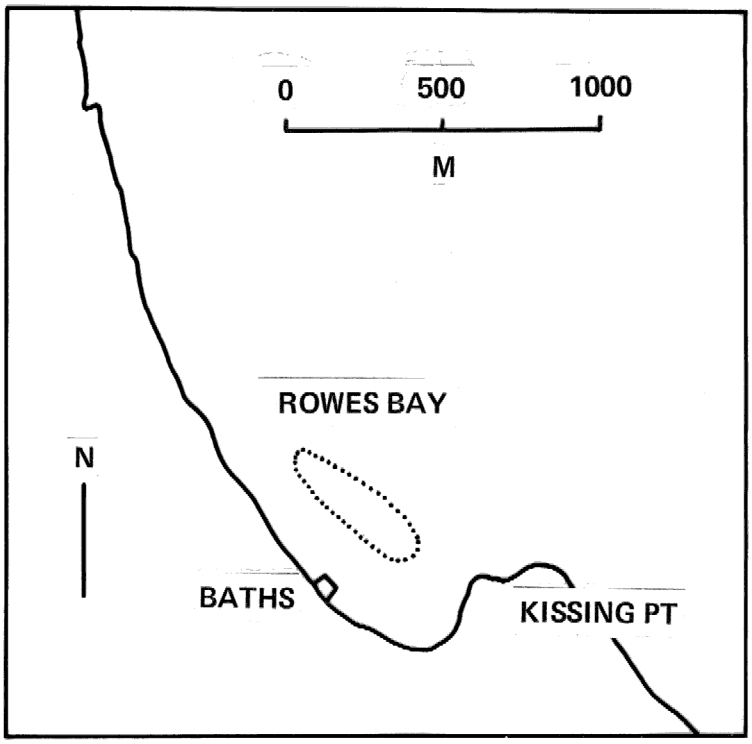


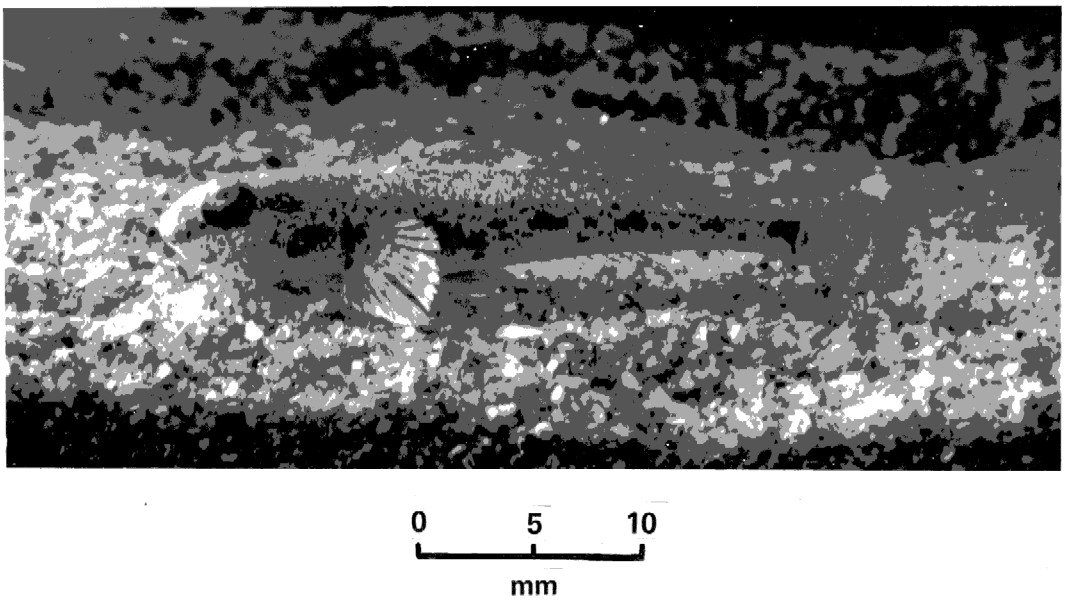


Figure 1. a) Map of Rowes Bay showing study site (....).

b) *Favonigobius melanobranchus*.

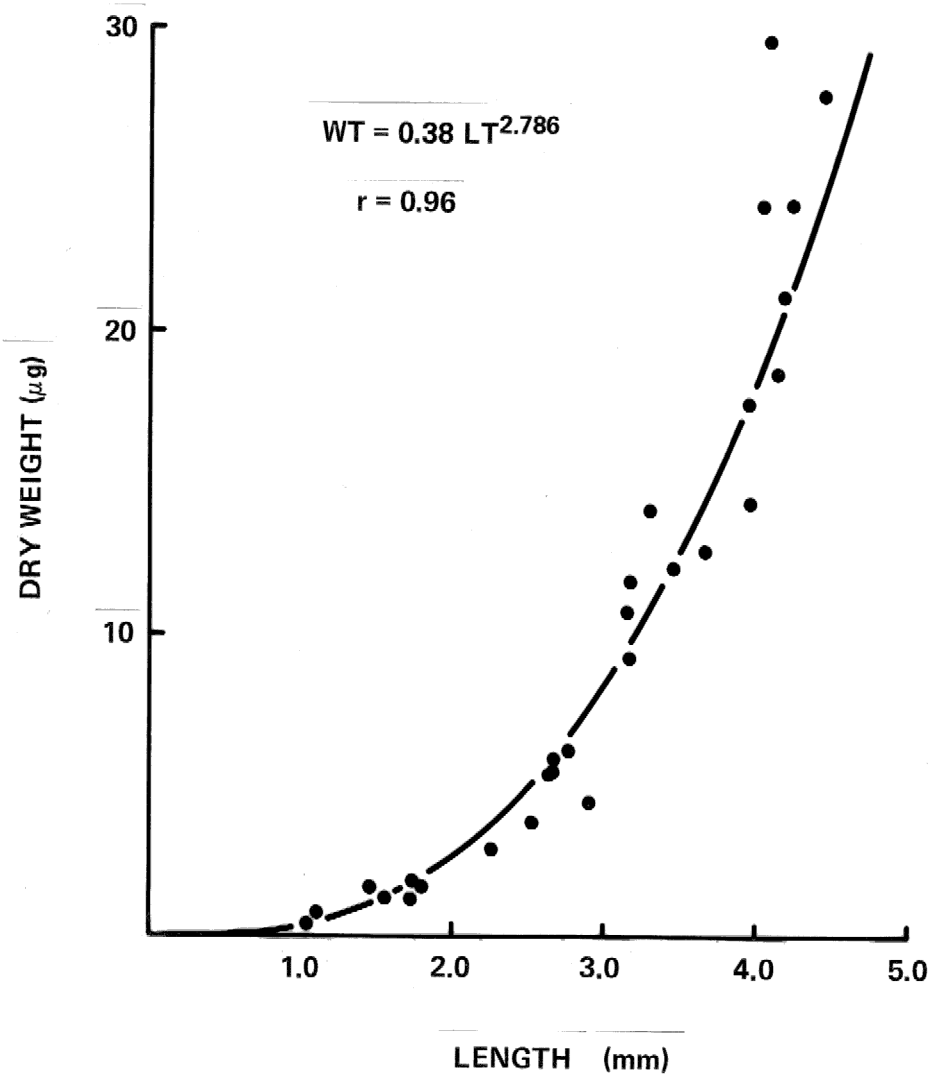


Figure 2. Length and dry weight relationship of amphipod A.

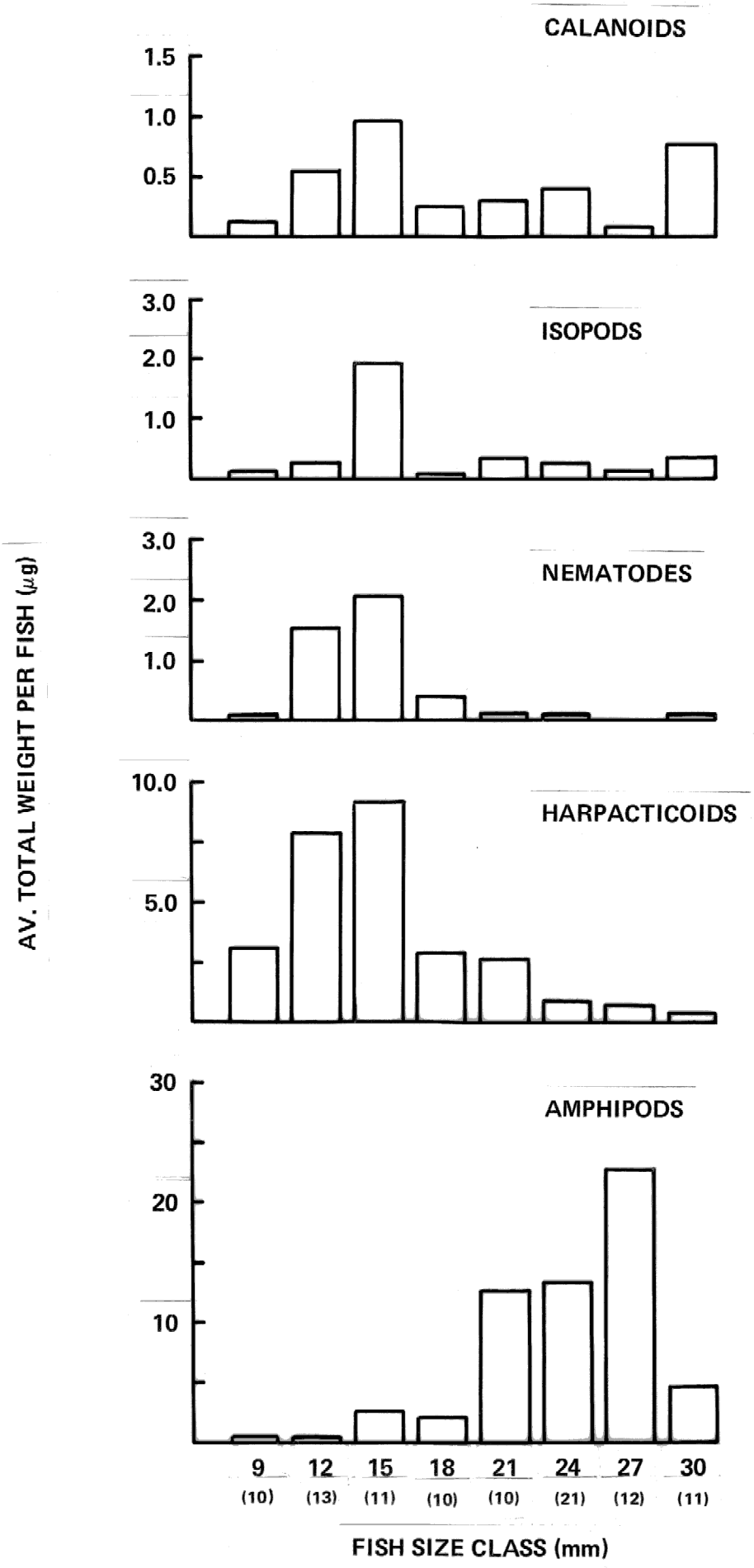


Figure 3. Average total weight of prey items eaten per fish (empty stomachs included) for 3mm size class fish. Sample size in brackets.

