N. J. Gotelli & A. M. Ellison. 2004. *A Primer of Ecological Statistics*. Sinauer Associates, Sunderland, Massachusetts

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Errata from 1st printing (printed: May 15, 2004)

Chapter 1

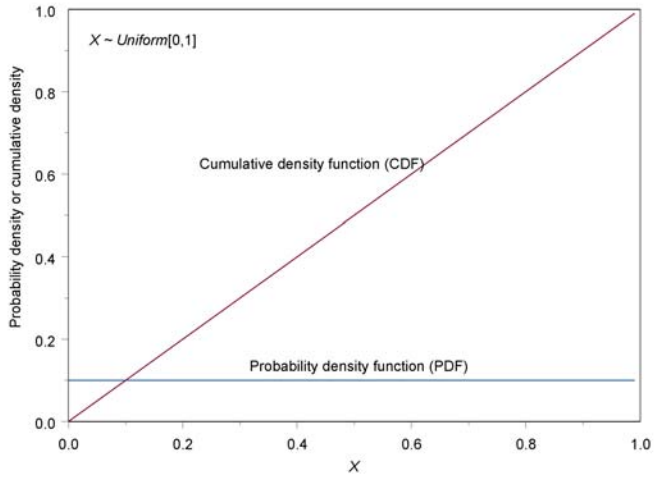
1.1. Page 24, 4 lines from the bottom. "addition" should read "multiplication". (*Thanks to Lisa Strycker, Oregon Research Institute*)

1.2. Page 28, lines 16 and 21. 5.72×10^{17} should read 6.5×10^{18} and the corresponding proudct on line 16 should be 0.07; a 7% chance of finding exactly 10 towns with *Rhexia*. (*Thanks to Dave Hewitt, Virginia Institute of Marine Sciences*)

Chapter 2

2.1. Page 28, line 3. 0.02 * 0.98 = 0.0196, not 0.196. (*Thanks to Victor DeGhett, SUNY-Potsdam*)

2.2. Page 44, Figure 2.5. The CDF on the figure should originate at (0,0), not



(0,0.1): .

The caption is correct as written. (*Thanks to Ingo Holz, Ernst-Moritz-Arndt-Universität Greifswald, Germany*)

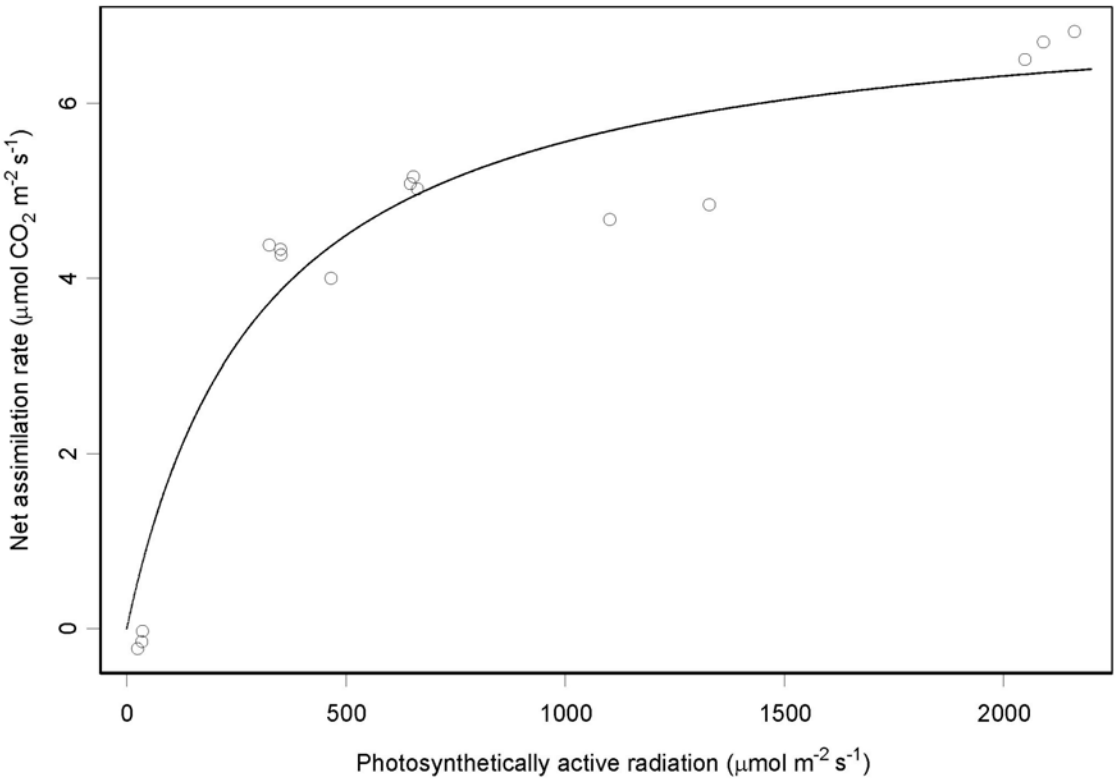
2.3. Page 45, last line, and Table 2.4, line 1. The expected value of a uniform random variable is: $\frac{(b+a)}{2}$. (*Thanks to Chad Brassil, Kellogg Biological Station*)

