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**Citation:** Schmitz, A., Ponitz, B., Brücker, C., Schmitz, H., Herweg, J. & Bleckmann, H. (2015). Morphological properties of the last primaries, the tail feathers, and the alulae of *Accipiter nisus*, *Columba livia*, *Falco peregrinus*, and *Falco tinnunculus*. *Journal of Morphology*, 276(1), pp. 33-46. doi: 10.1002/jmor.20317

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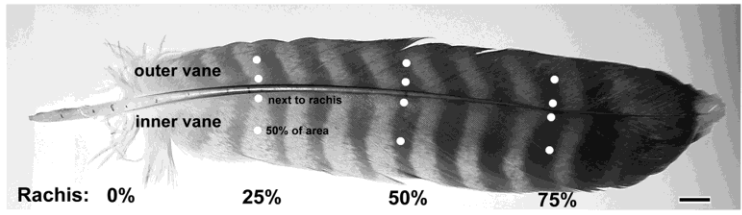
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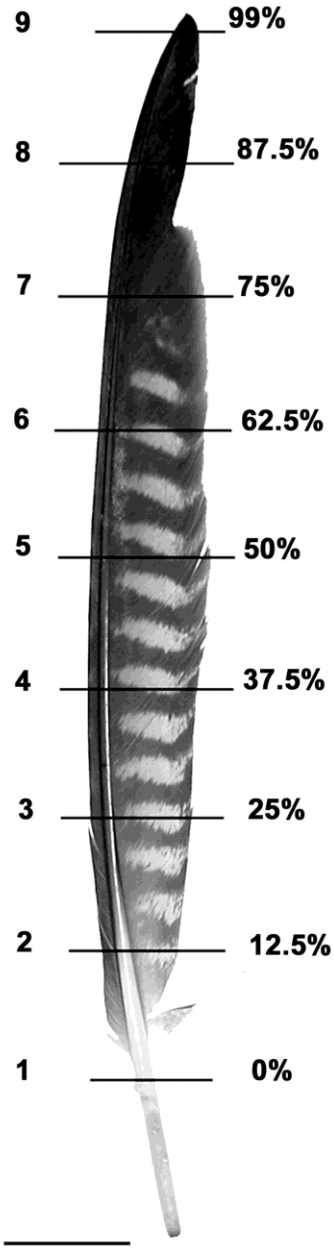
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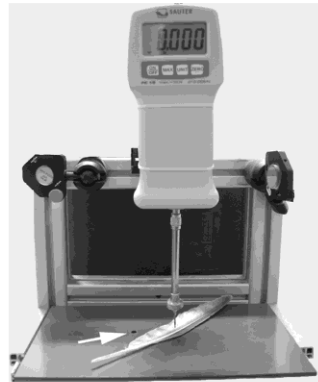
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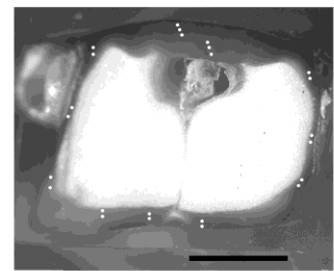
**A**



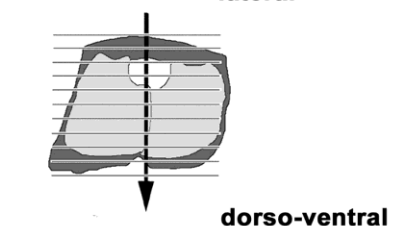
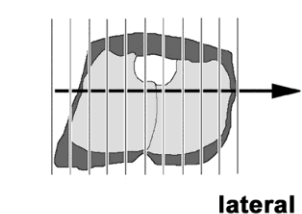
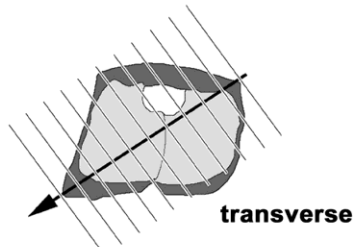
**C**



