

THE WATER-STICK INSECT *RANATRA LINEARIS* (L.) (HEMIPTERA: NEPIDAE) NEW TO COUNTY WATERFORD, IRELAND

Alan Walshe¹ and James P. O'Connor²

¹*Main Street, Bonmahon, County Waterford, Ireland.*

e-mail: <bellelaketrust@hotmail.com>

²*Emeritus Entomologist, National Museum of Ireland – Natural History, Merrion Street, Dublin 2, Ireland.*

e-mail: <joconnor@museum.ie>

Abstract

Adults of the water-stick insect *Ranatra linearis* (L.) (Hemiptera: Nepidae) were discovered in Belle Lake, County Waterford, south-east Ireland. These are the first confirmed records of adults from the island and it is the first time that the species has been reported from a natural habitat here, suggesting a long established and overlooked population.

Key words: *Ranatra linearis* (L.), Hemiptera, Nepidae, adults, Ireland, Waterford, Belle Lake, first confirmed adults, first natural habitat.

Introduction

The water-stick insect *Ranatra linearis* (L.) (Hemiptera: Nepidae) was first mentioned and illustrated as an Irish insect by Cabot (?1977) in his book *Irish Pond Life* but the author gave no details of any records. Publications in the Irish Environmental Library Series have provided reliable records of other insects species new to Ireland e.g. Goodhue (1980). Subsequently, Nelson (2018) reported the species from an artificial pond on the Wexford Wildlife Reserve on the 18 August 2016. Three immature specimens were caught with a pond net. No adults were found. The pond was created in 2005 and is currently used as an outdoor classroom and educational facility including for pond dipping. Nelson (*op. cit.*) suggests that the species may have appeared there between 2011 and 2016. An accidental introduction cannot be ruled out.

The present records

With some relaxation in the Irish covid-19 restrictions, AW was able to visit Belle Lake, County Waterford, to carry out essential work on the lake's facilities. While enjoying a break on the shore from ground maintenance, he noticed what looked like a reed in the lake but, unusually, it was moving in the water against the waves. Upon collecting the object, he recognised it as a water-stick insect. After the specimen was photographed (Plate 1), it was returned unharmed to the water and the National Biodiversity Data Centre was notified.

Subsequently on 25 May 2020, four adults were taken by him in a net during three kick samples along the stretch of shore-line between the Pump Station and the south-eastern reed bed.

The records

WATERFORD: Belle Lake (S6605), adult 21 May 2020, in the lake beside the eastern shore at the Pump Station, (S6605, S6604), four adults 25 May 2020, in three kick samples taken between the Pump Station and the south-eastern reed bed, collected and determined A. Walshe, confirmed J. P. O'Connor.

The known 10km Irish distribution of *Ranatra linearis* is shown (Fig. 1).

Belle Lake

Belle Lake is a medium sized calcareous lake (35ha), with a maximum length of 1.3km, surrounded by agricultural land (pasture mostly). The maximum depth is 7.6m. The catchment is small. This is one of the few substantial areas of fresh water in the south-east of Ireland and, as such, is of regional importance being a Proposed Natural Heritage Area. It is presently looked after by the Belle Lake Trust CLG, a non-profit organisation. The Trust's mission is to provide support to the stewardship and sustainable development of the lake. This is important as the lake has an interesting aquatic fauna. For example, the very rare Irish caddisfly *Cyrmus insolutus* McLachlan, 1878 was recently recorded from Belle Lake (O'Connor and O'Connor, 2016). Elsewhere in Ireland, it is only known from Lough Derrygeeha, County Clare (O'Connor, 1977, 2015). The lake also provided the first record of the caddisfly *Limnephilus decipiens* (Kolenati, 1848) from south-east Ireland (O'Connor and Walshe, 2018).

In recent years, the water quality of the lake has improved from moderate to good but the nutrient levels remain high (Anon, 2013). The south end of the lake is shallow and the gently sloping bottom consists here of woody fen peat. At the northern end, the substrate is rocky in the shallows and the shore slopes steeply. In the deeper water, the bottom consists of silty, sandy mud. The south end was an extensive marsh which has now been partly drained and planted with conifers but there is still a large marsh adjoining part of the west side of the lake (Green, 2008) (Plates 2).

