

How to estimate instar using Photopea

In [two recent blog posts](#) (see **Related Resources**, below), I showed how Adobe Photoshop can be used to make measurements that enable you to estimate the [instar](#) of [odonate larvae \(nymphs\)](#).

The process works well, that is, as long as you have Photoshop. Does that mean you're out of luck if you don't? In a word, no.

“[Photopea](#)” is a free alternative to Adobe Photoshop. Photopea is a Web-based clone of Photoshop — Photopea doesn't do everything Photoshop does but it can be used to make measurements on photos using a workflow similar to the one I described in detail in a blog post entitled “[How to estimate instar](#).”

Practical example using Photopea

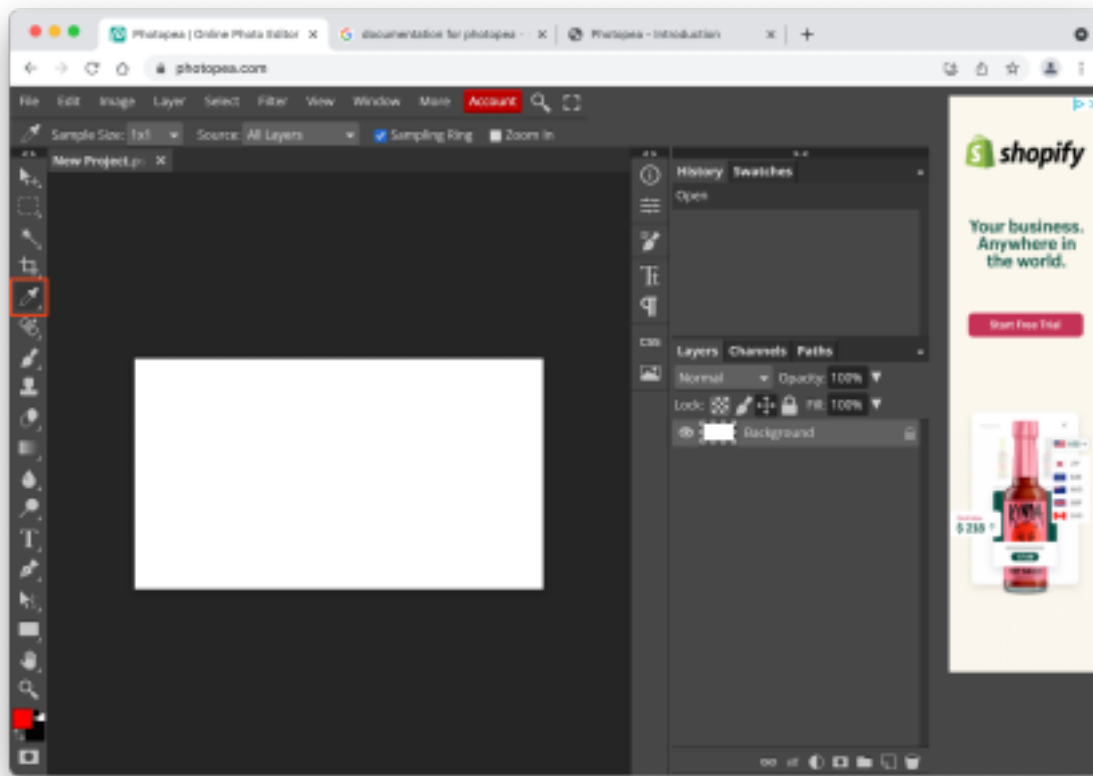
Open Photopea in a Web browser: www.photopea.com (For what it's worth, I prefer “Google Chrome.”) Since Photopea is Web-based, it runs on desktop computers, laptop computers, tablets, and smart phones.

In order to make this tutorial as simple as possible I went to the Photopea menu bar, navigated to File / New... and created the default blank white canvas, shown below. **Note: You should go to File / Open... and navigate to a photo of an odonate larva.**