**B**



**D**



**E**

Fig.1

Fig:1

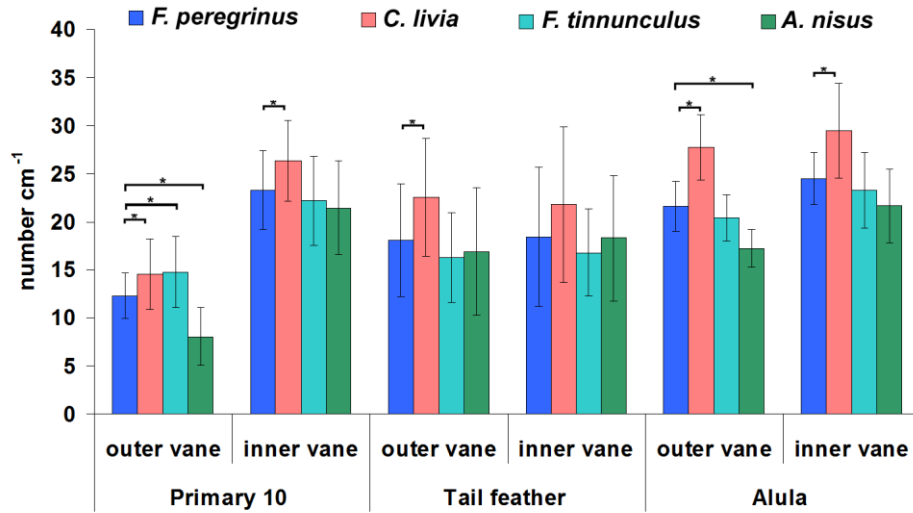


Fig.2

