

GULF STATES MARINE FISHERIES COMMISSION
NEW ORLEANS, LOUISIANA
JUNG HOTEL
October 18 (Thursday) & October 19 (Friday), 1956

P R O G R A M

(David C. Jones, Jr., Commission Chairman, Presiding)

GENERAL SESSION - MAP ROOM NO. 10

9:30 AM

CALL TO ORDER
ROLL CALL
~~INSTRUCTIONS~~

Introductions

WELCOME

Ernest S. Clements, Commissioner
State of Louisiana

REPORT OF CHAIRMAN

SUMMARY REPORTS: STATE WORK DURING THE PAST YEAR, AND PLANS,
INCLUDING RESEARCH, EXPLORATION, EDUCATION AND OTHER PROGRAMS

Alabama

A. J. Harris, Jr., Assistant Attorney General
Department of Conservation, Montgomery

Florida

Robert M. Ingle, Assistant Director
State Board of Conservation, Tallahassee

Louisiana

James N. McConnell, Chief, Division of Oysters
and Water Bottoms and Commercial Seafood
Wild Life and Fisheries Commission, New Orleans

Mississippi

Gordon Gunter, Director
Gulf Coast Research Laboratory, Ocean Springs

Texas

Cecil W. Reid, Director
Coastal Fisheries Division
Game and Fish Commission, Rockport

12:15 PM ADJOURNMENT

12:45 PM COMMISSION LUNCHEON - MAP ROOM NO. 9

GULF STATES MARINE FISHERIES COMMISSION
NEW ORLEANS, LOUISIANA
JUNG HOTEL
OCTOBER 18-19, 1956

Executive Session, Map Room No. 9, October 19, 1956

(David C. Jones, Jr., Commission Chairman, Presiding)

8:30 AM BREAKFAST

9:00 AM CALL TO ORDER

CONFIRMATION OF MR. GRIZZAFFI AS COMMISSION VICE-CHAIRMAN

MISS SCHULMAN WISHES TO REVIEW INTERNATIONAL LAW COMMISSION PROPOSALS
AND DISCUSS PERTINENT RESOLUTION

MR. DRINKARD REQUESTS INFORMATION ON MUDSHELL PRODUCTION

MR. MITTS WOULD LIKE DISCUSSED SUBJECT OF SALTWATER ANGLING LICENSES

SECRETARY SUGGESTS FOR CONSIDERATION, IF COMMISSION SHOULD DURING
THE YEAR PUBLISH A SUMMARY OF AVAILABLE INFORMATION ON CERTAIN
OF THE INSHORE FISHES

ANY OTHER SUBJECTS?

FINANCIAL REPORT AND BUDGET

ELECTION OF COMMISSION CHAIRMAN FROM LOUISIANA AND VICE-CHAIRMAN
FROM ALABAMA FOR YEAR 1956-57

SELECTING CITY IN TEXAS FOR THE COMMISSION MEETING MARCH 21-22, 1957

11:30 AM ADJOURNMENT

11:40 AM GENERAL SESSION, MAP ROOM NO. 10

10:00 AM

BIOLOGY

Discussion Leaders

Fin Fish

Royal D. Suttkus
Associate Professor of Zoology
Tulane University, New Orleans

Crustacea

Percy Viosca, Jr., Marine Biologist
La. Wild Life & Fisheries Commission
New Orleans

Shellfish

Lyle S. St. Amant, Marine Biologist
La. Wild Life & Fisheries Commission
New Orleans

TECHNOLOGY

E. A. Fieger, Head
Dept. of Agri. Chem. & Biochemistry
La. State University, Baton Rouge

OCEANOGRAPHY

F. G. Walton Smith, Director
The Marine Laboratory
University of Miami, Coral Gables

EXPLORATION

Harold C. Loesch, Marine Biologist
Alabama Department of Conservation
Bayou La Batre

STATISTICS

Clarence P. Idyll, Professor
Department of Marine Sciences
The Marine Laboratory
University of Miami, Coral Gables

RESERVED FOR OTHER SUBJECTS OF GENERAL INTEREST

11:30 AM

ADJOURNMENT

GENERAL SESSION - MAP ROOM NO. 10

11:40 AM

INTRODUCTION OF 1956-57 OFFICERS

ANNOUNCEMENTS

12 NOON

ADJOURNMENT

GENERAL SESSION - MAP ROOM NO. 10

2:00 PM

REORGANIZATION OF THE FISH AND WILDLIFE SERVICE, THE FISHERIES
EDUCATION PROGRAM, AND OTHER SERVICE ACTIVITIES OF INTEREST

