FOOD VALUE OF THE "ODANG" OF LAKE LANAO

G.J. Riconalla & Corazon Padrones-Macalisang

Prawns or "odang" of the *Macrobrachium* group dominate the crustacean population of Lake Lanao (1). This group of prawns are confined mostly to the freshwater lakes and rivers although there are a few species living in the sea and brackish-water areas. Large prawns have two names in the Maranao dialect: "odang a mangala" and "gangawa." The rest of the specie are known under the general names "odang" and the young prawns are called "odang a maroni."

The Macrobrachium group can be distinguished from other groups of prawns by the absence of keel-like ridge on the tergum of the posterior abdominal segments. The first pair of legs are slender and short and end in pinchers. The chelipeds or the second pair of legs are the largest and end in pinchers. The third, fourth and fifth pairs of legs are bigger than the first pair, but they do not end in pinchers (2).

One of the species of the Macrobrachium group found in Lake Lanao is the *Macrobrachium equidens (Dana)* (Fig. I). (3) Literature regarding this species is unfortunately rare so that its biology could not be included in this paper. The prawns also exist in Thailand, south China and the Ryukyu Islands. Its constant presence in the market stalls of Marawi and popularity among the Maranaos is evidence of the existence of large quantities in the Lake. In fact, in 1963-1964, it was estimated that more than 50 metric tons of prawns (4) were caught but that some of them were left unconsumed. Other aquatic animals such fish and larger

prawns also feed on this species.

Probably due to its seeming insignificance in the diet of some people and its limited abundance in other parts of the world, research on this prawn, especially its nutritive value, has not been made. Hence this study.

Experimental

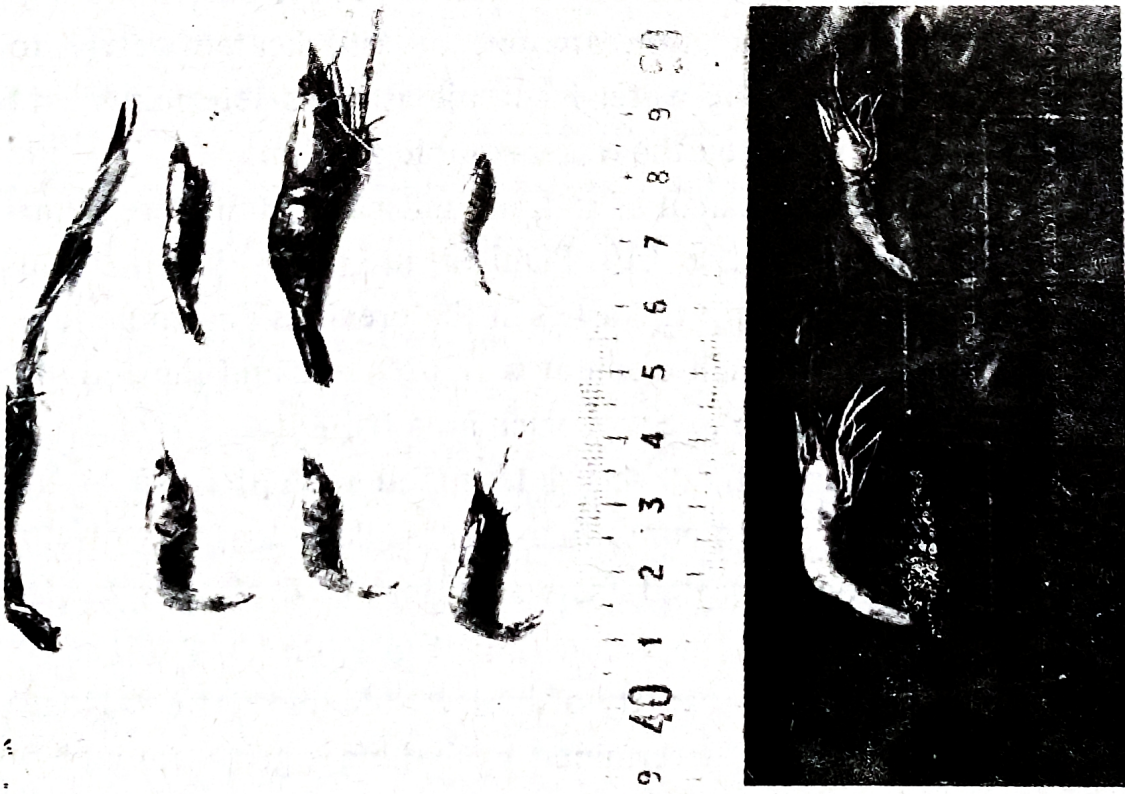
Samples of the prawn were bought from the public market at Marawi City. After washing and removal of dirt and other foreign matter, separation of one species from another was made.