Fig.2

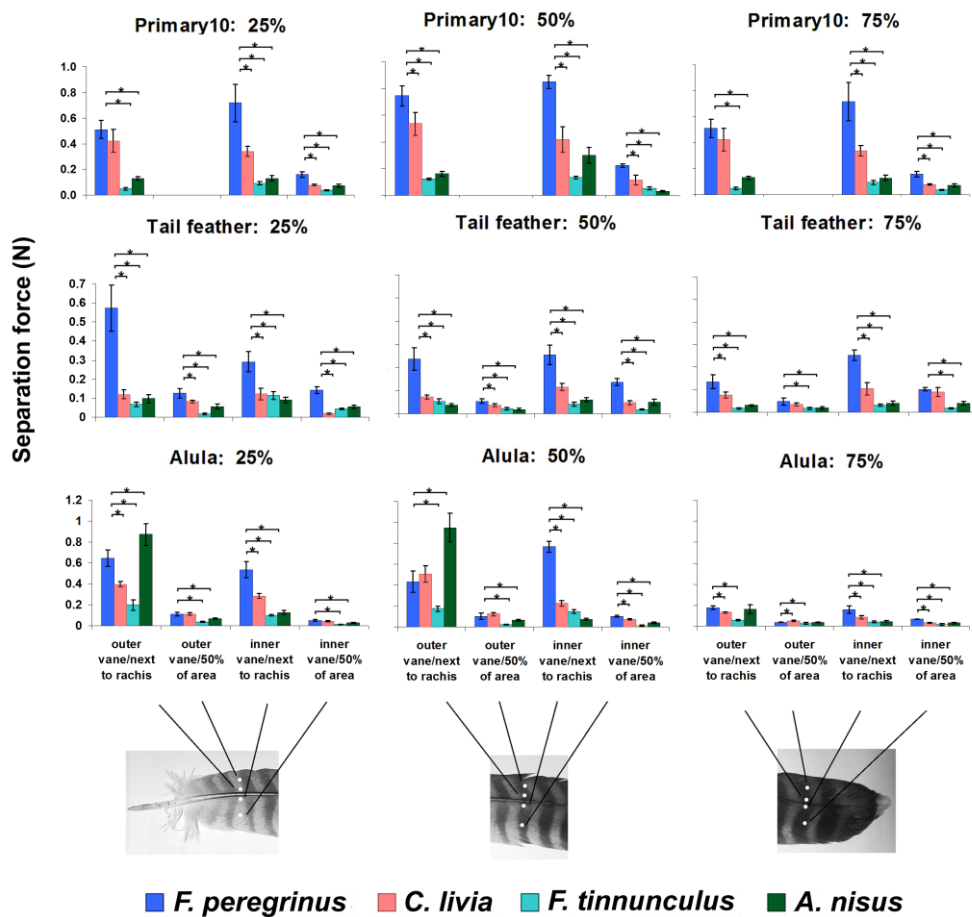


Fig.3

Fig.3

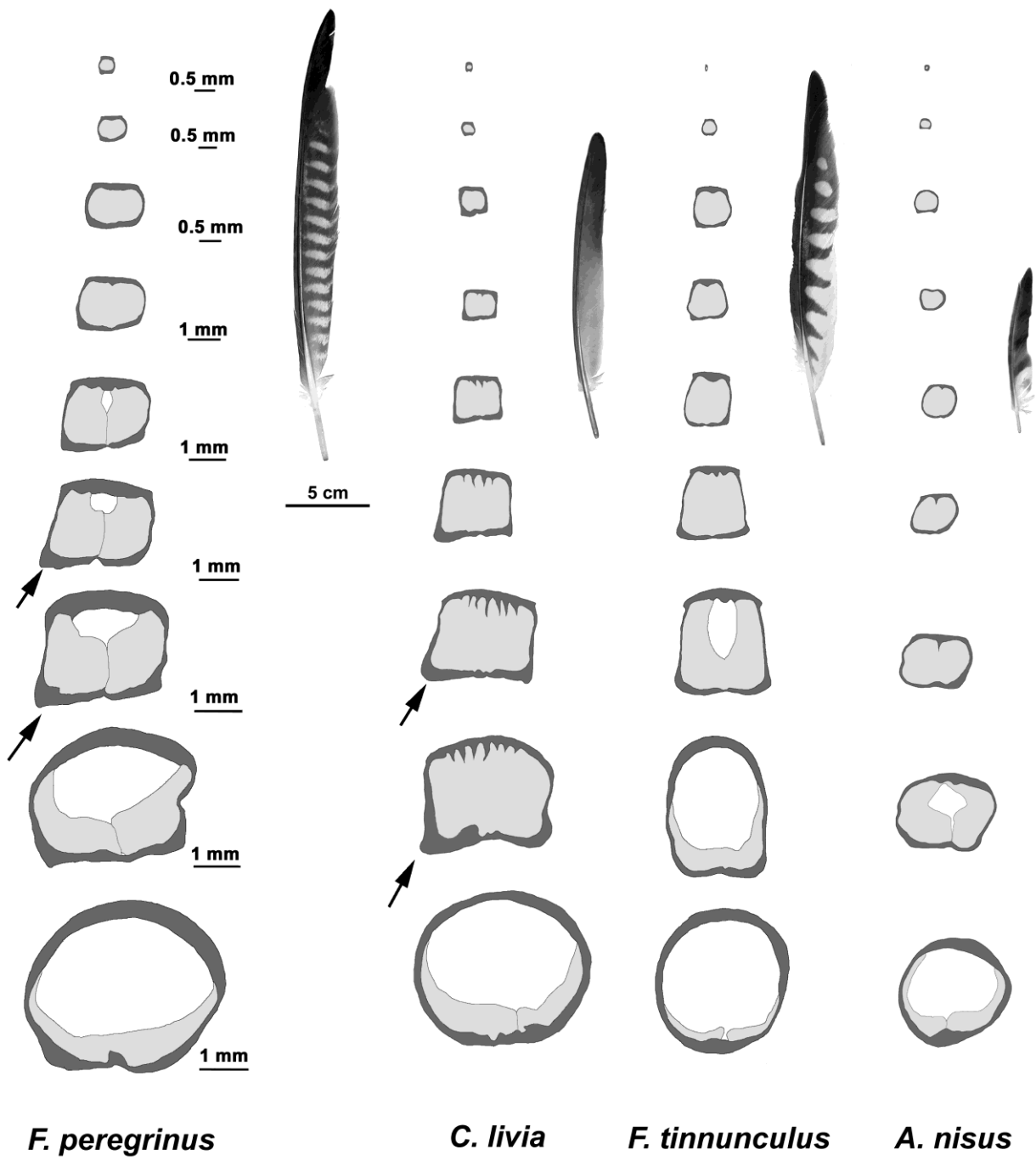