O. Lloyd Meehan, Ass't. to the Director
Technical Staff Services
Fish and Wildlife Service, Washington

SUMMARY REPORTS: FISH AND WILDLIFE SERVICE WORK DURING THE PAST YEAR,
AND PLANS, CONDUCTED BY THE SEVERAL OFFICES LOCATED ON THE GULF

<u>Galveston</u>	Thomas J. Costello, Acting Chief Gulf Fishery Investigations
<u>Pensacola</u>	Philip A. Butler, Chief Gulf Oyster Investigations
<u>Pascagoula</u>	Harvey R. Bullis, Jr., Chief Gulf Fisheries Exploration and Gear Research
<u>New Orleans</u>	Charles H. Lyles, Chief Gulf Fishery Statistical Program

THE FISH AND WILDLIFE SERVICE TECHNOLOGICAL LABORATORY AT PASCAGOULA
AND PROPOSED LABORATORY PROGRAM

Charles Butler, Chief
Technological Section
Branch of Commercial Fisheries, Washington

RESERVED FOR OTHER SUBJECTS OF GENERAL INTEREST

ADJOURNMENT

FRIDAY (October 19)

8:30 AM COMMISSION EXECUTIVE SESSION BREAKFAST - MAP ROOM NO. 9

9:00 AM SCIENTIFIC SESSION - MAP ROOM NO. 10

Gordon Gunter, Chairman
Harold C. Loesch, Secretary

INTRODUCTORY REMARKS

Session Chairman

GULF STATES MARINE FISHERIES COMMISSION
312 Audubon Building
New Orleans 16, Louisiana

M I N U T E S

REGULAR MEETING, OCTOBER 18-19, 1956
Jung Hotel
New Orleans, Louisiana

OFFICIAL ATTENDANCE OF COMMISSIONERS:

	<u>PRESENT</u>	<u>ABSENT</u>
<u>ALABAMA:</u>	W. C. Holmes	William H. Drinkard Garet Van Antwerp, III
<u>FLORIDA:</u>	Ernest C. Mitts David C. Jones, Jr. Vern Merritt	
<u>LOUISIANA:</u>	Ernest S. Clements (Session 10/18/56) E. J. Grizzaffi Jeffery J. LeBlanc	
<u>MISSISSIPPI:</u>	Stanford E. Morse, Jr. (Session 10/18/56) Hermes Gautier	Walter J. Gex, Jr.
<u>TEXAS:</u>	Travis Bailey	Howard D. Dodgen Jimmy Phillips
<u>PROXIES:</u>	A. J. Harris, Jr. A. J. Harris, Jr. James N. McConnell Hermes Gautier Howard T. Lee	(For William H. Drinkard) (For Garet Van Antwerp, III) (For Ernest S. Clements, 10/19/56) (For Stanford Morse, Jr., (10/19/56)) (For Howard D. Dodgen)
<u>STAFF:</u>	W. D. Gunn, Secty-Treas. Emily C. Carr, Office Secty.	

COMMISSION COMMITTEE MEMBERS PRESENT (Not listed above)

Mary Schulman, Gordon Gunter, Robert M. Ingle, Harold C. Loesch, Lyle S. St. Amant,
Percy Viosca, Jr.

INTERSTATE FISHERIES COMPACT REPRESENTATIVES PRESENT

Wayne D. Heydecker, J. Berdan Miller.

FEDERAL GOVERNMENT REPRESENTATIVES PRESENT

Harvey R. Bullis, Jr., Charles Butler, Philip A. Butler, Edward Chin, Charles Lee, Charles H. Lyles, O. Lloyd Meehan, E. Moret Smith, Theodore J. Starr.

STATE UNIVERSITY REPRESENTATIVES PRESENT

Fred Cagle, E. A. Fieger, Clarence P. Idyll, Edwin S. Iversen, J. G. Mackin, Albert K. Sparks, Royal D. Suttkus.

FORMER COMMISSIONERS, REPRESENTATIVES OF INDUSTRY AND OTHERS PRESENT

Bert E. Thomas Charlie Bevis, Cecil Drake, James L. McConnell, Tom Murphy, S. A. Theard, George E. Steele, Jr., Harvey Smith, Lawrence W. Strasburger, David H. Wallace Don Bryant, Joe Carmichael, Steve Harman, Michael O'Comer, F. O. McArdle, Charles A. Murphy.

