



Tongue Spied



*Text and photos
by Jeffrey Glassberg*



*Above: 'Black Hills' Christina's Sulphur, July 5, 2007. Ditch Creek, Lawrence Co., SD.
Below left: Orange-barred Sulphur. Oct. 21, 2007. Falcon SP, Starr Co., TX.
Bottom right: Orange-barred Sulphur. July 29, 2009. Near Atoyac, Veracruz, Mexico.
Opposite page: Androgeus Swallowtail. July 20, 2003. Bonampak, Chiapas, Mexico.*





*Left: Oak Hairstreak. April 29, 2003.
Goliad Co., TX.*

*Above: Ceraunus Blue. April 20, 2008.
National Butterfly Center, Hidalgo Co.,
TX.*

*Above right: Harvester. April 23, 1994.
Fork Creek WMA, Boone Co., WV.*

The tongue of a butterfly

is pretty critical to the success of most species. Basically, the tongue works like a drinking straw, allowing the adult butterfly to take in fluids, such as flower nectar, water and sap.

During development, the tongue is formed from the fusion of two hollow tube-like structures, sometimes referred to as galeae.

Recently, many lepidopterists have taken to primarily using the word proboscis to refer to a butterfly's tongue. In my opinion, using a strange word that very few people feel comfortable pronouncing to describe what is

simply, in the end, a tongue, makes no sense at all. This is especially so considering that the first meaning (still rarely used) given for this word in, for example, the Oxford English Dictionary, is "the trunk of an elephant." Would you feel comfortable, in the course of a normal conversation, saying "The poachers cut off the elephant's tusks but left its proboscis." I didn't think so.

In this short article, I'd like to take a quick look at tongue color. All 48 species of swallowtails that I examined had black tongues (see page 32). This homogeneity is

similar to what is found for eye color (also black) in swallowtails and contrasts with the greater heterogeneity of other families.

Most whites and yellows (53 species in 18 genera examined) seem to have tongue colors similar to those shown on page 33 — with the color varying along the length of the tongue — pale at the base, darker in the middle and pale again at the end. Some however appear to have black tongues.

Within a species, tongue color can vary. Note the somewhat differently colored tongues of the two male Orange-barred Sulphurs shown on the bottom of page 33. In addition, I suspect that tongue color may change over the life of the adult butterfly, growing darker as the butterfly ages.

Gossamerwing butterflies also show some variation, from dark brown or gray (Harvester, above) to tan (Oak Hairstreak, page 34, left).

The great majority of metalmarks (27 species in 9 genera examined) have straw to tan tongues (see photo page 36 top left). A very few appear to have darker brown tongues.

Most of the heliconians (13 species examined) have black tongues while fritillaries and true brushfoots mainly have black tongues that are pale at their bases. The admirals also have black tongues, but most of their close relatives have orange-yellow tongues.

There may be many examples of two very similar-looking species that are easily distinguished by their tongue colors, but I

*Harvesters have strange,
short gray tongues.
April 23, 1994. Fork
Creek WMA, Boone Co.,
WV.*

know of only one. Because they both have white stripes across the FWs and HWs coupled with a large orange apical FW spot, female Pavon and Silver Emperors are often confused with Band-celled and Spot-celled Sisters. There are a number of ways to distinguish the *Doxocopa* emperors from the sisters, but one fun way is by their tongue color. Sisters have orange-yellow tongues (4 species examined; see page 37, left) while emperors in the genus *Doxocopa* have bright green tongues (4 species examined; see photo, page 37 right). Since both Silver and Pavon Emperors stray to southern Texas, you might be able to see these green tongues at the National Butterfly Center! Another group of butterflies with brightly colored tongues — in this case red — is the preponas (6 species in 2 genera examined; see photo, page 36 top right). The leafwings, in the same family as the preponas, have yellow tongues.

Satyrs, unsurprisingly, seem to have mainly brown tongues, while monarchs have black tongues.

Skippers often have long tongues in relation to their body size. Most of the spreadwing skippers have black tongues while grass-skipper vary from tan to black.

Does tongue color serve any function? To the best of my knowledge, none is known but it is difficult to believe that the red tongues of preponas or the green tongues of emperors are simply random occurrences.