Fig.4

Fig.4

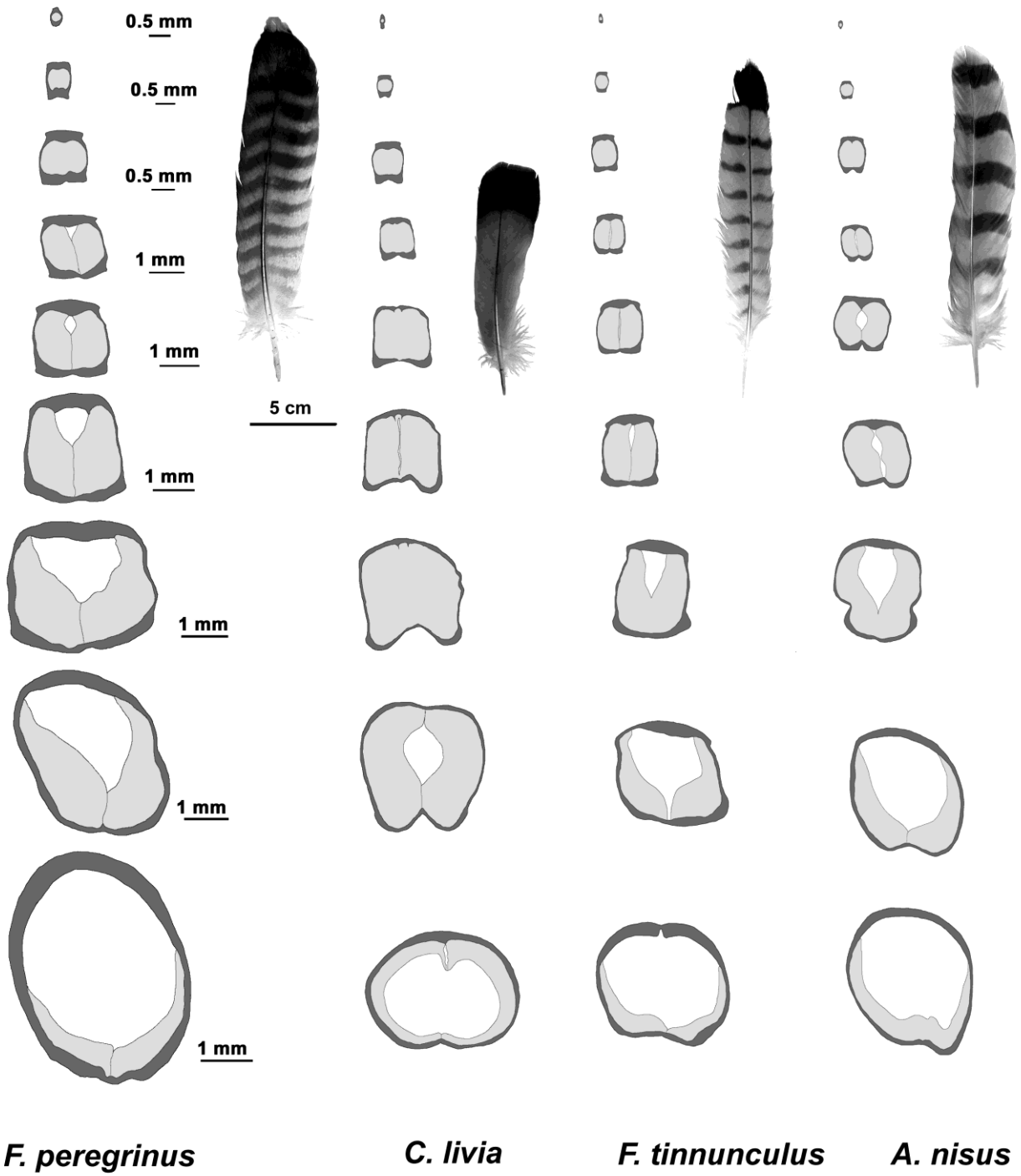


Fig.5

