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A Look at the Age Distribution of Mackerel (27-30 cm.) In Mackerel Age Samples of Poland, January-June 1976 From ICNAF SA 5+6

by

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In an effort to assess the variability of the age distribution of mackerel at the critical length intervals of 27-30 cm., plots were made of percent of two-year old mackerel at each length in the mackerel age samples of mackerel taken by Poland, January-May 1976, ICNAF SA 5+6. Since, in the 27-30 cm interval all fish were either two or three-year old fish, the percent of two-year old fish can be assumed to be a binomial variable, where percent of two-year old fish at a given length is:

$$p = \frac{\#\text{ 2-year fish among those of length } l}{\#\text{ fish at length } l} \qquad (1)$$

Also plotted were confidence bounds

$$p \pm \text{s.d.} = p \pm \sqrt{\frac{px(1-p)}{(n-1)}} \qquad (2)$$

$$p \pm 2\text{s.d.} = p \pm 2\sqrt{px(1-p)/(n-1)} \qquad (3)$$

Where n = number of fish at length l.
Statistics (1)-(3) were calculated for each age sample. Figures 1 - 4 present the plots of (1)-(3) for each sample, by ICNAF Division, month and cm group. Percent of two-year old fish in samples during January-March was fairly consistent for l=27 and l=30, but varied considerably for l=28 ($.20 \leq p \leq 1.00$) and l=29 ($0 \leq p \leq .65$).
For samples taken in April and May, p varied even more at l=28 and l=29, with p ranging from 0.0 to 1.00 for the April, 5ze (l=28) samples and for the May, 5ze (l=29) samples, although in both cases the sample sizes were comparable to those of the January-March samples for the same lengths. This suggests greater sample to sample variation among the April-May samples than the January-March samples for two and three year old fish at these lengths (l=28, l=29).

