95, VM94, WM06, WM16, WM14, WM13, WM25, WM24, WM34, VL75, VL74.

38. *Wiedemannia (Philolutra) pohoriana* sp. n.
UTM coordinates: WM06, WM24. IUCN: endemic species.
The description is added at the end of this paper.

39. *Wiedemannia (Philolutra) queyrasiana* Vaillant, 1956
UTM coordinate: WL27. IUCN: rare species. New to the fauna of Slovenia.

40. *Wiedemannia (Philolutra) wachtli* (Mik, 1880)
UTM coordinates: UM83, UM93, UM90, VM03, VM00, VM14, VM12, VM23, VM32, VM31, VM44, VM43, VM42, VM40, VM54, VM53, VM64, VM62, VM74, VM85, VM84, VM96, VM95, VM94, VM93, WM06, WM25, WM24, WM35, WM44, VL09, VL19, VL68, VL67, VL75, VL74, VL84, VL93, WL27, WL26. New to the fauna of Slovenia.

Subgenus *Pseudowiedemannia* Engel, 1918

41. *Wiedemannia (Pseudowiedemannia) armata* (Engel, 1918)
UTM coordinates: UM83, UM94, UM93, VM03, VM14, VM34, VM53, VM63, VM73, VM72. New to the fauna of Slovenia.

42. *Wiedemannia (Pseudowiedemannia) lamellata* (Löw, 1869)
UTM coordinates: UM90, VM50, VM70, VM81, VM80, VM96, VM93, VM90, WM16, WM13, WM12, WM23, WM22, WM32, WM31, WM30, WM42, WM40, WM62, UL99, UL93, VL04, VL03, VL17, VL15, VL14, VL13, VL36, VL35, VL34, VL49, VL44, VL57, VL53, VL68, VL79, VL77, VL76, VL74, VL89, VL88, VL87, VL99, VL94, VL93, WL09, WL07, WL05, WL03, WL19, WL16, WL14, WL29, WL28, WL39, WL38, WL37, WL49, WL48, WL47.

Hemerodromiinae

Chelifera Macquart, 1823

43. *Chelifera aperticauda* Collin, 1927
UTM coordinate: VM74. IUCN: rare species. New to the fauna of Slovenia.

44. *Chelifera astigma* Collin, 1927
UTM coordinates: WM24, WM34. IUCN: rare species.

45. *Chelifera flavella* (Zetterstedt, 1838)
UTM coordinate: VM44. IUCN: rare species. New to the fauna of Slovenia.

46. *Chelifera precabunda* Collin, 1961
UTM coordinates: UM82, VM23, VM92, WM11, WM24, WM44, VL99, VL93.

47. *Chelifera precatoria* (Fallen, 1816)
UTM coordinates: UM90, VM44, VM74, VM82, WM14, VL04, VL03, VL14, VL13, VL76, VL99.

48. *Chelifera siveci* Wagner, 1984
UTM coordinates: UM82, VM05, VL84. IUCN: rare species.

49. *Chelifera stigmatica* (Schiner, 1862)
UTM coordinates: UM82, VM24, WM00, WM13, WM11, WM41, VL04, VL13, VL34, VL43, WL47.

50. *Chelifera trapezina* (Zetterstedt, 1838)
UTM coordinates: UM83, VM03, VM23, VM44, VM74, VM93, VM92, VM91, WM25, WM24, VL75, VL84.

Chelipoda Macquart, 1823

51. *Chelipoda vocatoria* (Fallen, 1816)
UTM coordinates: UM90, VM74, UL99, VL29, VL84. IUCN: rare species. New to the fauna of Slovenia.

Heleodromia Haliday, 1833

52. *Heleodromia immaculata* Haliday, 1833
UTM coordinates: VM44, VM64, VM90, WM15. IUCN: rare species. New to the fauna of Slovenia.

Hemerodromia Meigen, 1822

53. *Hemerodromia melangyna* Collin, 1927
UTM coordinates: UL93, VL04, VL13, VL93. IUCN: vulnerable species.

54. *Hemerodromia oratoria* (Fallen, 1816)
UTM coordinates: VM00, VM10, VL25. New to the fauna of Slovenia.

55. *Hemerodromia slovenica* Horvat & Wagner, 1990
UTM coordinates: VM20, VL49, VL47. IUCN: rare species.

56. *Hemerodromia unilineata* Zetterstedt, 1842
UTM coordinates: VM00, VM91, WM11, UL93, VL04, VL15, VL14, VL13, VL29, VL25.