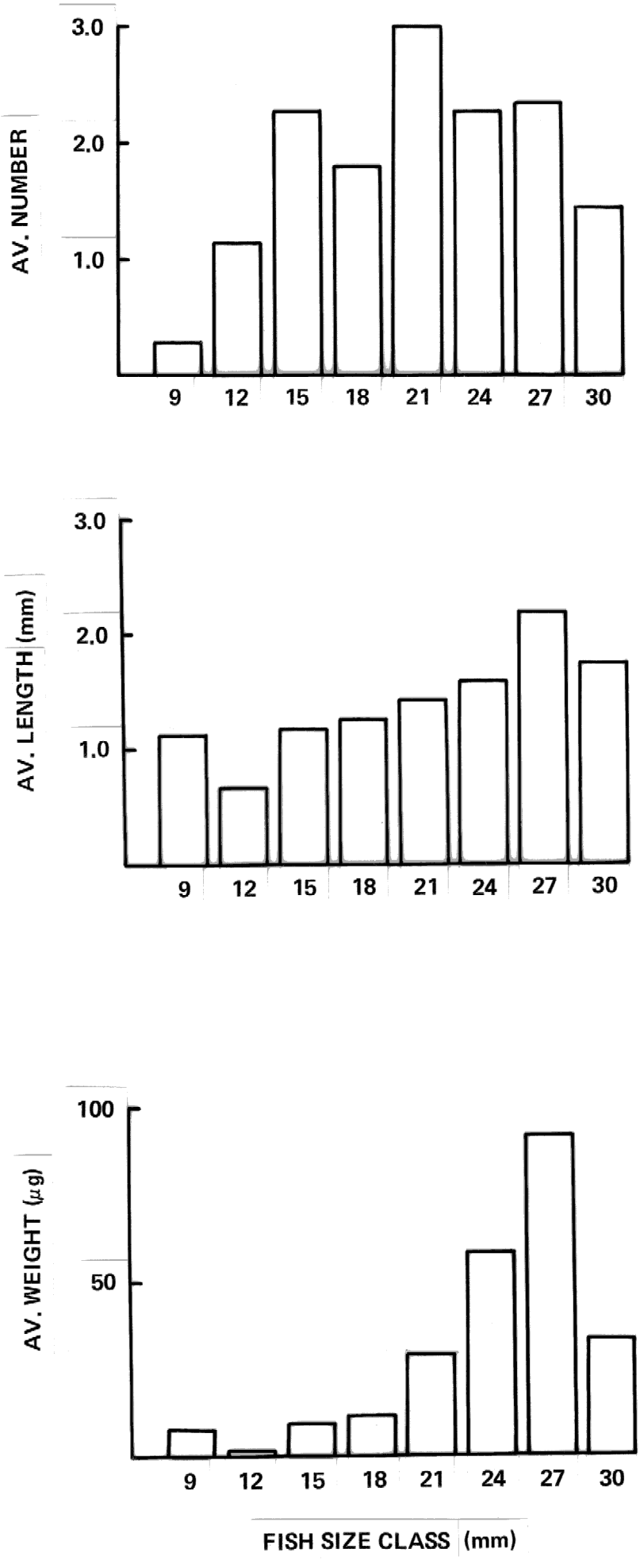


Figure 4. a) Average number of amphipods eaten per fish.
b) Average length of amphipod eaten.
c) Average weight of amphipod eaten.

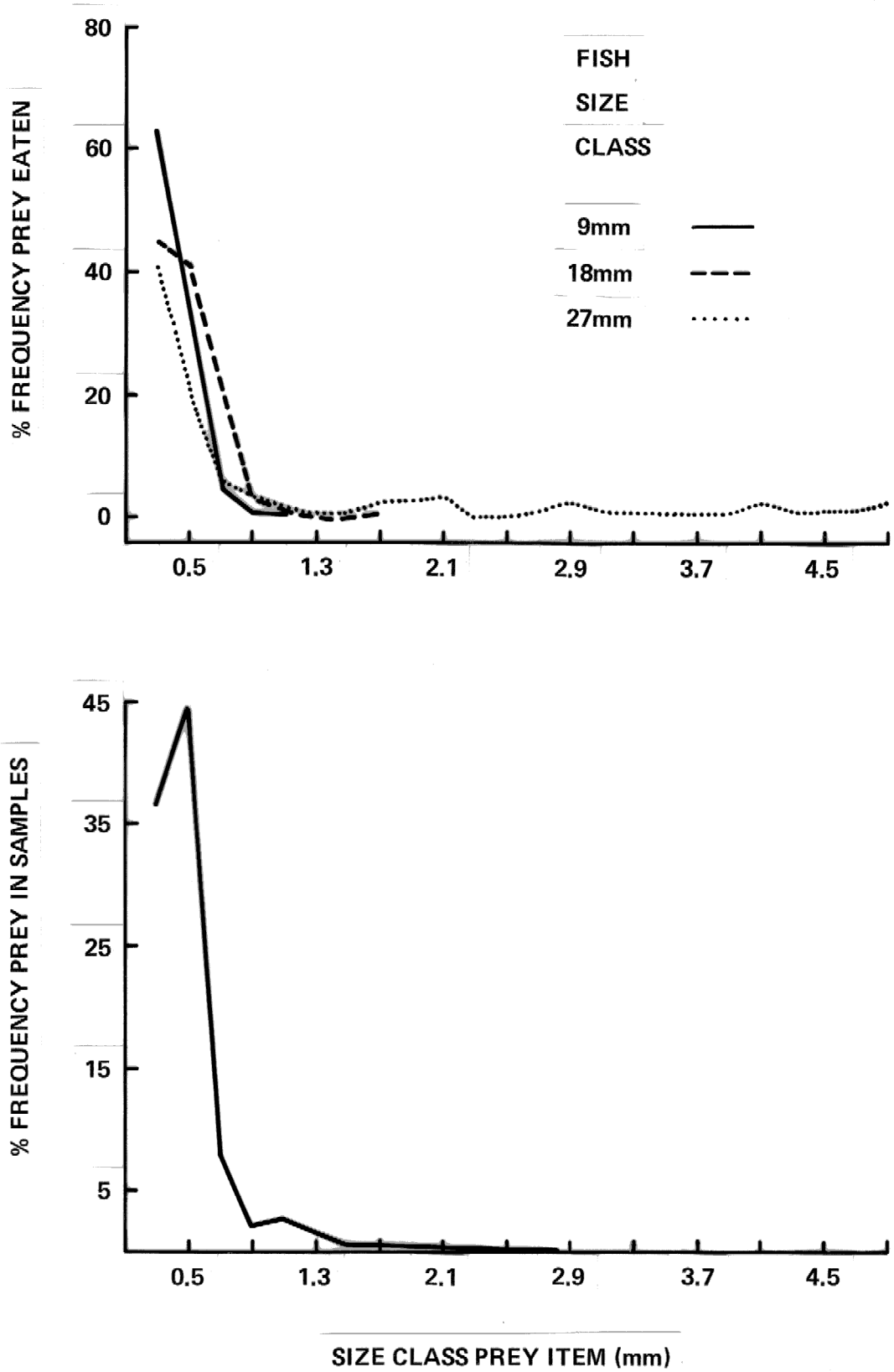


Figure 5. a)Size frequency distribution of harpacticoids, calanoids, isopods and amphipods eaten by three size classes of fish. b)Size frequency distribution of harpacticoids, isopods, and amphipods collected in benthic samples.

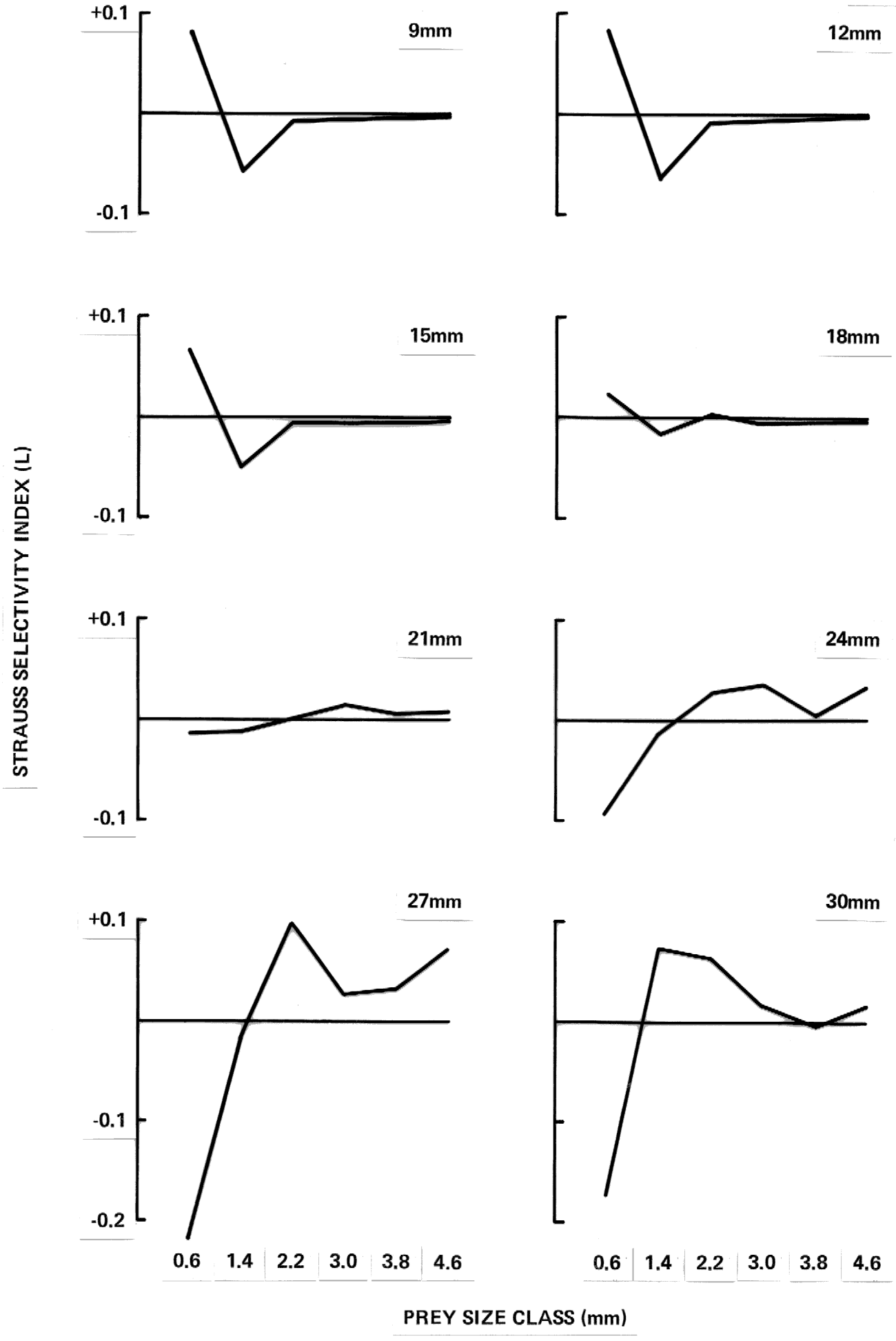


Figure 6. Selectivity of each fish size class for prey sizes grouped 0.8mm size classes, using Strauss' linear index of selectivity.

