

## HOW MANY DRAGONFLIES ARE THERE IN YOUR GARDEN POND?

D. ŠÁCHA

Podtatranského 31, SK-031-01 Liptovský Mikuláš, Slovakia; – dusan.sacha@vazky.sk

**Abstract** – In an old, small garden pond in the city of Liptovský Mikuláš, N Slovakia (max. depth ca 30 cm, water volume ca 150 l, cleaned and aried-out annually before winter), *Pyrrhosoma nymphula* (26 larvae), *Aeshna cyanea* (7) and *Libellula depressa* (36) were observed in 2009, but in 2010 only *A. cyanea* could be recorded, with an abundance of 190 larval individuals.

### Introduction

The urban environments have a bad reputation in terms of ecological balance and biodiversity. Nevertheless, several species can use this space and the niches it provides. The odonates are well-known colonizers of garden ponds, contributing therewith to the biodiversity of a town. In a garden pond in the Czech Republic (Silesia), CIEŚLA (2004) observed a relatively species-rich odonate community: 18 breeding and 11 visiting species, including *Somatochlora flavomaculata* (with a successful larval development).

After a longer period of observations on several dragonfly species flying and perching about the pond in my parents' garden, the occasional ovipositions and a couple of successful emergences, I have decided to specify the species composition and abundance in this particular assemblage.

### Study site and method

The garden pond is situated in the town of Liptovský Mikuláš, northern Slovakia. It is small, V-shaped, with deeper water (ca 30 cm) at the apex and two shallows at its arms, one of which with a constant depth of ca 10 cm, the other merging gradually into a small headland between the arms (Fig. 1). The estimated volume of the pond amounts to ca 150 l, with water lilies and other aquatic vegetation.

Since the pond is shallow and the local climate harsh, in autumn the plants are removed to the basement of the house and the water pumped out. With the cleaning, some aquatic insects are rescued.

During the 2009 and 2010 cleanings, I was recording the identity and the abundance of odonate larvae present in the pond, by counting them individually in every scoop of water, in debris and mud from the bottom, as well as those attached to the plants.

### Results and discussion

In 2009, 69 larvae were counted, referable to *Pyrrhosoma nymphula* (26), *Aeshna cyanea* (7) and *Libellula depressa* (36). The three species occur regularly in the pioneer odonate communities in the region. Their adults show high dispersability and are partly tolerant to a brief period of accidental drying-out of their larval habitat.

After overwintering, the surviving larvae (hardly 20% of the original numbers, the rest fell victim to predation) were released into the pond, and at least 2 emergences of *L. depressa* (first half of June) and 2 of *A. cyanea* (late