Fig.5

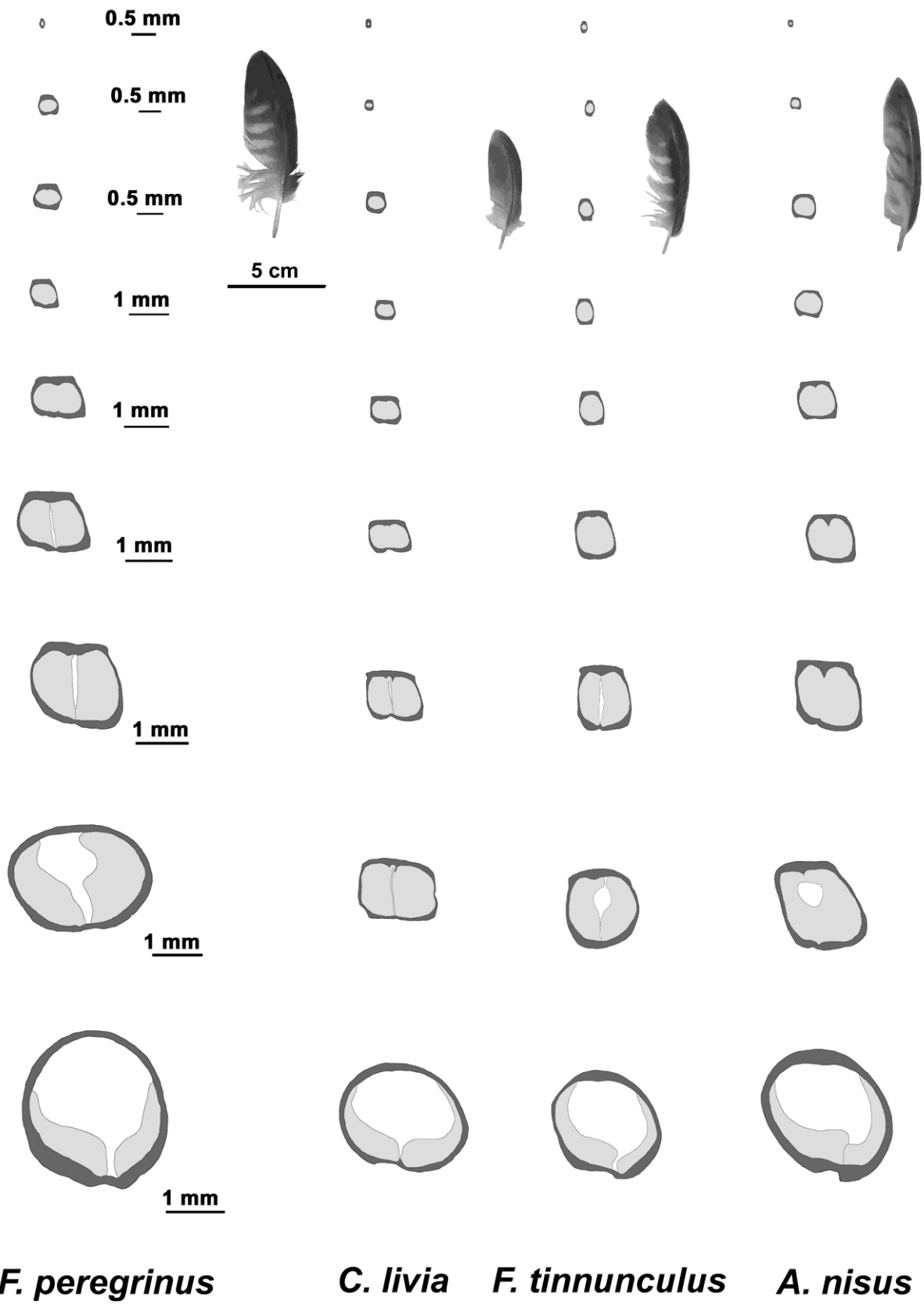
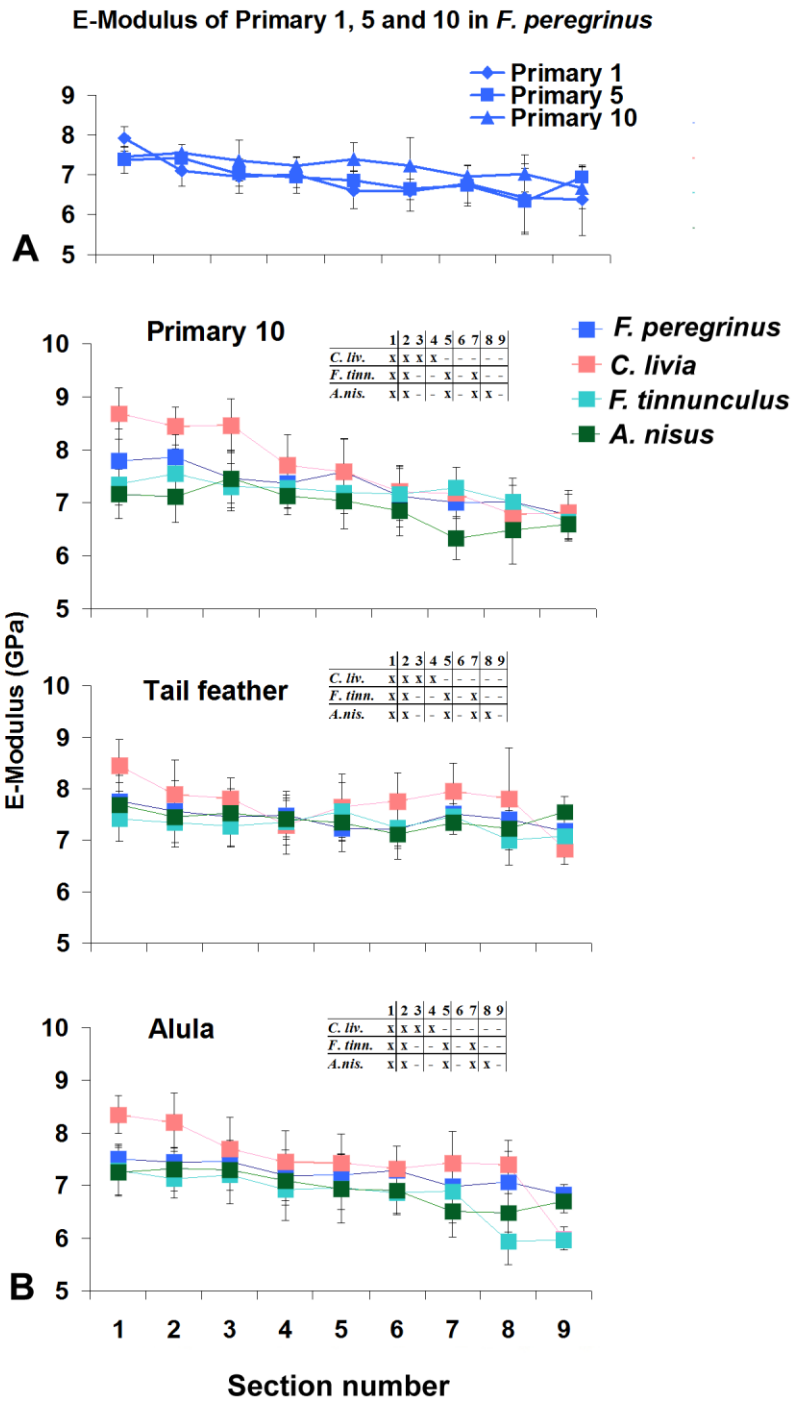


