

Exercise: Morphological operations

Image Processing & Analysis for Life Scientist

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Morphological Operations

1. Open *Leaf (36 k)*

File → Open Samples → Leaf (36 k)

2. Convert the image to 8-bit.

3. Crop the image.

Only the leaf shall be visible afterwards.

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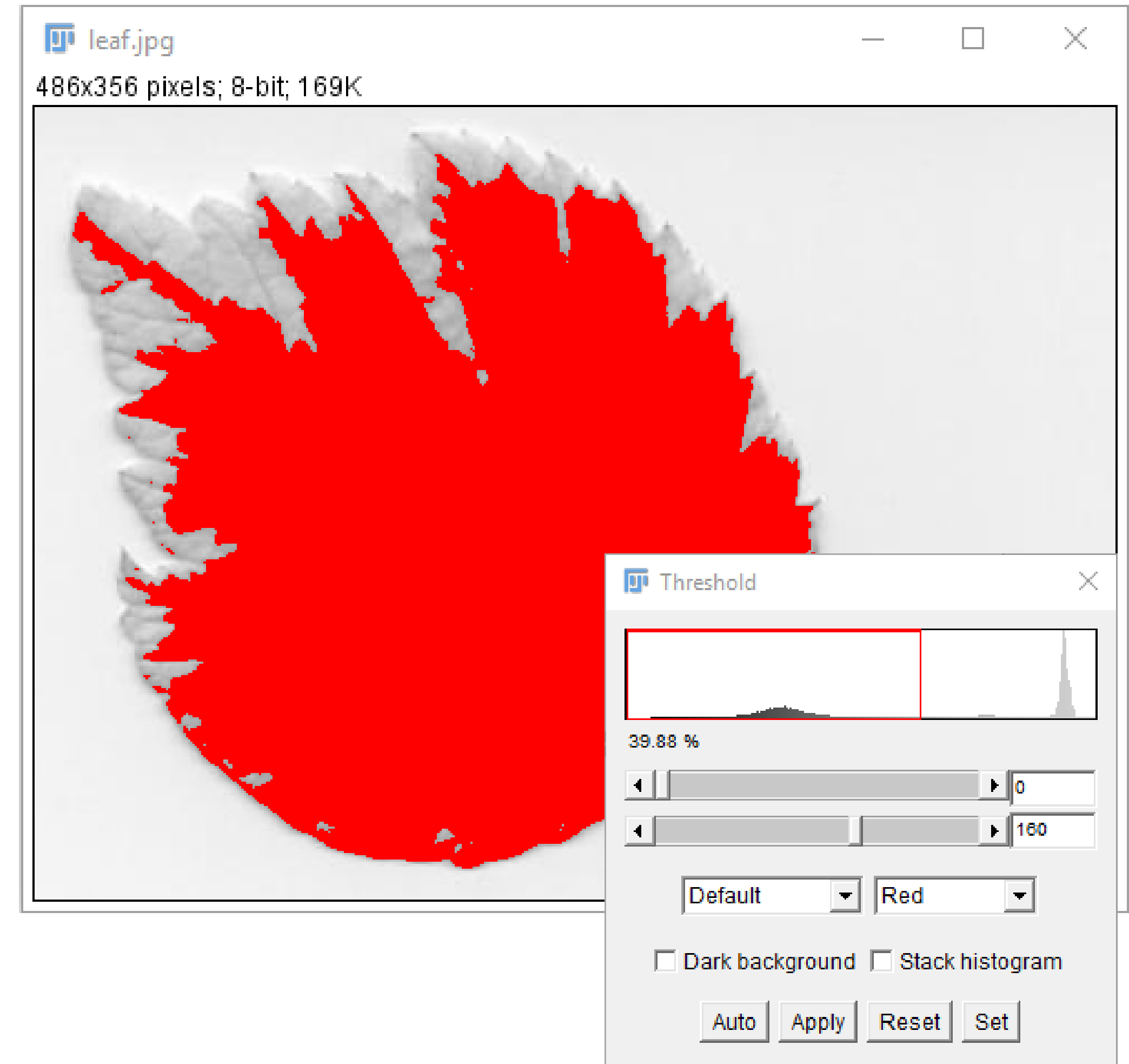
Morphological Operations

1. Open *Leaf (36 k)*
File→Open Samples→Leaf (36 k)
2. Convert the image to 8-bit.
3. Crop the image. Only the leaf shall be visible afterwards.
4. Duplicate the image twice.
5. Select one of the duplicated images.
6. Use simple thresholding in order to select the inner part of the leaf.