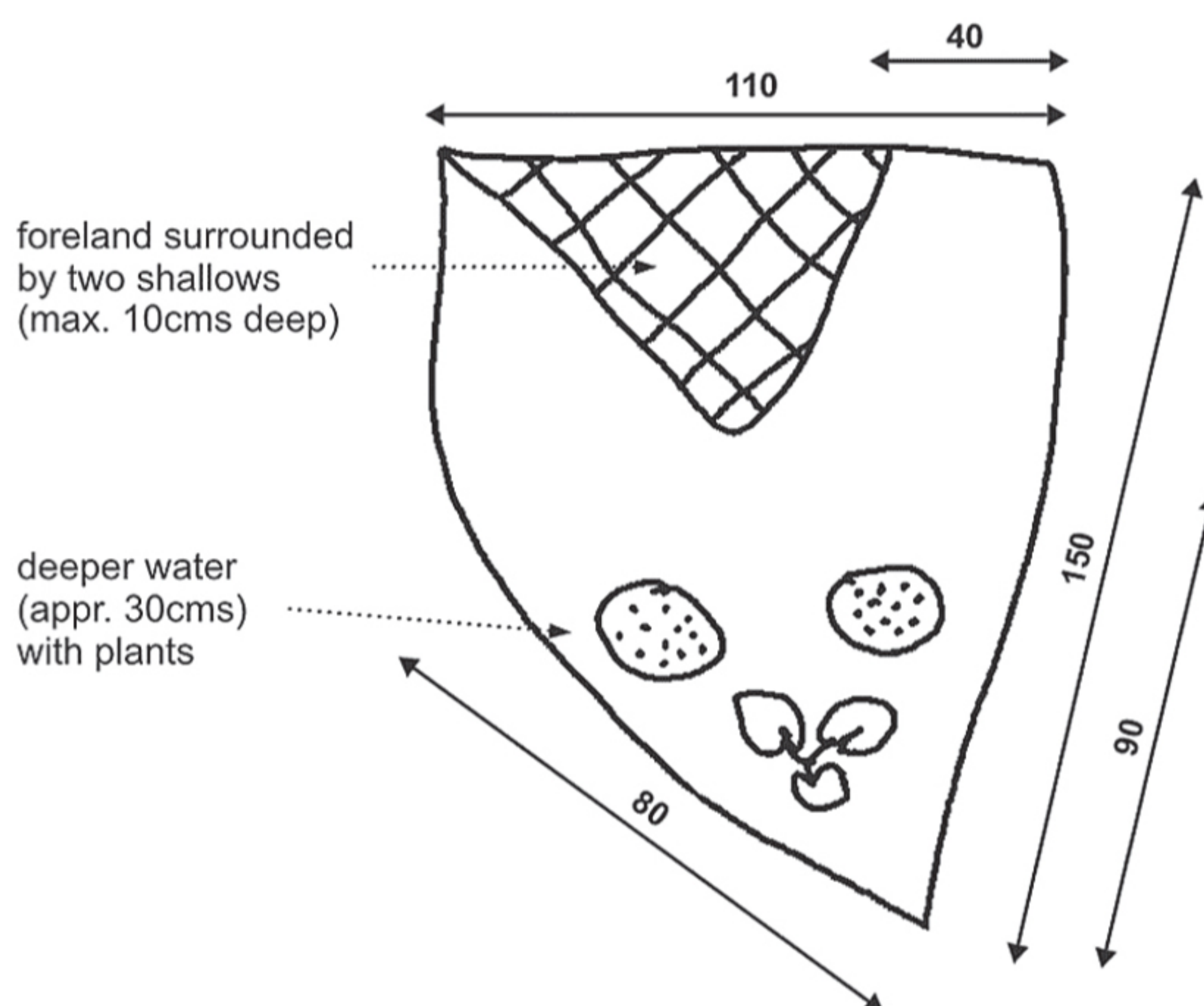


Fig. 1. Sketch of the pond. Measurements in cm.



June-July) were observed.

In 2010, only *A. cyanea* was present during the time of the cleaning. Its population amounted to 190 larvae in various instars. The other 2 species were probably outcompeted and/or exterminated by predation. *A. cyanea*, thus, became the top predator in the pond. After overwintering and releasing back into the pond, its larvae (F-0 to F-2) were immediately able to predate on the larvae of all possible subsequent colonizers. In addition, new larvae of this species could have hatched from the eggs laid in the moss growing on the walls of the pond after it was refilled in the spring. A small part of the great difference between the *A. cyanea* abundance in 2009 and 2010 could be perhaps attributed to the earlier date of pond cleaning in 2010, which

took place ca 2-3 weeks earlier than in 2009, preventing therewith a possible reduction of numbers due to the predation later in the season.

The abundance of *A. cyanea* larvae in 2010 was very high: more than 1 individual per litre of water. Actually it was perhaps even higher, as some larvae may have gotten lost when some overgrown algae were occasionally removed during the summer. Considering the number of insect prey (mosquitoes etc.) a dragonfly can hunt down, the potential of such a small garden pond in the biological pest-control is huge.

**Reference** – CIEŚLAM N,M 2004, *Vážky* 2004: 89-90.

*Received February 1, 2011*

---

**REQUEST TO THE AUTHORS** – The style and lay-out of the manuscripts should strictly follow the published examples. This also applies to the literature citations and to species- and reference listing. The manuscripts should be double-spaced, the illustrations and acknowledgements should be kept at the absolute minimum, and all footnotes should be omitted. Figures and (whenever possible) tables are printed at the column width, therefore the labelling should be of adequate size to withstand the reduction. – The manuscripts should be submitted on disc, which should be IBM-compatible, preferably any version of Microsoft Word. An accurate hardcopy must accompany each disc, together with details of the type of hard- and software employed. Alternatively, the manuscripts can also be submitted as an attached file to the e-mail address: mb.kiauta@12move.nl. – As a rule manuscripts not exceeding 3 typed pages appear as “Brief Notes”. – The publication of manuscripts, not prepared in accordance with the *NOTULAE* style and lay-out will suffer considerable delay. – Reprints should be ordered with the returned galley proofs.

