

Pyractomena dispersa (Mountain Variety Marsh Flicker)



John Richards, 2018



John Richards, 2018



John Richards, 2018



Anna Walker,

Taxonomy

- **Class:** Insecta
- **Order:** Coleoptera
- **Family:** Lampyridae
- **Genus:** Pyractomena
- **Scientific Name:** *Pyractomena dispersa* Green, 1957
- **Common Name:** Mountain Variety Marsh Flicker
- **Synonyms:**
- **Taxonomic Name Source:** Green, J.W. 1957. Revision of the Nearctic species of *Pyractomena* (Coleoptera: Lampyridae). *Wasmann Journal of Biology* 15: 237-284.

Agency Status

- **NMDGF:**
- **Federal Status:**
- **BLM Sensitive:**
- **USFS:**
- **IUCN Red List:** [Data Deficient](#)
- **Nature Serve Global:** [GU](#)
- **NHNM State:** SNR
- **NM Endemic:** NO

Description

Pyractomena species can be distinguished from other flashing firefly genera by their sculpted pronotum with a raised midline ridge, often referred to as a median keel (Lloyd 2018). In the eastern United States, *Pyractomena dispersa* Green, 1957 is fairly easy to identify because it usually does not have dark markings on the outer margins of its pronotum, as is seen in many other *Pyractomena* species (Faust 2017). In addition, the scutellum of *P. dispersa*, while mostly dark, has a slightly pale apex. It also has inconspicuous primary pubescence, which is sparse and short basally, but longer distally and the secondary pubescence covers the apical fourth of the elytral surface (Green 1957). Males are typically 9-12.5 mm in length, and females are 8-12.5 mm (Green 1957). In the western US, many populations of a certain *Pyractomena* firefly have, to date, been identified as *Pyractomena dispersa*. However, these western *P. dispersa*, dubbed “mountain variety *P. dispersa*”, or “The Wiggle Dancer” by Buschman (2016), have several differences from their eastern counterparts. Most notably, specimens from western populations often have a slight darkening along the margins of the pronotum. There are also differences in the male genitalia, thorax, and labrum (Pacheco 2014).

Habitat and Ecology

Adult *Pyrrhopyga dispersa* are typically seen flying over wet habitats including swamps, marshes, river sloughs, low wet pastures where the water table prevents agricultural crops from growing, and other poorly drained areas (Lloyd 2018, Faust 2017). In the Rocky Mountain states, mountain variety marsh flickers occur in permanent marsh areas, such as wet pastures, at altitudes from 4,000-8,000 feet (Buschman 2016) (Fig. 17). This is one of the first flashing species to emerge in the Southwest region, with records spanning from late May to early July. In some populations, males have been observed flashing from the vegetation. This may happen when temperatures are too cold for flight. In early June, at altitude, temperatures can drop quickly. Females are winged, and with the exception of their lantern, look similar to males. Larval *Pyrrhopyga* are predacious and due to their slender heads, appear to be uniquely adapted to feed on snails (Lewis 2016, Majka 2012, Lloyd 2018).

Besides morphological characters, there are several other differences between eastern and western populations of this species. First, the phenology of eastern *P. dispersa* populations seems to be much more predictable. Adults appear in the late spring around 719 growing degree days (GGD) and continue to be active through about 1,300 GGD (Faust 2017). For an explanation of growing degree days, see text box on page 25. In Utah and Idaho populations, individuals can be seen anywhere from 160 to 2,229 GGD, making the emergence of adults in the west much less predictable (Pacheco 2014). In general, it seems that GGDs are not reliable predictors of phenological timing for western firefly populations (A. Walker pers. obs.). It is possible fireflies in the west are responding to a more complex suite of environmental cues, due to the aridity of the landscape; precipitation conditions as well as temperature accumulations may need to be just right for fireflies to emerge.

Geographic Range:

Pyrrhopyga dispersa is widespread within the United States and Canada (Faust 2017). Its distribution is, however, very patchy, with few occurrences scattered in the Southeast, Northeast, Upper Midwest and Rocky Mountains (Lloyd 2018). In the West, something resembling this species has been recorded in mountainous wet habitats in Colorado, Utah, and Idaho, northern New Mexico and Arizona. Preliminary molecular evidence suggests these western populations show significant divergence from eastern populations, indicating they may soon be considered a new species (Pacheco 2014).