A portion of the sample was allowed to dry over tissue paper.

A second portion was dried in a 100-110°C oven.

Another part was dried under the sun and the remainder boiled in water, drained and dried in an oven maintained at 100-110°C.

Figure 1



Water contents of the raw and dried samples were also determined using the Toluene method, where a given amount of sample is boiled with toluene in a water content apparatus. The vaporized toluene and water condense and drip directly into the calibrated trap tube. Water being heavier than toluene settles at the bottom while toluene overflows back to the flask. The volume and temperature of the collected water are read and with its corresponding density, its percentage is calculated.

The protein content was determined using the Kjeldahl method. The sample is digested with concentrated sulfuric acid in the presence of a catalyst, to convert the nitrogen in the protein to ammonium bisulfate. The ammonia is liberated by the addition of sodium hydroxide and collected in boric acid solution. This is then subsequently titrated with standardized HCL solution. The percentage of nitrogen is calculated and converted to percentage protein by the factor 6.25.

Percent total ash was calculated from the residue obtained from the complete ignition of a certain quantity of sample in a porcelain crucible. A Tirril burner was used in the determination. Water was added to a given amount of ash, heated nearly to boiling and filtered. The water insoluble ash was determined and the difference represented the water-soluble portion.

The amounts of calcium, sodium and potassium were determined with the use of the EEL Flame Photometer. Sample solutions were prepared from the ashes in the previous determination. A standard curve for each element was prepared and the amount of the element in the sample was calculated from it.

The percentage of fat was determined with the use of the Soxhlet extractor. Petroleum ether was employed as the solvent. The weight of the extracted fat was determined after thorough drying.

Crude fiber is the quantity of indigestible matter or roughage in a foodstuff. This is determined by boiling a given amount of

sample, first with dilute acid and then with dilute alkali. The undigested matter is separated by filtration, dried and weighed. It is then ignited to constant weight. The difference in the two weights represents the weight of crude fiber.

Results and Discussion

Table 1. Proximate Composition of "Odang" (wt % , dry)

Crude Protein	–	60.56
Crude Fat	–	12.02
Crude Fiber	–	3.11
Ash (Total)	–	19.16
Ash, water-soluble	–	2.07
Calcium	–	3.56 (0.62% raw)
Sodium	–	0.23
Potassium	–	0.68

The fresh prawn contains about 73% water. Water contents of fishes range from 63 to 83% .

The protein content is 60.56 wt% (dried), or 16.35% (raw). Raw seater prawns have about 18%, lobster, 16, while raw fishes contain from 15 to 23%. It contains more fat than most fishes. Its fiber content, however, is considerably higher. This may be due to the fact that prawns unlike fishes have plastic-like shells or outer coverings.

While fishes have calcium from 0.02 to 0.04, clams, 0.11, cow's milk, 0.12, crabs, 0.02, eggyolk, 0.15; molasses, 0.27; peanut, 0.07, and soybean, 0.24, these prawns have about 0.62%.

It is evident therefore that these lowly prawns are excellent sources of those important substances required for the proper growth and maintenance of the human body People should be encouraged to eat more of them.

Table 2 shows the average composition of fish and shrimp meals.

Table 2. Average composition of fish (All analyses) and shrimp meals

	Fish	Shrimp
Protein	60.9	46.7
Fat	6.9	2.8
Fiber	0.9	11.1
Mineral	6.1	27.8
Calcium	5.36	–
Potassium	0.4	–
Dry matter		

The data (5) show that the *odang* is better than shrimp meal and as good as the average fish meal. The excess *odang* caught from the lake may be put to good use by processing them into *odang meal* for the poultry or fish industries.

NOTES

1. Villaluz, D.K., *The Lake Lanao Fisheries and Their Conservation,* College of Fisheries, MSU, 166.

2. *Ibid.*

3. The species was identified by H. Motoh, Aquaculture Dept. SEAFDEC, Iloilo.

4. Villaluz, D.K. *Loc. Cit.*

5. Morrison, F.B. *Feeds & Feeding,* 22nd Ed. 1959. The Morrison Publishing Company, Clinton, Iowa.