MEAT CONTENT OF PAVLOF BAY KING CRABS

By Henry M. Sakuda*

Previous statements on the meat content of king crabs (Paralithodes camtschatica) by Wigutoff and Carlson (1950) and in Fishery Market News (May 1942 supplement) are based on production figures and do not include the size of crabs from which the yields were obtained.

ALASKA KING CRAB
(PARALITHODES CAMTSCHATICA)

This study was undertaken to determine the meat content of various commercial-size king crabs. In order to simplify future meat-content estimates, a relationship of some part of the crab to the entire meat yield was desired. With such a relationship established, it would only be necessary to extract and weigh meat from this body part to estimate the total available meat of the whole crab. The merus (thigh) section of the right third leg was selected for this purpose.

SOURCES OF DATA

On March 23, 1957, the M/V Deep Sea commenced king crab factoryship operations in the Pavlof Bay area on the Alaska Peninsula. The commercial processing equipment aboard the vessel was used in this study. Although the meat extracting was done with more care than in commercial operations, the parts of the crabs used were the same, i.e., claws, legs, and shoulders.

SAMPLING PROCEDURE

Specimens were selected to include all the commercial sizes present. In an effort to keep the method of weighing constant, weights were taken immediately upon removal of crabs from the live tanks and subsequently upon removal from the cooling tanks after cooking. Both weighing procedures required approximately 30 seconds and did not exceed 45 seconds. To standardize weight variations due to water loss, crabs were kept on their backs at all times. The specimens were cooked with the commercially-butchered crab sections in wire baskets at about 200° F. for 25 minutes. The cooked crabs were cooled in tanks containing running sea water. Prior to meat extraction, the carapace and gills were removed and the body broken in half and rinsed.

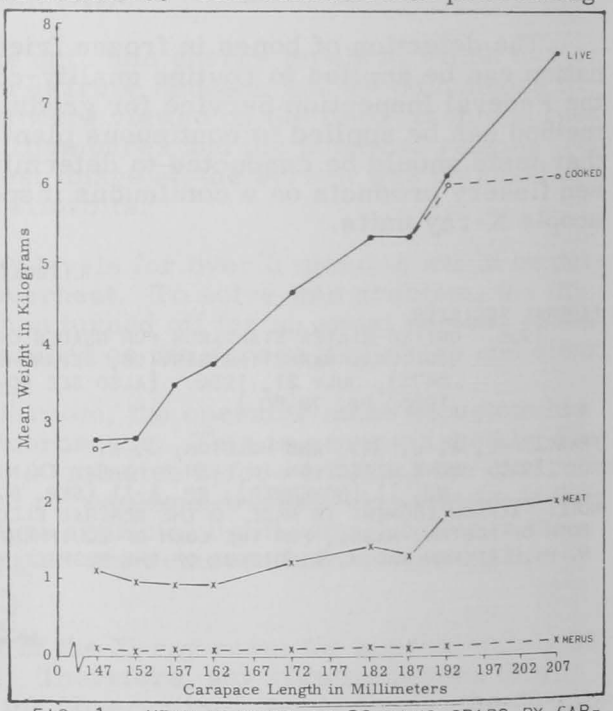


FIG. 1 - MEAN WEIGHTS OF 20 KING CRABS BY CARAPACE LENGTH.

The leg meat was extracted by a pressurized jet of water forced into the outer extremity of the propus. After the initial force of water had removed most of the

* FISHERY RESEARCH BIOLOGIST, PACIFIC SALMON INVESTIGATIONS, BUREAU OF COMMERCIAL FISHERIES, U. S. FISH AND WILDLIFE SERVICE, SEATTLE, WASH.

meat, bits of meat were often found adhering to the tendons. These were recovered by breaking the shell at each joint. The extracted meat was washed by sprinkling water.

The meat from the right third merus and the total meat from each specimen were weighed.

