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## The identity of *Aphodius nodifrons* Randall, 1838 (Coleoptera: Scarabaeidae: Aphodiinae) from Maine, United States of America, with designation of the lectotype and handwriting examples

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### Abstract

John Witt Randall's Coleoptera types have been assumed to be lost. In London and Harvard, we found two syntypes of *Aphodius nodifrons* Randall, 1838, coming from the collection of Thaddeus William Harris. We designated the lectotype and synonymised Randall's species with *A. pedellus* (De Geer, 1774).

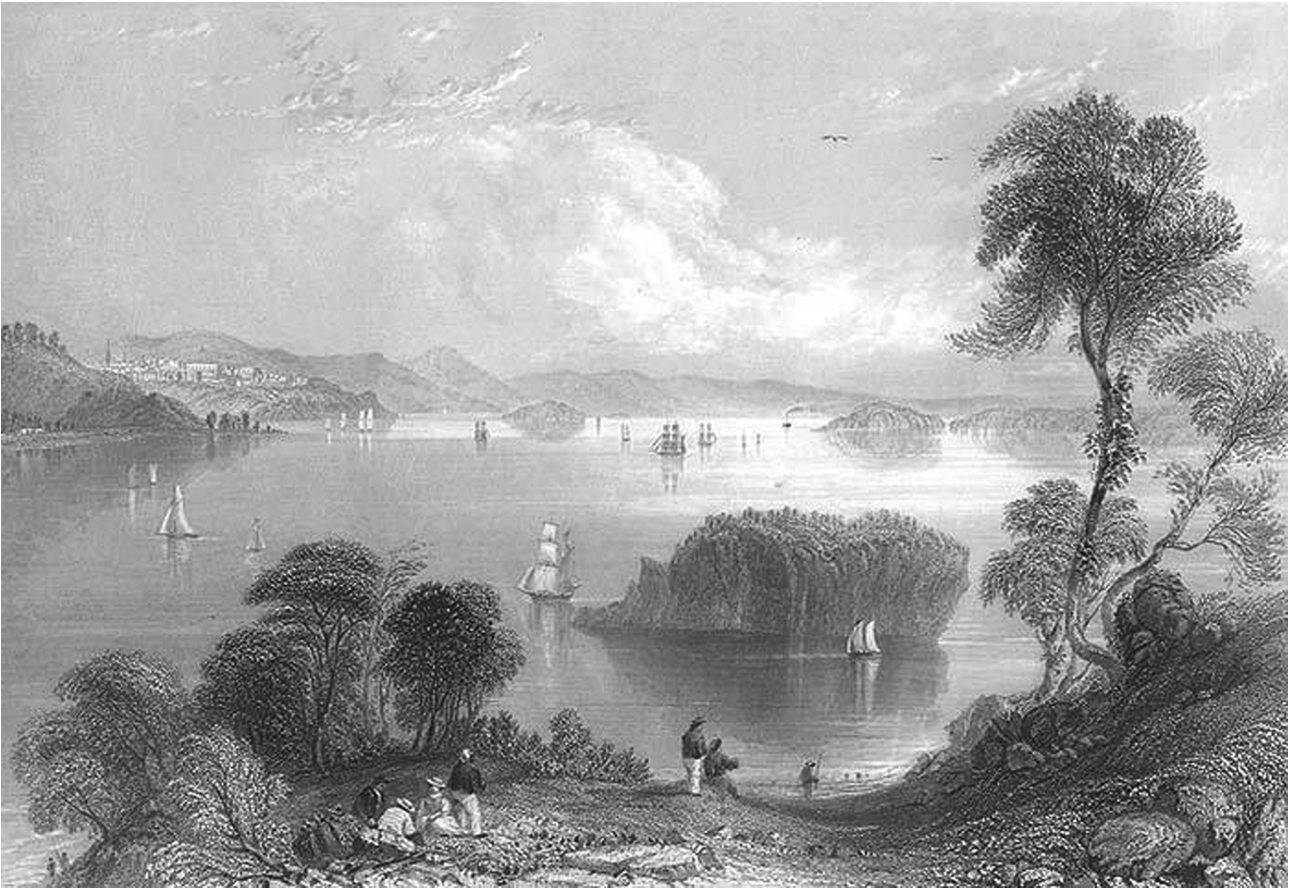
**Key words:** dung beetles, Holarctics, John Witt Randall, lectotype designation, Randall types

In 1838, John Witt Randall described 52 new beetle species from Maine, United States of America (Randall 1838a) and 31 from Massachusetts, United States of America (Randall 1838b), these being his only entomological publications (Anonymous 1892). Randall's specimens are generally considered to be lost (Sprague 1875), often impeding correct interpretation of Randall's species.

One of the species Randall described from Maine is *Aphodius nodifrons* Randall, 1838 (Coleoptera: Scarabaeidae), noting that "The insect is the counterpart of the *A. fimetarius* of Europe, and is extremely abundant throughout all Maine." Soon thereafter, Haldeman (1848: 103) synonymized Randall's name with *A. fimetarius* (Linnaeus, 1758) under which it has remained ever since. We are unaware of any author having used Randall's name as valid in a published work, apart from Randall himself. Now that we know that *A. fimetarius* consists of two cryptic species (Wilson 2001, Miraldo *et al.* 2014), namely *A. pedellus* (De Geer, 1774), and *A. fimetarius*, we need to reassess this synonymy and determine to which of those two species *A. nodifrons* belongs. This is particularly relevant in light of a nomenclatural debate about the correct names for the two cryptic species (*e.g.*, Angus *et al.* 2012, Fery 2012, Krell & Angus 2012), which went so far as the proposal to suppress Randall's name on grounds of its dubious identity (Fery 2012). Fortunately, we were able to locate two specimens from Randall's type series—one in The Natural History Museum in London (United Kingdom), and one in the Museum of Comparative Zoology at Harvard (Cambridge, Massachusetts, United States of America)—that allowed us to address this issue.

### History of Randall's specimens

Randall's personal collection is apparently lost, but he gave specimens to Thaddeus William Harris (Sprague 1875). The Harris collection went to the Boston Society of Natural History, from there to Boston University (Johnson 2004), and thence partly or completely to the Museum of Comparative Zoology at Harvard, where the historical material from the Boston University collection was deposited (J. Traniello, Boston University, personal communication). Harris commonly exchanged material with colleagues in North America and Europe (Elliott 2008), presenting the possibility that both Harris and Randall specimens might be preserved in these various collections.



**FIGURE 9.** "East-port and Passamaquoddy Bay", 1839, by William Henry Bartlett; engraved by C. Cousen and printed by George Virtue of London, United Kingdom.

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