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57. *Hemerodromia zwicki* Horvat, 1993
UTM coordinates: UL93, VL03, VL13. IUCN: vulnerable species.

Phyllodromia Zetterstedt, 1837

58. *Phyllodromia melanocephala* (Fabricius, 1794)
UTM coordinates: VM00, VM10, VM21, VM92, WM11, WM31, VL09, VL15, VL77

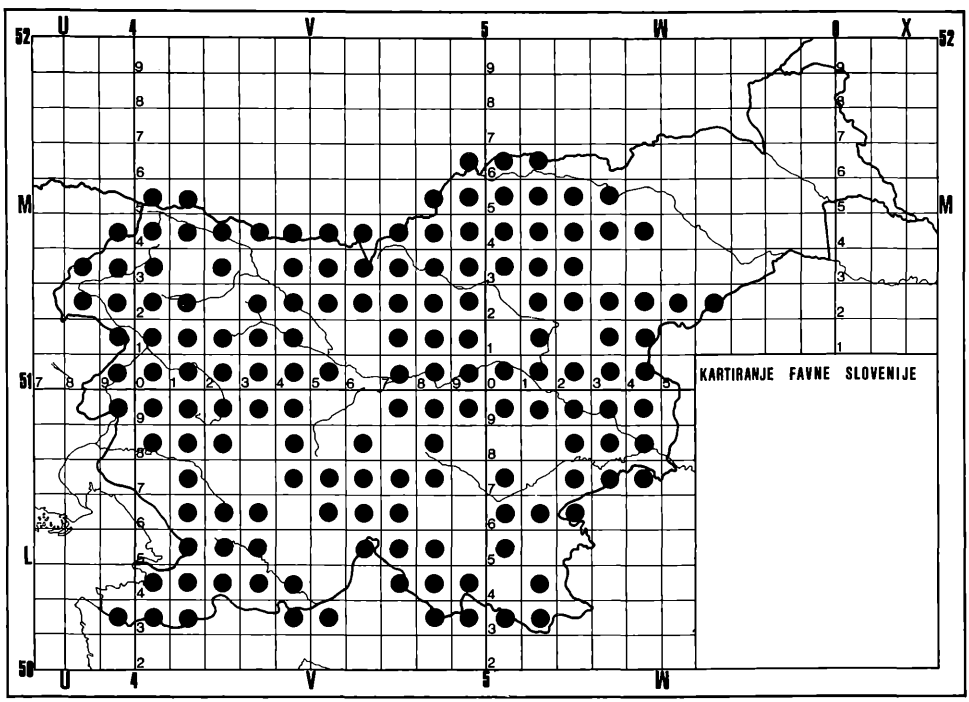
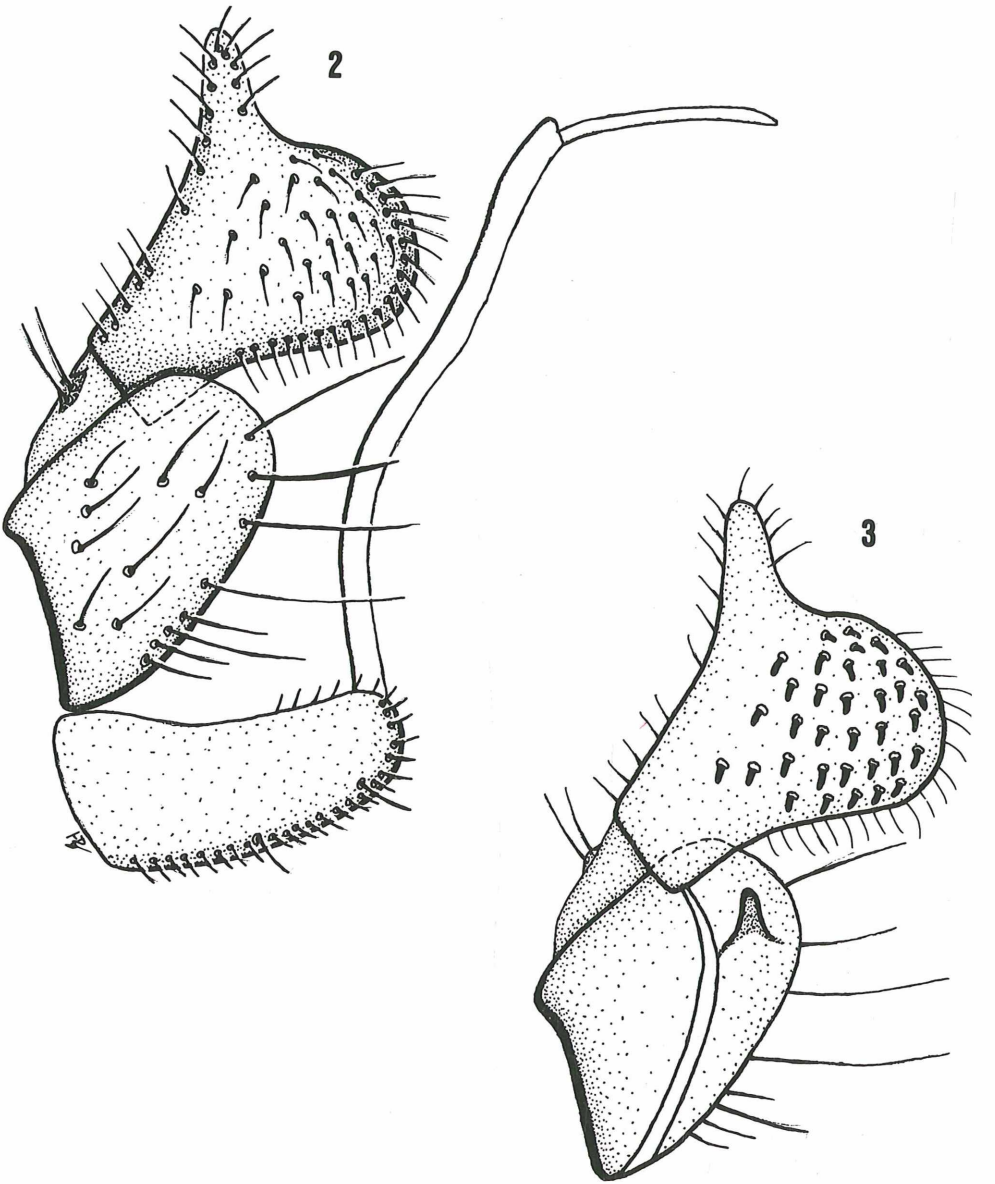


