

Teaching Microscopy Nowadays Is a Real Challenge

A New Type of Student Microscope

The era when students became excited only by using an old, mostly unsightly microscope to observe faintly illuminated and more or less standard slides have passed by a long time ago. It needs much more to get and keep the attention of students in the field of microscopy. Today educators and students expect carefully manufactured, well-designed and ergonomic products. The lessons of basic microscopy not only have to include all basic contrast methods like bright field, phase contrast and dark field. They also have to be applied to selected and spectacular samples. The learning experience has to be a real firework of visual sensation. Students will not be interested in anything less than that.



Carl Zeiss knows about this pressure every teacher of microscopy faces. Therefore Carl Zeiss designed a completely new type of student microscope: Primo Star. It is the first student microscope that really takes into account the needs of the mostly young students of microscopy at universities and the many different kind of schools. Primo Star's industrial design shows bright and clear colours, the stand body is shaped a dynamic arc like in the classical 1920s combined with the pyramid design element from Carl Zeiss of the 1980s and 1990s provides a rock-stable position on every table. We think this combination of openness, dynamics and stability produces in-

spiration and excitement that is needed to promote the teaching of microscopy and the science of microscopy itself.

Besides an appealing design the user of a student microscope expects an ergonomic viewing angle of 30° and an adjustable viewing height to his or her own needs. The Primo Star offers two distinct viewing heights provided by the Ergo-Siedentopf principle only available with Carl Zeiss microscopes. The interpupillary distance can be individually and continuously adjusted between 48mm and 75mm. Soft-touch adjustment knobs and a self-explaining handling within easy reach of all user interfaces are mandatory. Because in many cases the microscopes have to be stored into cabinets after usage a convenient grip to carry the stand like with Primo Star is highly appreciated by the student as well as by the teachers. Even more the new concept with the external power supply draws the attention of teachers. Now there will be no more missing power lines or cable spaghetti in their shelves and in their lives as teachers. Primo Star provides a strictly reliable external power supply with integrated power plug and a low voltage cable that can be stored in a space provided just behind an integrated parking position for this power supply in

the back side of the stand. And in case that the power supply should fail after many, many years it can be replaced easily without missing the stand for a single day.

Also the change of a halogen bulb is easily done. The user only has to unlock the illumination drawer, take it out and replace the bulb by a spare bulb that is already present inside the drawer for a high convenience. For economical minded teachers the LED illumination drawer is really the right choice. It has a regular lifetime as long as the lifetime of a typical student microscope itself, between 10 to 15 years. The money and time to change the halogen bulb during many years of usage is just saved. A wonderful thing! But even more: The light of the LED illumination has a higher colour temperature closer to that one of the sun at daylight. That means it is much more convenient and can be used without any blue contrast filter. And last but not least the power consumption is only about one tenth of that of the 30W halogen illumination. For usage in the field and in rural areas an attachable mirror is available to use the reflected light of the sky to illuminate the specimen. For this kind of usage the optional carrying box should be helpful, too. This modular illumination con-

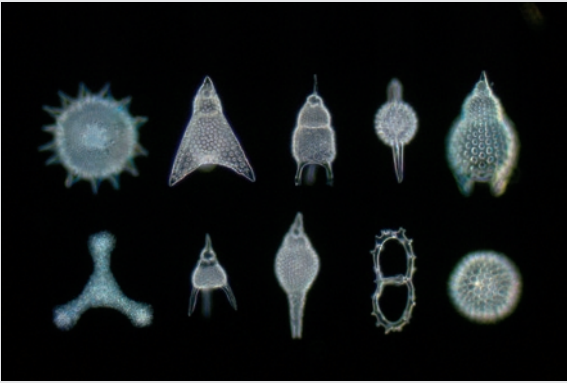


Fig.1: Fossil foraminifera, annular-diaphragm darkfield; Objective: Plan-Achromat 40x

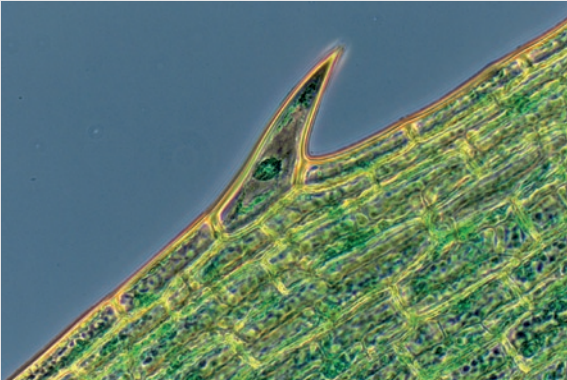


Fig. 2: Waterweed (*Elodea*), phase contrast; Objective: Plan-Achromat 40x

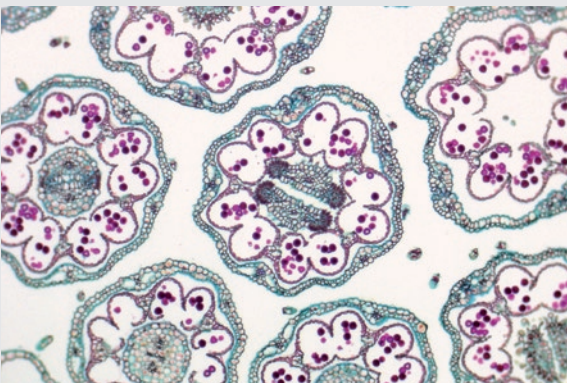


Fig. 3: Flower umbel of the daisy (*Bellis perennis*); Brightfield view; Objective: Plan-Achromat 10x

cept of Primo Star with halogen 30W, LED and mirror is unique in this class.

Additionally the blue light intensity displays on both sides of the stand are only available with Primo Star of Carl Zeiss. By this means, the teacher has a clear understanding of the usage situation of each single stand in his microscopy room only when checking how many LEDs are lit at each stands. These indicators are legible even from distances up to 10m and more without a problem. This helps the teacher to find out quickly about students working not in line with others for various reasons. As designers say "Form follows function". Therefore the design of these indicator LEDs is fully integrated into the form of the stand.

Finally modern documentation with digital cameras is a must. This documen-

tation is either done by the students or by the teacher to demonstrate certain details on a screen. Here Primo Star offers various adapters and a new software, especially designed to be used with Canon consumer digital cameras.

To be a good teacher of microscopy many things are needed. But Carl Zeiss can help a little to generate real excitement and real value for your class room: Primo Star, the best choice for student microscopes today.

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