



## By The Way, 100 Years Ago ...

... when Louis Lumière made images move by means of the world's first motion picture machine, when the mysterious X-rays discovered by Wilhelm Conrad Roentgen first transilluminated a human hand, and when Count von Zeppelin went on his first successful



flight in an airship, the American zoologist Horatio S. Greenough met the German physicist Ernst Abbe at the "Weimarer Hof", one of Jena's inns.



With a few lines on some random slip of paper, the zoologist sketched his idea of a binocular microscope that would produce spatial images. The Zeiss researcher was impressed.

A few months later, Carl Zeiss built a double microscope after Greenough's concept - the world's first stereomicroscope was born.



Microscopy by Carl Zeiss

# The Adventure Of Stereomicroscopy





*A sunny weekend morning -  
time to set out for a microscopy hunt:  
"Look what's crawling there under the bark ..."*

*Let's pay attention to nature's  
miniature wonders - it's rewarding!*



2

## Hunting For The Wonders Of Nature.

Why do nettles sting?

Why does an owl fly noiselessly?

Are there really scorpions in our woods?

There is no end to such questions.

Nature is full of hidden miniature life wherever you look - in the soil, in a tuft of moss, on leaves or under stones, in a pond or in the rainwater barrel.

Wouldn't it be exciting to ferret it all out?

Most of these wonders escape the unaided eye.

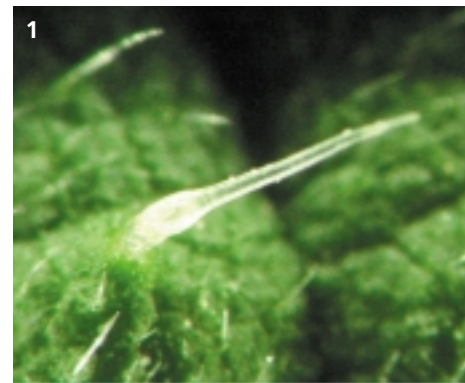
To enter nature's microcosm, you want a pair of special eyes - a stereomicroscope! It should have brilliant optics to view inert or live objects, a zoom system for varied magnifications, an illuminator allowing you to vary image contrast, and controls that are child's play to operate. And, of course, the price should not drain your purse.

You can have all that from Carl Zeiss. It's the new **Stemi DV4 Stereomicroscope**.

**1** Nettle leaves are covered with tiny brittle needles, which contain a caustic liquid. When you touch them they get stuck in your skin, break off and inject the liquid.

**2** Unlike a goshawk feather, the front edge of an owl's feather is frayed so as to whirl the air stream produced by the wings and minimize the noise - an advantage in the nightly hunt for prey.

**3** Pseudoscorpions inhabit our local woodlands. Only 2-3 mm in size, they lack the venomous stinger. Amazing how they walk equally well in any direction without turning their bodies.



1



2



3





# Trophy Hunters Need Professional Optics.

Whoever had the opportunity to look through a Zeiss microscope, of the kind used by scientists, knows how even the smallest details show up clearly and distinctly.

The visual pleasure is due to the instrument's optics - something Zeiss never compromises on!

The exemplary brilliance of the Stemi DV4 images is the work of a new, patented zoom system. These images boast exceptional definition and contrast throughout the zoom range, from overview to the highest detail magnification - features unmatched by any other microscope of this class!

*A spider sits on the glass support of your Stemi DV4. It seems small and inconspicuous.*

*Not through the microscope: Even at the 8x overview magnification, you see a fascinating creature you might think an extraterrestrial.*

*As you slowly zoom in on it, the thing seems to grow continuously.*

*And all the while it remains in brilliant, supersharp focus. At 32x, it looks really frightening, with its two, four - no, six eyes!*