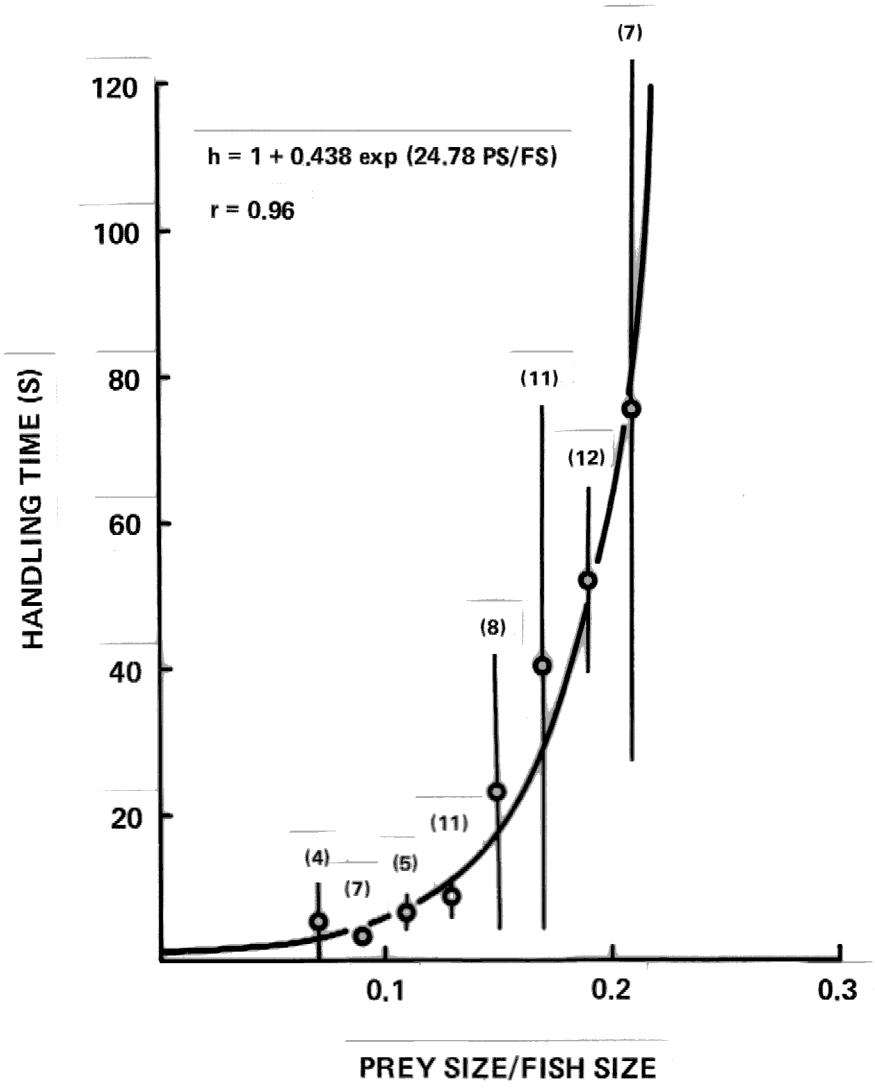
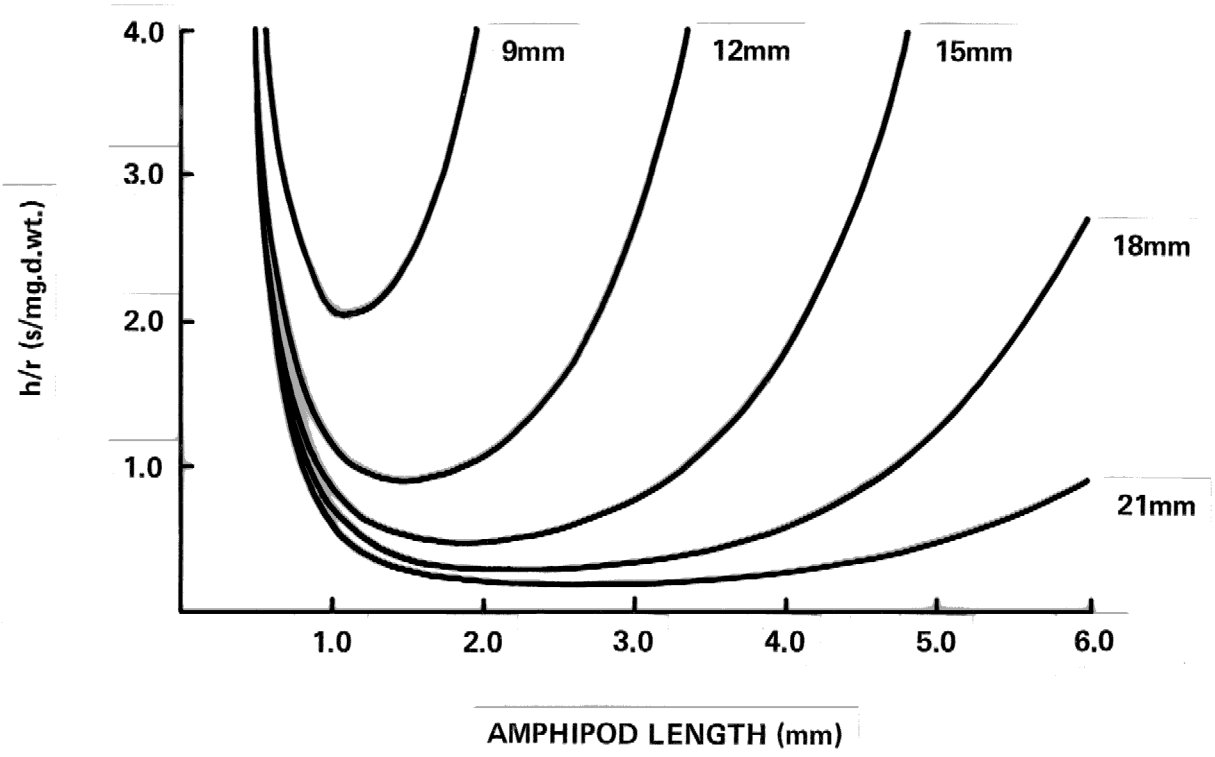


Figure 7. Relationship between handling time and the ratio of prey length to fish length. Each data point is the average of observations in 0.02 group intervals of prey size/fish size. Error bars show 95% C.L. Number of observations are shown in brackets. Solid line shows regression curve.



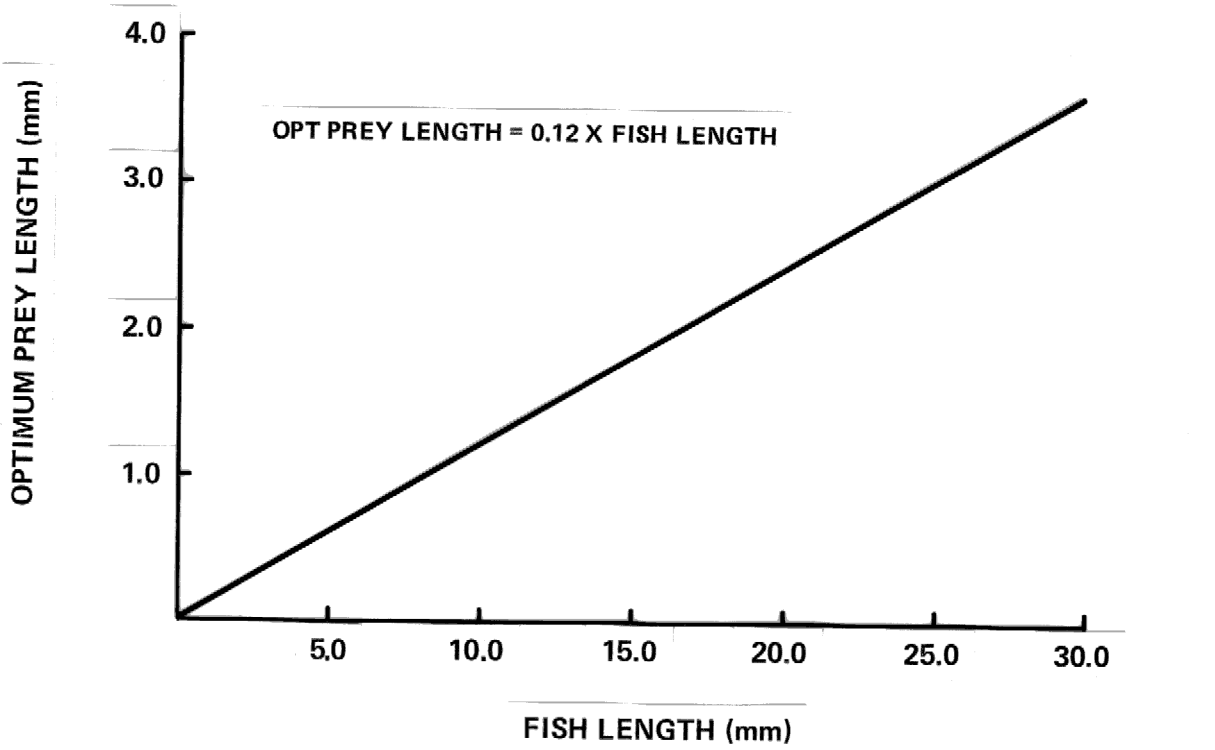


Figure 8. a)Relationship between handling time per unit energy return (mg.d.wt) of prey and length of prey. Curves are calculated for fish of length 9,12,15,18,21mm.

b)Optimum prey size derived from cost/benefit curves above, where the optimum prey size is that which has least cost.

