

EXPLORATORY FISHING AND TECHNOLOGY SESSION

TUESDAY—NOVEMBER 27

*Chairman—ERNEST MITTS, Director, Florida State Board of Conservation,
Tallahassee, Florida*

A New Federal Fishing Laboratory on the Gulf

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THE CONSTRUCTION of a new Fish and Wildlife Service laboratory is under way at Pascagoula, Mississippi. This building has been designed as the operating base in the Gulf for research by the Service's Exploratory Fishing and Technological Sections. The research functions of the Exploratory Fishing and Gear Development Unit are widely known, but a word may be in order on the functions of the Technological Section, whose efforts closely supplement those of the first group. The work of the Technology Section begins with the fish resource at the point of capture and extends throughout the processing and distribution chains until the product is purchased by the consumer. It is our job to devise methods of preserving the quality of the product throughout the chain. In a sense, our work can aptly be termed "product research."

Heretofore our research program has been carried out by laboratories at Ketchikan, Alaska, Seattle, Washington, Boston, Massachusetts, and College Park, Maryland. It will readily be recognized that the Pascagoula location offers an excellent new base for several of the types of research activities we now have under way. For example, we are now conducting our southern oyster studies from the College Park Laboratory. There are manifest advantages in the close proximity of the menhaden plants to Pascagoula for part of our now well advanced and extensive fish meal and oil studies. The pressing problems requiring development of proper processing and plant sanitation programs designed to retain existing and to develop new and lucrative fresh, chilled crab markets are naturals for our new location. Certainly the higher average air and water temperatures in this area will provide maximum challenges to our projected studies of antibiotics and chemical additives to test their allegedly substantial extension of the preservation of the excellent quality inherent in sea foods as they come from the water. Pascagoula can well serve as the starting point for studies of effects of handling on the quality of iced or frozen fisheries products which are shipped to such major distant markets as New York or Chicago.

It may well be asked when all these projected developments may be expected to materialize. The answer is that already we have arranged to move one of our mobile laboratories into the Gulf to serve as a roving and probing unit pending construction and equipping of the Pascagoula Laboratory. A well qualified former resident of Mississippi will soon be seeking to pinpoint specific needs for our research attention and to get in personal contact with the seafood industry of the Gulf.

We have at every opportunity during the past few years questioned the

industry members as to the technological problems that need attention in this area. Our Pascagoula personnel, assigned to this important fisheries area, can now follow through in the development of a realistic research program if each of you will assist. The Gulf and Caribbean Fisheries Institute can well serve as the focal point of contact or clearing house for ideas, concrete problems, or suggestions that can materially facilitate development of our program. If you have occasion to be in the vicinity of the Pascagoula Laboratory make the most of the skills of our staff. By this continuing and personal interest you can aid us in keeping abreast of current needs, and help our new laboratory settle quickly into what we confidently feel will be a valuable niche in the pattern of the diverse and valuable Gulf fisheries industry.

You may expect to find among our staff a number of the accepted scientific disciplines essential to the conduct of product research. True, we do not always have men trained in every possible scientific field at each of the technological laboratories, but we do try to maintain a good balance of personnel between the several laboratories, within the limitations of available funds and with due regard for the major emphasis expected to be placed on our research in each of the several geographical areas mentioned. For example, our major emphasis at Boston is on refrigeration of fish. A close second would be the development of background information on voluntary Federal standards of quality for fillets, steaks, portion-control fisheries products and fish sticks. Required skills are training in refrigeration engineering, chemistry, microbiology and fishery products technology.

At Seattle we have stressed recently the chemistry of fish oils, raw materials analogous to petroleum or coal tar, that are potentially valuable to the chemical industry. The quality evaluation and preservation aspects allied to best use of frozen stored fisheries products is another major interest here. The types of training in the sciences required of personnel include organic chemistry, chemical engineering, fishery products technology, analytical chemistry and biochemistry.

College Park personnel have major interests in biochemistry, pharmacology, nutrition, analytical chemistry and in the chemical and mechanical engineering aspects of fisheries products research. Our Ketchikan staff, although small and geared primarily to local industry problems, still supplies talent for national use on studies of the biochemistry of fish proteins, chemical engineering aspects of fish oils, analytical chemical and microbiological aspects of fisheries products.

Thus our staff may be said to be a closely knit unit, geared to the attack on national problems of product research. We have, if you will, a split personality; a part of our combined research effort is always aimed high at fundamental studies to show (1) what fisheries material have to offer for human, animal, or chemical industry use; (2) how we can best modify or apply these unique characteristics for maximum application and value; (3) where the effort can best be placed to attain these desirable goals; and (4) why the indicated procedures can be expected to be technically and financially successful. These are the problems dealt with by our basic research units.

The other side of our personality is more immediately practical: aimed at picking the brains of other competing industries; that is to say, adapting existing knowledge for a solution of fisheries problems; or merely making more readily understood and available to interested industry members information, techniques or ideas that are known, demonstrably appropriate, and feasible of ap-

plication in the improvement of the economic status, or competitive position, of fish and fishery products. These are the problems for our applied research group.

From this general survey of our technological activities, you may have arrived at several conclusions that may warrant summary here:

- (1) Our program of research is always determined by the needs of the area in which each laboratory is located.
- (2) All interested industry members are solicited as consultants to guide us in our planning, to help where they can in the research, and to review our results critically.
- (3) We consider that common prudence dictates the diversion of a considerable portion of our total national research effort toward the obtaining of fundamental knowledge on the "why, what, where and when" of fish and fisheries products. It is essential that these studies be made to furnish the basic building blocks that will form a firm foundation for progress in the competition of fisheries products with such other protein products as meats, the crude vegetable oils and meals, and the modified (mineral or vegetable) oils now available.
- (4) The balance of our effort, and a not inconsiderable part, is devoted to the obtaining of maximum benefit from scientific knowledge *already* available. This information may have been derived either from fisheries research efforts or from the extrapolation of results in kindred research fields to fisheries problem applications. We have by no means exhausted the latter field. However, if we are to lift the fishing industry into a favorable competitive position with heavily subsidized agricultural protein products, we cannot in the future, as we now must, continue to rely solely on what can justly be termed "second-hand" knowledge. It's up to those of us who are interested in making our fisheries a factor in the nation's (and eventually the world's) economy to undertake the rough road of fundamental research. It may well be a more difficult and slow path, but you may be equally sure it will be a more rewarding one.

If you are inclined to question this premise you should examine the present status of the land-animal fats. The present market outlets for such fats include such obscure and modified forms as individually-isolated fatty acids steroids, epoxidized compounds, and allied chemical euphemisms unintelligible to many fisheries people, but none-the-less profitable items of commerce that now dominate this field. If we are to invade this area, the fundamental work, presently so admirably advanced (and for the first time in our industry's history), by the combined efforts of our dedicated Service scientists and the contract researchers (a direct result of the Saltonstall-Kennedy Act), will have to continue until we are abreast of, or preferably ahead of, the competition. This is no task to be lightly undertaken. It bids fair to be long, arduous and sometimes disappointing. Our people, however, are not only ready, but eager, to demonstrate that the confidence of the Service and of the industry, as expressed at the recent Advisory Committee meeting, is well placed in assigning to us the task of leading this carefully planned campaign to bring the fishing industry into the prominence it rightly deserves, and certainly can expect to attain.