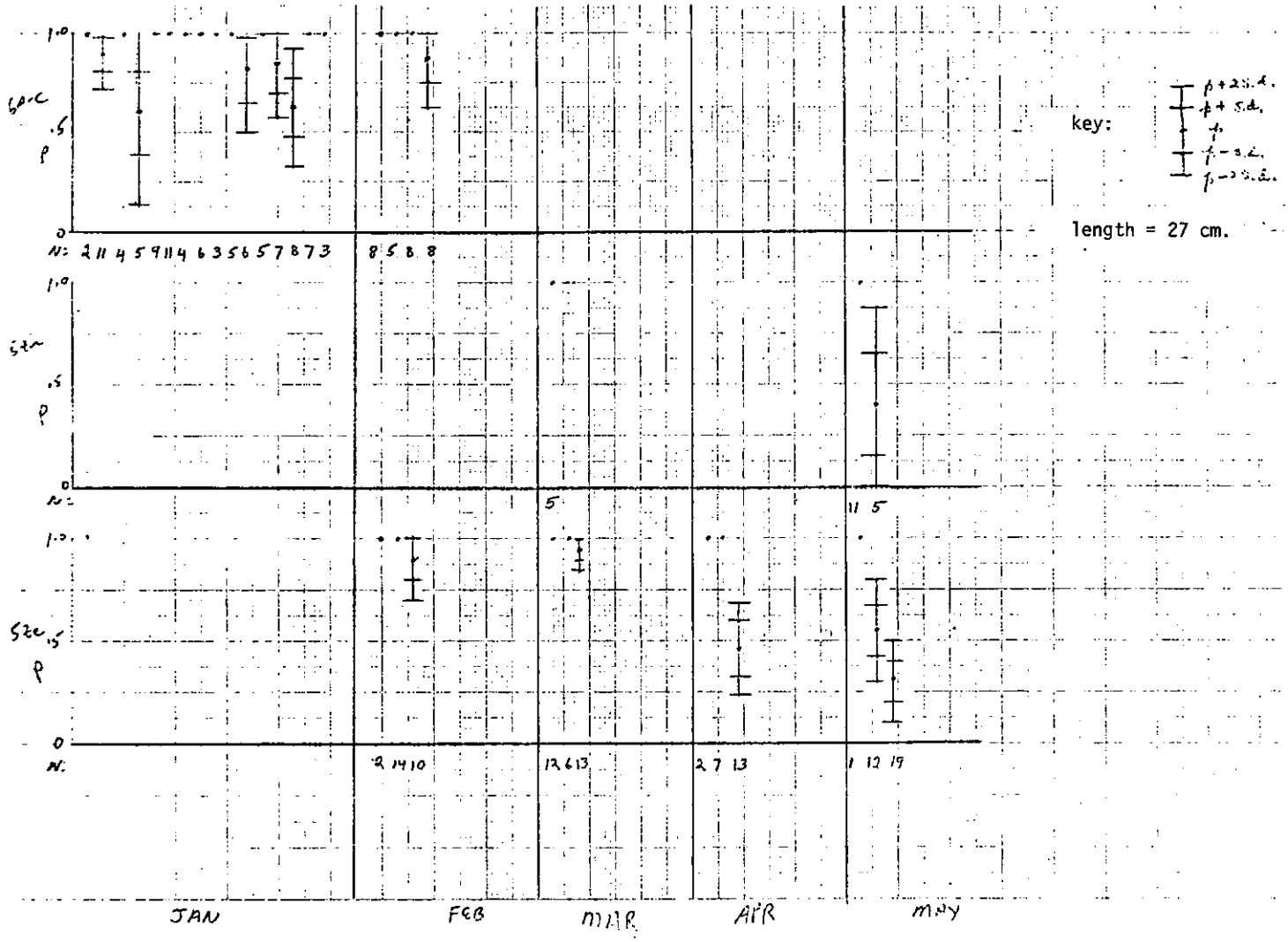

Fig. 1. Plots of percent of 2-year-old fish in mackerel age samples of Poland at length 27 cm for January-May. 1976 mackerel age samples taken in ICNAF SA 5+6.