GENERAL SESSION, OCTOBER 18, 1956

Mr. David C. Jones, Jr., Commission Chairman, called the meeting to order at 9:40 AM. In opening the meeting the Chairman paid high tribute to Miss Erma Baker and Mr. Reece O. Bickerstaff for their contribution to the Commission prior to their deaths, following which tribute a silent prayer was offered by the conferees.

The Secretary called the roll of Commissioners, and proxies were seated.

Mr. Jones introduced Mr. Ernest S. Clements, Louisiana Commissioner, and Director of the Louisiana Wild Life and Fisheries Commission, who officially welcomed the group to New Orleans and the State of Louisiana. At the conclusion of his address and acting in behalf of Governor Earl K. Long, Mr. Clements distributed honorary appointments in the rank of colonel on the staff of the Governor to each of the Commissioners.

The Chairman next gave a brief summary of Commission activities for the seven years of its operation. He pointed to the Gulf exploratory and research programs which had been inaugurated by the several member states and by the Fish and Wildlife Service and indicated an expansion of these and technological research in the future.

Following, the program provided for summary reports of work accomplished by the member states during the year in the fields of research, exploration, education and other related activities, including plans.

Mr. A. J. Harris, Jr. of Alabama gave the conferees benefit of that state's efforts to create artificial snapper banks through the depositing of old auto chasis in offshore areas on sand and mud bottoms. He stated that Alabama was so pleased with results of the initial and relatively inexpensive experiment that the Alabama Department of Conservation expected to create similar fishing grounds in

the other areas off the Alabama coast. The new salt water sports fishing license which it was explained is a combination fresh and salt water license, had doubtless contributed to increased revenue but for obvious reasons it could not be definitely stated to what extent, according to Mr. Harris. He added that the new law relating to angling licenses did not provide for non-residents to purchase same. An economic survey of sports fishing and hunting was completed in September 1956 and the report was said to be available. The speaker said an Alabama shell dredging company had recently been enjoined on the basis that the dredging of shells would do irreparable damage to a live oyster reef located between a mile and one-half from the area being dredged. The case was said to now be before the State Supreme Court.

Mr. Robert M. Ingle speaking for the Florida State Board of Conservation said their research work was handled in part by The Marine Laboratory, University of Miami, and that such programs were underway as; statistics, in cooperation with the Fish and Wildlife Service; snook tagging; a study of red snapper discoloration; a biological and life history study of the sea trouts; an investigation of mold on smoked mullet; a study to determine fishing pressure by spear fishermen; experimentation with antibiotics and other chemicals in effort to find agents to retard spoilage and to combat black spot in shrimp; a shrimp biological investigation to determine mesh-size relationship and size distribution by season; a gamefish survey; sailfish tagging; tagging and life history studies of tarpon, and life histories studies of other game fishes (these being cooperative between State and other Marine Laboratory projects). With reference to that part of the overall program being carried on, Mr. Ingle said the Board's laboratory at St. Petersburg was endeavoring to locate offshore shrimp spawning areas between Naples and Cedar Keys and was collecting salinity and temperature data in the process. Other work regarding shrimp was said to include contact with bait shrimpers to learn more as to seasonality of catches, size variations of individuals, migration, and gonad observations. Other projects under way at St. Petersburg were identified by the speaker to be; continued Red Tide studies; oyster pest investigations; mullet parasites studies; trash fish use studies as concerns mink food. Mr. Ingle mentioned the contribution being made by the Conservation Agents to various of the programs. He also said, the publication titled Ecology of Boca Ciega Bay with Special Reference to Dredging and Filling, was available; that the seafood sales promotional program inaugurated in January was progressing very satisfactorily; and that oyster shells for cultch were planted in June in areas of Bay and Franklin Counties. Mr. James N. McConnell inquired as to the control of Florida water bottoms; to which Mr. Ingle replied that the Internal Improvement Board was the responsible agency.

Speaking for the Louisiana Wild Life and Fisheries Commission, Mr. James N. McConnell reported that Bayou La Moque Spillway would be opened within the next two to three weeks. He said the spillway, construction of which began in the spring of 1955, would make it possible to obtain additional fresh water from the Mississippi River at the entrance of Bayou La Moque, which would result in a greatly increased oyster production in those parts of Plaquemines and St. Bernard Parishes lying east of the River. It was added that the rivers had been low for the last five to six years and that conch infestation continues. Speaking of the hurricane Flossy, it was said the full damage could not be determined for several weeks but it appeared losses to oystermen would be very heavy in some sections.

