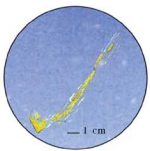
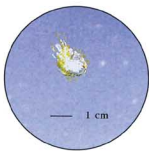
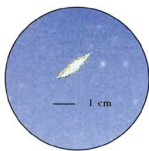
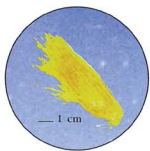
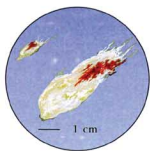


Know  
your  
**SPLAT!**



# A guide to that insect gunk on your car

(and how to get rid of it...)



by  
**M** MOTORCLEAN  
& Dr. Mark Hostetter



## Introduction

Dr. Mark Hostetler is an Associate Professor at the Department of Wildlife Ecology & Conservation at the University of Florida. Mark is a pioneer in the field of 'Splatology', a distinctive way to learn about insects from the marks they leave after colliding with vehicles. He and valeting company Motorclean have initiated a project to identify some of the billions of hitherto anonymous fatalities caused by cars on the UK's roads.

This guide describes the most common splats they expect to find and contains some interesting facts to help budding 'Splatologists' expand their knowledge of insects.

## Insect facts

Did you know that insects have been around for 350 million years: Much, much longer than humans?

They comprise more than half of all animal species, with one million known varieties. There are more than 23,000 insect species in the UK and there are estimated to be one billion insects per human worldwide.

Well over 51 billion\* insects are estimated to die as a result of collisions with cars in the UK alone every year, but who's counting?

## Splatology

Dr. Hostetler for one: he examined the marks left by various insects when they collided with vehicles in the US and wrote a book called 'That Gunk on Your Car'.

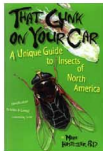
Over the past ten years he's been spreading the word about this distinctive way to learn about insects. This year he established that Motorclean, the UK's top car valeting company, was in an ideal position to supply information about the types of insects that hit windshields in this country, thanks to the large number of vehicles it washes.

Motorclean is especially interested in this area because it knows the damage that insects' acidic remains can do to paintwork.

With valeters doubling as trainee Splatologists, Motorclean will pass information to Dr. Hostetler for him to explore the situation in the UK.

## Get involved

Anyone can get involved by sending images of interesting splats (of under 100kb in size) to [splat@motorclean.net](mailto:splat@motorclean.net), along with a description of where and when the splat occurred. Also, visit the [Motorclean.net](http://Motorclean.net) website to test your knowledge of splats with an interactive game after reading this guide.



Dr. Mark Hostetler's book



Dr. Hostetler identifying splats

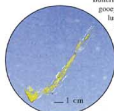
\*The UK's Royal Society for the Protection of Birds carried out a large study into the quantity (as opposed to type) of insects around Britain in 2004, to detect any changes in the supply of food for birds. 40,000 volunteers drove 1,624,070 miles, recording 324,814 splats using a special grid placed over their number plates. With UK drivers travelling over 8,349 miles per year, 1,670 insects must die on each number plate. With over 31 million cars on the road, 51bn insects are estimated to meet that fate in this way alone every year (<http://www.rspb.org.uk/>)

# Common splats & the insects that cause them



## The Splat:

Butterflies and moths usually leave a thick, gooey, white or yellow substance with lumps in it. The splat is usually string out from the point of impact (10 to 90 mm), and one can see scales (dust-like particles) scattered around the perimeter.



shown at 90% actual size



## BUTTERFLIES AND MOTHS

It's proposed that moths use the moon to navigate, but why might they? They could use it to fly in a straight line which is more efficient if, for example, they want to cover more ground when searching for a mate. On roads, headlights can lure moths and during the day yellow road or safety markings can also draw in butterflies: The Monarch, which amazingly crosses the Atlantic to visit these shores once or twice a decade, is particularly keen on yellow reflectors. It's also not unknown for some butterflies to feed on decomposed frogs smashed by roadsides.



## The Splat:

Usually a watery, small, white smear about 8 to 15 mm in length.

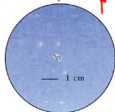


## ANTS

The worst time for splats is during the mating season, when swarms of winged males and females fly about looking for mates.

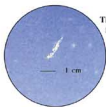
## The Splat:

Small, clear spots (2 to 5 mm in diameter) with specks of black.



## MIDGES

Active in spring, summer and autumn, they are like mosquitoes in that only the female bites: She uses proteins in blood to bring her eggs to maturity. Otherwise they feed on nectar. Preferred victims of the female can include deer, rabbits or...humans! The good news is that tiny critters only live for about two weeks, unless they get splatted of course...



## The Splat:

Normally a small, clear speck (3 to 6 mm) that resembles a mosquito splat, but a little more string out in a line.



## CRANE FLIES

You're most likely to hit crane flies where a road passes near damp or vegetated areas. They only have a lifespan of a few days or weeks, although they live it up, spending most of their time attempting to reproduce. Some species are so preoccupied that they don't even feed, or see the car coming. Many species swarm and Crane flies are active night and day, especially in spring and summer.



