

Two DVDs on "The Beauty of Mitosis"

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University Version: <https://www.createspace.com/292574>

School Version: <https://www.createspace.com/292575>

Both Versions: <https://www.createspace.com/292809>

Cytologists who have seen the films on mitosis made by Andrew Bajer and Jadwiga Molè-Bajer during the 1960th cannot forget the impression these films made by portraying the dynamics of mitosis in a captivating way. The films were received, and still are considered as among if not the best educative films on mitosis. The films documented nuclear division in endosperm tissues of blood lily *Haemanthus katherinae* (now named *Scadoxus multiflorus* ssp. *katherinae*). The Bajers developed the technique of maintaining the endosperm tissues alive during phase contrast microscopy and time-lapse cinematography of the mitotic process, using an assembled movie camera. They also visualized mitosis in *Scadoxus* using other microscopic approaches such as bright field and differential interference contrast microscopy as well as transmission electron microscopy.

Recently, the Bajers selected some of their time-lapse films and converted them to a digital form. The digital film sequences, schematic drawings of the mitotic stages and still pictures using bright field and differential interference contrast microscopy, supplied by the Bajers, together with some of my scanning electron pictures, all on *Scadoxus*, constituted the pictorial material for the edition of a DVD on mitosis.

Two DVD versions were made titled "The Beauty of Mitosis: University Version" and "The Beauty of Mitosis: School Version", 25 min and 12 min long, respectively, by Andrew S. Bajer,

Jadwiga A. Molè-Bajer and Waheeb K. Heneen.

In *The Beauty of Mitosis: University Version*, various aspects of normal mitosis, spontaneous aberrations and effects of chemicals, UV-irradiation and X-rays are exemplified. Features such as duration of mitosis, behaviour of ring chromosomes, colchicine effects, multipolar division as well as chromosome nondisjunction and breakage are elucidated. Phase contrast cinematography is complemented with schematic drawings and photographs of the different stages of mitosis as seen after bright field, differential interference contrast and scanning electron microscopy. The detailed *University Version* is an educational film meant for university students and researchers, as a complement to genetic and cytology courses in life sciences and medicine.

In *The Beauty of Mitosis: School Version*, phase contrast cinematography of normal mitosis, chromatin condensation and the duration of mitotic stages are complemented with schematic drawings and bright field photographs of the mitotic stages. Features of aberrant mitosis are exemplified by chromosome nondisjunction and fragmentation induced by exposure to UV-irradiation and X-rays. The short *School Version* is an educational film meant for school students, as a complement to the lectures of biology teachers.

In both versions, necessary explanatory text is added. Fitting well as background music is Chopin's piano concerto no.1. The prime goal of making these DVDs is to have the Bajers "unique" films accessible for cytology scholars and biology students. The DVDs have been released through CreateSpace.com in October 2010. My contribution is just the edition work of the two versions and contribution with scanning electron microscope pictures in the *University Version*.

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