The speaker pointed to oil development as a cause for the changing of the ecology of the coast line because of canalling by the industry in order to get equipment into position. The oil companies were said to be cooperating in every way. Mr. McCormell exhibited several specimens of oyster shells which had been found in Arkansas and Texas and which had been determined to be 40 to 60 million years old. Dr. Holmes commented that he had seen similar shells on beaches in the South Pacific. Speaking of the operation of the Louisiana Commission's vessel Albacore, it was stated the vessel is now assigned to shrimp research; having been taken off tuna exploration because of some duplication of the M/V Oregon's work. A study was reported to be in progress to determine the feasibility of revising the shrimping laws to permit brown shrimp fishing at night.

Dr. Gunter was called upon for a summary of activities of the Mississippi Seafood Commission through its official research agency, the Gulf Coast Research Laboratory. Speaking of the fall hurricane Flossy, it was said the Mississippi Sound actually benefitted because the full force of the storm did not hit that area, while an abundance of rain did fall. No grass and but little mud was reported. It was the thinking of the speaker that the drop in salinity as noted in survey by the Laboratory, is responsible for a better than average run of white shrimp in the Sound. Dr. Gunter stated much praise is being received on the new laboratory building which was completed last spring and which permitted the training of many more students at the college level during the summer. Continuing projects were said to include; a study of the conch with view of determining how to combat it in the field; a survey of all mollusks of the Gulf; a study of shrimp to learn more about growth and other factors considered essential to the care of young.

Mr. Howard T. Lee in summarizing work of the Texas Game and Fish Commission said the laboratory staff at Rockport had carried out a wide variety of duties, including among others; weekly trawl collections in Aransas Bay to determine trends in fish and shrimp populations; tests to determine effects of seismicographic explosions in Corpus Christi and Aransas Bays (complete report in September '56 Texas Game and Fish Commission Magazine); and salinity tolerance tests of various fish and shrimp. The speaker said preliminary surveys were under way with a sonic instrument which will locate exposed and buried shell reefs in coastal bays. He invited those interested from member states to visit Texas and see the instrument in operation. With regard to ecological surveys, Mr. Lee said such work continues in Sabine Lake, Galveston Bay, Matagorda Bay, and the Upper and Lower Laguna Madre. Areas in which passes have been dredged or are being deepened, or where new navigation channels are proposed, are being carefully studied with respect to the effect on marine life of the bays, according to the speaker. An experiment of general interest was stated to be that of stocking fresh water lakes with small redfish, 2100 having been used thus far in the experiment which began in April 1956. Growth rate studies of immature redfish are underway in a brackish water lake on a portion of the King Ranch, according to Mr. Lee, and a program has begun to determine the extent of use of the Laguna and Cayo Atascosas as redfish nursery grounds.

Mr. Charlie Bevis, Executive Secretary, Southeastern Fisheries Association, was recognized for a summary of the National Shrimp Congress' initial activities. He explained the purpose of the Congress to be that of the shrimp industry being in position to present a united front on all matters of concern to the industry. It was said Florida and Texas shrimp people had been very active in recent weeks in promoting interest in the organization in those and other of the Gulf States. Organizational meetings were reported to have been held recently in Brownsville and Tampa, and at the latter meeting Miss Mary Schulman had agreed to become Director of the Congress after having been granted a six months' leave of absence as Assistant Attorney General of Florida.

The morning session was adjourned at 12:15 PM and the Chairman again extended an invitation to all conferees to attend the 12:45 PM Commission luncheon.

