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NOTE

The first recorded occurrences of *Platydracus immaculatus* (Mannerheim) and *Ocypus nitens* (Schrank), (Coleoptera: Staphylinidae), in New Brunswick, Canada

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Rove beetles (Staphylinidae) are one of the most diverse coleopteran families in the world, and the largest in North America (Newton et al. 2000). In New Brunswick alone, Webster (2016) reported 767 species, 91 of which were adventive. These numbers will increase due to climate change (range expansion), globalization (increase in movement of organisms by humans), and improved reporting facilitated by citizen scientist programs and online platforms dedicated to recording wildlife observations. To this point, we present two new species records for New Brunswick; one native, *Platydracus immaculatus* (Mannerheim 1830), and one adventive, *Ocypus nitens* (Schrank 1781). Both species were identified using an online key (Brunke et al. 2011), and confirmed by Staphylinidae experts from two different online observation reporting platforms. Collected specimens were deposited in the New Brunswick Museum (NBM) or Reginald Webster's personal collection (RWC).

Platydracus immaculatus (Mannerheim 1830)

NEW BRUNSWICK: **York Co.**: Nasonworth (45.8564°, -66.6898°), 30 May 2017, Knopf, E., open field on *Sphagnum* L. *sp*. (Sphagnaceae) (1, https://inaturalist.ca/observations/8139304); Charters Settlement (45.8350°, -66.7436°), 10 May 2018, Webster, R.P., mixed forest, on soil on dirt ATV trail (1, RWC); Nasonworth (45.8563°, -66.6899°), 9 July 2018, Knopf, E., dirt in shallow pit (1, NBM-067788; https://bugguide.net/node/view/1553448); Nasonworth (45.8563°, -66.6902°), 14 July 2018, Knopf. E., open field in grass (1, https://inaturalist.ca/observations/14539382).

Platydracus immaculatus (Figure 1) had previously been found in Canada in Ontario and Québec (Brunke et al. 2011). It is distinguished from other Atlantic Canadian members of the subtribe Staphylinina such as *Staphylinus ornaticauda* (LeConte 1863) and *Platydracus cinnamopterus* (Gravenhorst 1802), by the pairs of golden setal patches along the abdominal tergites, the red head, and the dull, red elytra (Brunke et al. 2011).

As the habitat of *Platydracus immaculatus* has not been well documented (A. Brunke, Canadian National Collection of Insects, Arachnids and Nematodes (CNC), personal communication 2018), we include here some site details for all individuals found in Nasonworth. The site (Figure 2) was forested prior to the mid-1980s, at which time it was cleared for a house lot. Most of the lot seeded in naturally and was kept mowed short until September 2015, at which time it was allowed to progress with minimal interference. Vegetation at the site included flat-topped goldenrod (*Euthamia graminifolia* [L.] Nuttall), hawkweeds (*Hieracium* L. *spp*.), calico aster (*Symphyotrichum lateriflorum* [L.] A. & D. Löve) (Asteraceae); Virginia strawberry (*Fragaria virginiana* Duchesne), common cinquefoil (*Potentilla simplex* Michaux) (Rosaceae); hair-cap mosses (*Polytrichum* Hedwig *spp.*) (Polytrichaceae); and sphagnum mosses.

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Figure 1. *Platydracus immaculatus* found in Nasonworth, New Brunswick. 14 July 2018.

Figure 2. Habitat in which *Platydracus immaculatus* and *Ocypus nitens* were found in Nasonworth, New Brunswick. July 2018.

Within the area was a shallow pit about ten square meters in size and approximately half a metre deep, which was dug in 2017 as a test pit for a pond; NBM-067788 was found in this pit, struggling to climb out. The area was primarily bordered by forested land which was comprised of mature balsam fir (*Abies balsamea* [L.] Miller), eastern white pine (*Pinus strobus* L.) (Pinaceae); trembling aspen (*Populus tremuloides* Michaux), large tooth aspen (*Populus grandidentata* Michaux) (Salicaceae), red maple (*Acer rubrum* L.) (Aceraceae), with pin cherry (*Prunus pensylvanica* L.f.) and raspberries (*Rubus* L. *spp*.) (Rosaceae) dominating the edges.

As Brunke et al. (2011) described *Platydracus immaculatus* as occurring in areas with sandy soil, two test pits were excavated in the field where the rove beetles were discovered to verify soil conditions. As the samples from the field test pits revealed near identical conditions, only the results from test pit 1 are presented in the interest of brevity.

A grain size analysis of the soil samples was performed in the New Brunswick Department of Energy and Resources geochemistry lab using a sedimentation technique modified after the hydrometer methodology of Bouyoucos (1962). The granulometric analysis was conducted on the <2 mm fraction to quantify the relative amount of sand, silt and clay in the matrix component of each sample.

Sample 1 was collected near the center of the field, close to the small shallow pit in which NBM-067788 was discovered. A pit was dug with a shovel and trowel down to 30 cm. The upper portion of the soil profile in the field had been removed by bulldozer during the mid-1980s when the area had been cleared for a house lot. The colour of the soil, using the Munsell Soil Colour Chart, was determined to be 5YR 4/2. This slightly reddish hued, densely compacted glacial till was derived from the underlying Carboniferous-aged bedrock (Pictou Group – Minto Formation) (St. Peter and Fyffe 2005) and can be described as a firm to friable clay loam. Sand, silt and clay percentages were found to be 34%, 34% and 32%, respectively. Common sub-angular to rounded pebbles were found within the pit. Approximately 20-30% of the soil is comprised of larger than gravel sized clasts (>2 mm).

Ocypus nitens (Schrank 1781)

NEW BRUNSWICK: **York Co.**: Nasonworth (45.8563°, -66.6898°), 2 May 2018, Knopf, E., open field burrowing into *Sphagnum* (1, NBM-067787; https://bugguide.net/node/view/1515704); Charters Settlement (45.8395°, -66.7391°), 1 June 2018; 12 June 2018, Webster, R.P., mixed forest on pavement (1, NBM; 1, RWC).

Ocypus nitens (Figure 3) can be distinguished from similar Staphylinini found in the Maritime Provinces (e.g., *Tasgius* Stephens *spp*.) by the entirely black body and legs, the last maxillary palpomere being rectangular in shape, and the elytral suture being shorter than the pronotum (Brunke et al. 2011). A native of the Palaeartic Region, *Ocypus nitens* has been recorded in Ontario, as well as New York, and most of New England (Brunke 2016). Although *Ocypus nitens* had not previously been recorded in the Maritime Provinces it was predicted and anticipated by Brunke (2016).

Figure 3. *Ocypus nitens* found in Nasonworth, New Brunswick. 2 May 2018

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