Fig. 1. Map of Slovenia with 10x10 km UTM grid: marked are coordinates mentioned in the text.

***Wiedemannia (Philolutra) pohoriana* sp. n.**



Figs. 2-3: *Wiedemannia (Philolutra) pohoriana* sp.n..
2) male genitalia, left lateral view, 3) inner side of the right gonostyle

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Material – Holotype male: Slovenia, Pesek, Pohorje Mts, 1350 m a.s.l., 28-X-1989, B. Horvat and I. Sivec leg. (UTM: WM24). Paratypes: 5 males, 4 females: data as for holotype; 2 males, 2 females: 13-IX-1989, B. Horvat leg.. same locality; 1 male, 1 female: mating couple, 29-V-1989, B. Horvat leg.. same locality; 30 males, 31 females: r. Velka, Kozji Vrh, Dravograd, 550 m a.s.l., 23-X-1991, B. Horvat and I. Sivec leg. (UTM: WM06); 5 males, 3 females: 30-IV-1991: same data; 1 male: 12-IV-1991: same data; 9 males, 6 females: 12-III-1991: same data. – The type material is preserved in 75 % alcohol and deposited in the Slovene Museum of Natural History, Ljubljana (PMSL).

Description, male: Head roundish, blackish brown, proboscis short, eyes black. 1 pair of ocellar, 2 pairs of interocular and 5-6 pairs of postocular bristles. Thorax blackish brown. Pronotum with 1 pair of pronotal bristles. Mesonotum with 5 pairs of subequal dorsocentral bristles, between them 10-11 pairs of acrostichals in two rows. 1 pair of humeral, 1 prealar, 2 intra-alar and 1 postalar bristles present. Scutellum with 1 pair of apical bristles and some short preapical bristles. Wings brown, with slightly elongate brownish stigma. Legs brownish, long and slender. Abdomen brown.

Genitalia, male, left lateral view (Fig. 2): hypandrium well-developed, aedeagus fillose. Gonocoxite almost quadrangular. Gonostyle ovoid, basally narrow, distally bipartite. Anterior part is a strait, tooth-like prolongation, posterior part is very wide and rounded. Cerci reduced, represented by small sclerites with a few bristles. Inner side of the right gonostyle and gonocoxite (Fig. 3): gonocoxite with a short secondary prominence. Gonostyle with numerous strong short spines, concentrated in its middle area.

Measurements (in mm): Body length male 3.2-4.1, female 4.0-4.9. Wing length male 3.5-4.3, female 4.3-5.1.