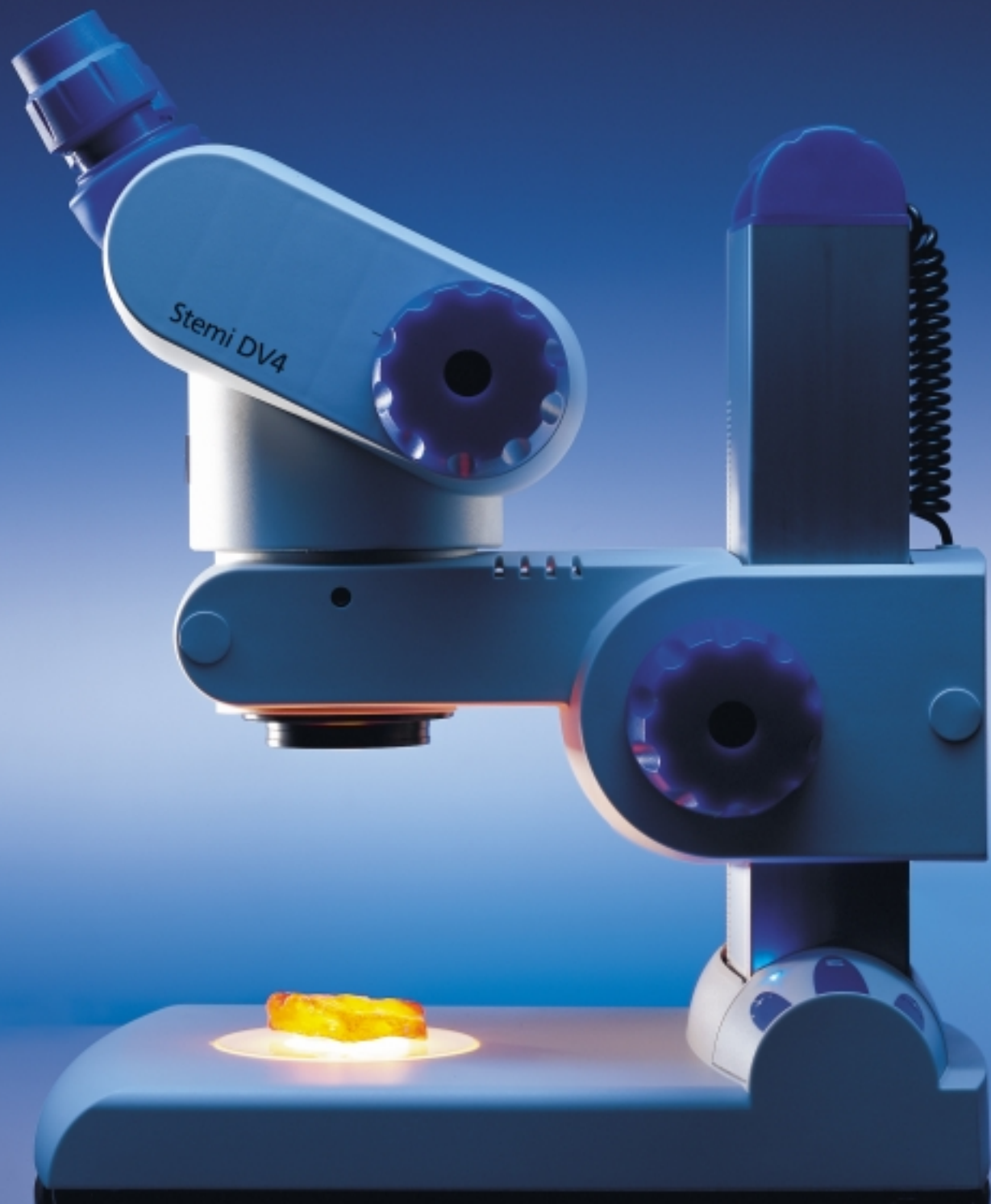
*Certainly that's why this little predator is not easily outwitted.*



*The viewing tube of the stereomicroscope can be adapted to your individual eye distance (1). To compensate for eyesight defects, rotate the respective eyepiece (2).*

	Magnification	Object field dia. (mm)
<b>Stemi DR 1040</b>	10.0x/40.0x	20.0/5.0
<b>Stemi DR 1663</b>	16.0x/63.0x	12.5/3.2
<b>Stemi DV4</b>	8.0x...32.0x	25.0...6.3

*In addition to the Stemi DV4 with its zoom system, Carl Zeiss also offers the Stemi DR 1040 and Stemi DR 1663 stereomicroscopes with two fixed, switchable magnifications each.*





# Professional Illumination For Maximum Information.

The variety of specimens you can observe through a stereomicroscope is almost inexhaustible, and so is the diversity of their shapes, properties, compositions and structures.

To make a specimen yield as much information as possible, you need to illuminate it, or - as microscopists say - contrast it in the most suitable way.