Opening the afternoon session, Mr. Jones called upon Mr. O. Lloyd Meehan, Fish and Wildlife Service, Washington, for information relating to the reorganization of the Service, the federal fisheries education program (Payne Bill), and other Service activities. Mr. Meehan expressed the regrets of Director John L. Farley on not being able to attend the meeting because of the time limitation placed on completing the reorganization of the Fish and Wildlife Service. The speaker began with a review of the numerous bills introduced in the last Congress concerning reorganization, the final of which was said to be an amended bill, now Public Law 1024, but generally referred to as The Fish and Wildlife Act of 1956; the same having been approved by the President on August 8th. He said the Act calls for an Assistant Secretary for Fish and Wildlife, and a Commissioner of Fish and Wildlife - both to be appointed by the President, and approved by the Senate; also, a Fish and Wildlife Service with a Bureau of Commercial Fisheries and another designated as the Bureau of Sports Fisheries and Wildlife; the Director of each to be appointed by the Secretary of the Interior. Ninety days from August 8 was said to be the deadline for reorganization. Parts of the Act concern foreign relations, and the fisheries loan fund for fishing vessels and gear. Mr. Meehan said Fred F. Johnson, former Service employee, had come out of retirement to administer the fund. Speaking of the Payne Bill, referred to as Public Law 1027 following approval August 8 by the President, he said no funds had yet been provided for financing a program under the Bill. Regarding provisions of the Bill it was stated that it calls for \$550,000 per fiscal year to finance the program; also, that the Bill amends the Vocational Act of 1946 and calls for \$375,000 for vocational education in the fishery trades and industry and distributive occupations therein. Mr. Meehan added that any funds appropriated for College Level Training will be allocated to the various colleges by the Secretary of the Interior, and that any funds appropriated for Vocational Training will be allocated to the individual state vocational directors by the Office of Education, Department of Health, Education and Welfare; that inquiries regarding the latter should be addressed to the state offices. In conclusion it was stated if funds are appropriated at the next session of Congress, a start could be made when the colleges open for the 1957-58 school year.

The Chairman announced that summary reports would be heard from Fish and Wildlife Service representatives of activities at their respective installations during the year and called upon Messrs. Edward Chin and Theodore J. Starr of

Gulf Fisheries Investigations, Galveston. Mr. Chin, speaking first, said that Mr. Thomas J. Costello who was scheduled to speak was taken ill and was unable to attend the meeting. Concerning the menhaden program he said they were endeavoring to determine age of menhaden by scale investigation; that scales were being secured from Moss Point and Sabine. Scales were exhibited and markings explained with the aid of a scope to the conferees. With regard to question from the Secretary, Mr. Chin stated he did not know how soon the shrimp marking project would be ready for field marking in the several states. In further connection with the shrimp program, Mr. Chin explained a project which seeks to determine chemicals which are toxic to shrimp. He said some of the laboratory work on shrimp was being temporarily delayed due to moving to a new building at Fort Crockett. Mr. Starr, speaking of investigations in connection with the Red Tide program, stressed the importance of B-12 vitamin and stated it is produced by small marine organisms. He said mullet have a high B-12 content. The speaker said the Red Tide organism is being assayed.

Dr. Philip A. Butler was called upon for a report on activities at the Pensacola laboratory, headquarters for Gulf Oyster Investigations. The projects were stated to be divided into two major groupings. The first was explained to be a continuing, long-range, program with several related projects which are concerned with the overall relationships of the Gulf oyster to its environment. The program was said to provide for the maintenance of continuous records of salinity and temperature fluctuations, duration and timing of oyster setting season, amount of spatfall, growth, quality, and other factors. The eventual goal is to place oyster culture on the same level of efficiency which agriculture enjoys, according to Dr. Butler. Work, he said, continues on the oyster drill, Thais, and that two other snails of unknown importance to industry are being studied. Contact work with Florida State University in the Apalachicola Bay area to determine why formerly important commercial reefs have practically disappeared, continues. A second group of projects, according to Dr. Butler, includes an effort to find out what particular quality in the water creates a "fat" oyster, and a survey of the entire Gulf coast to determine the range and concentration of populations of the oyster drill, and how much acreage is free from drills or the threat of floods is still available for oyster cultivation. Also in this grouping is a project aimed at finding a means of securing biological control of the oyster drill, either through another animal or a disease. Dr. Butler said in concluding that two extensive papers are in preparation reporting results on projects now completed, and that three other manuscripts completed during the summer will be published in the Proceedings of the National Shellfish Association.

