

BRIEF COMMUNICATIONS

Estimation of oxygen and food consumption in *Sarda chiliensis* (Cuvier): a correction

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Professor Dr K. Becker (University of Hohenheim, Stuttgart, Germany) recently brought to my attention various errors in Mendo & Pauly (1988). The present note is to correct these errors; it should be read in conjunction with Mendo & Pauly (1988).

Based on the data in Table 1 of the earlier paper, the equation for predicting the gape (cm^2) from the length (cm) of bonito, *Sarda chiliensis* (Cuvier), and its mouth opening angle (A) should be

$$\text{gape} = 0.000124 \cdot \text{F.L.}^{2.13} \cdot A^{0.716}$$

(and not $\text{gape} = 0.000127 \cdot \text{F.L.}^{2.13} \cdot A^{0.705}$); the gape of fish of 56.8 cm, with $A = 12.25^\circ$, should thus be 4.067 cm^2 (and not 3.93 cm^2).

This, multiplied by the distance swum daily (69 km) corresponds to 28 062 l of water moving daily over the gills of the fish (and not 27 117 l). Given an oxygen extraction rate of 50%, an oxygen content of water of $5.22 \text{ cm}^3 \text{ l}^{-1}$, and a specific weight of O_2 of 1.429 mg cm^{-3} , this corresponds to an oxygen consumption of $73\,242 \text{ cm}^3 \text{ day}^{-1}$ (and not $70\,775 \text{ cm}^3$), or $104\,663 \text{ mg day}^{-1}$ (and not 4923 mg day^{-1}).

With an oxycaloric equivalent of $3.25 \text{ cal. mgO}_2^{-1}$, a food assimilation efficiency of 0.85 and a prey energy content of 1000 cal g^{-1} (wet weight), this corresponds to a ration of 400 g day^{-1} , or, for a bonito weighing 2530 g, to 15.8% BWD (and not 188 g day^{-1} and 7.4%, respectively).

This corrected ration may still underestimate true food consumption, since, as also pointed out by Professor Becker, the oxycaloric equivalent given above assumes a respiratory quotient of 0.7 (i.e. starving fish) and not the value near unity appropriate for fish fed continuously.

Considering this latter point would lead to a ration estimate of 23% BWD, near the upper range of estimates for active tunas (Kitchell *et al.*, 1978).

However, the point to emphasize here is that we erroneously implemented the indirect approach we proposed for the estimation of ration in bonito.

With hindsight, we realize that we would probably have spotted the combination of simple computational and typographical errors which led to our underestimate of ration, had it not been for the fact that it appeared to confirm an earlier, low estimate, derived from stomach content data (Pauly *et al.*, 1987).

Thus, besides having to thank Professor Becker for pointing out these errors, and to apologize to our colleagues for our carelessness, we have to admit having fallen victim to confirmatory bias—still a plague, despite widespread awareness that one should attempt to *refute* propositions, not strive to confirm them.

References

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