Errata

Energetics and Consumption Rates of Alpine Grasshoppers (Orthoptera: Acrididae) in New Zealand

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I regret to inform you that I have now noted some most unfortunate errors. Despite the correctness of the original mathematical calculations in themselves, there was an error of logic in the sequence of mathematical steps when converting egestion to egestion energy and ingestion. The correction unfortunately has repercussions through nearly all subsequent calculations in Tables 4–6, though in most cases, the adjustments are minor. In the errata, I have given just enough information for the reader to recalculate the changes himself, should he wish, and at the same time I have pointed out those changes that are greater than marginal and listed those that the reader cannot calculate.

In Table 3, read $\bar{T}_i$ for T_i and $\bar{E}_i$ for E_i , and substitute the calculations below, corrected for egestion energy and the subsequent conversion to ingestion and respiration:

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Instar	Females				Males			
	Faeces	Diet		Respiration	Faeces	Diet		Respiration
	Kcal/ meal $\bar{E}_i$	G dry wt/meal	G dry wt	Kcal R_i	Kcal/ meal $\bar{E}_i$	G dry wt/meal	G dry wt	Kcal R_i
<i>Paprides nitidus</i>								
4th	0.0060	0.0026	0.248	0.519	0.0056	0.0025	0.256	0.575
6th	0.0199	0.0065	0.473	0.405	n.a.			
Adult	0.0385	0.0119	3.548	4.146	0.0124	0.0044	1.301	2.154
<i>Sigauss australis</i>								
4th	0.0060	0.0022	0.232	0.350	—			
5th	—				0.0101	0.0033	0.230	0.217
6th	0.0259	0.0074	0.578	0.124	n.a.			
Adult	0.0507	0.0140	4.216	3.137	0.0131	0.0041	1.209	1.600
<i>Brachaspis nivalis</i>								
3rd	0.0068	0.0035 ^c	—		—			
6th	0.0159	0.0052 ^c	—		0.0161	0.0053 ^c	—	
7th	0.0229	0.0071 ^c	—		n.a.			
Adult	0.0403	0.0119	3.532	3.843	0.0192	0.0061	1.805	2.676

^cBased on $\frac{\text{Faecal dry wt}}{(1 - AE)} \times \frac{\text{Faecal Kcal/G}}{\text{Food Kcal/G}}$, given Faecal Kcal/G < Food Kcal/G

As a result of the above corrections, many of the data in Tables 4–6 also need adjustment, but except where pointed out below, the adjustments are only slight. No changes in the emphases or conclusions of the study are necessary.

The regression on page 35 becomes:

$$Y = 1.80 + 16.51 (\pm 1.69)X$$

$$r = 0.98$$

and the solutions of b on pages 37 and 38 now lie in the range 0.40–0.52 (*Sigauss australis* = 0.48).

Table 4 efficiencies can be recalculated from Tables 1–3 and Figure 5 regressions, but shifts in the P_N/R and R/I efficiencies of 6th instar female *S. australis* should be overlooked because of the low faecal energy value (4.323 Kcal/g) in Table 3. By substituting a range of higher energy values, it can be shown that the order of magnitude of the published P_N/R value (309.3%) remains correct (see p. 36).

In Table 5, the corrected population consumption estimates (Kg dry weight/ha/yr, including ash) in the right-hand column are as follows, in descending order:

0.67, 0.61, 5.77, 0.10, 0.12, 1.00 and 0.84.

These changes improve the agreement between the gravimetric and energetics studies to 13–35% (p. 40).

In the energy budget of Table 6, values of P are unchanged but most values of I , R and E are reduced slightly. The new values can be determined indirectly from Table 3, using the proportional corrections to I (based on G dry wt) and R , thence solving $E = I - P - R$. There is an increase in all values for 4th instar *S. australis* (see parentheses below) and the total population energy demands on page 41 are recalculated as:

$$I \simeq 5.106 \text{ Kcal/m}^2/\text{yr} \text{ (0.043)}$$

$$P \simeq 0.260 \text{ Kcal/m}^2/\text{yr} \text{ (0.004)}$$

$$R \simeq 1.318 \text{ Kcal/m}^2/\text{yr} \text{ (0.014)}$$

$$E \simeq 3.532 \text{ Kcal/m}^2/\text{yr} \text{ (0.025)}$$

The solutions of the Duke and Crossley regressions then become respectively

$$Y = 0.5774 \quad \text{and} \quad Y = 0.5723,$$

and these values overestimate P ($\simeq 0.260$) by $2.2 \times$ (p. 42).

On pages 26 and 28, the standard errors of the regressions for Figure 7a–f respectively should read as follows:

$$\pm 0.0039, \pm 0.0011, \pm 0.0048, \pm 0.0009, \pm 0.0050, \pm 0.0021.$$