Mr. Harvey R. Bullis, Jr., was introduced for a summary of exploration activities. Covering red shrimp exploration, he said the schedule had been completed and results of the project were awaiting printing. Check in May for possible stock off the W. Louisiana and Texas coasts, resulted as formerly, poor. The speaker said an uncharted rock ridge was located in deep water approximately south of Galveston and east of Corpus Christie and produced good hand-line results. One commercial seven days' fishing along the ridge was said to have reached 33,000 pounds. A June cruise to the Dry Tortugas produced 3,145 pounds of red shrimp in three days and to east of the Mississippi Delta, 2,055 pounds in three days, according to Mr. Bullis, who added that good catches of red shrimp were resulting from a similar exploratory project off the Florida east-coast and in the Gulf Stream. Turning to tuna, the speaker said the March 1956

cruise had proven to be the most productive, with catch rates as high as 12.8 yellowfins per 100 hooks in the S. W. Gulf. He said further that it had been clearly demonstrated that tuna are available in commercial quantities in the Gulf in all months but that some fill-in information was necessary for November and December. Commercial canning is in near prospect with two canneries having purchased equipment, according to Mr. Bullis. Sardine and fin fish trawling will begin in January 1957, he said, adding that gear and equipment had already been rigged for this effort. A summary report on long-line production of yellowfin will be available in March 1957; also it was added, a report on the development of the trash fish industry is in preparation.

Concerning the statistical effort on the Gulf, Mr. Charles H. Lyles said the program had been going on for a little over nine months. The objective of the program was said to be that of obtaining statistical data which can be used to manage, if management is found necessary, the shrimp fishery of the United States; such data to include the complete catch of all shrimp in the Gulf of Mexico by United States craft, the area of capture, the quantity of effort expended in making this catch in each area, the depth fished, and the size and species of shrimp taken in each area. He said these data are obtained largely through personal interviews with vessel captains and that the gathering method had proven successful in the New England fisheries. Mr. Lyles gave a run down on landings by areas for the first six months of 1956. Mention was made of the problem of maintaining a complete staff of field men, or port agents, due to resignations, transfers and promotions, and that the staff is presently short three men; this shortage causing such a heavy work load that the system is apt to suffer unless additional personnel is secured in the near future.

Mr. Charles Butler of the Washington office of Fish and Wildlife Service stated in beginning his presentation that the long-awaited technological laboratory for the Gulf was under construction at Pascagoula and should be completed in May or June 1957. He estimated three to six additional months would be required for assemblage and installation of equipment. It was added that interim plans provided for (1) a mobile laboratory equipped for general microbiological studies to be sent to Pascagoula upon completion of its present field assignment in North Carolina; (2) recruitment, now practically complete, of an experienced microbiologist to man the above mentioned mobile laboratory, to initiate a detailed study of the Gulf areas fisheries and to begin work upon selecting problems of high priority; (3) the technologists stationed at College Park will continue to supervise and to coordinate oyster research and the fish meal and oil work now under a contracted program until the Pascagoula laboratory is fully operative; (4) the tuna discoloration studies, now under way at College Park, will be continued at that station. Mr. Butler said we should now be looking beyond the interim program and develop a balanced long-range, basic study aimed at the betterment of all phases of the fisheries of the Gulf Coast. He said that College Park representatives will continue to contact industry on the Gulf to secure information regarding a long-range program and that industry could make their suggestions known to Washington either direct or through the Commission. It was said that both basic and applied research would be carried on by the Pascagoula laboratory as one was essential to the success of the other. Examples of both types of research were given.

The Chairman opened the meeting for comment by conferees on any subjects they wished to present. Mr. Bert E. Thomas said that Mr. Al Wegmann was confined at Providence Hospital in Mobile and for that reason could not attend the meeting. Following the afternoon session, a telegram over the Chairman's signature was sent to Mr. Wegmann expressing the regrets of the Commission and wishing a speedy recovery.

Mr. David H. Wallace, Oyster Institute of North America, spoke of the great opportunity open for expansion of the oyster industry on the Gulf. He said the country was now at its lowest oyster production and cited normal and present productions by regions. While the eastcoast is down, the westcoast is up in production, it was said. It was predicted by Mr. Wallace that Pacific canners would compete with Gulf canners as production in the former region increases. On inquiry from Dr. Gunter as to how the westcoast was doing it, the speaker said seed were being obtained from Japan and some local set was used; also, that both California and Oregon are opening areas.

Mr. Francis W. Taylor, Warren Fish Company, Pensacola, suggested that something be done to lower production costs and that fishermen be advised of methods. He said he believed fleet owners should help a captain to produce new captains; adding that he offers his captains 1/4¢ per pound to develop and train a captain.

Mr. Larry W. Strasburger of the American Fisheries Advisory Committee said that body did not work on individual projects but only on matters of policy. Speaking as a technologist, he suggested to those expecting to can tuna to be sure their packs conformed with standards now being set by Food and Drug.

