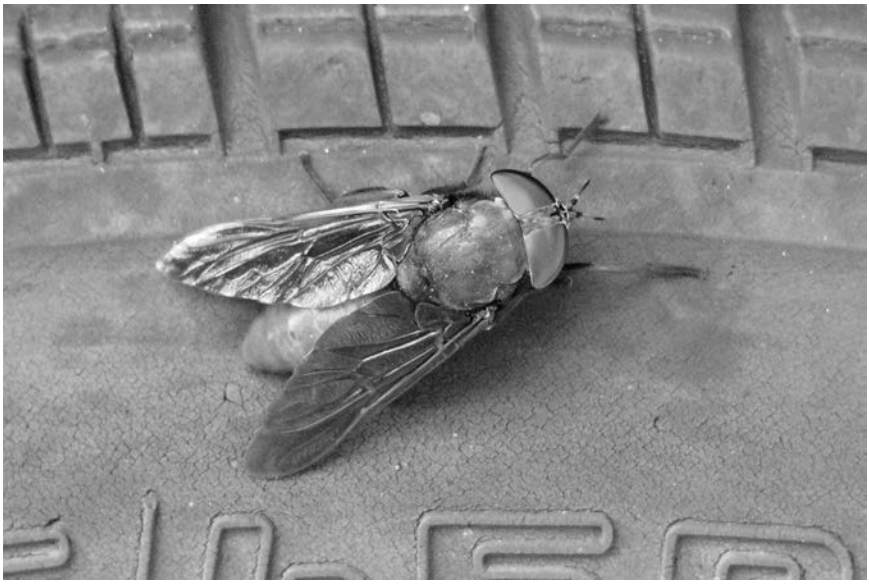
AT A GLANCE

August 2004



DAVID LARSON

You are ogling a mysterious wader at Plum Island during the height of August shorebird migration, when suddenly you feel a light touch on your bare leg, quickly followed by a sensation like that of being poked with a hot wire. Shortly after appears a telltale itchy welt, accompanied by a trickle of blood. You have just been bitten by an arthropod. A serious arthropod! Or perhaps you're walking a brushy field edge in hopes of glimpsing that late-singing Indigo Bunting, all the while flailing your arms (not unlike a cow or a horse switching its tail) to keep those fast-moving, spotted-winged, yellowish "bugs" away from your face. Sound familiar? I am sure it does.

In our quest for feathered quarry, we birders are routinely assaulted by a plethora of arthropods, each with unique and specialized techniques for irritating us. Some attack by air, others creep, crawl, or stealthily swim so as not to alert us to the fact that we are about to be victimized. While this siege is virtually nonstop in warm weather at most latitudes, few of us seldom stop to examine closely the individual makeup of these heckling hoards. Even more so than with birds, a careful examination is often required before a correct name can be applied to many arthropods. Given that the techniques for identifying arthropods are not unlike those used to identify birds, as well as the fact that arthropods often represent a significant constituent of many summer birding trips, a little time spent on trying to recognize them may not be such a bad idea.

A first step in determining the identity of this month's mystery arthropod is to carefully examine its legs. Although it is only possible to see the legs on the left side of the featured creature, it seems pretty clear that it has six walking appendages, three on each side. Further examination reveals that its body is rather distinctly divided into three readily discernible body parts (i.e., head, thorax, and abdomen), that the eyes are large and rounded (i.e., compound eyes), and that there is a pair of frontal appendages (i.e., antennae) on the head. This combination of three distinct body parts, six legs, large compound eyes, and a single pair of antennae on the head at once tell us that the arthropod belongs in the Class Insecta (i.e., insects).

A closer examination of the mystery insect reveals that it possesses a single pair of prominent, membranous wings, indicating that it is a species capable of flight, unlike, for example, many ants, or relatively sedentary insects such as scale insects and lice. This single pair of wings at once places the insect in the Order Diptera (Flies). This feature, combined with the fact (albeit perhaps difficult to see in the picture) that the antennae have three jointed parts, the last (outermost) of which has a tooth-like notch at the base, unequivocally places the fly in the Family Tabanidae. A more discriminating examination of the wings shows that they are plain and unspotted. The absence of spots on the wings and the fact that the body (especially the thorax = middle body segment) is wide and robust indicate that the fly is a horsefly or Tabanid (*Tabanus* spp.), as opposed to one of the closely related, but less robust and spotted-winged deerflies (*Chrypsops* spp.).

Given the fact that other key characters are unobservable in the printed image, it is only possible to reduce the mystery arthropod to the genus level, a situation not unlike that found in certain female and immature hummingbirds, or flycatchers in the *Empidonax* group. Using a tool as basic as a hand lens, it would be possible in a living Tabanid to examine other critical features, such as wing venation, an identification character analogous to primary extension or wing formula in flycatcher identification. Based upon the overall dull body coloration and the fact that the eyes are not brilliant green (you have to trust the author on this point!), the pictured fly is not a Green Head, a familiar resident of local salt marshes. It is possible, however, to sex the mystery fly. In flies of the genus *Tabanus* the large compound eyes are separated on top of the head in females, while in males they are joined; hence, the mystery fly is a female.

A final piece of information of possible interest to readers is the fact that since the pictured insect is a female, it is the gender that inflicts such painful bites on unwary birders. Male Tabanids feed primarily on flowers. The carnivorous larvae of all Tabanids typically develop in moist soil or water, where many species may spend up to two or more years before ultimately emerging from their pupal stage as adults. As with most insect groups, there are many different species, many of which are difficult to identify in the field.

The Tabanid in the mystery photograph was digitally captured by David Larson at his home in Bradford, MA.

Wayne R. Petersen

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Can you identify this bird?
Identification will be discussed in next issue's AT A GLANCE.