RESULTS

Twenty specimens were collected between April 20 and April 26, 1957. The data concerning these crabs, arranged in order of increasing carapace length, are given in table 1.

Table 1 - Dimensions of Twenty King Crabs from Pavlof Bay, April 20-26, 1957

Specimen	Carapace Length	Live Weight	Cooked Weight	Total Meat Weight	Merus (Thigh) Meat Weight
No.	Millimeter			(Kilogram)	
1	145	2.7499	2.6649	1.1340	.097
2	150	2.8066	2.8208	1.3041	.057
3	154	2.7783	2.7783	.6804	.055
4	155	3.2744	3.1469	.8080	.056
5	159	3.5153	3.3737	1.0773	.085
6	159	3.5862	3.4587	.9639	.085
7	163	3.7988	3.7564	.9639	.079
8	164	3.6429	3.4729	.8930	.083
9	170	4.2241	4.1675	.8080	.067
10	172	4.7202	4.6494	1.2900	.111
11	172	4.8478	4.6778	1.3608	.114
12	172	4.7344	4.7628	1.4033	.117
13	180	5.6700	5.4857	1.4742	.138
14	181	4.6068	4.5502	1.3466	.112
15	182	5.4573	5.3015	1.4175	.125
16	184	5.5281	5.2589	1.4600	.120
17	185	5.3439	4.3620	1.2190	.108
18	186	5.2872	5.1739	1.4033	.102
19	191	6.1093	5.9677	1.8285	.136
20	205	7.6260	6.0669	1.9845	.166
Mean	171.45	4.5154	4.3198	1.2410	.101

NOTE: 1 KILOGRAM EQUALS 2.2046 POUNDS.

Figure 1 is a graphic presentation of table 1 in 5-mm.-carapace length intervals.

From the data of table 1, the mean meat weight is 27.48 percent of the live weight. The merus meat averages 2.23 percent of the live weight, 2.33 percent of the cooked weight, and 8.11 percent of the total meat weight. Figure 2 graphically presents these percentages.

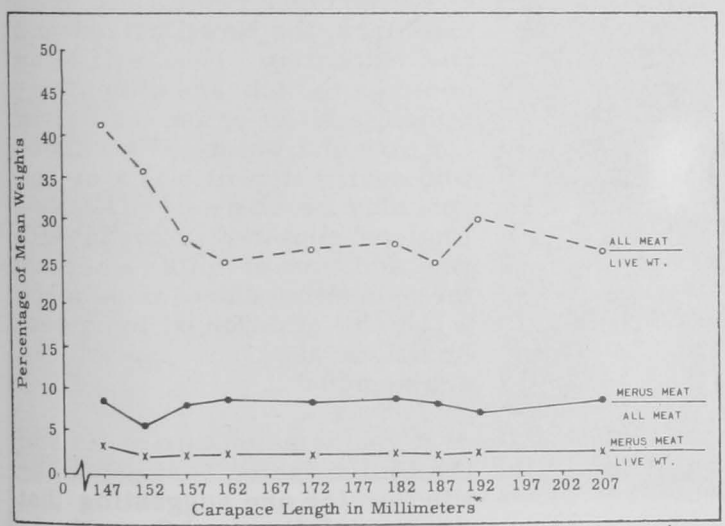


FIG. 2 - PERCENTAGE OF MEAN WEIGHTS OF 20 KING CRABS BY CARAPACE LENGTH.

There was a 4-percent decrease in the mean live weight of the specimens after cooking.

Although the results are based on a short term study and may not be applicable in all cases, the constant percentage of merus meat weight to live weight gives indications that the merus may be used as a suitable standard for meat-content estimates.

SUMMARY

1. There was a slight decrease in weights after the specimens were cooked.

2. The live and total meat weights did not increase proportionately.

3. A higher percentage of meat yield was recovered from the smaller specimens.

4. The percentage of merus meat weight to all meat weight remained fairly constant throughout the sizes.

5. Indications of a very constant percentage between the merus meat weight and the live weight enables the use of the merus meat as a suitable standard for future meat-content estimates.

