GULF FISHERIES SESSION

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Chairman—J. L. BAUGHMAN, Chief Marine Biologist,
Texas Game, Fish and Oyster Commission, Rockport, Texas.

New Developments In The Menhaden Industry

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MENHADEN occupy a unique role in the economy of the ocean and in the economy of man, with whom they certainly have no personal interest. Fairfield Osborn and William Vogt have so well expressed the idea of a "plundered planet" and the "Road to Survival." This must inevitably lead man to contemplate his use of the vast and strange fields of the oceans of the planet upon which he dwells.

Menhaden in those oceans perform a peculiar although not a unique part. They harvest the "grass of the sea," the diatoms, desmids and dinoflagellates, copepods and other teeming microscopic plant and animal organisms of the seven seas and by icthyological alchemy transform them into lipstick, house paint, chicken food and drugs that must enter, to save human lives, the worlds of otherwise doomed human beings. Menhaden, therefore, merit regard.

The Menhaden fishery has risen spectacularly to excel by its more than one billion pounds annual production all other single fisheries in the western hemisphere. These figures have been very kindly provided to the writer by Dr. Lionel Walford of the Fish and Wildlife Service. What makes the impact of this fact more severe is that at no time in our recorded history have the materials derived from the Menhaden fishery been more critically needed.

The writer had the great privilege of participating in the recent United Nations Conference at Lake Success, New York, the first ever held designed to contemplate in a global pattern the utilization and conservation of this planet's natural resources in terms of world nations and world populations.

It is necessary in the evaluation of any fishery or other resource to orient oneself and see wherein in the pattern of human economy that fishery fits.

Two species of Menhaden exist on the Atlantic coast. Two species exist on the coasts of the Gulf of Mexico. Their pursuit and capture is accomplished by a highly specialized fishery method, i.e., the use of peculiar gear called the purse seine.

Menhaden are not used directly as human food, although during the war an attempt at canning these species for direct human food was made.

Utilization of Menhaden exceeds in length of time any other application of fisheries' products in continental America since the Indians instructed the Pilgrims to plant Menhaden and corn together.

The intervening years have held the record of changing and technologically more and more refined processing. Menhaden oil, the first product, was simply secured by permitting the fish to rot in barrels. Later, omitting the long inter-

vening history, it may merely be pointed out that the fish scrap became fish meal, used to fortify stock foods.

The writer served as a member of a wartime committee of the National Research Council which, upon the recommendation of the President of the United States, issued an order forbidding the use of any fish meals as fertilizer since its value elsewhere was so great.

The present situation is this. At no time in the history of the world has there been greater need of the proximate and ultimate products of the Menhaden industry than now exists.

The Gulf of Mexico, with 750,000 square miles, one of the great inland seas of the world, remains virtually unexplored. Its potential productivity may well be not alone of national, but of global importance. The investigation of the Gulf of Mexico should be given high priority in any national hydrographic and marine biological program and the search for knowledge of Menhaden resources should have in that high priority a high position on the scientific agenda.

It should be pointed out that the United States in 1948 produced 56,200 tons of fish oil, our republic being the largest producer of fish oil in the world. It should be further pointed out that in that year, 1948, Menhaden provided 49 per cent of our total fish oils.

A vast amount of careful scientific research has established the importance of the amino acids derived from Menhaden protein products, known as fish water or "fishstick" and no longer desiccated to the stage of fish meal. Within the past few months, there has appeared a flood of papers indicating that these amino acids (which are the building stones of proteins that make up the structure of all animals, including man, and of all plants) are not adequate when they are derived from plants, but when they are supplemented by the addition of only five per cent of fish amino acids (in these experiments specifically fish amino acids derived from Menhaden), the deficiencies are remedied and an astonishing impetus is given both to growth and, in the instance of poultry, to egg production.

One factor must be here emphasized. The essential conduct and the desirable expansion of the Menhaden industry come into violent and head-on collision with one factor, i.e., the misunderstanding of three things: first, the fact that the proper use of the Menhaden fishing gear, the purse seine, does not involve the capture of game fish or other commercial fish; second, the fact that, as established particularly by the excellent pioneering and convincing studies augmented by still unpublished and vast scientific surveys supervised by Jack Baughman, Menhaden do not constitute an element of any importance whatever in the food chain of game fish or of other commercial fish; and, third, that the proper use of the purse seine (which is the only practical use of this gear) does not in any way damage the nursery grounds of shrimp, of game fish or other commercial fish nor of oyster grounds.

The Menhaden fishery, the greatest in the western hemisphere, presents two problems. First is the problem of efficient production, second is the necessity to show that public good does not conflict with private enterprise in the Menhaden fishery. In no fisheries question in decades have the problems been more clearly defined.