#### The Splat:

Whole dragonflies are usually found on the bumpers and grills of cars where their wings get caught. Occasionally they will hit the windshield, leaving a roundish splat that is variable in length (10 to 30 mm) and transparent-white in color.

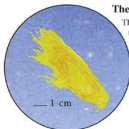


### DRAGONFLIES

Dragonflies are the "hawks" of the insect world, hunting many different types of insects. Males tend to be found near water where they patrol a territory. Males of some species use their vibrant colouring to attract females. Dragonflies can sometimes mistake dark coloured cars for water and attempt to lay eggs on them.

#### The Splat:

The size of the splat is quite variable (10 to 80 mm in length), but it generally consists of smooth, yellowish-looking gunk.

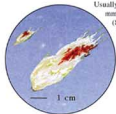


### GRASSHOPPERS

Grasshoppers live in relatively dry meadowland. They only fly short distances but are related to locusts that can cover vast distances in massive swarms. In Africa, swarms can be so numerous that they cause road accidents, because a slick of dead insects can form.

#### The Splat:

Usually quite large for horse flies (20 to 70 mm in length) and small for deer flies (8 to 14 mm). Each consists of dirty-white, gooey stuff. There will be a smear of red in it if the fly was full of blood (from an animal).

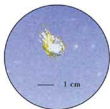


### HORSE AND DEER FLIES

Horse flies can make large splats as they grow up to 25mm. They like living close to water: Females have a space between their eyes and males don't but, by the time they are on your windscreen, it's usually too late to tell.

#### The Splat:

A big white round blotch (approximately 10 mm in diameter) with yellow on the edges.



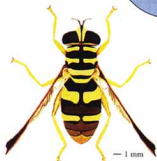
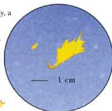
### HONEY BEES

The bees hit by cars are most likely to be female, because male 'drones' are produced in small numbers to mate only. Don't worry unduly about hitting them because some queens lay up to 2,000 eggs a day – most of which are sterile sisters with an average of 75% shared genes. Young bees stay in the nest and tend the young and move to foraging when older. Therefore the bees you hit are most likely older females.

Know  
your  
**SPLAT!**

### The Splat:

Depending on the size of the hover fly, a splat can be as small as 2 mm and as big as 35 mm. The splat spreads out around the point of impact and usually appears to be yellow and smooth.

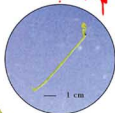


## HOVER FLIES

The wings of these bee impersonators beat 250 times a second and they live on nectar and pollen. Some species can overwinter as adults, which you can tell because they look a bit tattered, only moreso on the bumper!

### The Splat:

Lacewings will always leave a long, thin, greenish line (up to 10 cm in length) with a small blob at one end.

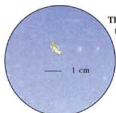


## LACEWINGS

These flying insects are nocturnal, meaning you can't escape insect hits by only driving at night. The wingless larvae are ferocious predators on aphids.

### The Splat:

Usually a small, clear smear (5 mm in length) with a little red in the center if it was a stable fly.



## MUSCID FLIES

Ahh – the pesky house fly. House flies develop from eggs to adults in about ten days and females can lay up to six batches of 150 eggs in their lifetime. Often found near decaying matter such as roadkill, they are active during the day throughout the year.

### The Splat:

Normally a small (1 to 2 mm), black-grayish, dry dot. If you hit a female full of blood, the splat will have a touch of red.



## MOSQUITOES

Females need blood for the development of fertilised eggs. Thus, you can tell their gender by the splat alone. If the splat has a touch of red in it, you know it is a female that has just fed. Males are lured by the pitch of their mates' wings and can even be drawn to a tuning fork (so take care not to tune your engine too finely or you may end up being swarmed by eager males!). Mosquitoes are often found near stagnant water and different species are active at night or day.



So, you've read the guide and you know your splats. Once you've finished examining the ones on your car, here are a few tips to help get rid of them...

Top cleaning  
tips from  
Motorclean



1. If you run out of car shampoo, a good quality washing up liquid will do the job
2. Don't worry if you run out of cleaner for your alloy wheels, you can use lemon juice, which has the benefit of being environmentally friendly
3. Always clean your vehicle from top to bottom for the best result (or you risk dirt running over the areas you've just cleaned)
4. Use a clean, grit free leather & sponge when washing your car to reduce any paint scratches. Always use a separate sponge for wheels and arches, which tend to be dirtier
5. Never polish your car in direct sunlight or in high temperatures. The sun can react with the cleaning agent and damage your paint work. Plus, you'll save on water
6. Tyres will shine with black boot polish applied to the walls
7. A 50/50 mix of clear vinegar and water sprayed on to your windows and buffed with newspaper will make them shine.
8. To remove dust from your vents, dash and centre console use a new paintbrush and then vacuum
9. Always, always mop up any spilt milk or liquids straight away with a good bacterial killing agent, e.g. Milton Liquid.
10. If you can, wash on grass and not concrete because run-off contains oil particles which can contaminate water supplies (Motorclean often uses special drain filters)
11. One extra tip: why go to all this trouble? Give Motorclean a call and you can benefit from professional showroom standards applied to the valeting of your car. We currently operate in select locations around the country and are about to launch at several of the UK's largest retail centres