---

**EDITORIAL BOARD:** R.J. BECKEMEYER (957 Perry St., Wichita, KS 67203-3141, USA); – M. BEDJANIČ (Kolodvorska 211B, SI-2310 Slovenska Bistrica, Slovenia); – R.A. CANNINGS (Roy. British Columbia Mus., P.O. Box 9815 Stn Prov. Govt, Victoria, BC, V8W 9W2, CA); – S.W. DUNKLE (Biol. Dept, Collin Co. Community Coll., 2800 E Spring Creek Pkwy, Plano, TX 75074, USA); – R.W. GARRISON (1030 Fondale St., Azusa, CA 91702-0821, USA); – M. HÄMÄLÄINEN (Sunankalliontie 13, FIN-02760 Espoo); – A.Yu. HARITONOV (Inst. Anim. Syst. & Ecol., Russ. Acad. Sci., 11 ul. Frunze, RUS-630091 Novosibirsk); – K. INOUE (5-9, Fuminosato 4-chome, Abeno-ku, Osaka 545-0004, JA); – G. JACQUEMIN (Biol. Insectes, Univ. Nancy--I, BP 239, F-54506 Vandoeuvre-lès-Nancy); – G. JURZITZA (Reinmuthstr. 27, D-76187 Karlsruhe); – R.G. KEMP (“Tree Tops”, 5 Maltings Close, Ackleton, Wolverhampton, WV6 7WB, UK); – B. KIAUTA & M. KIAUTA (P.O. Box 124, NL-5854 ZJ Bergen); – O.E. KOSTERIN (Inst. Cytol. & Genet., Russ. Acad. Sci., Lavrentiev ave 10, RUS-630090 Novosibirsk); – J. LEGRAND (Lab. Ent., Mus. nat. Hist. nat., 43 rue Buffon, F-75005 Paris); – J.C. LIEN (Dept Med. Ent., Taiwan Prov. Inst. Infect. Diseases, P.O. Box 125, Nankang, Taipei, Taiwan, ROC); – A.B.M. MACHADO (Depto Zool.-Ent., Inst. Cien. Biol., UFMG, Caixa postal 256, BR-31270-901 Belo Horizonte, MG); – A. MARTENS (Bachstr. 10, D-76185 Karlsruhe); – P.J. MILL (8 Cookridge Grove, Cookridge, Leeds, LS16 7LH, UK); – D.R. PAULSON (Slater Mus. Nat. Hist., Univ. Puget Sound, 1500 North Warner, Tacoma, WA 98416-0360, USA); – G. PRITCHARD (Dept Biol. Sci., Univ. Calgary, Calgary, AB, T2N 1N4, CA); – M.J. SAMWAYS (Dept Ent. & Nematol., Fac. Agric., Univ. Stellenbosch, P.B.X1, Matieland-7602, SA); – E. SCHMIDT (Coesfelder Str. 230, D-48249 Dülmen); – G. THEISCHINGER (2A Hammersley Rd, Grays Point, NSW 2232, AU); – D.J. THOMPSON (Sch. Biol. Sci., Univ. Liverpool, Crown St., Liverpool, L69 7ZB, UK); – C. UTZERI (Dipto Biol. Anim. & Uomo, Univ. Roma “La Sapienza”, Vle Università 32, I-00185 Roma); – G.S. VICK (Crossfields, Little London, Tadley, Hants, RG26 5ET, UK); – M. WATANABE (Inst. Biol. Sci., Univ. Tsukuba, Tsukuba, Ibaraki, 305-8572, JA); – H. WILDERMUTH (Haltbergstr. 43, CH-8630 Rüti); – K.D.P. WILSON (18 Chatsworth Rd, Brighton, BN1 5DB, UK).

---

**Annual subscription:** € 20.— net. For SIO associates and for subscribers to *Odonatologica* special rates. Please inquire!

© International Odonatological Foundation S.I.O., Bergen

**ISSN 0166-6584**