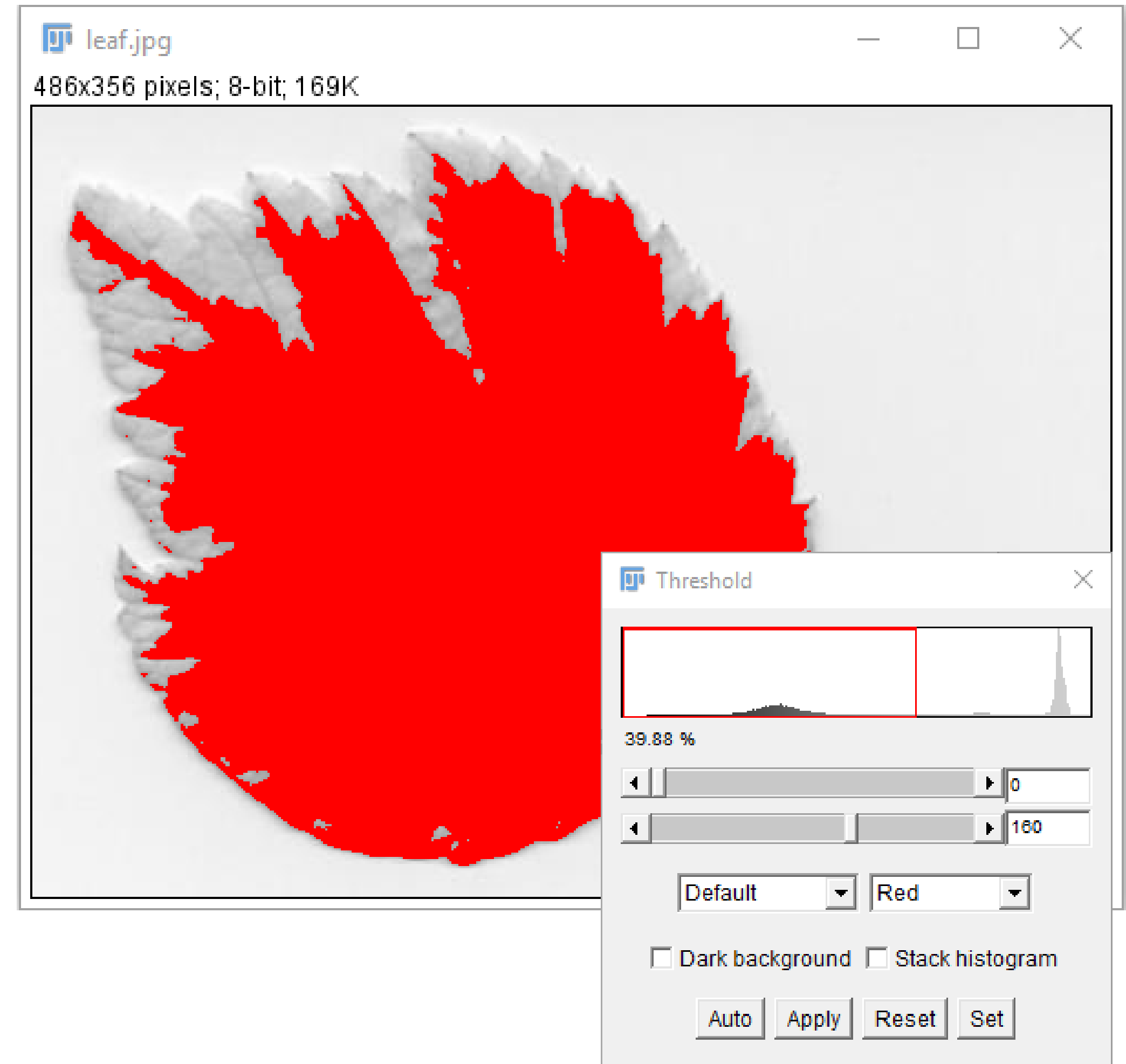
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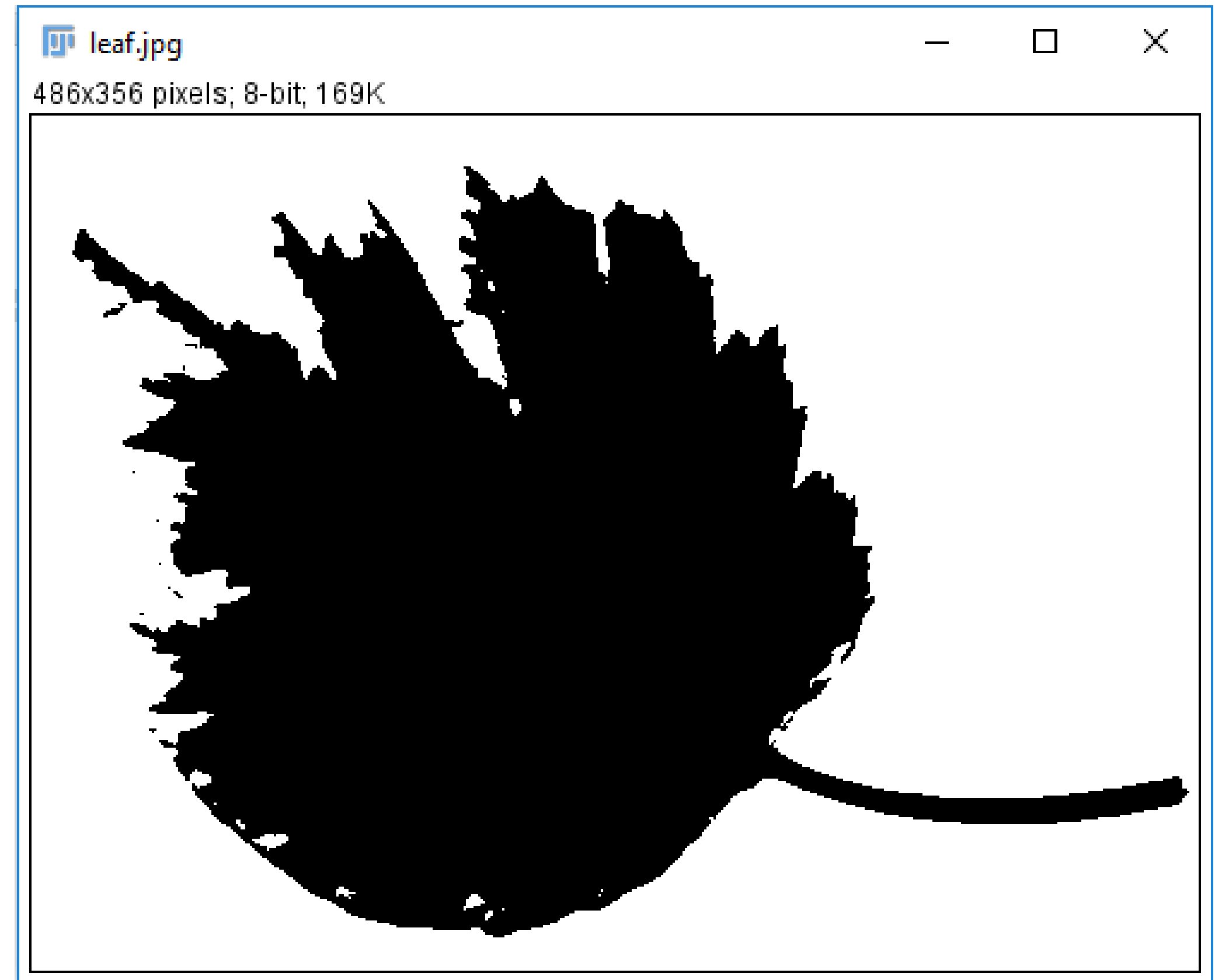
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5. Select one of the duplicated images.
6. Use simple thresholding in order to select the inner part of the leaf.
7. Convert the image to a binary image.