2.4. Page 50, last line, and Table 2.4, line 3. The expected value of a log-normal random variable is: $e^{\frac{2\mu+\sigma^2}{2}}$. (*Thanks to Chad Brassil, Kellogg Biological Station*)

2.5. Page 51, line 2, and Table 2.4, line 3. The variance of a log-normal random variable is: $\left[e^{\frac{2\mu+\sigma^2}{2}}\right]^2 \times \left[e^{\sigma^2}-1\right]$. (*Thanks to Chad Brassil, Kellogg Biological Station*)

Chapter 4

4.1. The correct values for the parameter estimates of the non-linear (Michaelis-Menten) fit to the mangrove photosynthesis data are: $k = 7.3 \pm 0.58$ and $D = 313 \pm 86.6$. The corrected Figure 4.3, using these parameter values



is:

4.2. Page 85, legend to Fig. 4.2, fourth line from the bottom: "perameters" should read "parameters" (*Thanks to Howie Neufeld, Appalachian State University*)

Chapter 7

7.1. Page 200, line 9: "may" should be "to". (*Thanks to Howie Neufeld, Appalachian State University*)

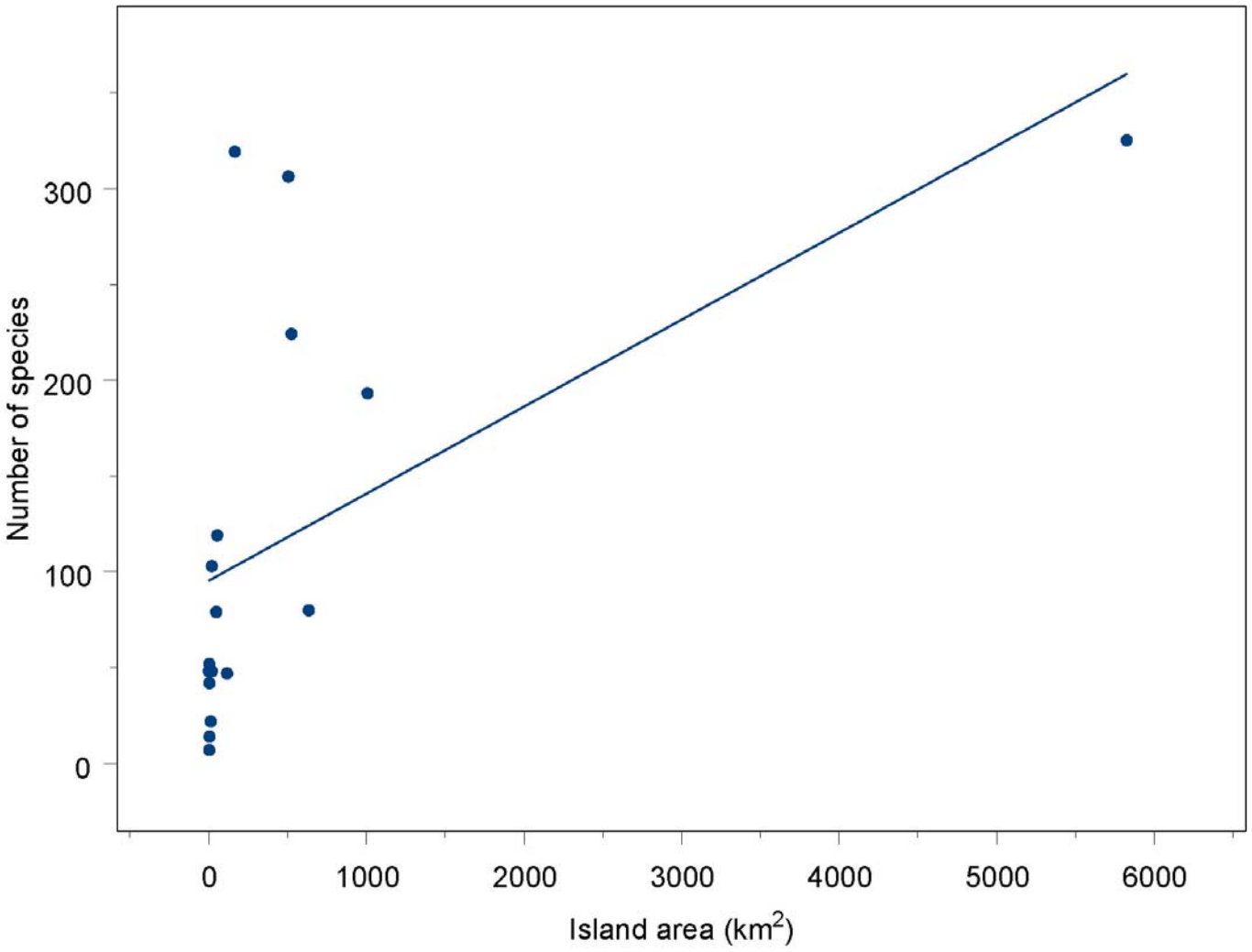
Chapter 8

8.1. Page 227, five lines below Equation 8.8: "Figure 8.8" should read "Figure 8.6".

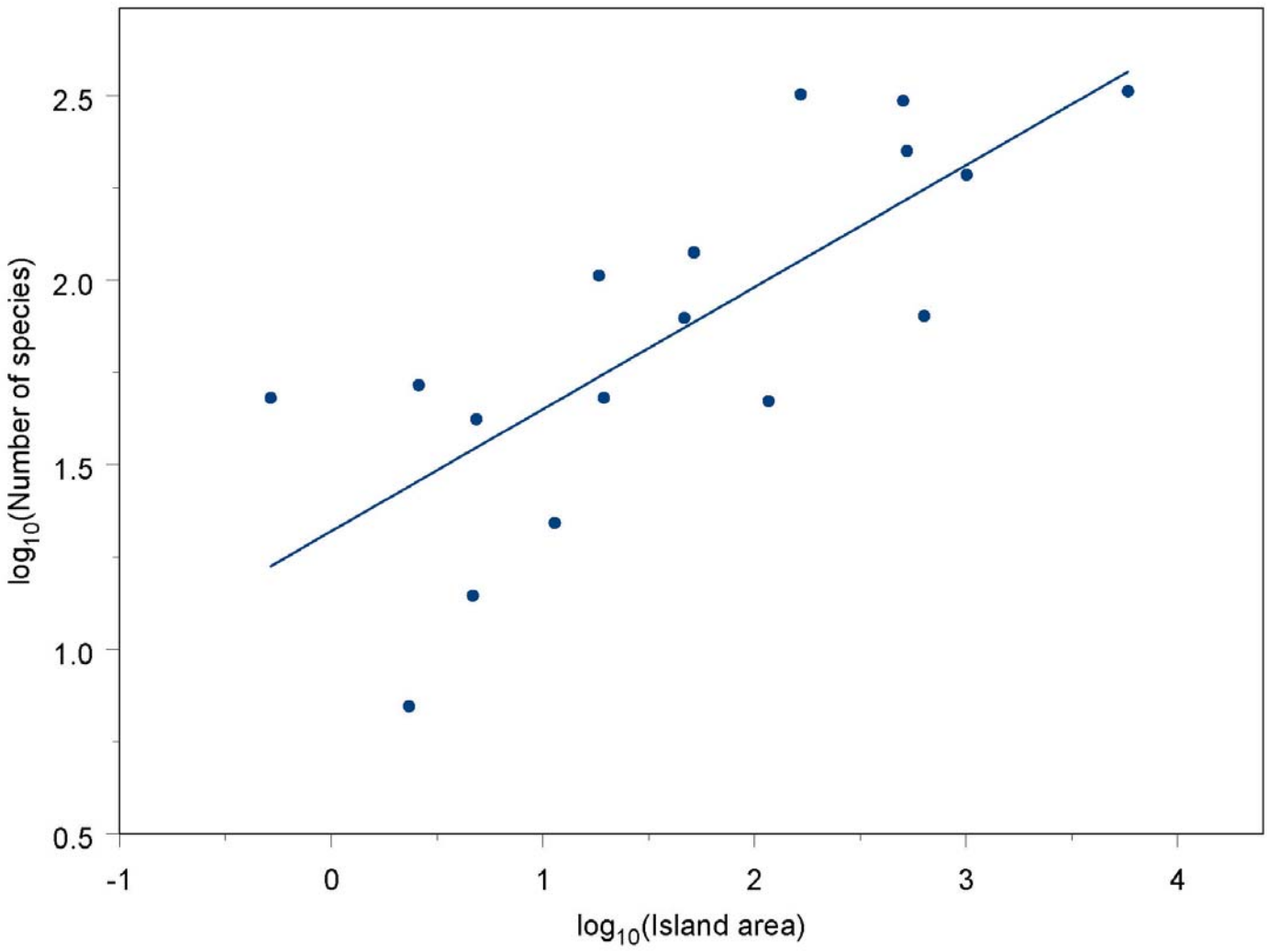
8.2. The values given for the area of the Galápagos Islands are incorrect. Here are the correct data. We transformed the values given in square miles by Preston (1962) into square kilometers, and inadvertently multiplied by 3.86 (the conversion factor for square kilometers into square miles) instead of multipling by 2.59 (the conversion factor for square miles into square kilometers). Because we did the regressions on log-transformed data, this has no effect on the calculation of the slope of the log-log plot (see the discussion of scale and shift operations on page 49), but it does affect the intercept. (*Thanks to Victor DeGhett, SUNY-Potsdam*)