The simplest method, which is standard for any stereomicroscope, is epi-illumination, also known as reflected light. A built-in halogen lamp illuminates the specimen obliquely from above, much the same as the sun illuminates the earth.

This is usually sufficient for opaque specimens, such as insects, or pieces of rock or wood.

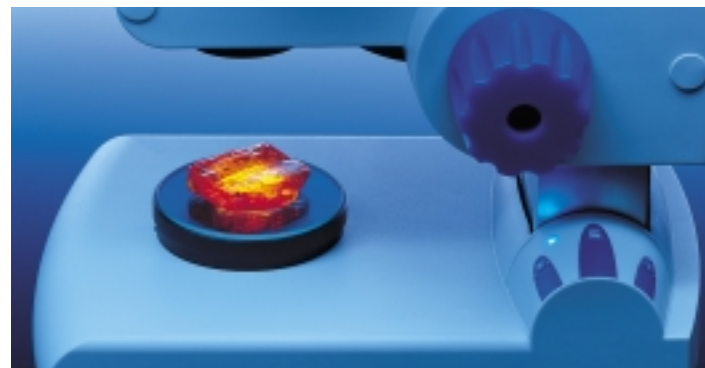
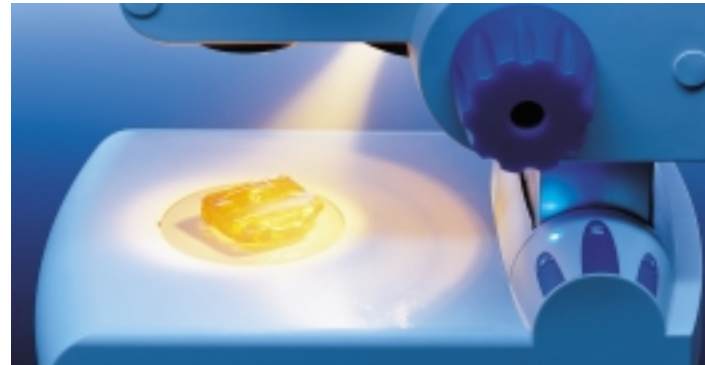
Transparent specimens such as a water flea, or the wing of a dragonfly, have to be transilluminated, similar to a slide in a projector, to make them reveal their features.

For best results, the equipment should allow the user to freely mix illumination methods.

This is precisely what the modern light control system of the Stemi DV4 provides.

At the touch of a button, you can optimally adapt the illumination to the specimen or the detail of interest. Nothing could be easier.

*Quick, push-button easy  
selection of illuminating methods.*

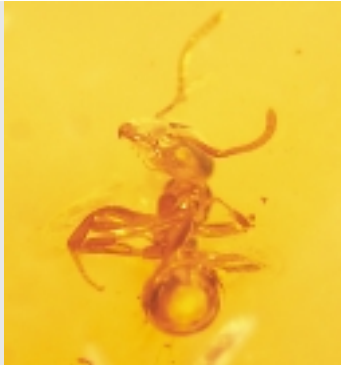




*An ant enclosed by amber impressively demonstrates the advantages of this innovative light control system.*

Reflected light

*Standard on a stereomicroscope for observing opaque specimens*



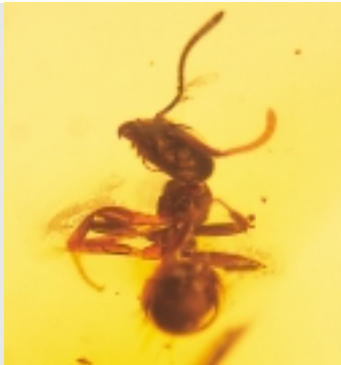
*Ant and amber are brightened up equally.*



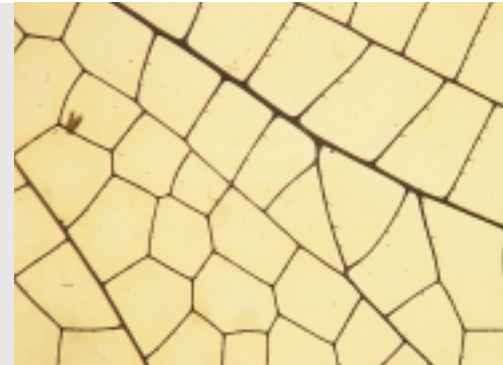
*Movement of a watch*

Transmitted light

*Standard, too, on the Stemi DV4. Important for viewing transparent objects, or contours..*