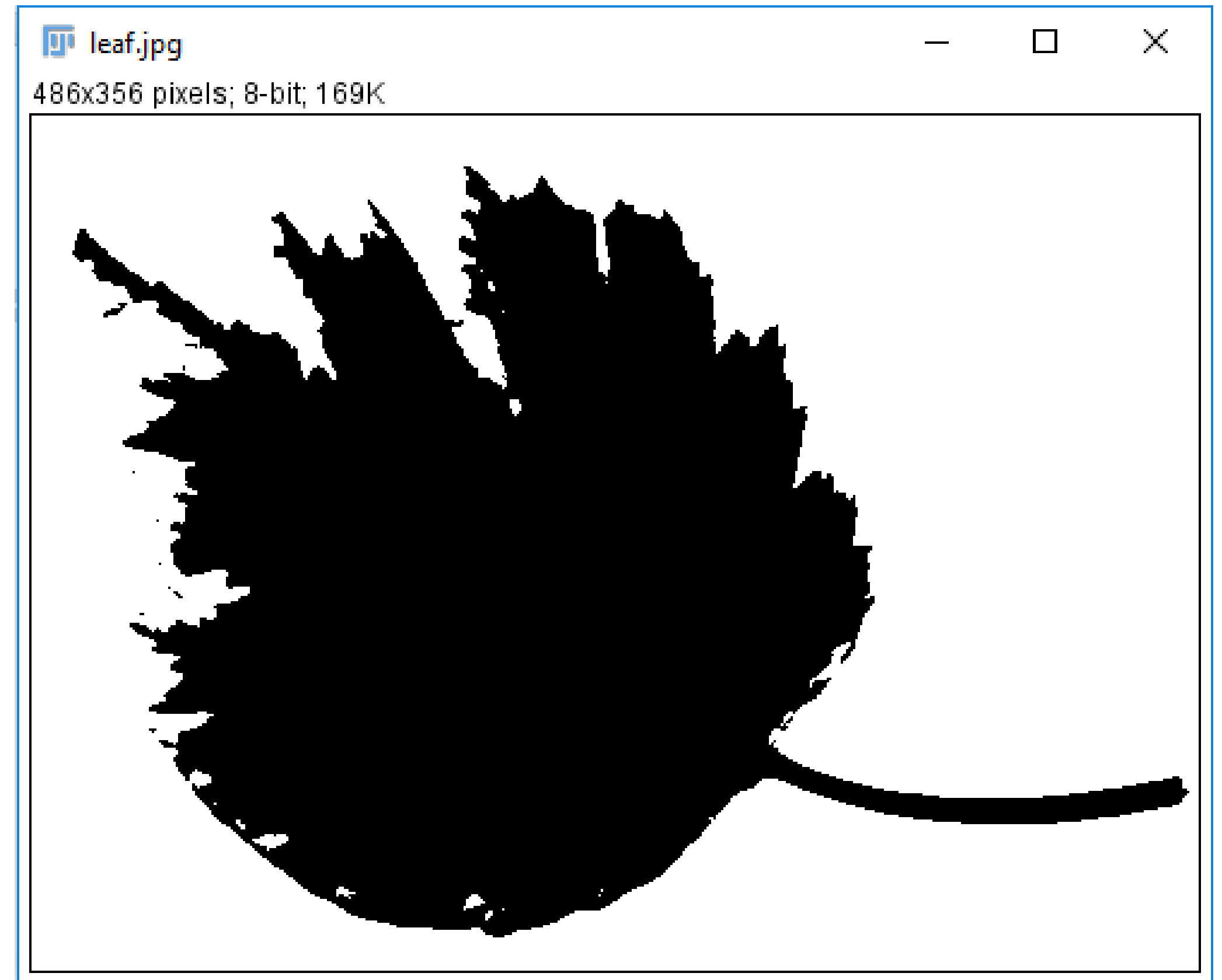
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7. Convert the image to a binary image.
Process→Binary→Make Binary