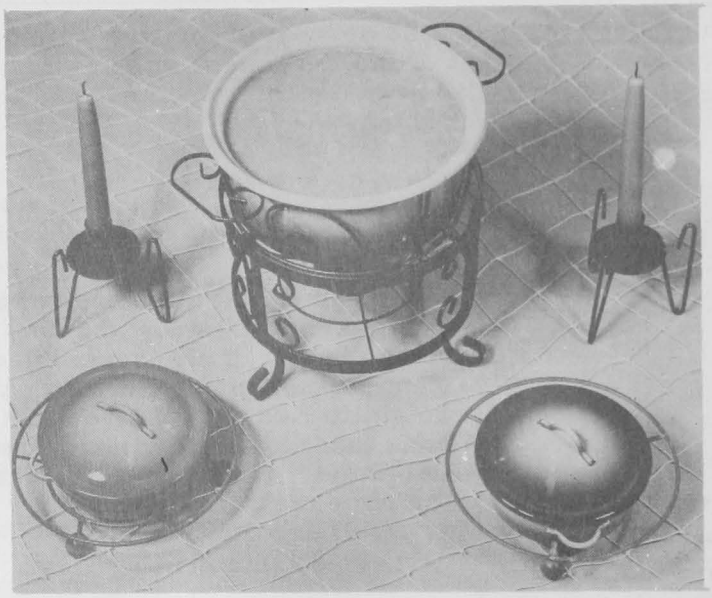
LITERATURE CITED

FISHERY MARKET NEWS:
1942. THE ALASKA KING CRAB, VOL. 4, NO. 5A (MAY SUPPLEMENT), FISHERY MARKET NEWS, U. S. FISH AND WILDLIFE SERVICE, P. 23.

WIGUTOFF, N. B., AND C. B. CARLSON:
1950. S. S. PACIFIC EXPLORER, PART V. 1948 OPERATIONS IN THE NORTH PACIFIC AND BERING SEA. U. S. FISH AND WILDLIFE SERVICE, FISHERY LEAFLET 361, PP. 57-58.

COLD WINTRY DAYS ARE CHOWDER DAYS

The aroma of savory clam chowder cooking on the stove is a pleasant experience, especially on a cold wintry day. Clam chowder is an economical hearty dish that is as full of good nourishment as it is of good flavorful eating.



There are two basic clam chowders, the New England and the Manhattan. Ingredients common to both are clams, potatoes, a bit of onion, and clam liquor and water. (For those who desire it, salt pork or bacon may be added.) The New England chowder is made with the addition of milk, whereas, the Manhattan chowder is made with the addition of tomatoes. Additions of other ingredients are regional.

The home economists of the United States Fish and Wildlife Service are suggesting that you serve "Clam and Corn Chowder," a variation of New England chowder using canned corn which is plentiful now.

CLAM AND CORN CHOWDER

- 1 PINT CLAMS
- 1/4 CUP CHOPPED SALT PORK OR BACON
- 1 CUP CHOPPED ONION
- 1 CUP CLAM LIQUOR AND WATER
- 1 CUP DICED POTATOES
- 1 TEASPOON CELERY SALT
- 1 TEASPOON SALT
- DASH PEPPER
- 1 CAN (8 OUNCES) WHOLE-KERNEL CORN
- 2 CUPS MILK
- 1 TABLESPOON BUTTER OR OTHER FAT
- 1/3 CUP CRACKER CRUMBS

Drain clams and save liquor. Chop. Fry bacon until crisp; drain on absorbent paper. Cook onion in bacon fat until tender. Add liquor, potatoes, seasonings, and clams. Cook about 15 minutes or until potatoes are tender. Add corn, milk, and butter; heat. Stir in cracker crumbs. Garnish with bacon sprinkled over the top. Serves 6.