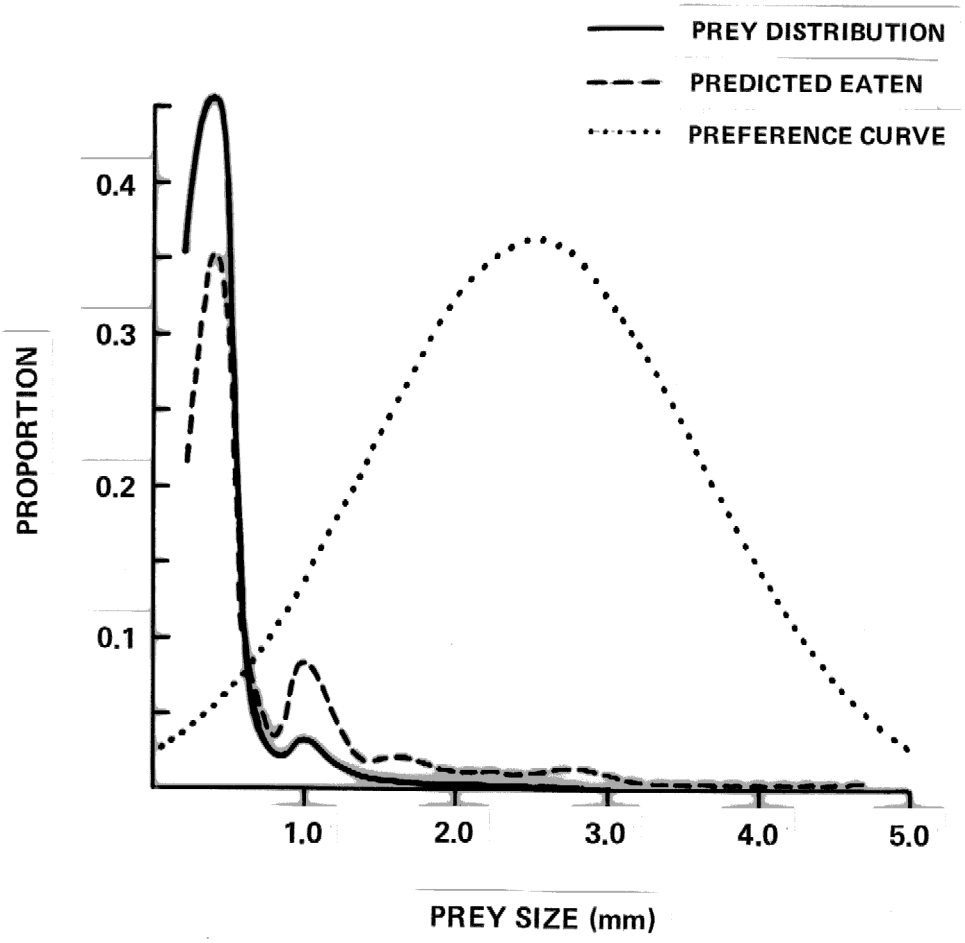
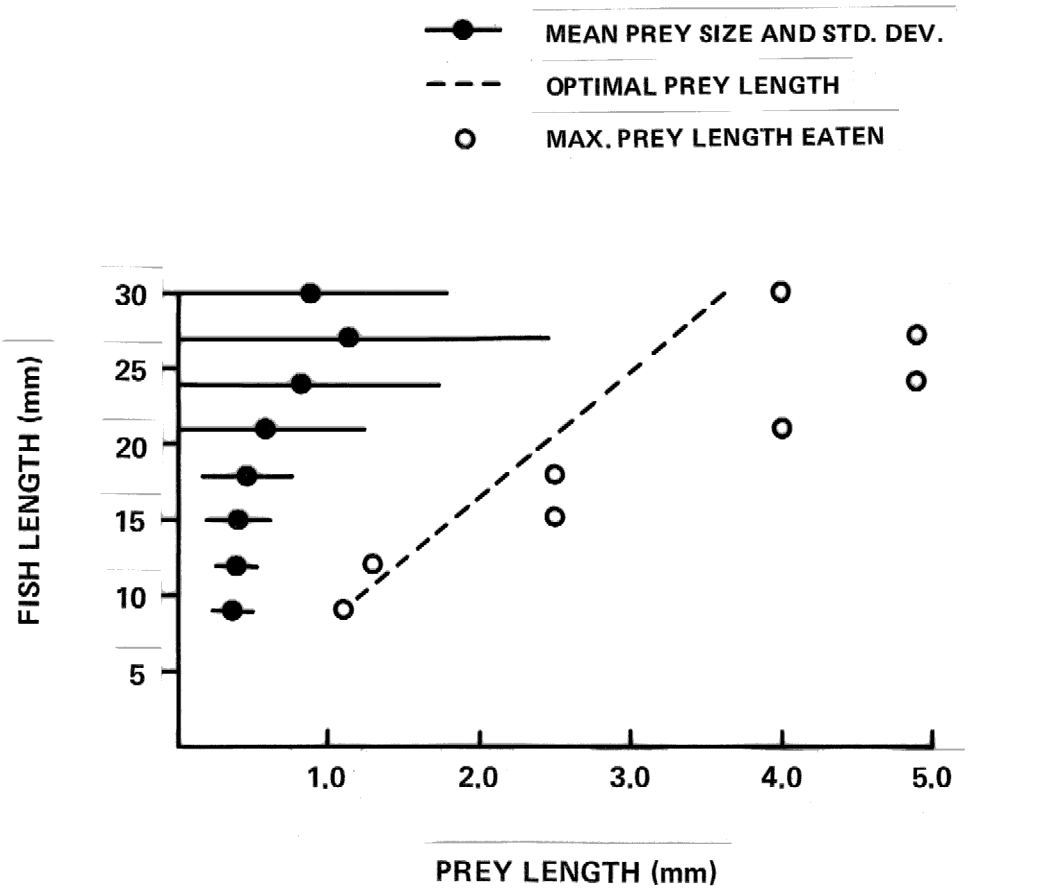


Figure 9. Preference curve for a 21mm fish, with prey size distribution of harpacticoids, isopods, and amphipods and predicted size eaten.



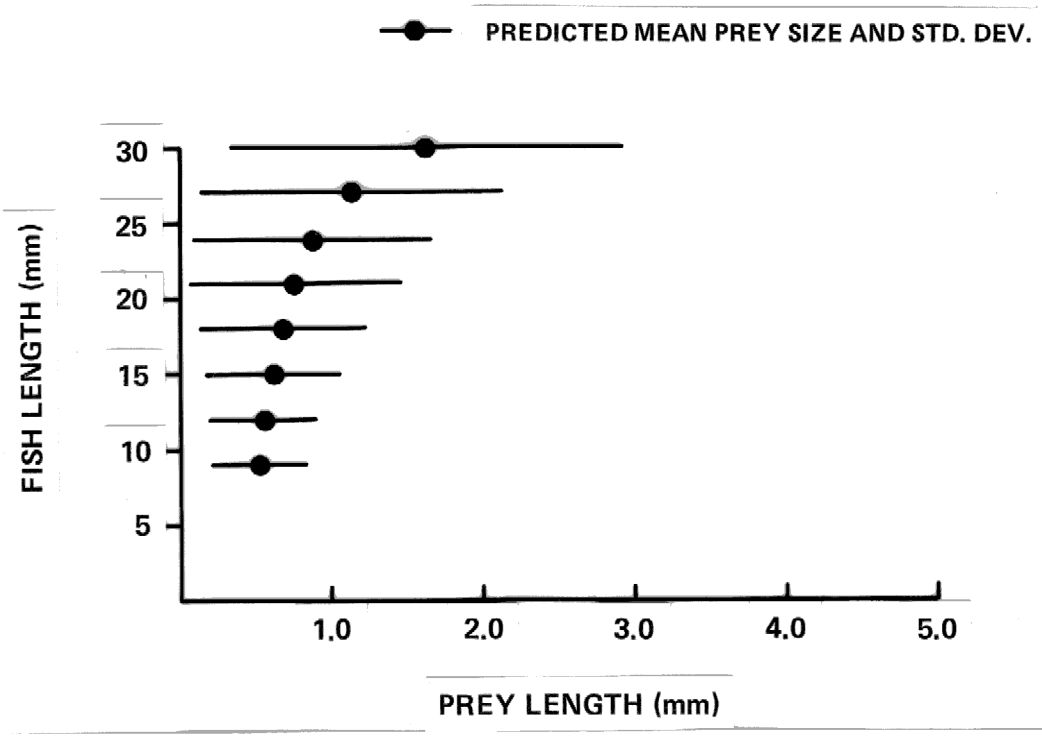
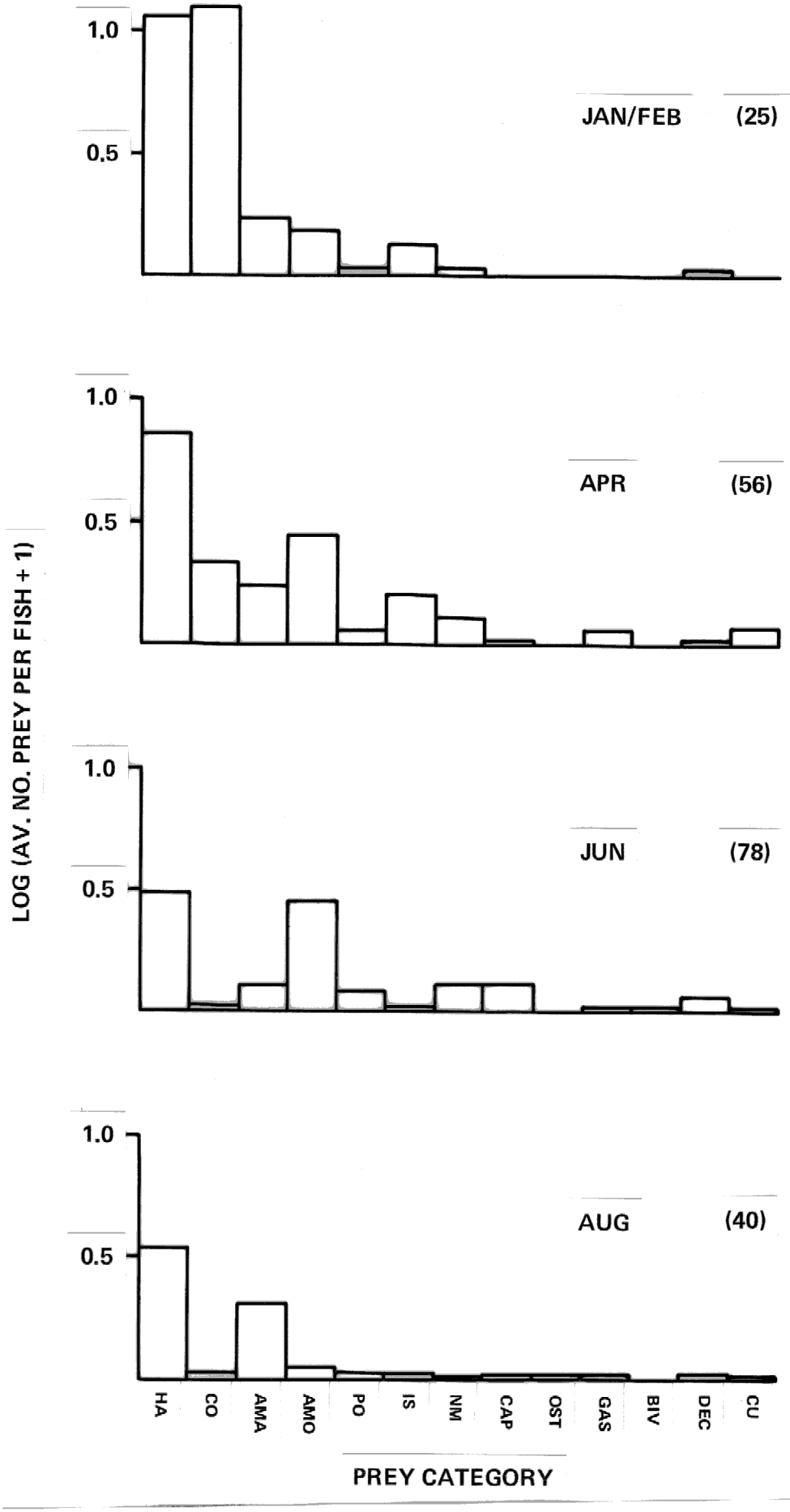


Figure 10. a)Average prey size eaten with standard deviation for each size class of fish, compared with predicted optimum prey size and largest prey size eaten.

b)Predicted average prey size eaten with standard deviation from simulation model incorporating a normal distribution of prey preference with varience of 1.1.



