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Relation of Partial Length Measurements to Total Length  
with Special Reference to the Sampling of Grenadiers

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Introduction

Difficulties arise in obtaining correct length frequencies of grenadiers and other species with similar body shapes, using total length measurements, as a large proportion of these fish in trawl catches have varying lengths of their tails broken off (Jensen, MS 1976). This phenomenon is not only caused by the catching process but apparently also occurs accidentally under normal living conditions, as evidenced by many fish with tails in various stages of regeneration. It is therefore desirable to study the possibility of using other length dimensions which are significantly related to total length.

Results

During a groundfish survey carried out by the R/V *Walther Herwig* in the Southwest Atlantic (Argentinian Shelf) in July-September 1978, the problem of measurement was studied in order to obtain reliable length frequencies for *Macrourus whitsoni* (similar to the roughhead grenadier, *Macrourus berglax*, in the Northwest Atlantic) and for *Macruronus magellanicus*, the long-tailed hake.

For both species, numerous measurements (to cm below) both of total length (fish with complete tails only) and pre-anal length (measured from the tip of the snout to anterior edge of the anus) were obtained and highly significant linear correlations between both parameters have been found (Fig. 1 and 2), indicating the possible use of pre-anal length as defined above as a suitable length measurement for such species.

References

- MESSTORFF, J., and K.-H. KOCK. 1978. Deutsch-argentinische Zusammenarbeit in der Fischerei-forschung mit FFS "Walther Herwig" erfolgreich fortgesetzt. Infn. Fischw. 25(6): 175-180.
- JENSEN, J. M. MS 1976. Length measurement of roundnose grenadier (*Macrourus rupestris*). ICNAF Res. Doc. 76/VI/93, Serial No. 3913.