Fig.6

Fig.6



**Fig.7**

Fig.7



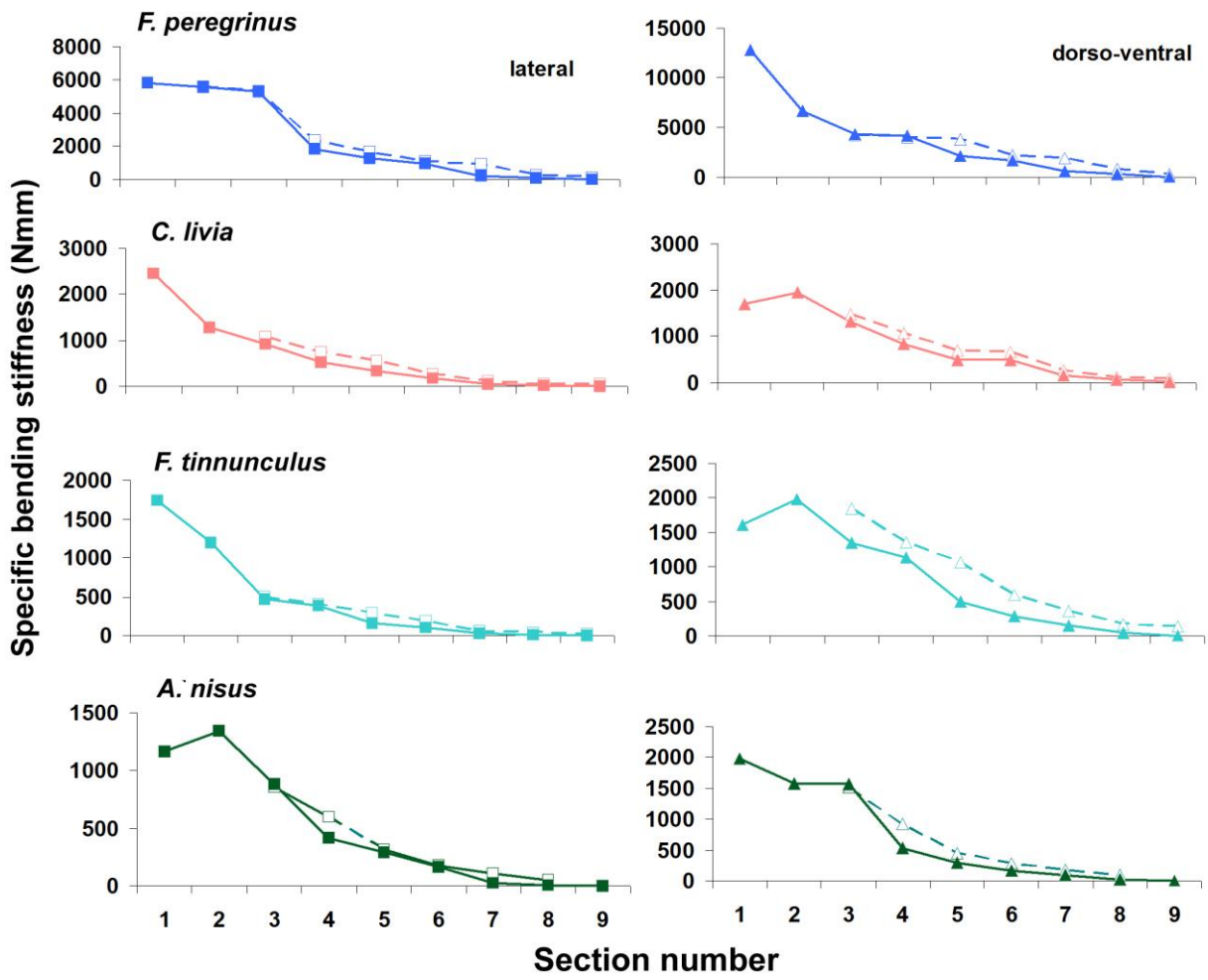


Fig.8

Fig.8

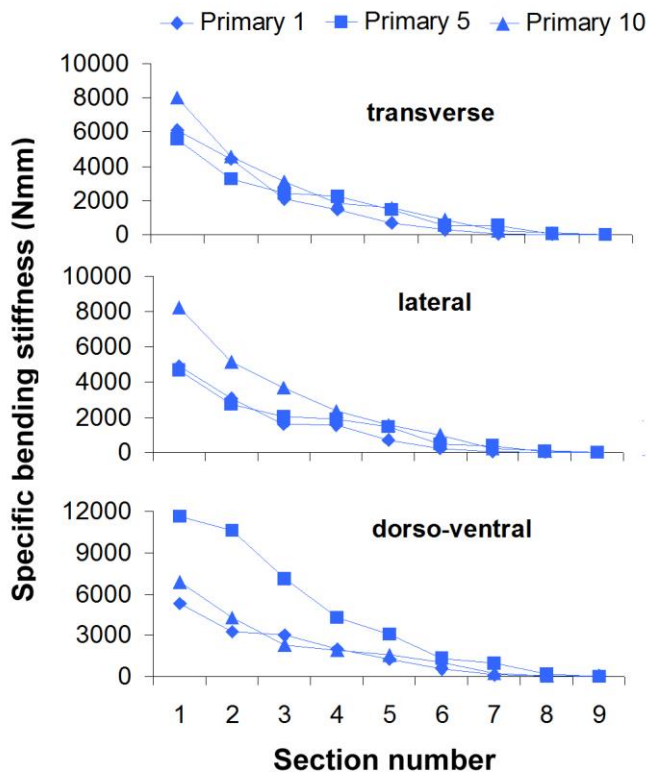


Fig.9

Fig.9

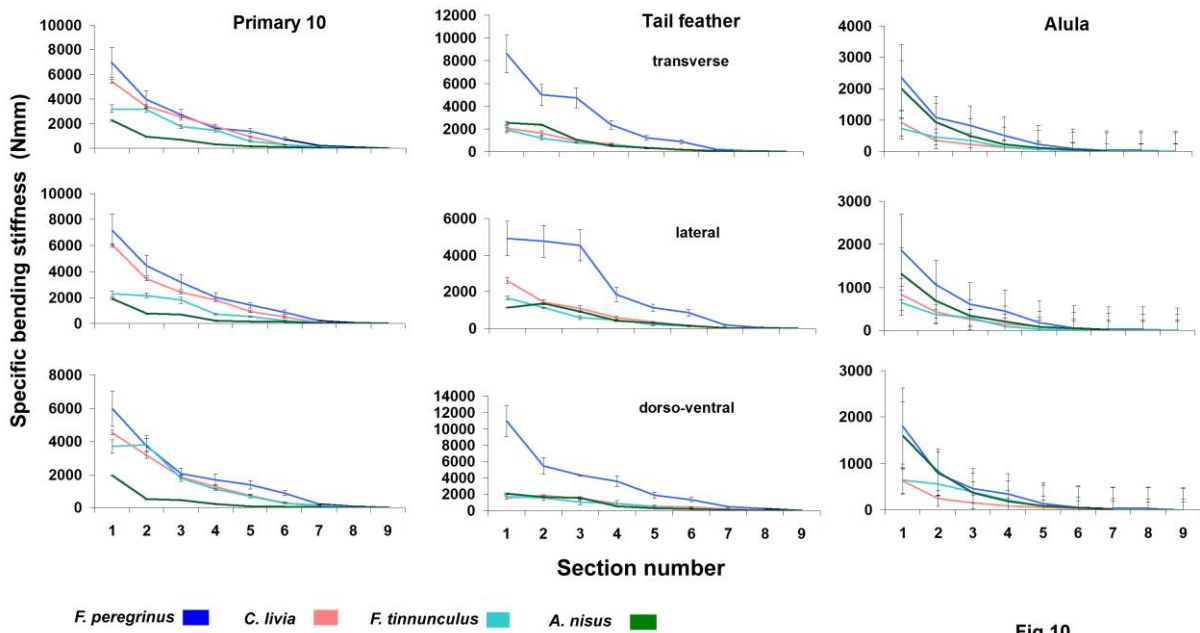


Fig.10

Fig.10

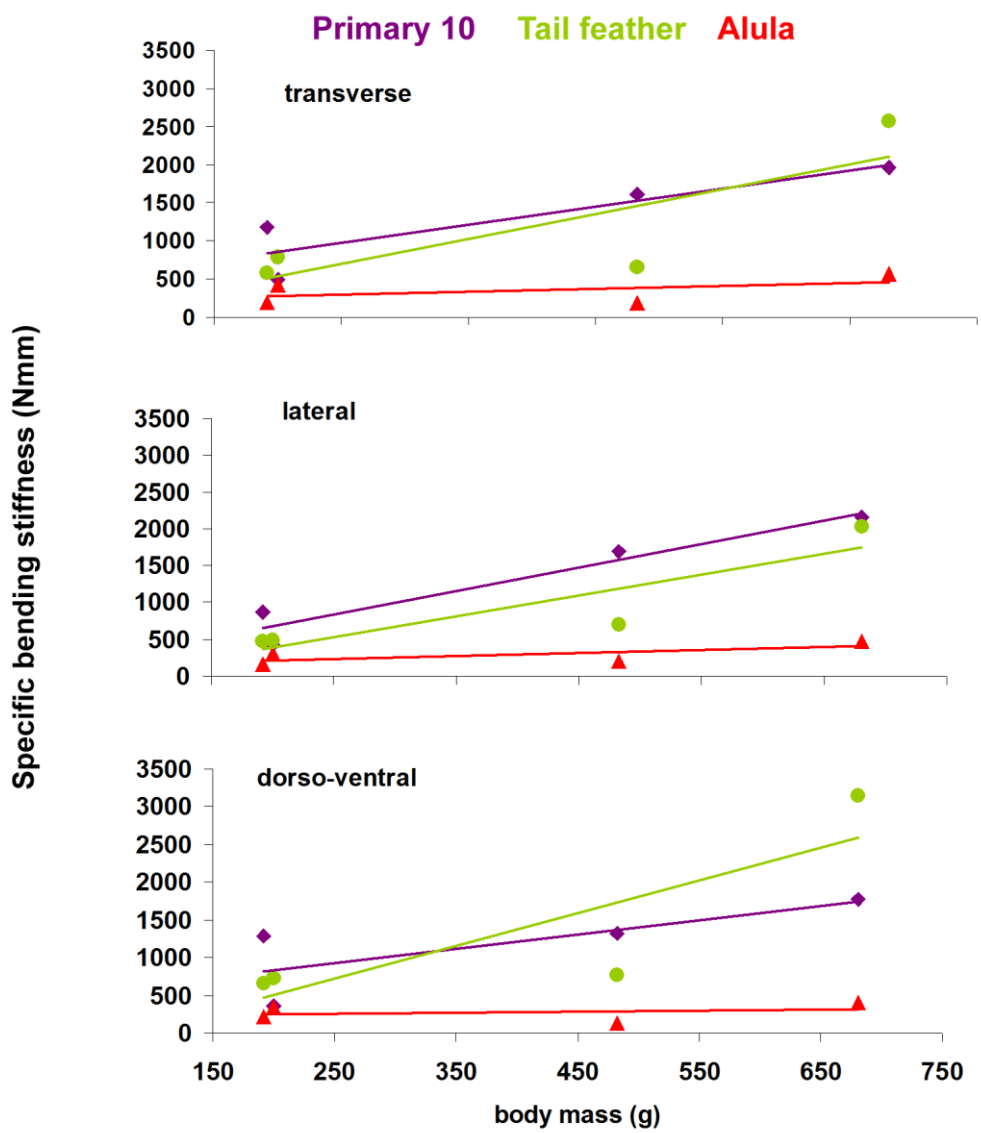


Fig. 11

Fig.11

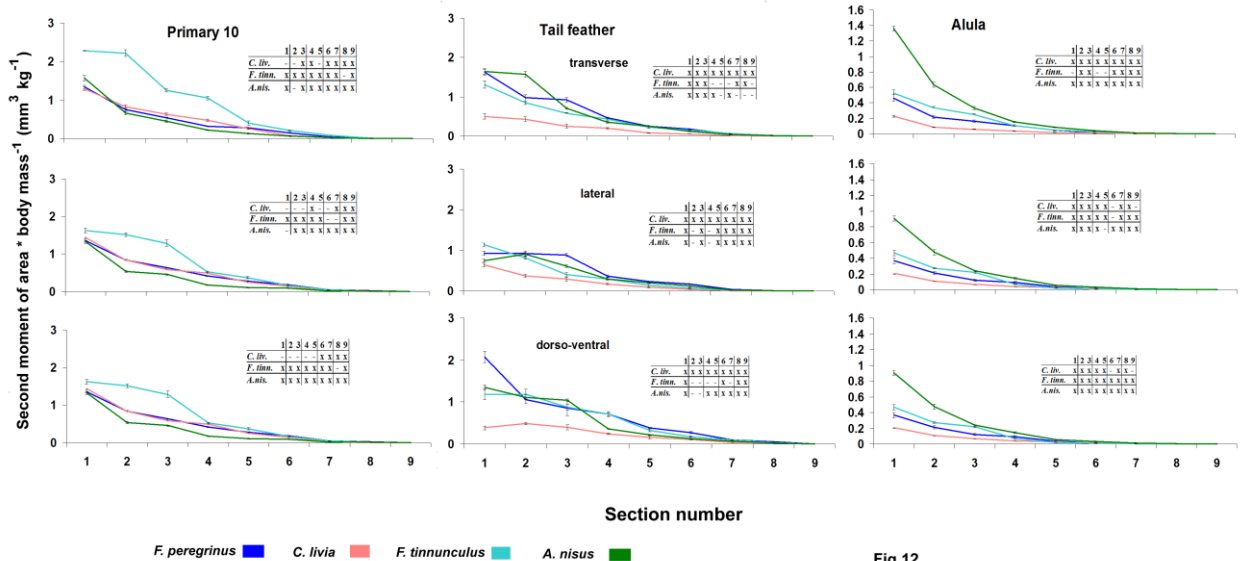


Fig.12

Fig.12

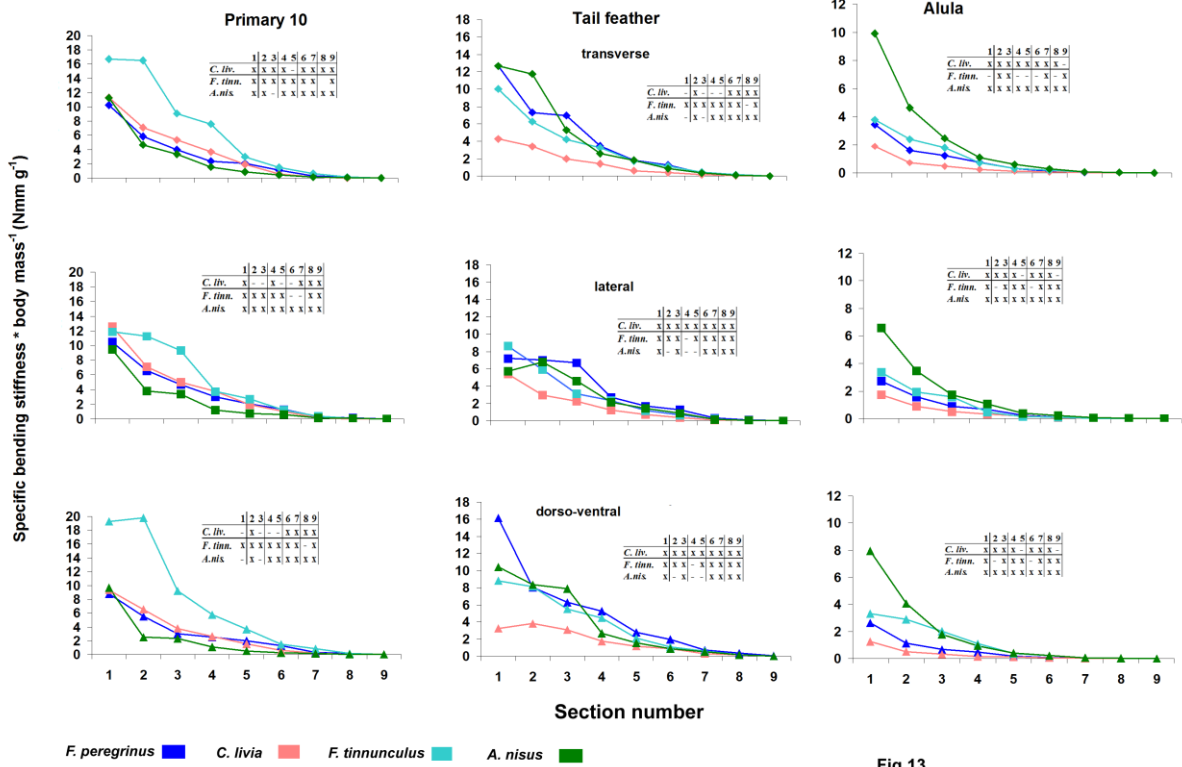


Fig.13

Fig.13

**Table 1: Data of the evaluated feathers**

In each species we investigated two males and two females. As in *F.peregrinus* sexual