8.3. The result of this mis-conversion is the following set of errors in the text:

8.3.1. Figure 8.5 should look
like:



8.3.2. Figure 8.6 should look like:



8.3.3. Page 227. The slope of the line in Figure 8.6 is the same (0.331), but the intercept = 1.32, not 1.28. (*Nota bene:*. If the regression is done on the raw [untransformed] data shown in Figure 8.5, the intercept is the same (95.44) but the slope = 0.035 for the incorrect data and = 0.045 with the corrected data).

An interesting pedagogical exercise is to consider why the intercept but not the slope changes if the regression is done on the raw data, but why the slope but not the intercept changes if the regression is done on the log-transformed data. This illustrates well the difference between the scale and shift operations described in Chapter 2.

8.3.4. Page 233. The average island size = antilog(1.654) = 45.110 km^2.

8.3.5. Page 235. Although the standard error of the mean of log(area) still equals 0.27, since the mean is different, the confidence errors are different. The lower bound = 1.654-2.110*0.27 = 1.084;

the upper bound = 2.224. When they are back-transformed, the interval is now [12.13, 167.49], still asymmetrical around the back-transformed mean of 45.11.

8.4. Page 227, Legend to Figure 8.6, line 4: "Figure 8.6" should read "Figure 8.5". (*Thanks to Howie Neufeld, Appalachian State University*)