Mr. Wayne D. Heydecker, Atlantic States Marine Fisheries Commission, suggested that all coasts be carefully studied to determine nursery grounds and that they be preserved. Mr. Meehan agreed, saying the nursery grounds should be pin-pointed. The Secretary mentioned the coastal survey now being conducted by Gulf Oyster Investigations and suggested some important data in this connection would doubtless result from the survey. Dr. Butler said the survey would furnish some valuable information on nursery grounds as well as the nature of water and bottoms in the area of such grounds.

Mr. Tom Murphy, who expects to can tuna in the Pascagoula section, spoke briefly of his plans and thanked Mr. Strasburger for the suggestion.

Mr. George E. Steele, Jr., Fishery Products Division, National Canners Association, expressed to the Commission the thanks of his organization for its wide interest in the Gulf fisheries and particularly for its efforts to bring on-the-ground technological assistance to the Gulf.

Dr. Clarence P. Idyll, Gulf and Caribbean Institute, extended a cordial invitation to all to be present at the meeting of the Institute scheduled for November 26-30, 1956 at the British Colonial Hotel in Nassau.

Mr. S. A. Theard of Bay Dredging and Towing Company announced that his organization was giving a party from 6:00 - 7:30 Thursday evening in the Jung's Plantation Room and extended a cordial invitation to the Commissioners and their guests at the meeting.

FRIDAY (OCTOBER 19)

The Commissioners met for an executive session breakfast at 8:30 AM in Map Room 9.

The scientific session was called to order at 9:00 AM in Map Room 10 by Dr. Gordon Gunter who acted as session chairman. Mr. Harold C. Loesch served as secretary for the session.

In his opening remarks, Dr. Gunter said the Lindner report on the white shrimp provides important information on the species and added that such information should also be available on the brown and pink shrimp, since those species had steadily gained in importance, while the white shrimp had shown a production decline over the past several years.

Royal D. Suttkus, Percy Viosca, Jr., Lyle S. St. Amant, E. A. Fieger, Edwin S. Iversen and Clarence P. Idyll served during the session as discussion leaders. Concerning menhaden, Dr. Suttkus reviewed its early life history, beginning with the larval form which was first identified by Tulane in the Lake Pontchartrain studies. Dr. St. Amant told of the use of dead shell as a proven effective, as well as a relatively inexpensive, medium for spat collection. It was Mr. Viosca's expressed belief that a good crop of shrimp results from there being an abundance of Rangia available for food when young shrimp are brought into the bays through tidal action. Dr. Fieger reported a new method of processing shrimp in which the shrimp are peeled, deveined, cooked, frozen and vaporized under high vacuum. He said, when reconstituted a one pound can will yield seven pounds of shrimp. Mr. Iversen pointed out that oceanographic research should be carefully planned. Dr. Idyll stressed the need for precise locations of shrimp catches. Due to the lateness of the hour, exploration was not covered. Mr. Loesch was to have covered this subject.

The session was adjourned at 11:40 AM and a final brief general session followed.

Mr. Jones announced the appointment of Mr. Grizzaffi as Commission Chairman and asked Mr. Grizzaffi if he would take charge of the meeting. Mr. Grizzaffi mentioned early work in the formation of the Commission and during his former term as Commissioner, 1949-51. He praised the cooperative effort of individuals and groups in furtherance of the objectives of the Commission, and pledging his best efforts, asked for their continued assistance.

Mr. Grizzaffi asked Miss Schulman and the Secretary to give a summary of action taken at the executive session. The former stated a resolution was adopted outlining the Commission's views to the State Department relative to international fisheries laws, with respect to certain criteria thought to be necessary in consideration of the principles of fishing abstention; also, that another resolution requested the Department of the Interior, Fish and Wildlife Service, to allocate sufficient Saltonstall-Kennedy Act funds for expansion of the Gulf statistical program; and another requested the proper authorities for

additional Coast Guard patrol service for the Gulf. The Secretary reported the Commission's decision to publish a manuscript, which will be prepared by Dr. Gunter, and which will contain in summary all available information on the speckled trout and the two species of white trout. He reported also, that the next regular meeting of the Commission would be held in Austin, Texas, March 20-21, 1957.

Mr. Harold C. Loesch was called upon for a summary of points of general interest brought out at the scientific session. The summary appears on the proceeding page of these minutes.