Key

Figure 11. Average number of prey items eaten per fish for thirteen prey catergories. Data has been scaled to log(x+1).

HA	Harpacticoids	AMO	Other amphipods	NM	Nematodes	GAS	Gastropods
CO	Copepods	PO	Polychaetes	CAP	Caprellids	BIV	Bivalves
AmA	Amphipod A	IS	Isopods	OST	Ostracods	DEC	Decapods
						CU	Cumaceans

Sample size in brackets.

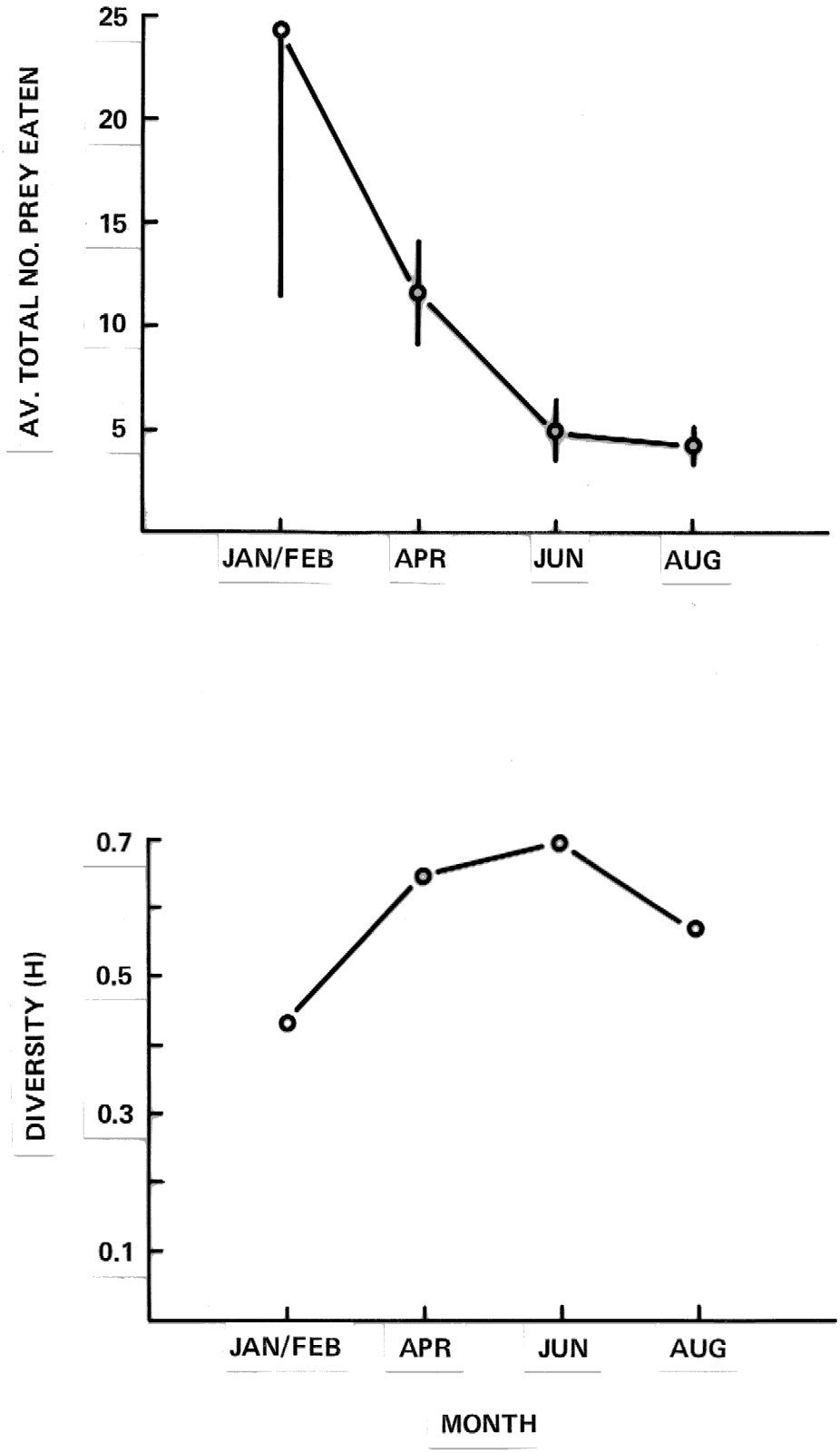


Figure 12. a)Average total number of prey items eaten per fish. (Error bars = 95%C.L.)

b)Changes in the diversity of diet of fish.

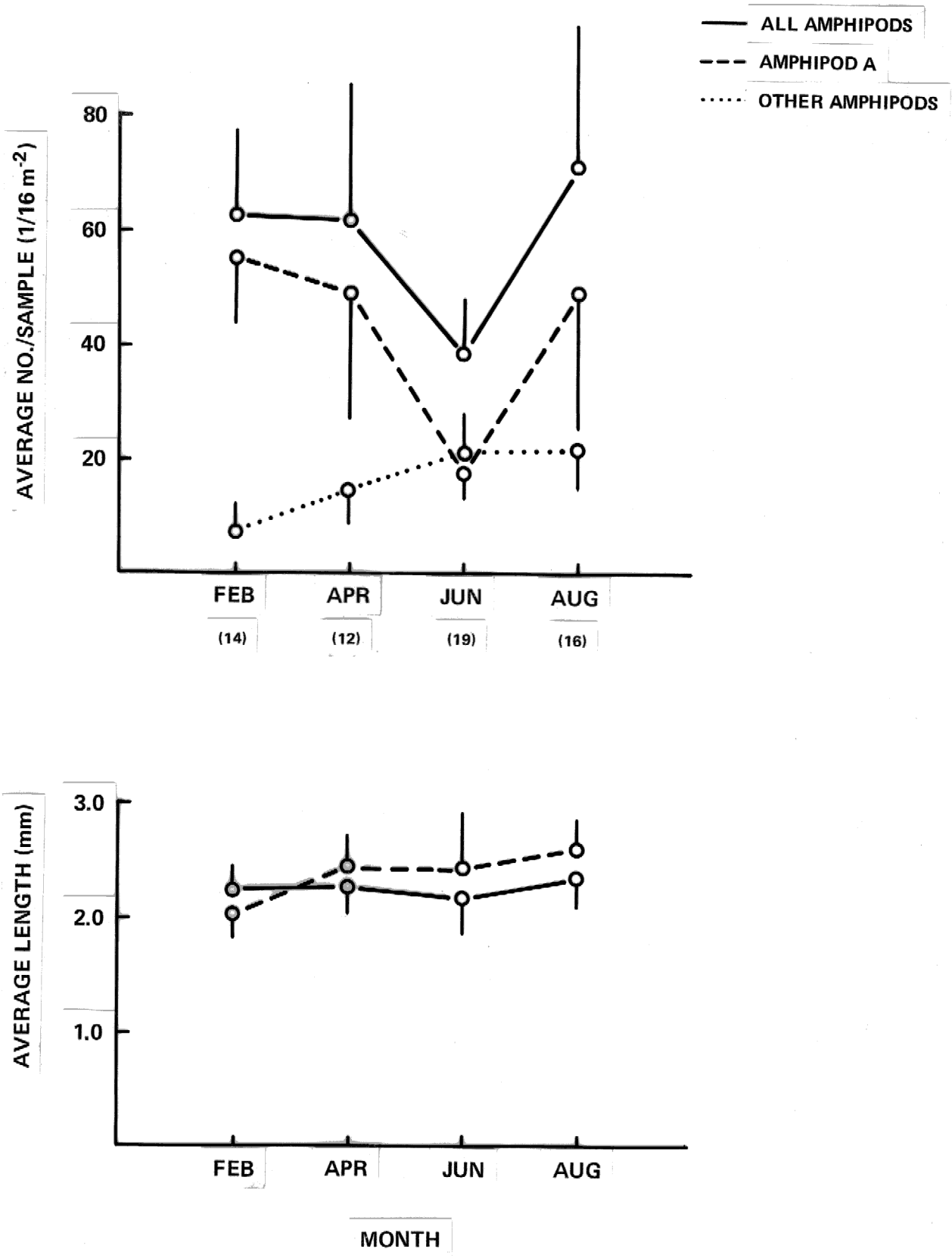


Figure 13. a)Average abundance of amphipods sampled by a $1/16M^{-2}$ quadrat.(Error bars=95%C.L.)

b)Average size of amphipods sampled.(Error bars=95%C.L.)