Chapter 9

9.1. Further consequences of the incorrect values in Table 8.2:

9.1.1. Page 242, line 24. The center corresponds to (1.654, 1.867).

9.1.2. Page 244, Figure 9.3 needs to be replaced with Figure 8.6 but the annotations stay the same.

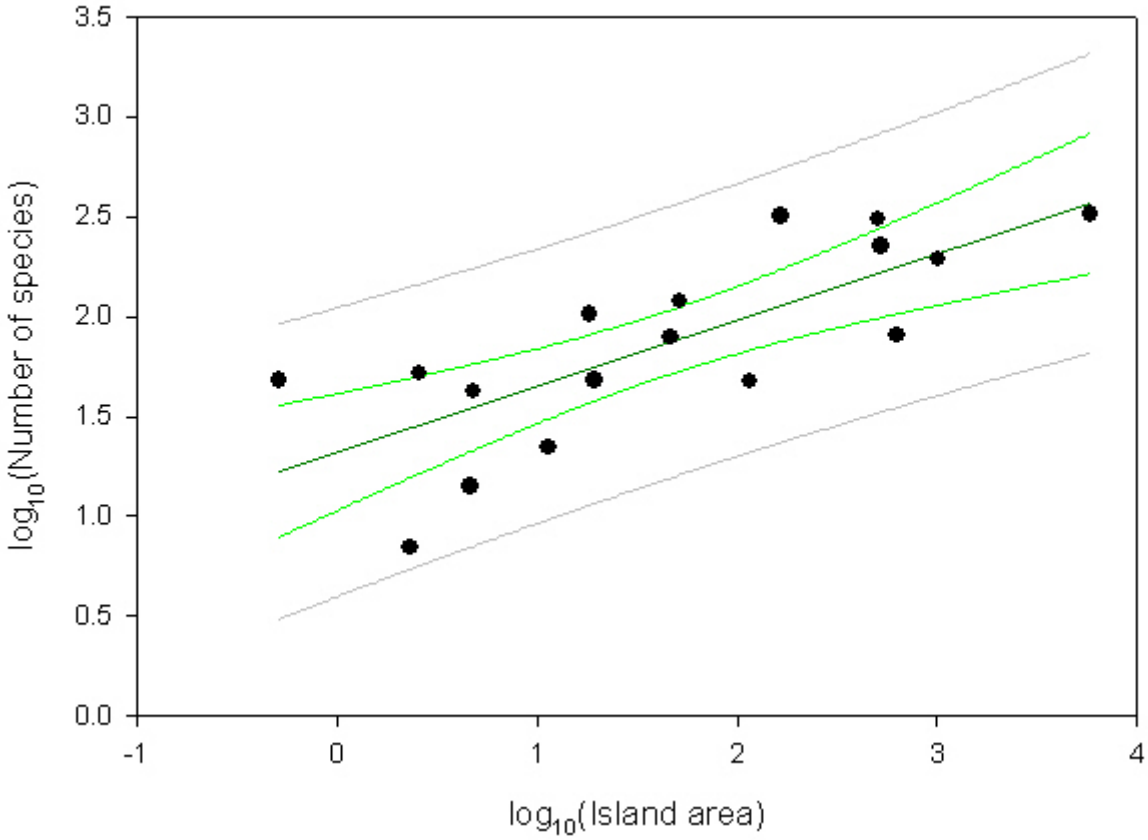
9.1.3. Page 244. The regression equation in the legend to Figure 9.3 should read: $\log_{10}(\text{Species}) = 1.320 + \log_{10}(\text{Area})*0.331$; $r^2 = 0.584$.

9.1.4. Page 247, line 10. The intercept = 1.867 - (0.331)(1.654) = 1.319.

9.1.5. Page 247, line 14 & 15. This yields an estimate of $10^{1.319} = 20.844$ species for an area of 1 square kilometer (not a square mile, as written on line 14).

9.1.6. Page 254, 3rd line from the bottom. the 95% confidence interval for the intercept ($ß_0$) should be 1.017 to 1.623, not 0.966 to 1.601./p>