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5. Select one of the duplicated images.
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7. Convert the image to a binary image.
Process→Binary→Make Binary
8. Apply Outline and Dilate to the image
(one after the other)



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7. Convert the image to a binary image.
Process→Binary→Make Binary
8. Apply Outline and Dilate to the image
Process→Binary→Outline
Process→Binary→Dilate



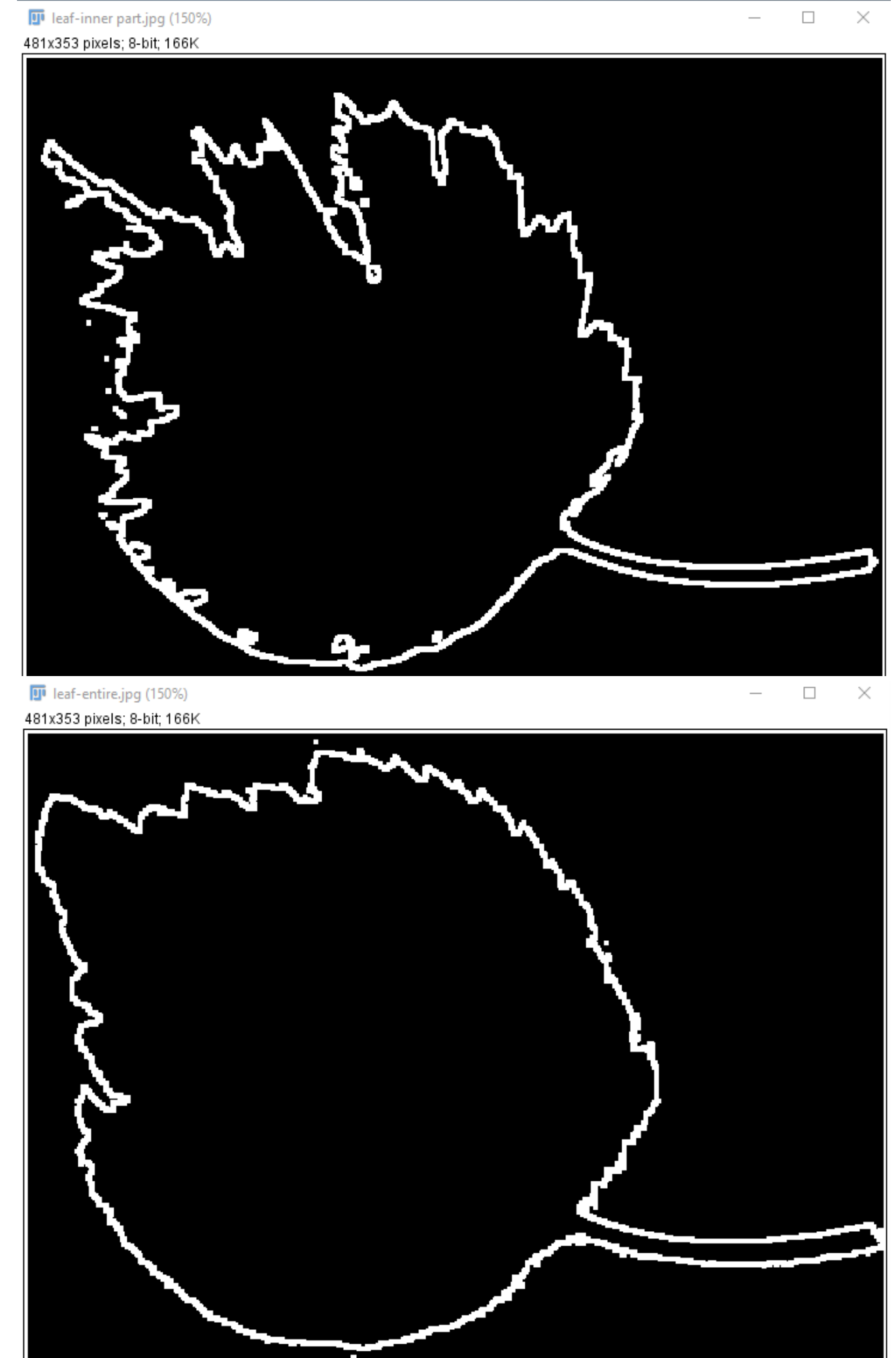
Morphological Operations

8. Apply Outline and Dilate to the image
Process → Binary → Outline
Process → Binary → Dilate
9. Rename the image.
10. Repeat 5.-10. to outline the entire leaf.



Morphological Operations

8. Apply Outline and Dilate to the image
Process → Binary → Outline
Process → Binary → Dilate
9. Rename the image.
10. Repeat 5.-10. to outline the entire leaf.
11. Invert the original image.
12. Make an overlay of the inverted original image and the created outlines.



Morphological Operations

8. Apply Outline and Dilate to the image
Process→Binary→Outline
Process→Binary→Dilate
9. Rename the image.
10. Repeat 5.-10. to outline the entire leaf.
11. Invert the original image.
12. Make an overlay of the inverted original image and the created outlines.
Image→Color→Merge Channels...