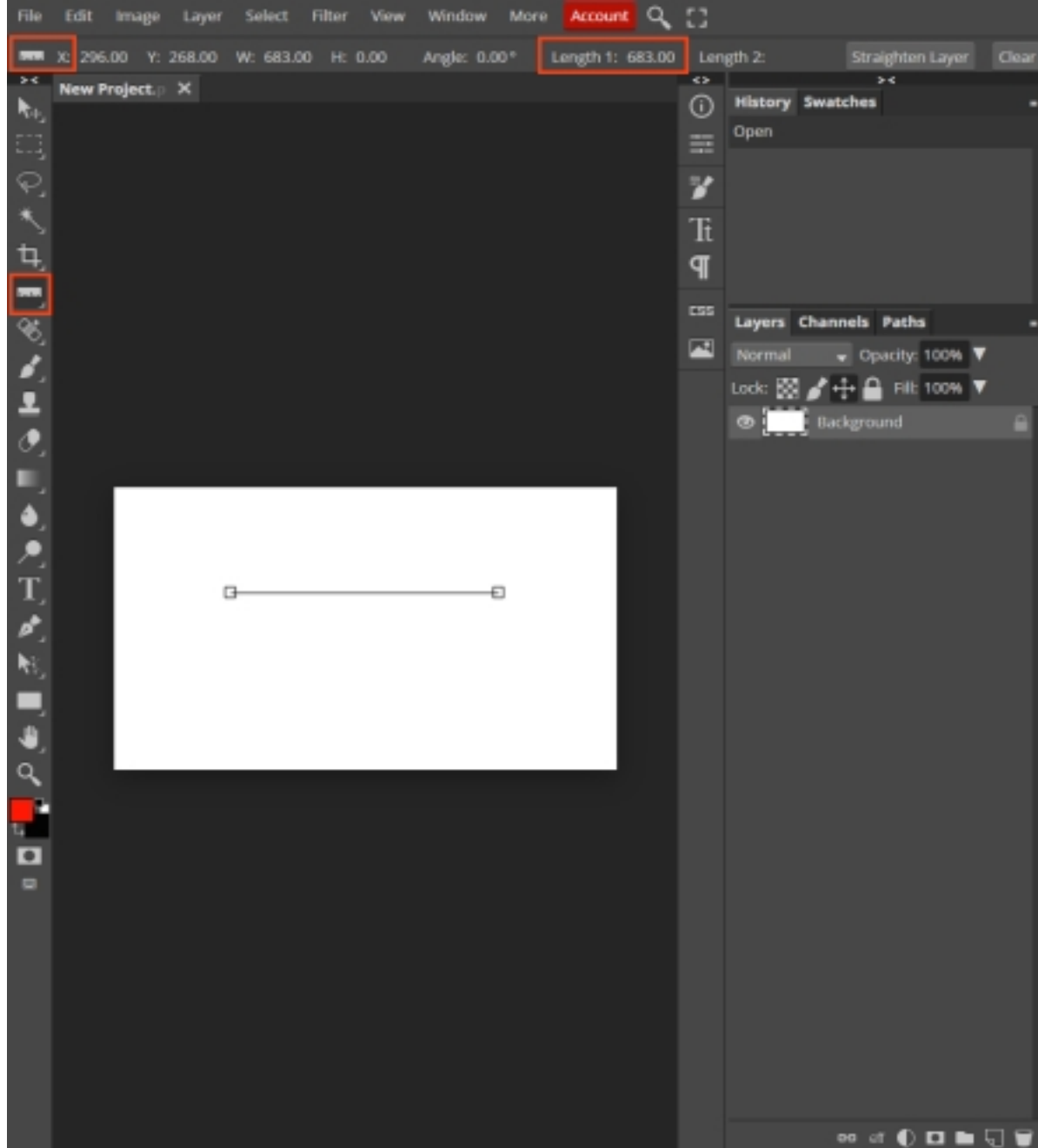
Use the Photopea “Ruler Tool” to measure the length (in pixels) of two line segments: HwL (Hind wing Length); and HW (Head Width). If you don't know how to measure “HwL” and “HW” then please refer to “[How to estimate instar](#)” for detailed, step-by-step instructions.

Right-click on the Eyedropper Tool — located in the left sidebar of the main

window, as shown below — and select the Ruler Tool.



Click and drag line segment HwL, such as the sample line shown below.
Record the length of the line, in pixels. Click the “Clear” button (optional) and repeat the same process for line segment HW (not shown).



Do the math to calculate instar equivalent and voilà, the result is a number that can be used to estimate instar based upon [Ken Tennessen's average instar equivalents](#). Again, please refer to "[How to estimate instar](#)" for detailed, step-by-step instructions.

Related Resources

[Dragonfly Nymphs of North America: An Identification Guide](#), by Ken Tennessen. Section 2.5.1 Determining Instar, pp. 27-28.

[A Method for Determining Stadium Number of Late Stage Dragonfly Nymphs \(Odonata: Anisoptera\)](#), by Kenneth Tennessen.

[How to estimate instar](#)

[How to estimate instar, revisited](#)

[Learn Photopea](#)

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Tags: [instar equivalent](#), [larva](#), [larvae](#), [nymph](#), [nymphs](#), [Tech Tips](#)

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