Sample size in brackets

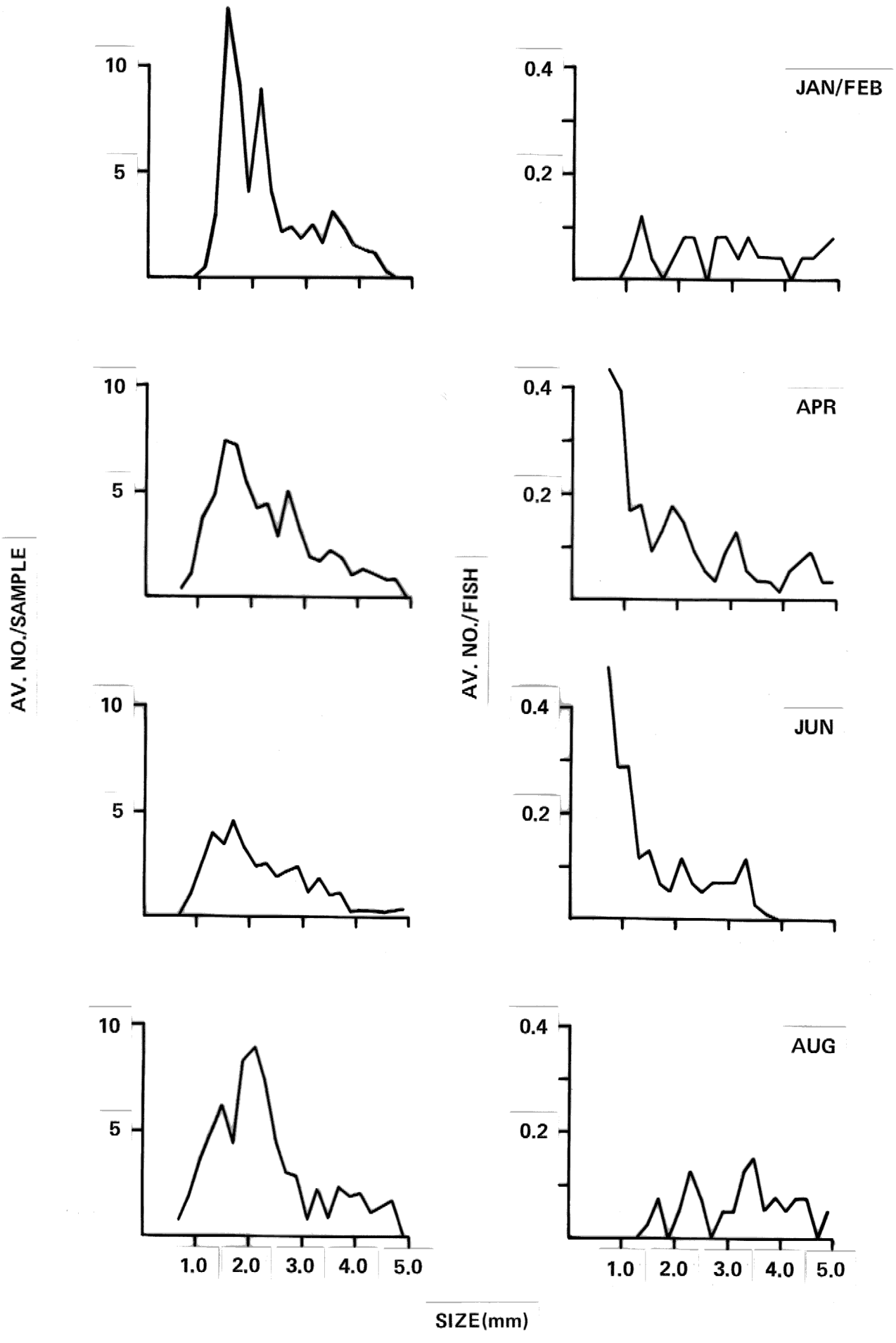


Figure 14. Comparison of size frequency distributions of all amphipods in benthic samples and stomach contents.

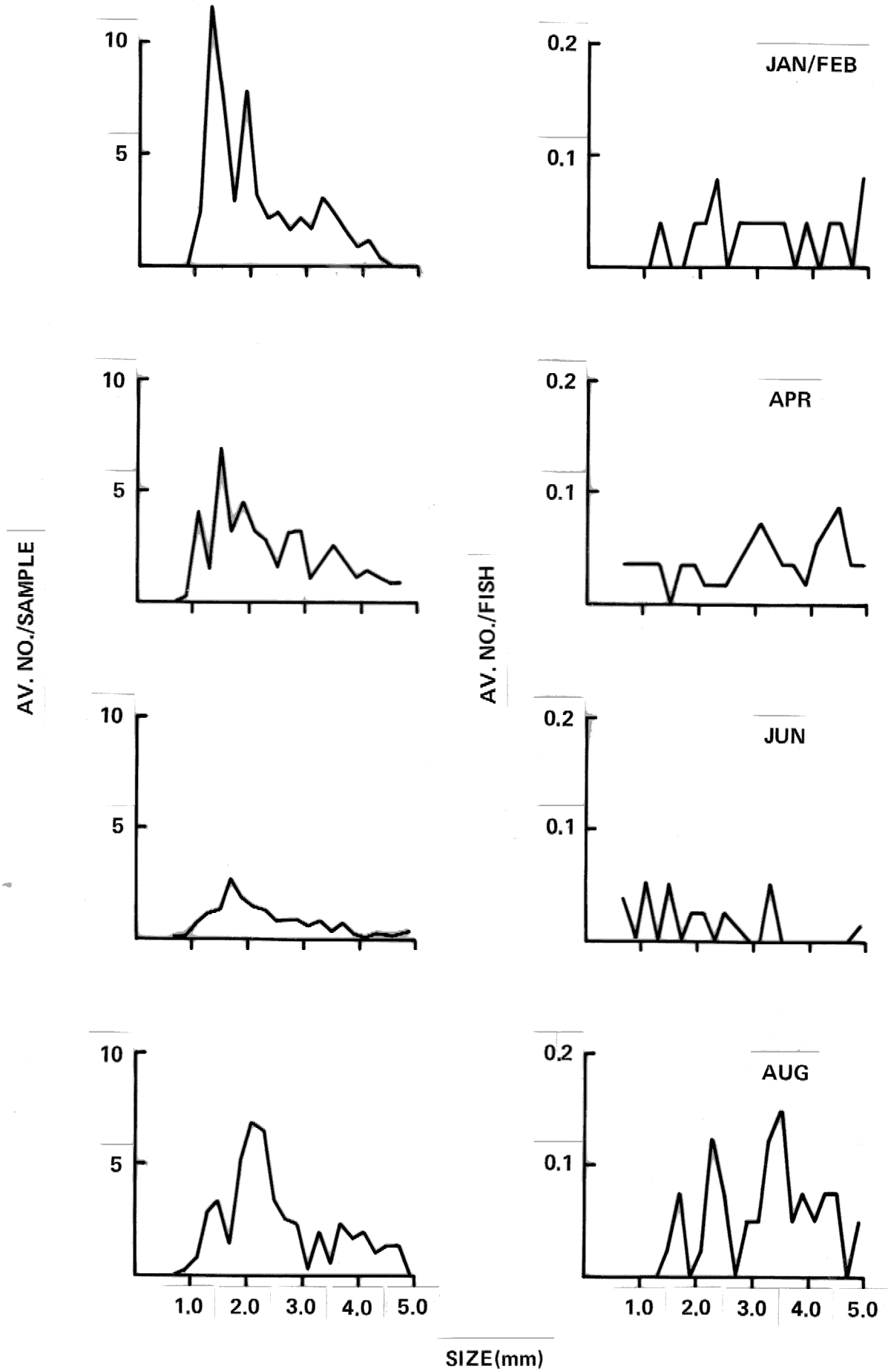


Figure 15. Comparison of size frequency distributions of Amphipod A in benthic samples and stomach contents.

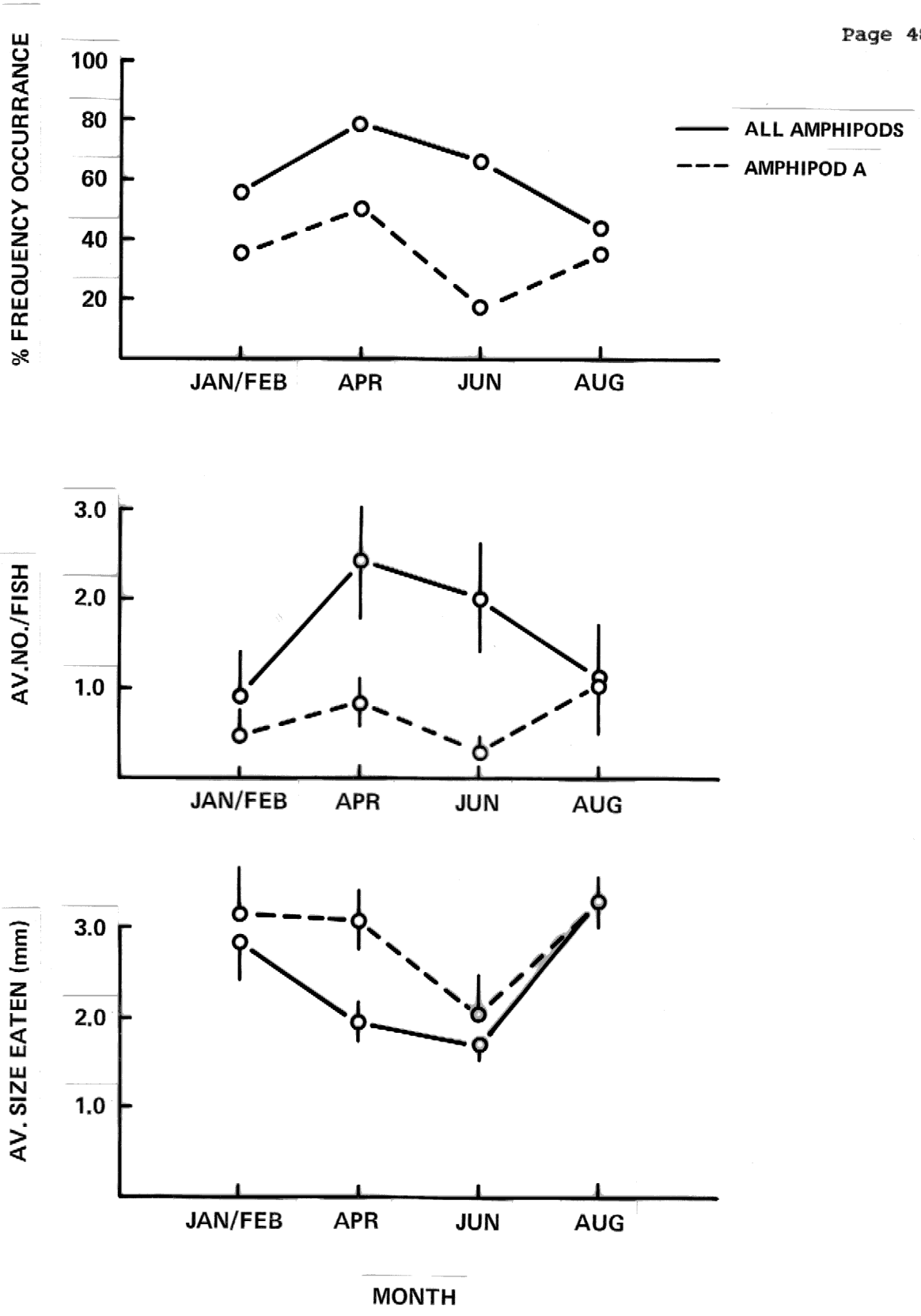


Figure 16. a)Frequency of occurance of amphipods eaten

b)Average number of amphipods eaten per fish.
(Error bars=95%C.L.)

c)Average size of amphipods eaten.
(Error bars=95%C.L.)