Affinities: The closest relatives of *W pohoriana* sp.n. are *W zwicki* Wagner, 1982 from France and Italy, and *W kacanskae* Horvat, 1993 from Bosnia. The structure of the appendages of both gonostyles is similar (elongate anterior and rounded posterior appendage). The new species differs from the others in having a much wider and more rounded posterior part of the dististyle.

Habitat: Part of the Prealpine region where *W. pohoriana* sp.n. was found belongs to an old volcanic rock area and is very rich in running waters. River-beds are mostly dark (due to abundant organic matter and gravel or stones covered with moss), and shaded (due to rich vegetation and conifers on the river banks). We found dance flies sitting on stones just above the surface of flowing streams and among leaves or twigs in organic deposits between stones. The type localities are situated between 550 and 1350 m a.s.l.

Phenology: *W. pohoriana* sp.n. was found in spring (March, April, May) and autumn (September, October), and probably has two generations in one year.

Etymology: The species is named after Pohorje, mountainous region in northeastern part of Slovenia where this aquatic dance fly is endemic.

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References

Chvala M., R. Wagner, 1989: Empididae. In: Soss A., L. Papp (Eds): *Catalogue of palaearctic Diptera,* Vol. 6, pp. 312-335. Elsevier Sci. Publ., Amsterdam, & Akademiai Kiado, Budapest.

Collin J. E., 1961: Empididae. *British Flies*, Vol. 6, 782 pp. Cambridge University Press..

Horvat B., 1990a: Aquatic dance flies of the subfamily Hemerodromiinae (Diptera: Empididae) in Yugoslavia. *Scopolia*, 20: 1-27

Horvat B., 1990b: Dvokrilci. Empididae: Clinocerinae in Hemerodromiinae (Diptera). In: Krušnik, C. (Ed): *Inventar. in topograf. favne Kraškega roba.* Inšt. za bio., Univ. v Ljubljani, pp. 121-126 (with 15 UTM grids, Slovene).

Horvat B., 1993a: A new Hemerodromia species from submediterranean Slovenia and Croatia (Diptera, Empididae: Hemerodromiinae). *Aquatic Insects*, 15(4): 229-231.

Horvat B., 1993b: Bergenstammia carniolica sp.n. (Diptera, Empididae: Clinocerinae) from Karavanke Mts. in Slovenia. *Acta Univ. Carolinae-Biologica*, 37· 73-76.

Horvat B., 1993c: Aquatic Empididae Fauna (Diptera) in Bosnia and Herzegovina. *Scopolia*, 28: 1-25.

Horvat B., R. Wagner, 1990: Hemerodromia slovenica sp.n. (Diptera, Empididae: Hemerodromiinae) from Slovenia (Yugoslavia). *Aquatic Insects*, 12(1): 23-25.

Niesiolowski S., 1992: Empididae aquatica. Wodne wujkowate (Insecta: Diptera). *Fauna Poloniae*, Tom 14, 128 pp., Polska Akademia Nauk.

Shirt D.B., 1987 (Ed): British Red Data Books. Insects. Nature Conservancy Council, Peterborough.

Sivec I., 1980: Kartiranje nevretenčarjev Evrope, predstavitev in razlaga. *Biološki vestnik*, 28(2): 169-184 (Slovene).

Vaillant F., 1978: Empididae. In: Illies, J. (Ed): *Limnofauna Europaea*, 2. Aufl., pp. 465-469. Gustav Fischer Verlag & Swets and Zeitlinger.

Wagner R., 1981: Uber einige Hemerodromiinae vom Balkan und aus der Agais (Diptera, Empididae). *Spixiana*, 4(3): 297-304.

Wagner R., 1982: Über einige Empididae (Clinoceratinae) aus den Alpen und aus Italien (Diptera, Empididae). *Entomofauna*, 3(15): 217-222.

Wagner R., 1984: Notes on Empididae (3). Description of Chelifera siveci sp.n. *Aquatic Insects*, 6(4): 244.

Wagner R., B. Horvat, 1993: The genus Roederiodes Coquillett, 1901 (Diptera, Empididae: Clinocerinae) in Europe, with descriptions of four new species. *Bonn. zool. Beitr.*, 44(1-2): 33-40.

Author's address/Naslov avtorja
Bogdan HORVAT
Prirodoslovni muzej Slovenije
Prešernova 20, p.p. 290
SLO-61001 Ljubljana, Slovenia

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Artikel/Article: Checklist of the aquatic Empididae recorded from Slovenia, with the description of one new species (Diptera). Seznam vodnih muh poplesovalk najdenih v Sloveniji, z opisom nove vrste (Diptera: Empididae) 25-35