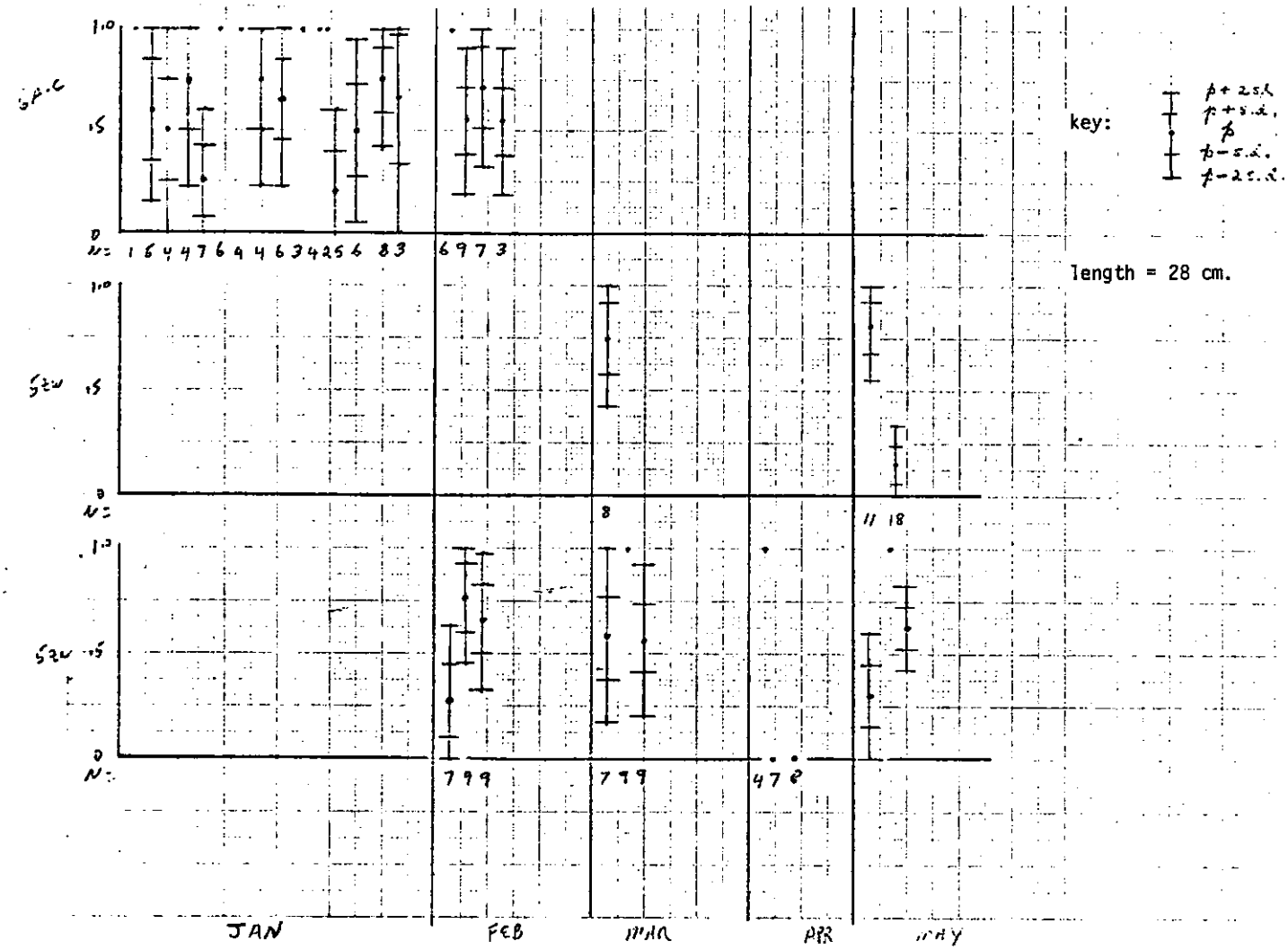

Fig. 2. Plots of percent of 2-year-old fish in mackerel age samples of Poland at length 28 cm for January-May. 1976 mackerel age samples taken in ICNAF SA 5+6.

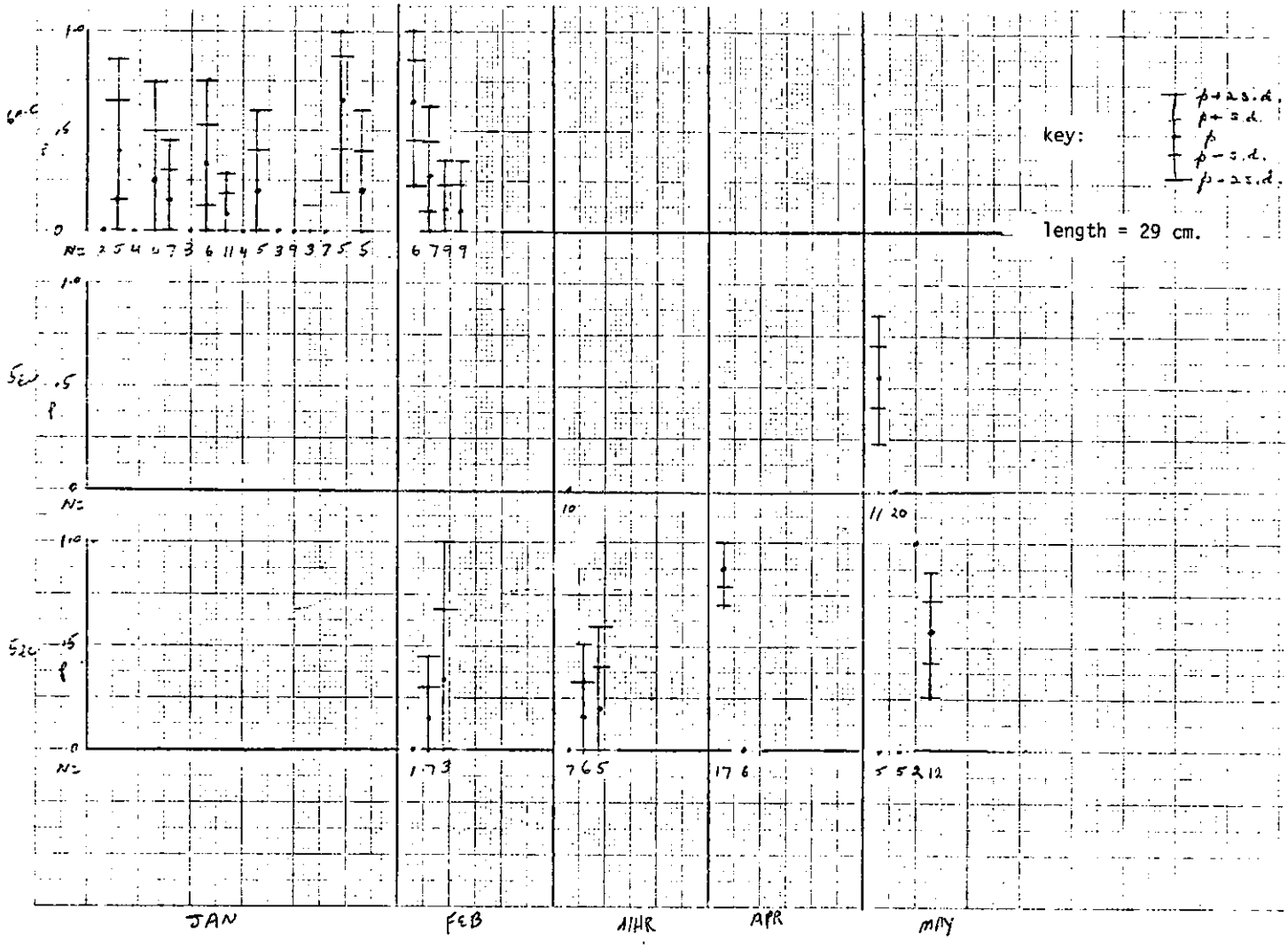

Fig. 3. Plots of percent of 2-year-old fish in mackerel age samples of Poland at length 29 cm for January-May. 1976 mackerel age samples taken in ICNAF SA 5+6.