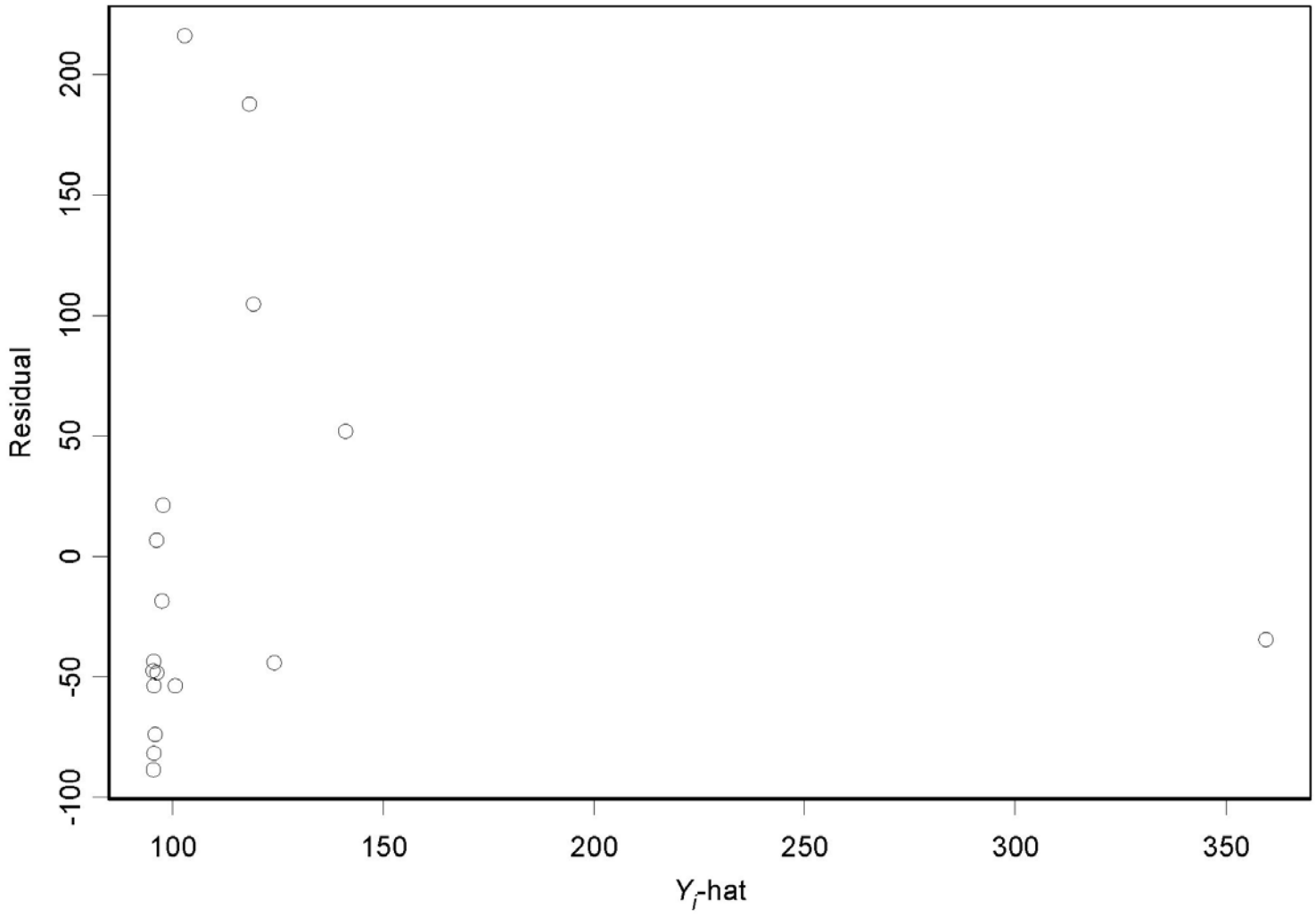
9.1.7. Page 256, Figure 9.4 needs to be



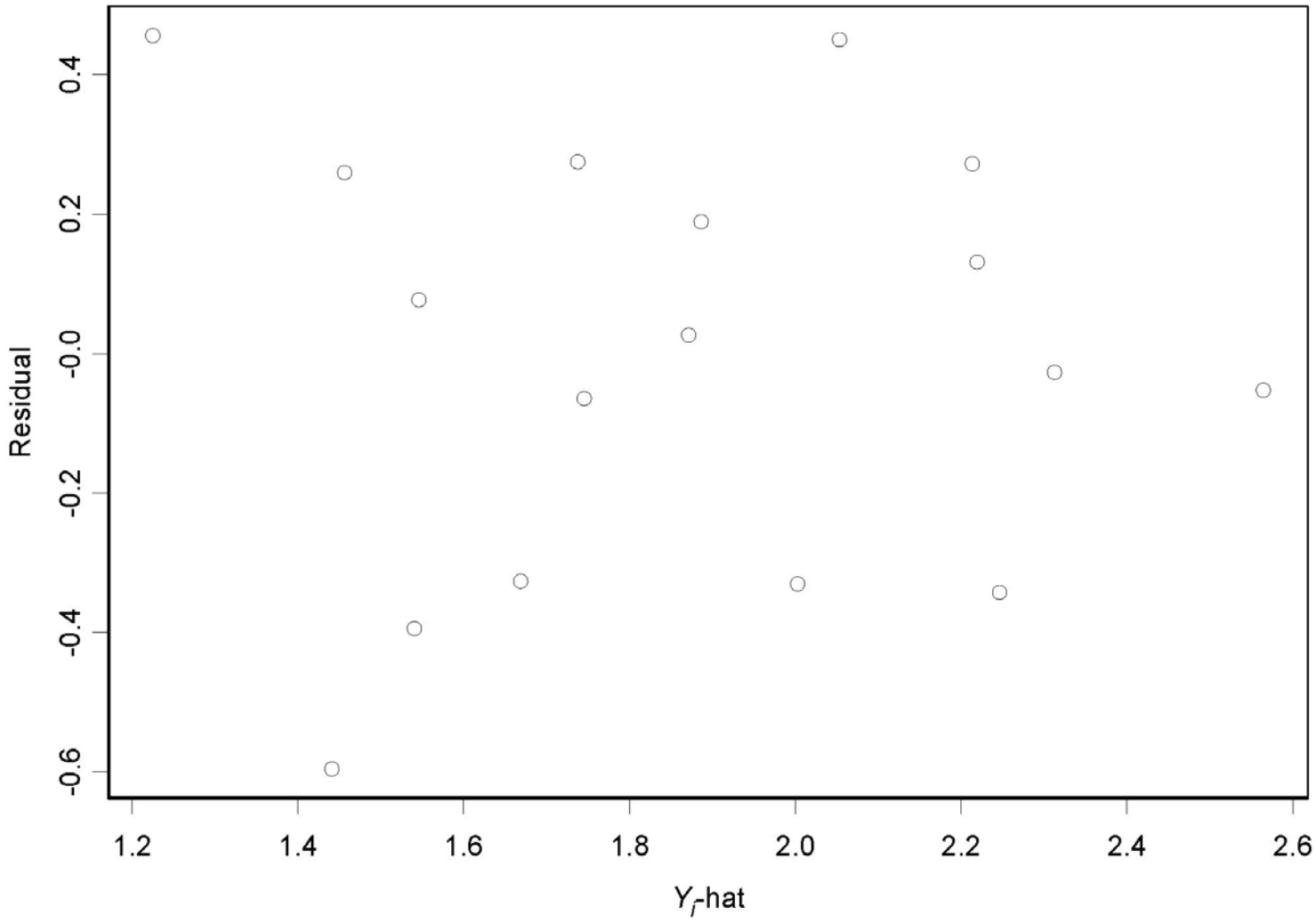
replaced:

9.1.8. Page 257. The point prediction for an island of 10 km^2 = 45 species with a 95% prediction interval = [9, 229]. The point prediction for an island of 100 km^2 = 96 species with a 95% prediction interval = [19, 485].