dimorphic differences in the weight were considerable therefore we plotted both sexes separately. For the wing we evaluated feathers of both body sides and for the tail we evaluated the two central feathers. If possible, mean and S.D. are given.

	<i>F.peregrinus</i> males	females	<i>C.livia</i>	<i>F.tinnunculus</i>	<i>A. nisus</i>
<b>Mass (g)</b> mean values ( $\pm$ S.D.)	567.5 ( $\pm$ 24.7)	794 ( $\pm$ 53.5)	482.5 ( $\pm$ 4.61)	191.8 ( $\pm$ 17.7)	200.2 ( $\pm$ 4.8)
<b>Length of the rachis (cm)</b>					
<b>Primary 10</b>	20.7 ( $\pm$ 0.28)	23.05 ( $\pm$ 0.07)	14.65 ( $\pm$ 0.12)	17.95 ( $\pm$ 0.96)	8.94 ( $\pm$ 0.13)
<b>Tail feather</b>	14.5 ( $\pm$ 0.05)	16.6 ( $\pm$ 0.08)	10.9 ( $\pm$ 0.06)	16.06 ( $\pm$ 0.35)	15.9 ( $\pm$ 0.11)
<b>Alula</b>	7.75 ( $\pm$ 0.06)	8.23 ( $\pm$ 0.1)	5.03 ( $\pm$ 0.06)	6.92 ( $\pm$ 0.07)	7.45 ( $\pm$ 0.33)
<b>Length * body mass<sup>-1</sup> (mm g<sup>-1</sup>)</b>					
<b>Primary 10</b>	0.36	0.29	0.30	0.94	0.45
<b>Tail feather</b>	0.26	0.23	0.23	0.84	0.79
<b>Alula</b>	0.14	0.10	0.10	0.36	0.37

