LENGTH-WEIGHT RELATIONSHIPS FOR GULF FLOUNDER, *PARALICHTHYS ALBIGUTTA*, FROM NORTH CAROLINA

Ginsburg (1952) resolved that the gulf flounder, *Paralichthys albigutta*, ranging from North Carolina to Laguna Madre, TX (Topp and Hoff 1972; Hoese and Moore 1977; Robins and Ray 1986), was a *Paralichthys*. Topp and Hoff (1972) summarized the many distributional records known throughout its range. Other than keys to the species of *Paralichthys* (Gutherz 1967), much of the biology of the gulf flounder remains unknown even though it abounds east of the Mobile Bay system (Joseph and Yerger 1956; Topp and Hoff, 1972; Shipp 1986).

Some researchers cite a 390 mm (total length, TL) Cedar Key, FL specimen (Jordan and Swain 1885) as the largest size attained by the gulf flounder (Hoese and Moore 1977; Robins et al. 1986). Vick (1964) noted a 710 mm, 5 kg, specimen in the sport fishery off Panama City, FL but did not furnish data on specimens larger than 380 mm TL.

We present length-weight regression data for North Carolina gulf flounder from 263 to 673 mm TL and 318 to 3,706 g.

Methods

Since 1975, 75 gulf flounder were speared while scuba diving along the Cape Lookout rock jetty (13 km east) and the artificial fishing reef (3 km SE) off Morehead City, NC. Most dives occurred in November and December, when *P. albigutta* and other paralichthids congregated in nearshore ocean waters off Carteret County, NC prior to their offshore spawning migration. Specimens were weighed to the nearest gram on beam balances and measured (total length) in millimeters within hours of capture.

Observations

While gulf flounder are not abundant in North Carolina (Schwartz et al. 1979, 1982), they are captured by hook and line or spear fishermen when the fish frequent high saline nearshore ocean waters or inlets (Schwartz 1979, 1982). Species of *Paralichthys* can usually be separated from each other by the number of gill rakers on the lower first gill arch, fin ray count, spotting, body width, salinity preference, and depth distribution preference (Gutherz 1967). Gulf flounder possess 9–12 (usually 10–11) gill rakers on the lower first arch, 53–63 anal rays, and three prominent ocellated spots arranged in a triangular pattern. North Carolina gulf flounder had 9–13 gill rakers on the lower first arch (65 specimens) and 54–67 anal fin rays. Complete anal rays were not counted in 17 specimens.

Gulf flounders caught consisted of 13 males and 62 females. Males ranged from 310 to 426 mm TL

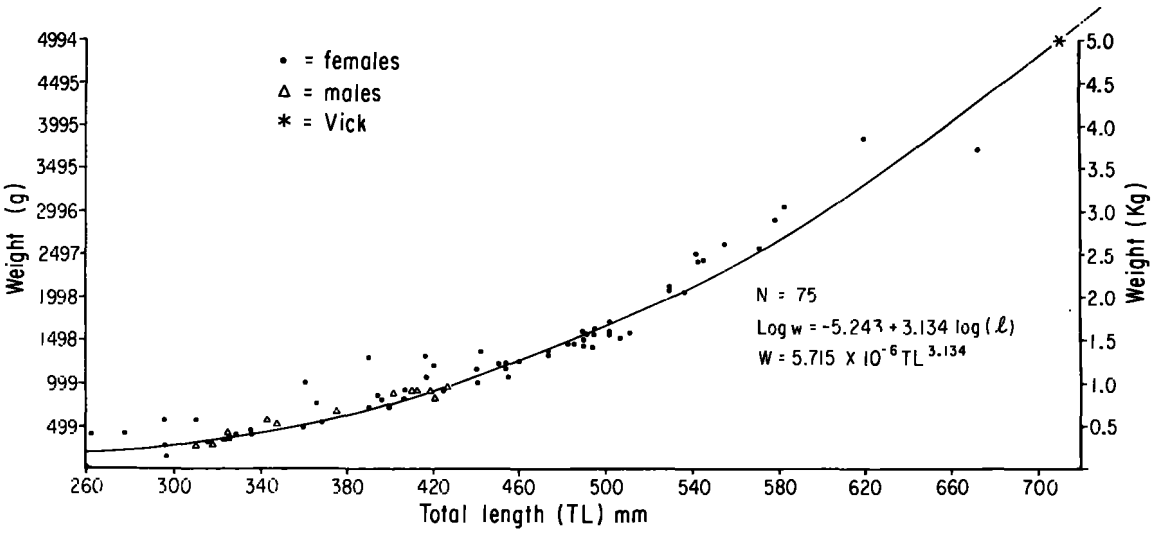

FIGURE 1.—Length-weight relationship for gulf flounders, *Paralichythys albigutta*, from North Carolina. Asterisk represents Vick's specimen.

and weighed 318 to 949 g, while females ranged from 263 to 673 mm TL and 408 to 3,706 g (Fig. 1). The length-weight relationship for North Carolina gulf flounder can best be expressed as $\log w = -5.24 + 3.134 \log l$ for 75 specimens (sexes combined), $r = 0.957$ (Fig. 1). Little change occurred when the male data was removed because the female length-weight relationship was virtually the same: $\log w = -5.018 + 3.053 \log l$ ($N = 62$), $r = 0.955$. Vick's (1964) large specimen, 710 mm TL, 5,000 g, fits right on our regression curve. Thus, there is little doubt that his specimen was *P. albigutta* because *P. dentatus* does not occur in the Gulf of Mexico (Robins and Ray 1986), and *P. squamilentus* or *P. lethostigma* possess other distinguishing meristic, morphometric, and ecological requirements (Vick 1964; Gutherz 1967).

The maximum known upper size and weight can now be raised to at least 673 mm and 3,706 g in North Carolina.

Acknowledgments

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FUNCTIONAL REGRESSION EQUATIONS FOR ZOOPLANKTON DISPLACEMENT VOLUME, WET WEIGHT, DRY WEIGHT, AND CARBON: A CORRECTION

The objective of this note is to point out the fact that the first nine equations published by Wiebe et al. (1975, table 2) were those appropriate for the Y on X regressions; they were not the functional regression equations as originally claimed. This mistake was discovered as a result of correspondence with F. A. Ascioti (Dip. di Biologia Animale Ed Ecologia Marina; Universita di Messina; Via Dei Verdi 75; 98100 Messina ITALY). This table 2 should have had the following equations in it:

Equation		*Regression equation*			*N*
1	LOG(DV)	= −1.434 + 0.820	LOG(C)		87
2	LOG(WW)	= −1.537 + 0.852	LOG(C)		70
3	LOG(DW)	= 0.499 + 0.991	LOG(C)		195
4	LOG(DV)	= −1.842 + 0.865	LOG(DW)		163
5	LOG(WW)	= −2.002 + 0.950	LOG(DW)		95
6	LOG(DV)	= 0.139 + 1.003	LOG(WW)		77
7	LOG(BWW)	= −1.947 + 1.050	LOG(BDW)		421
8	LOG(BDV)	= −1.887 + 1.007	LOG(BDW)		404
9	LOG(BDV)	= 0.005 + 0.981	LOG(BWW)		403