A detailed study of the vegetation of Belle Lake was carried out by Heuff (1984) and the plant information is taken from that work. The lake contains a high diversity of vegetation types. An up to 10m wide *Phragmites* reed fringe surrounds most of the lake, with an extensive *Phragmites* swamp still occurring at the south/south-west end. The *Phragmites* fringe is replaced by *Typha angustifolia* in one large area and it is at least 15m wide. On the landside of the reed fringe are present a zone of *Eleocharis palustris* and in patches *Carex rostrata* and *Menyanthes trifoliata*. The reed fringe is fronted by *Scirpus lacustris*. On the stony northern shore, the reed zone is much reduced or absent.

Discussion

These new records of *Ranatra linearis* from Belle Lake are significant. The adults are the first confirmed ones from Ireland. It is also first time that the species has been reported from a natural habitat in Ireland, suggesting a long established and overlooked population. Since the lake has extensive reed beds (Plate 3), these provide a perfect environment as the species frequents aquatic habitats where thick emergent plants with erect stems are almost always available. The bug spends much of its time immobile within the vegetation, which it protectively resembles, awaiting swimming prey (Southwood and Leston, 1959).

The timing of the discovery is fortunate as the water-stick insect can be difficult to find in reed beds. Overwintered adults mate in April and eggs are laid in row on the stems and leaves of water plants. However, the oviposition season is protracted to July (Southwood and Leston, *op. cit.*). The first Belle Lake individual may therefore have been female from a nearby established reed bed seeking a new one in which to lay her eggs. *R. linearis* swims using the mid and hind legs as oars (Anon., 2020). Since the species can also fly, it may yet be found in other suitable habitats in south-east Ireland.

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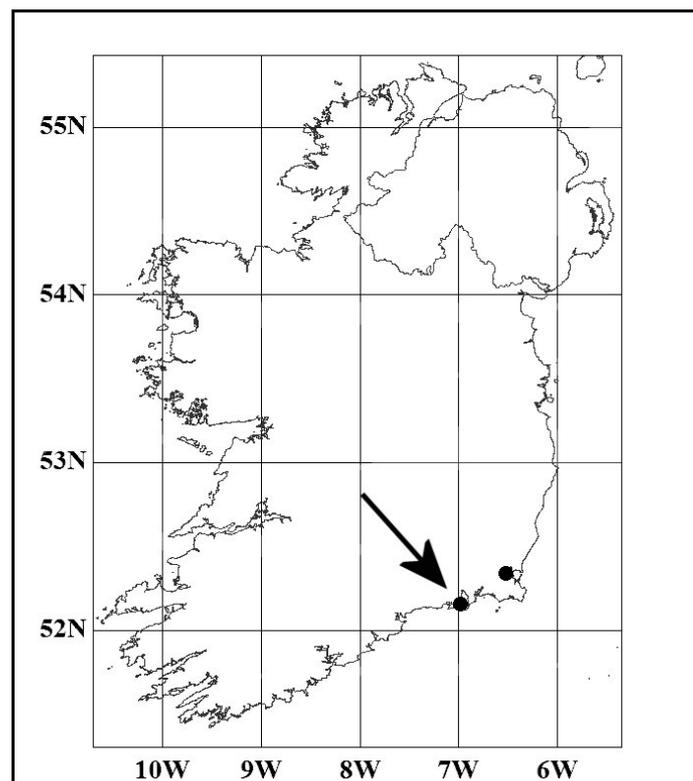


FIGURE 1. The known 10km Irish distribution of *Ranatra linearis*. An arrow indicates the location of the new records.



PLATE 1. *Ranatra linearis*, 21 May 2020, Belle Lake, County Waterford. Photograph © Alan Walshe.



PLATE 2. Belle Lake, County Waterford. Photograph © Google. 1 = Pump Station. 2 = start of the south-eastern reed bed.



PLATE 3. South/south-western end of Belle Lake, County Waterford. Photograph © Peter Foss.