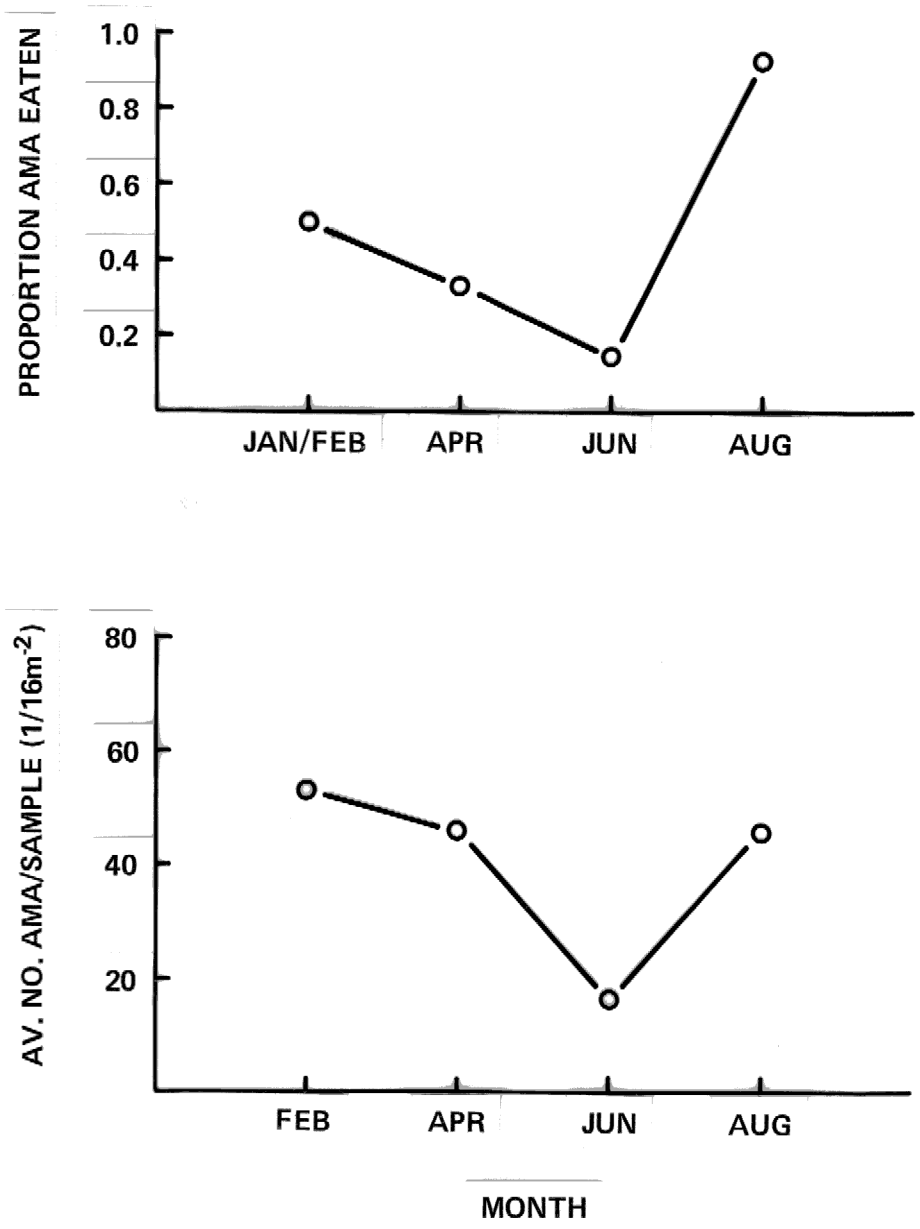
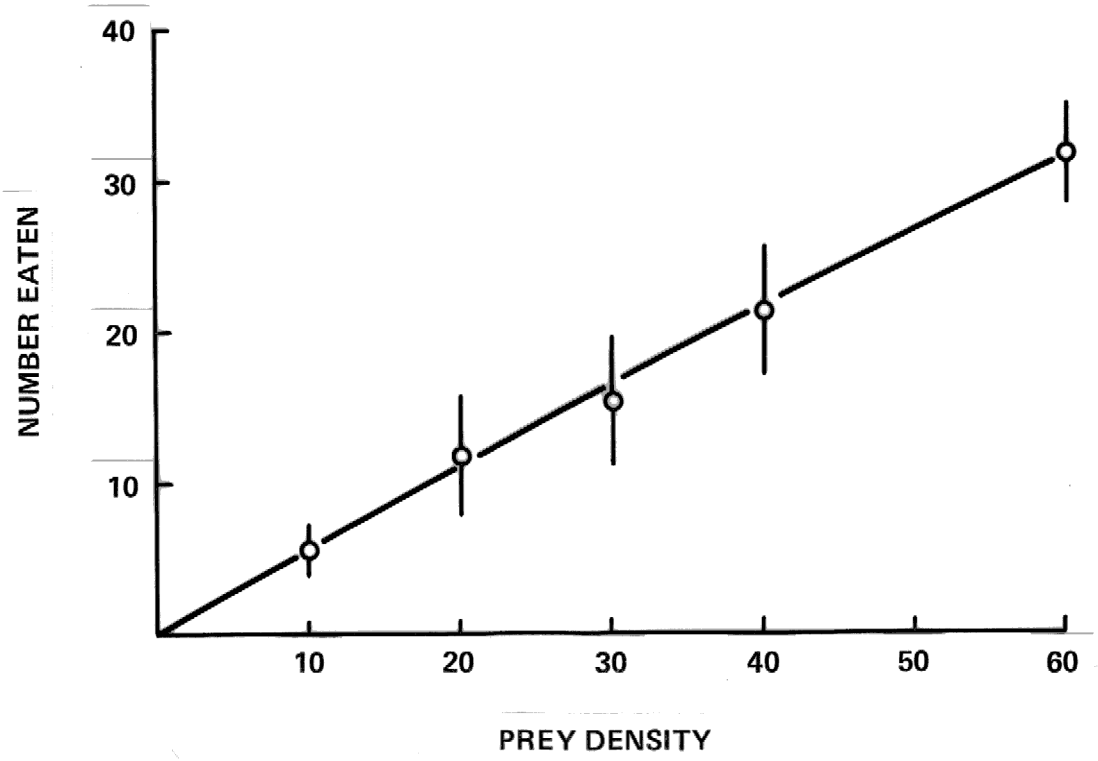


Figure 17. Proportion of amphipod A eaten from all amphipods eaten compared with the change in abundance of amphipod A.



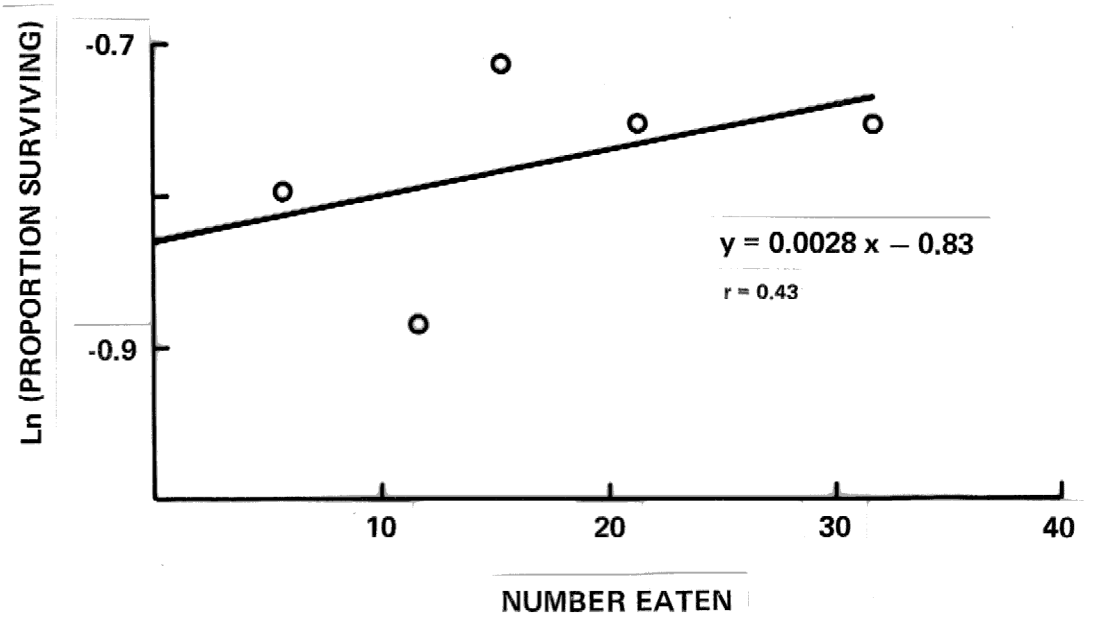
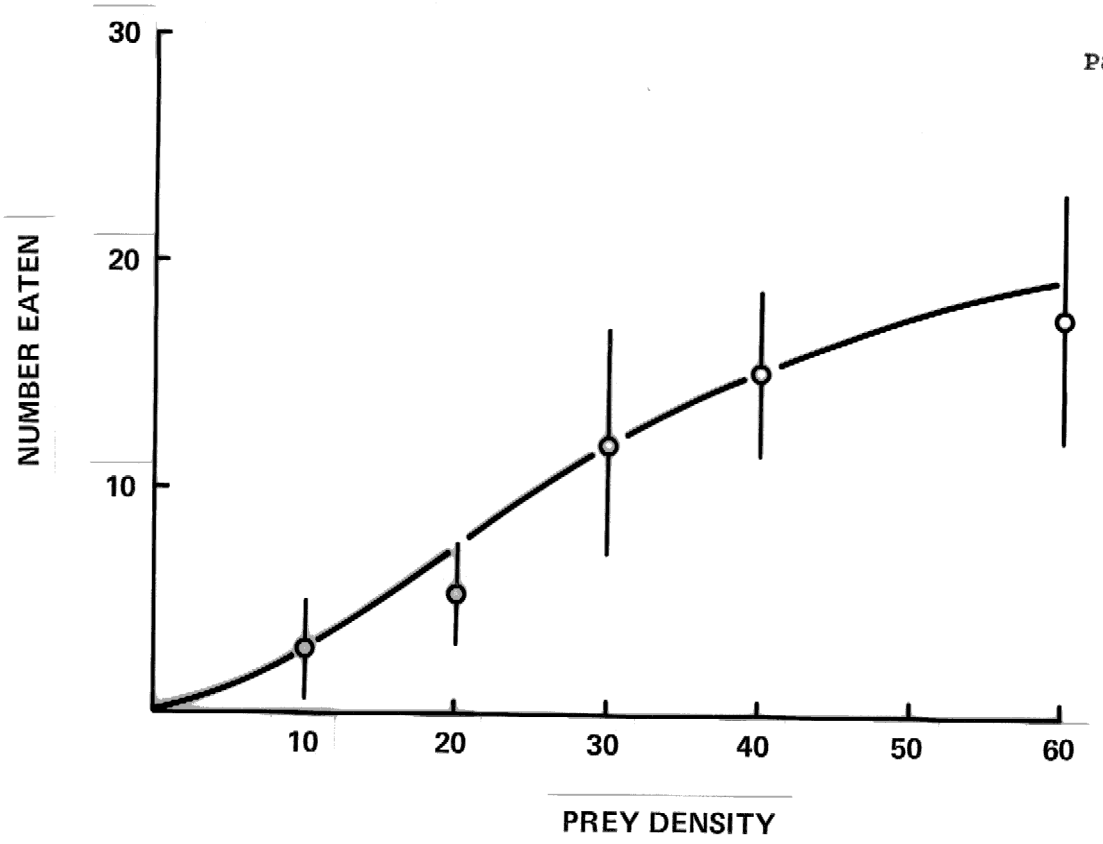


Figure 18. a)Functional response of fish to density of small amphipods. Curve fitted from random predator equation. (Error bars=95%C.L.)

b)Regression to estimate parameters of attack rate and handling time for small amphipods.