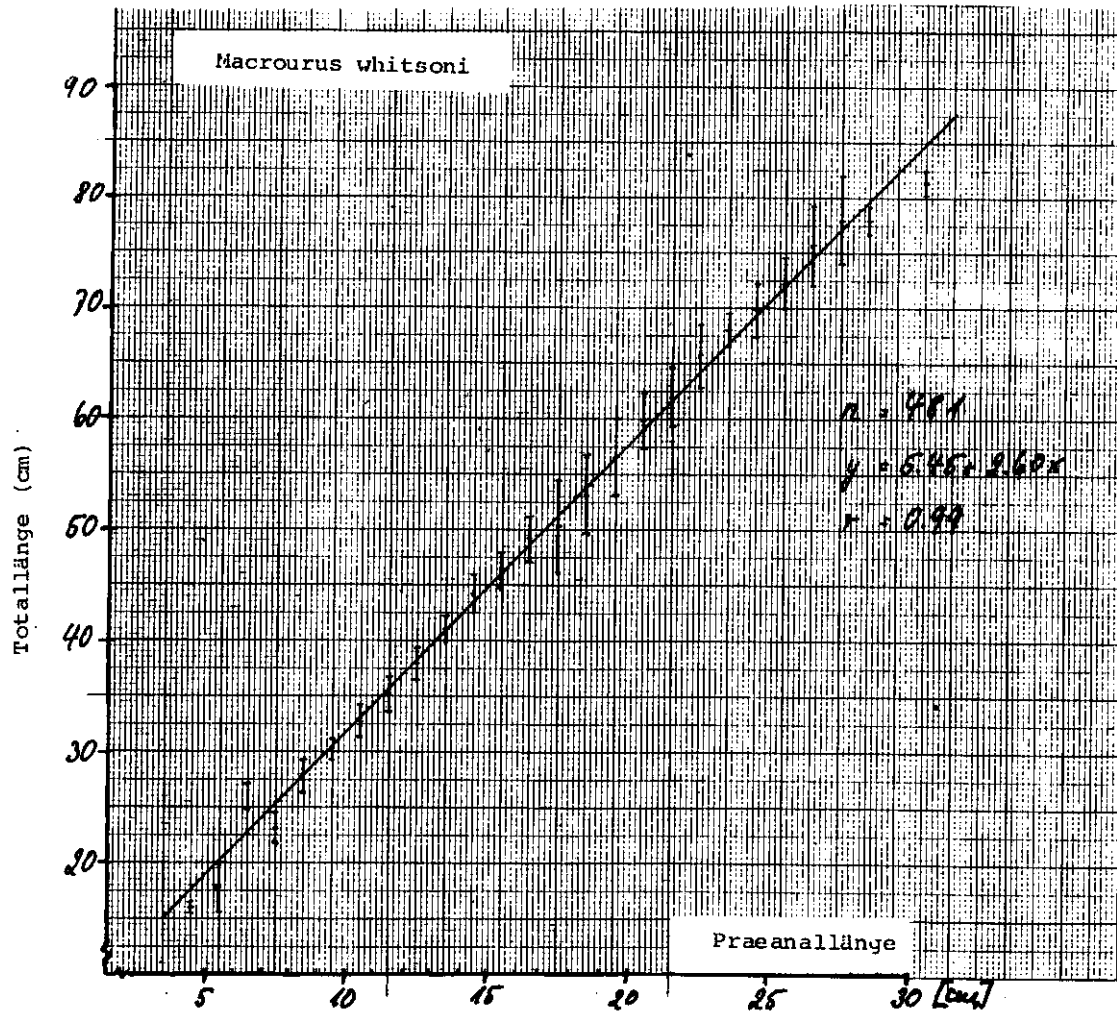


Fig. 1. Relation between pre-anal and total length for *Macrourus whitsoni*.

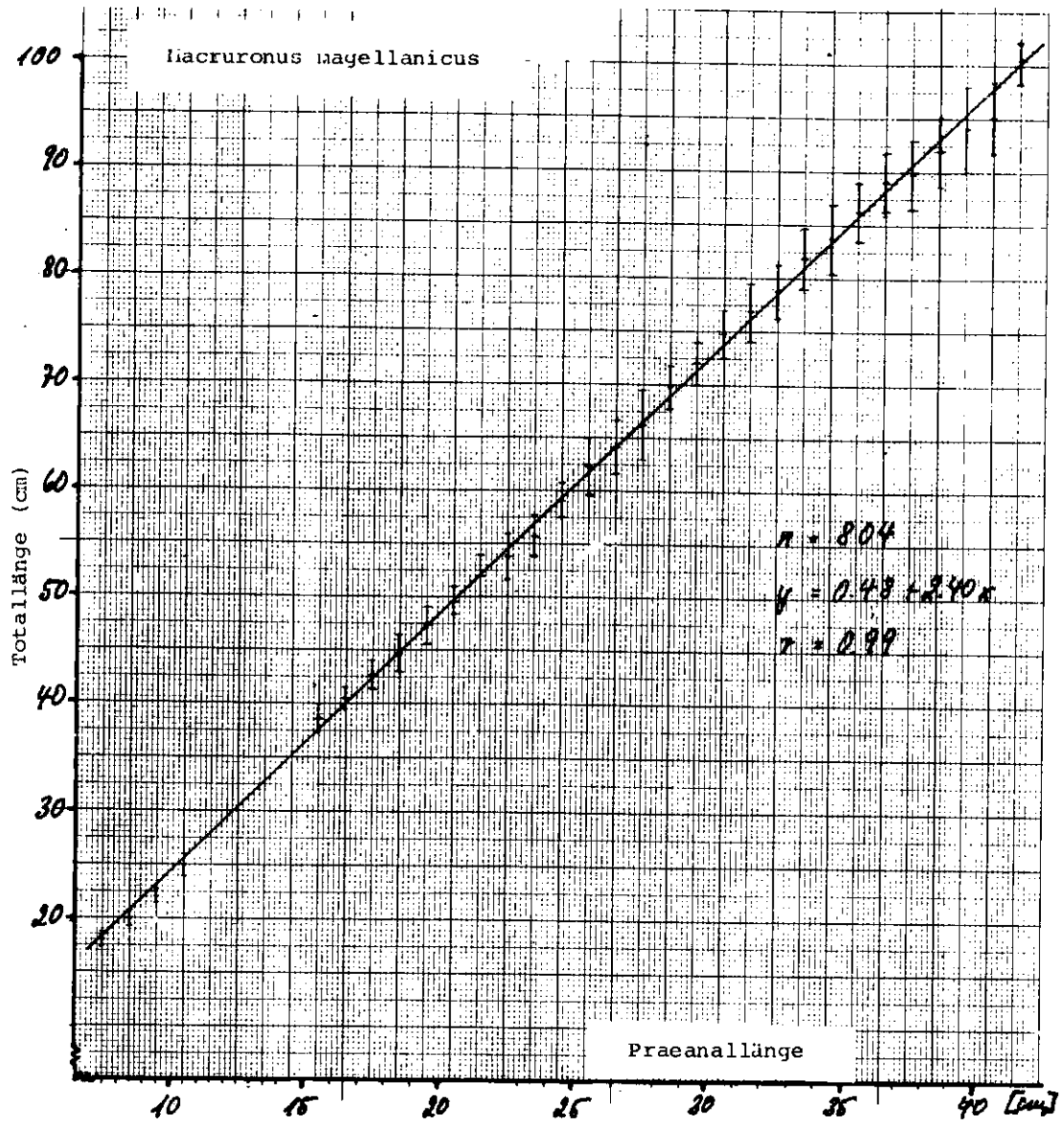


Fig. 2. Relation between pre-anal and total length for *Macruronus magellanicus*.