Conservation Considerations:

Though widespread across the US, *Pyrrhopyga dispersa*'s distribution is very patchy, with few scattered occurrences. There is also some evidence of local extirpation in several different regions throughout its range. Declines are likely the result of habitat loss due to development, conversion of land for agricultural, and light pollution. *Pyrrhopyga dispersa* was assessed as Data Deficient on the IUCN Red List, as research on the extent of decline is needed (Walker 2021a). Therefore, this species is a priority for further survey work and genetic studies. If the mountain variety *Pyrrhopyga dispersa* is described as a new species, a conservation status assessment should be carried out. Given how fragile wetland habitats are in the western US, the species may be considered threatened.

Threats:

Because this species is nocturnal and associated with wetland and riparian habitats, it is threatened by drought, riparian corridor severance, habitat degradation and direct trampling due to cattle, intrusive recreation, light pollution, and hydrological modification for farming, ranching, and urbanization. The larval stage may be particularly sensitive to environmental change due to restricted dispersal capabilities and vulnerability to desiccation (A. Walker pers. comm).

2024)

Population:

While *Pyractomena dispersa* is very widespread, lack of specimens in archive collections suggest it is not common (Lloyd 2018). In the East, there appear to be some local extirpations of this species. For example, it can no longer be found at its type locality near Wilmington, Delaware and it is increasingly rare in the Mid-Atlantic region. In another example, one robust population in Tennessee is vulnerable to extirpation, as it is located in an old hayfield within a rural area that is quickly being developed (Walker 2020). In the West, we have not studied this species extensively enough to know whether it might be declining. In some cases, visits to historic localities have yielded no observations, though this may be a result of yearly variation in response to environmental conditions. More monitoring is needed.

References:

- [GBIF. 2020. Global Biodiversity Information Facility. http://data.gbif.org/](http://data.gbif.org/)
- Faust, L.F.. 2017. Fireflies, Glow-worms, and Lightning Bugs. Identification and Natural History of the Fireflies of the Eastern and Central United States and Canada. University of Georgia Press, Athens, GA : (356).
- Lloyd, J.E.. 2018. A naturalist's long walk among shadows of North American Photuris - patterns, outlines, silhouettes... echoes. Self-published, Gainesville, FL : (477).
- [Buschman, L. 2016. Field Guide to Western North American Fireflies . Draft. http://entomology.k-state.edu/doc/WesternFireflies%20March%202016a.pdf](http://entomology.k-state.edu/doc/WesternFireflies%20March%202016a.pdf)
- Majka, C.G.. 2012. The Lampyridae (Coleoptera) of Atlantic Canada. *Journal of the Acadian Entomological Society* 8: (29-Nov).
- Green, J.W.. 1957. Revision of the Nearctic species of *Pyractomena* (Coleoptera Lampyridae). *The Wasmann Journal of Biology* 15: (237-284).
- Lewis, S.. 2016. Silent Sparks The Wondrous World of Fireflies. Princeton University Press, Princeton .
- Lewis, S., Wong, C.H., Owens, A., Fallon, C., Jepsen, S., Thancharoen, A., Wu, C., De Cock, R., Novak, M., Lopez-Palafox, T., Khoo, V. and Reed, J.M. . 2020. A global perspective on firefly extinction threats. *BioScience* 70: (157-167).
- Owens, A.C.S. and Lewis, S.M.. 2018. The impact of artificial light at night on nocturnal insects A review and synthesis. *Ecology and Evolution* 8: (11337-11358).
- Buschman, L.L.. 1984. Biology of the firefly *Pyractomena lucifera* (Coleoptera Lampyridae). *The Florida Entomologist* 67: (529-542).
- [IUCN. 2021. The IUCN Red List of Threatened Species. Version 2021-1. www.iucnredlist.org](http://www.iucnredlist.org)
- [ITIS. 2019. Integrated Taxonomic Information System \(ITIS\). 2019. https://www.itis.gov/](https://www.itis.gov/)

More Information