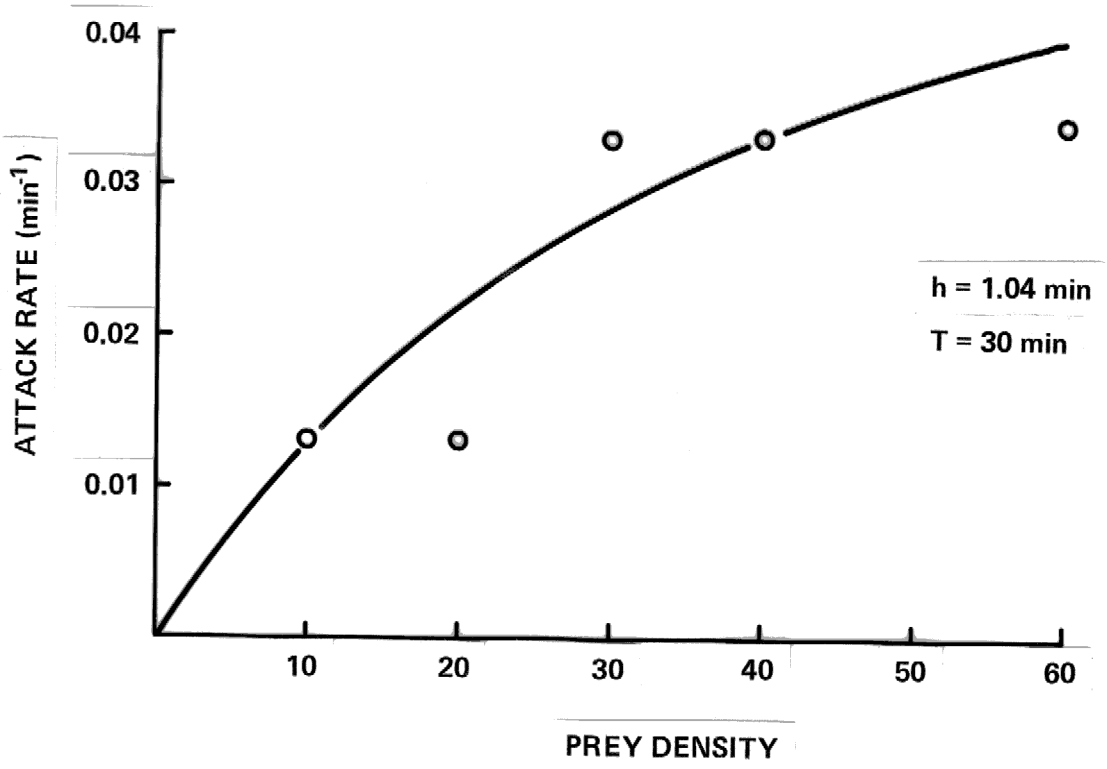


Figure 19. a)Functional response of gobies to density of large amphipods. Curve fitted from eqn (7). (Error bars=95%C.L.)

b)Change in attack rate of gobies to density of large amphipods. Curve fitted by regression from eqn (5) with data point 20 excluded.

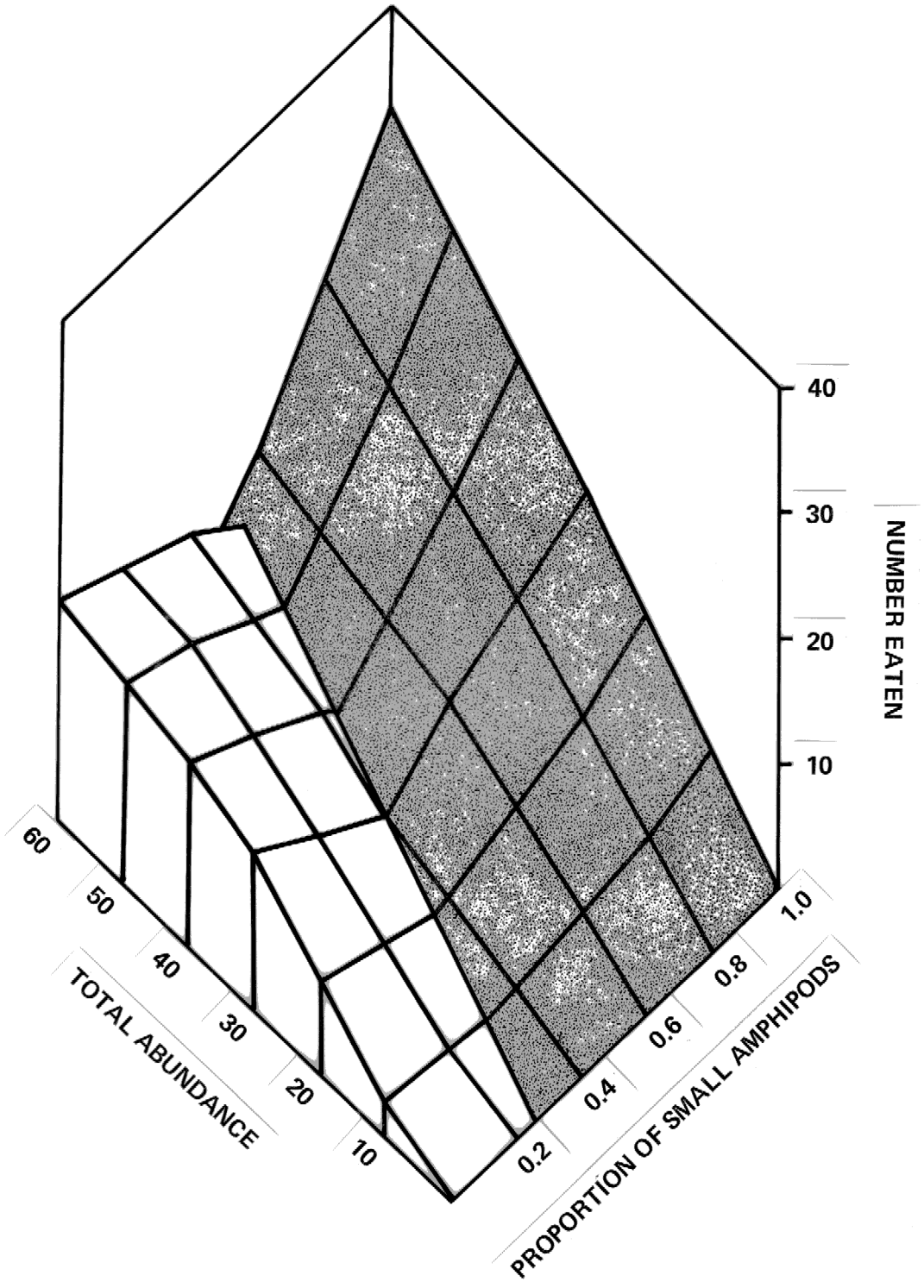


Figure 20. Predicted numbers of both large and small amphipods eaten from eqns (8) for the range of total and relative abundances used. Shaded section - small amphipods, clear - large amphipods.

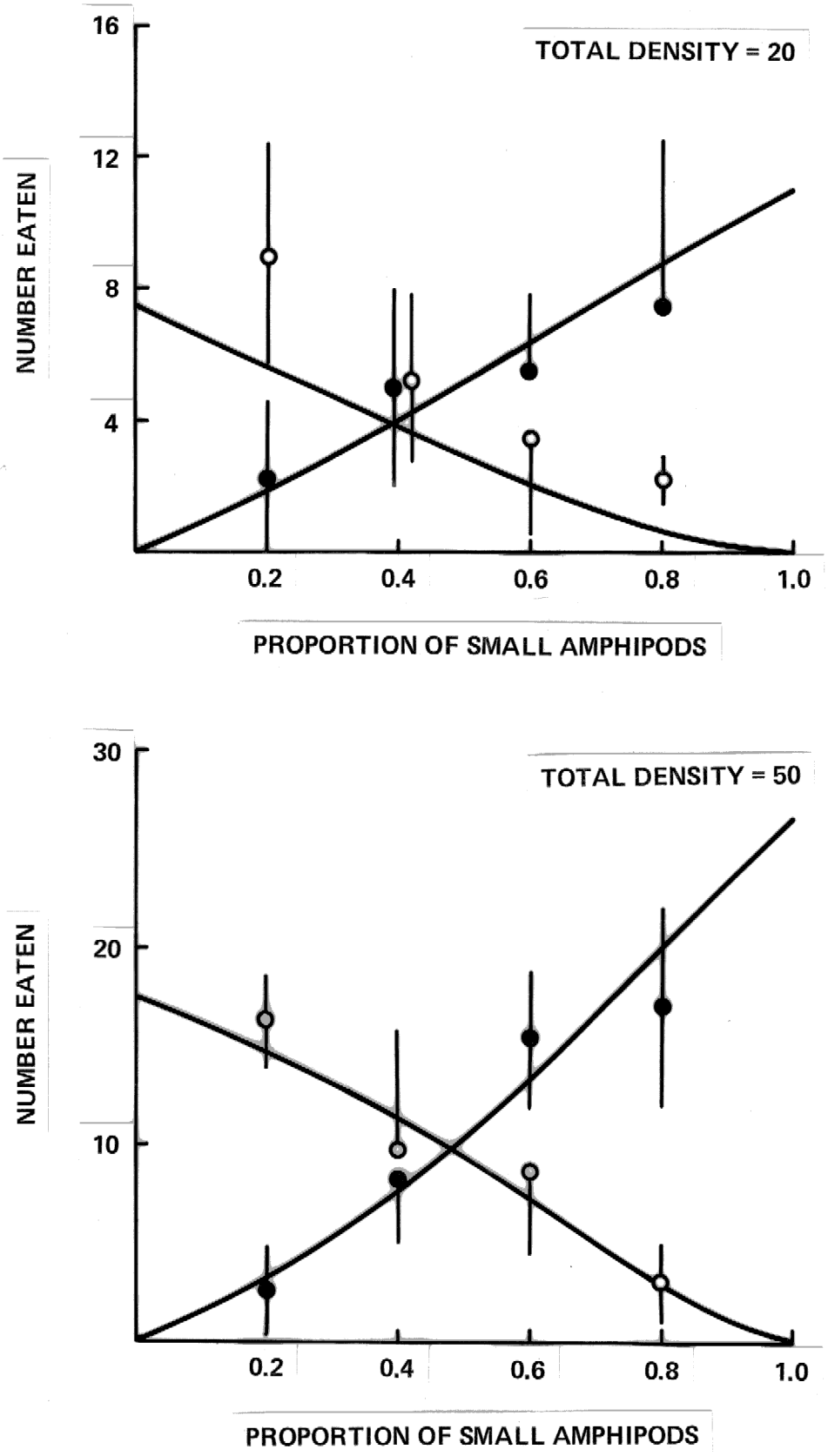


Figure 21. a)Predicted (solid line) and observed numbers of amphipods eaten. Total density 20 amphipods. Open circles - large amphipods, closed circles - small amphipods. (Error bars=S.E.)

b)As above, with total density 50 amphipods.