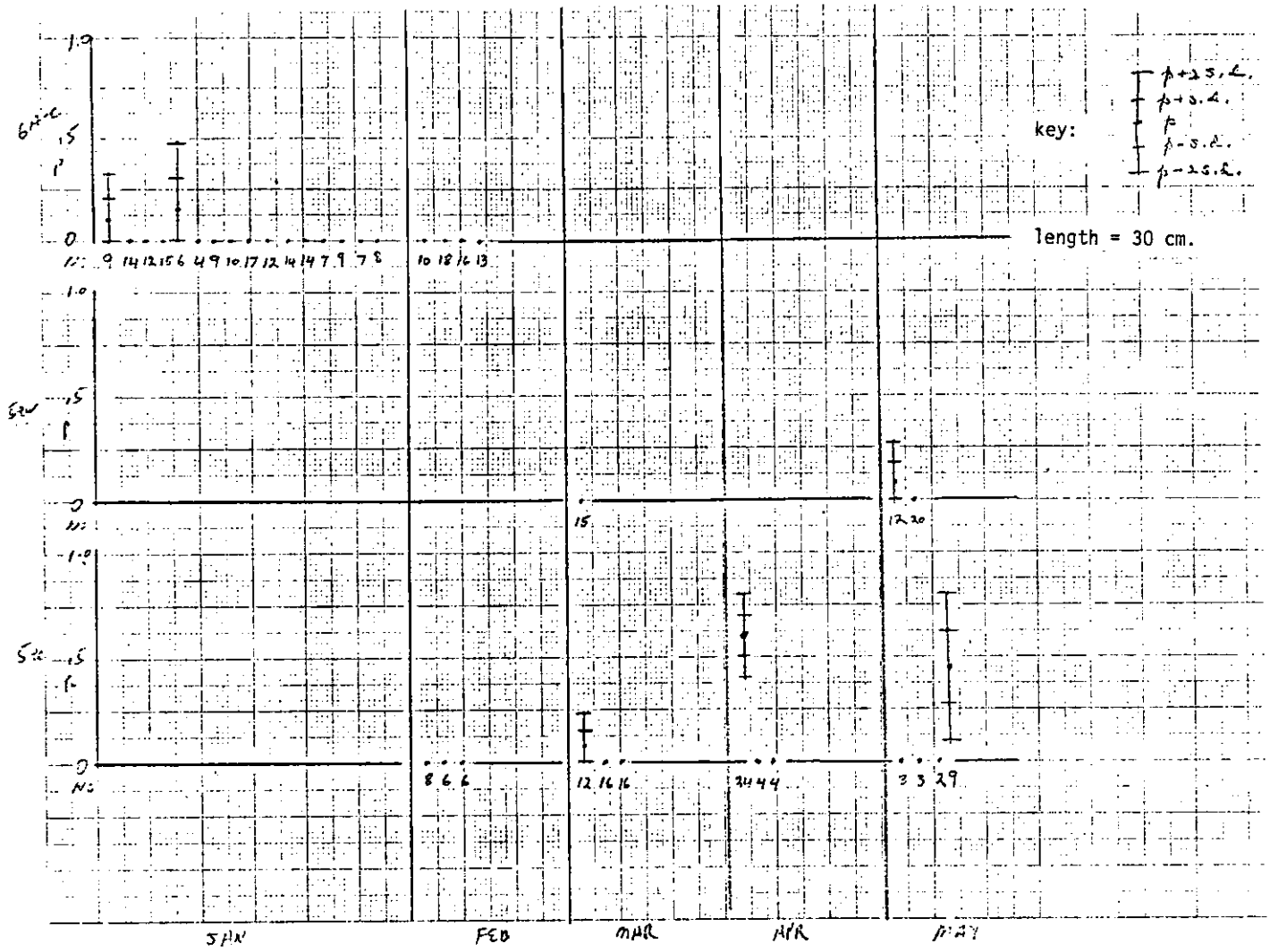

Fig. 4. Plots of percent of 2-year-old fish in mackerel age samples of Poland at length 30 cm for January-May. 1976 mackerel age samples taken in ICNAF SA 5+6.