*The ant now appears as a silhouette against a bright background.*



*Wing of a dragonfly*

Mixed light

*Standard as well now. Professional illumination (contrasting) means that light can be mixed for efficient adaptation to the specimen.*



*In a transmitted-light darkfield (with accessory), the ant displays its colors. Minute hairs and finest structures are resolved. Adding some reflected light emphasizes the ant's body surface*

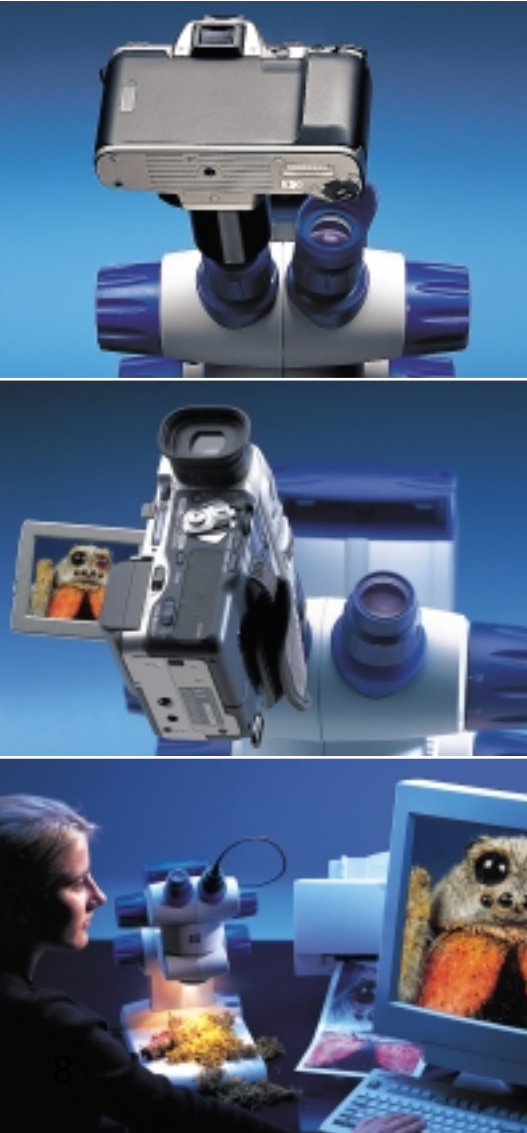
*Goatsbeard  
(Tragopogon pratensis)*





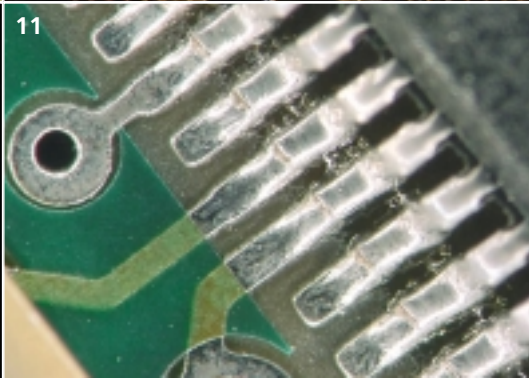
# Collecting Trophies.

*Turn exciting encounters  
into admired pictures ...  
... with the SLR camera  
... with the digital video camera  
... with your PC*



Natural specimens are unique, but seldom durable. Therefore, the Stemi DV4 Stereomicroscope offers several accessories for image documentation. Zeiss supplies a number of eyepiece adapters for fitting a tried-and-approved 35mm SLR or a modern digital camera, so that you can shoot quality micrographs of your trophies quickly and easily. Not only can your discoveries be turned into pictures, but these can also be archived and even processed by your computer.

