CLAIMS:

1. An assembly for use in a microscope having an objective assembly including an aperture, the assembly comprising a lens and a beamsplitter;

wherein the lens and the beamsplitter are configured to form a respective aperture image on each of two optical paths;

the assembly further comprising, on each optical path, a stop structure;

wherein, when the assembly is positioned relative to the aperture such that each aperture image is located in the plane of the respective stop structure, each stop structure blocks a portion of the respective aperture image in order to provide an exit pupil, such that a stereoscopic image of an object viewed through the microscope is produced by the combination of the images of the object visible through each exit pupil;

the assembly further comprising:

two image sensors, each image sensor being configured to capture an image visible through the respective exit pupil and to output a digital image;

a digital image processor configured to apply a correction to the respective digital image output by each image sensor in order to compensate for a distortion related to the position of the stop structure, the correction being based on the position of the respective stop structure;

wherein the correction comprises performing a spatial transformation of the respective digital image to correct for distortions introduced by optics structures of the microscope and/or assembly, the spatial transformation having at least one parameter dependent on the position of the respective stop structure.

2. The assembly according to claim 1, wherein the correction comprises adjusting brightness of the respective digital image by a proportion based on the position of the respective stop structure.

3. The assembly according to claim 1, wherein:

the stop structures are one set of a plurality of sets of stop structures, wherein the sets of stop structures are swapped into the assembly; and

the digital image processor is configured to apply the correction based on the position of the respective stop structure and on which set of stop structures is present.

4. The assembly according to claim 1, wherein each stop structure comprises a circular aperture.

5. The assembly according to claim 1, wherein each stop structure comprises a curtain configured to block one side of the respective aperture image.

6. The assembly according to claim 5, wherein each curtain has a straight edge where it blocks the aperture.

7. The assembly according to claim 1, wherein each stop structure is moveable from a position in which the aperture image is not blocked to a position in which the exit pupils are non-overlapping portions of the aperture image.

8. The assembly according to claim 7, wherein each stop structure is continuously moveable.

9. The assembly according to claim 7, wherein each stop structure is moveable so as to provide a transition between a mono and stereo image captured by the image sensors without interruption of the image.

10. The assembly according to claim 1, wherein each image sensor is a CCD.

11. The assembly according to claim 1, and further comprising a stereoscopic display configured to present the corrected digital images to the user as a stereoscopic image.

12. The assembly according to claim 11, wherein the stereoscopic display comprises two projectors, and a mirror, each projector being configured to provide a focused image of the corrected digital image captured by the respective image sensor on the mirror, and the mirror being configured to relay exit pupils of the projectors to a viewing plane for viewing by an observer.

13. A stereo microscope comprising:

an objective assembly having an aperture; and

an assembly according to claim 1.

14. A method of retrofitting a microscope, having an objective assembly including an aperture, with an assembly including a lens and a beamsplitter, the method comprising:

removing an eyepiece of the microscope; and

placing the assembly relative to the aperture such that the lens is placed in the light path of the microscope and the lens and the beamsplitter form a respective aperture image on each of two optical paths, wherein: the assembly further includes, on each optical path, a stop structure; and each of the aperture images is located in the plane of the respective stop structure;

blocking a portion of the respective aperture image with each stop structure in order to provide an exit pupil;

producing a stereoscopic image of an object viewed through the microscope by combining the images of the object visible through each exit pupil;

capturing and outputting as a digital image with each of two image sensors an image through each of the exit pupils; and

apply with a digital image processor a correction to the respective digital image output by each image sensor in order to compensate for a distortion

related to the position of the stop structure, the correction being based on the position of the respective stop structure;

wherein the correction comprises performing a spatial transformation of the respective digital image to correct for distortions introduced by optical structures of the microscope and/or assembly, the spatial transformation having at least one parameter dependent on the position of the respective stop structure.