9.1.9. Page 261, Figure 9.6a needs to be replaced:

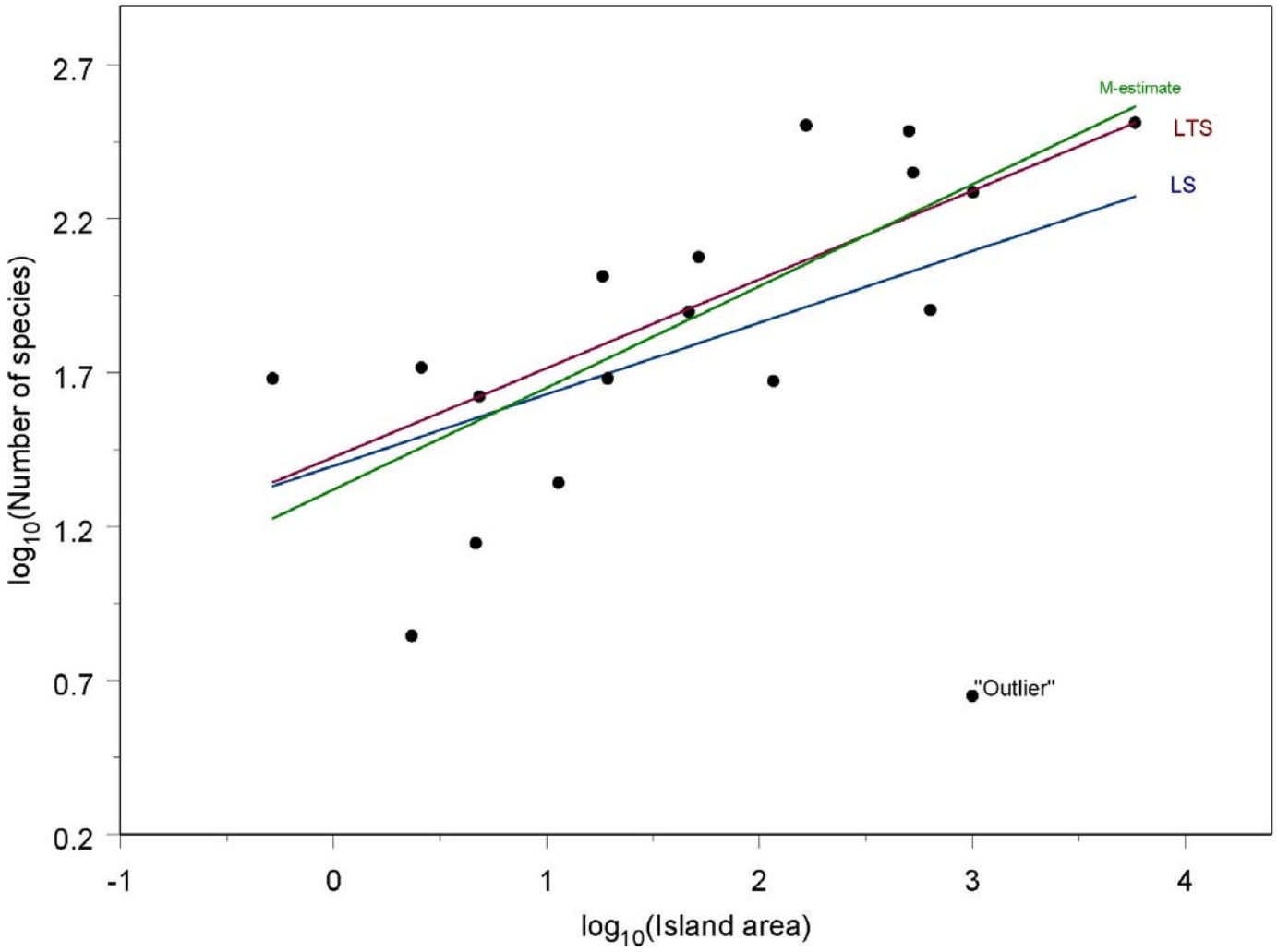


9.1.10. Page 261, Figure 9.6b needs to be replaced:



9.1.11. Note for the interested: the change in island areas does not affect the slope or intercept of the Bayesian calculations on pp. 266-268.

9.1.12. Page 270, Figure 9.9 needs to be replaced:



9.1.13. Page 270, Legend to Figure 9.9. The linear regression (LS) slope of the data with outlier = 0.233, and the intercept = 1.396. The M-estimate slope = 0.331; its intercept = 1.319. The LTS slope = 0.283; its intercept = 1.432.

9.1.14. Page 271. First paragraph should now read: "M-estimate robust regression yields the correct slope of 0.331, but the variance around this estimate equals 0.25, over three times as large as the estimate of the variance on the data lacking the outlier (0.07). The intercept is similarly correct at 1.319, but again, its variance is nearly twice as large (0.71*vs.* 0.43). Lastly, the overall estimate of the variance of the regression error equals 0.125, just over 30% larger than that of the simple linear regression on the original data."

9.2. Page 245, fourth line from the bottom: both subscripts "*XY*" should be set in subscript (smaller) font. (*Thanks to Howie Neufeld, Appalachian State University*)

Chapter 10

10.1 Page 300, Table 10.4. The formula for the within-groups (residual) sum of squares $\sum_{i=1}^{a}\sum_{j=1}^{n}(x_{ij}-\bar{x}_{i\cdot})^2$ is incorrect. The correct formula is: $\sum_{i=1}^{a}\sum_{j=1}^{n}(x_{ij}-\bar{x}_{i\cdot}-\bar{x}_{\cdot j}+\bar{x}_{\cdot\cdot})^2$. The correct version removes the effects of the blocks. (*Thanks to Stephen Roxburgh, Australian National University*)

10.2. Page 334, Figure 10.4. The black and green lines should be reversed in Figure 10.4F. (*Thanks to Julie Richburg, UMass-Amherst*)

10.3 Page 339, Table 10.13, data column 1: the mean difference between the "Unmanipulated" and the "*Tedania*" treatment should be 0.536, not 0.436. (*Thanks to Howie Neufeld, Appalachian State University*)

Chapter 12

12.1. Page 387, line 16. There are 48, not 49 degrees of freedom for the *t*-test. (*Thanks to Victor DeGhett, SUNY-Potsdam*)

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I.1. Page 510, line 2. Wilk's, not Wilke's. (*Thanks to Victor DeGhett, SUNY-Potsdam*)