- 1 *The fascination of quartz crystals.*
- 2 *Pond snails are common almost everywhere; their gelatinous spawn can even be found on aquarium panes.*
- 3 *Differently dyed fibers of a textile fabric.*
- 4 *These miniature, but functional scissors were carved from red gold and embedded into a poppy seed.*
- 5 *Aphids - there are more than 3000 species of them - infest ornamental and cultivated plants around the world.*
- 6 *Ticks are increasingly feared as carrier hosts of bacteria that cause borreliosis and meningitis. Ticks are bloodsuckers, which puncture the human skin with their mouthparts. But this takes them quite some time, so that it is no problem during the first few hours to remove a tick from the skin. To make sure that you removed all of it, check up with the stereomicroscope.*
- 7 *Exotic rose chafers are striking by the metallic gleam of their green exoskeleton and their fan-shaped antennae. These help the beetle to quickly find the nearest blossom or mate.*
- 8 *Dragonflies have large compound eyes constantly on the lookout for possible dangers.*
- 9 *A burdock burr has little hooks that cling to people or animals contacting them. This is how the plant spreads its seed.*
- 10 *The spreading devices of grass seeds are even more impressive. A feather grass seed uses a torsion mechanism to dig itself into the soil.*
- 11 *This printed circuit board distinctly shows unwanted residues of flux between the contacts.*
- 12 *Copied from nature: The familiar Velcro fastener was modeled on the hooking mechanism of birds' feathers.*







*There are lots of things to discover in the water and on the beach.*

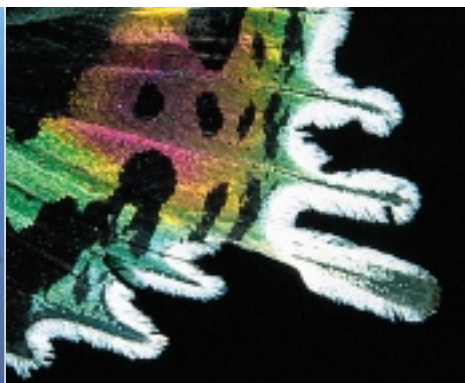
## Adventure Holidays.

On vacation, especially in a foreign country or environment, the hunt for specimens is even more exciting, with all the new and strange objects you can discover. Take your Stemi DV4 Stereomicroscope along, and your vacations will never be boring! Not even when it's raining.

Whether you explore a sandy beach, a lake or brook, a cliff or a slope of rock debris, your microscopical safari will always be a worthwhile adventure. Bringing your microscope is no problem at all. It takes little space and is robust enough to survive many adventure trips.

*It's no problem to carry your microscope. For added safety, there is a sturdy, elegant carrying case.*

*The wing tip of one of the most splendid butterflies - *Chrysidia madagascariensis*, named after the island it inhabits. As in almost all butterflies, the display of colors is caused by light refraction in the fine scales covering the wings like tiny roofing tiles. The scales are, in fact, merely a waste product of metabolism, produced when the pupa turns into the butterfly!*











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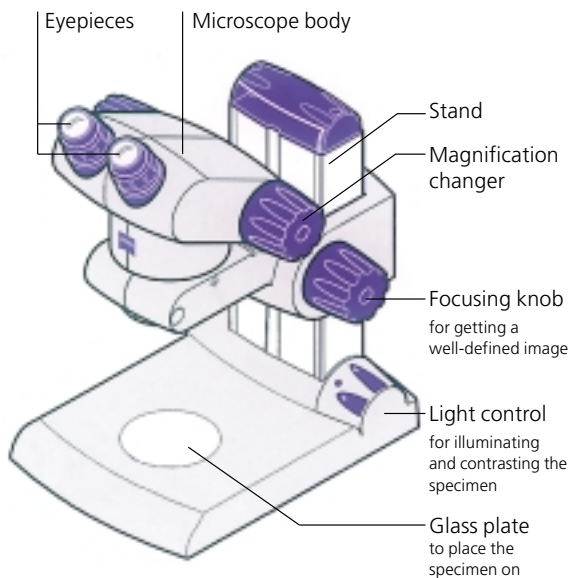
**[www.zeiss.de/micro](http://www.zeiss.de/micro)**

Design and specifications are subject to change in the interest of technical development

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Printed on environment-friendly paper,  
bleached without the use of chlorine.

# No Need To Be Afraid Of Technology.



## And this is how you set your microscope:

- 1.** Place the specimen on the glass plate, center it, and switch on the light.
- 2.** Set the eyepieces to your eye distance.
- 3.** Set the zooming knob to the highest magnification.
- 4.** Turn the focusing knob to find the best image definition.
- 5.** Set the zooming knob to the lowest magnification.
- 6.** Turn the focusing eyepieces to compensate any eyesight defects separately for either eye.

Finished!