With no further matters to be presented for consideration, the Chairman declared the meeting adjourned at 12:15 PM.

Prepared by: W. Dudley Gunn
Secretary-Treasurer

M I N U T E S

EXECUTIVE SESSION, NEW ORLEANS, LOUISIANA, OCTOBER 18-19, 1956

The Chairman, Mr. David Jones, called the executive session to order immediately following breakfast, which was shortly after nine o'clock, and entertained a motion to confirm Mr. Grizzaffi in the office of Commission Vice-Chairman. Mr. LeBlanc offered such a motion; seconded by Mr. Gautier; unanimously passed on vote.

Miss Mary Schulman was called upon to review International Law Commission proposals as concern high seas fisheries. She referred to the position taken at the Commission March 1956 meeting opposing extension of seaward limits of foreign nations which would interfere with high seas fishing and said that since that time the International Law Commission had completed a set of recommendations or proposals which was reviewed in considerable detail by representatives of the American fishing industry in August at San Francisco. As the proposals now stand, according to Miss Schulman, they appear to fit the best interest of most of the industry. The criteria worked out for the Gulf, she said, gives necessary protection to the rights of the states as well as the high seas fishermen. Mr. Wayne D. Heydecker contributed that the resolution on this subject adopted by the Atlantic States Marine Fisheries Commission was the same as Miss Schulman furnished the Gulf Commission's Secretary for distribution several weeks prior to the meeting, except for some minor clarification in wording. Mr. Heydecker spoke briefly on the background of the principle of abstention and pointed to the Atlantic Commission's feeling expressed in paragraph six of the resolution, copies of which resolution were distributed for study. Miss Schulman said the State Department realized that it was necessary that the United States take a position on the subject, and urged the Commission to act, so that such action could receive consideration prior to the November 1956 meeting of the International Law Commission in New York. Mr. Mitts moved for adoption of the resolution. Dr. Holmes seconded; and upon vote the resolution was unanimously adopted. The resolution is first attached to these minutes.

In connection with high seas fishing, the Secretary distributed copies of two communications released by the Fish and Wildlife Service which concern exploration and research to be done in the near future by the Japanese in South and Central America and Mexico. The Secretary explained he was bringing this matter to the attention of the Commissioners since it was possible some form of abstention might be written into international fisheries law at some future time which may prevent expansion of the United States shrimp fishing effort if this country had not previously engaged in the fishery involved. He suggested that the Fish and Wildlife Service might be asked to explore areas off the northeastern coast of S. America for shrimp (Brazil, the Guianas, and Venezuela to and including the Gulf of Paria) if the Commission thought such exploration was necessary. The matter was discussed round the table. The

consensus was that although there might be commercial concentrations of shrimp in the region, it was hardly the time to convey to other nations that this country was undertaking to extend its fishing operations to international waters off other nations; accordingly, the matter was deferred and the legal staff was asked to study same and report back to the Commission. Miss Schulman said she would discuss the matter with Mr. Wm. C. Herrington, State Department, when in Washington in November.

Miss Schulman told of the arrest of a number of shrimp vessels during past months at different places and times in the South Gulf of Mexico and of the resolution adopted at the last session of Congress requesting adequate Coast Guard patrol vessel service for those waters. It was said the desired service had not been supplied and it was suggested by Miss Schulman that a resolution might be in order. Mr. McConnell moved that a suitable resolution in this connection be prepared by Miss Schulman and coordinated with Mr. Harris and the Secretary. Dr. Holmes seconded; upon vote the motion unanimously passed. Such resolution is last attached to these minutes.

The Secretary advised that Dr. Gordon Gunter had offered to prepare a manuscript covering all available information in summary form of either the weakfish family or the croaker family if the Commission cared to publish such information. Following discussion of the merits of such a publication and review by Commissioners of two fisheries publications of the Pacific Commission, Mr. Lee offered a resolution to the effect that the offer by Dr. Gunter be accepted for the weakfish family; that manuscript be reviewed by the Committee to Correlate Research and Exploratory Data, as suggested by Dr. Gunter, prior to publication and that a sum not to exceed \$1,500 be made available from Commission funds for publishing and mailing expenses. The resolution is second attached to these minutes.

It was suggested by Mr. Mitts that the 1956-57 itinerary of the Commission Secretary be extended to include attendance at the annual meetings of the Atlantic States Marine Fisheries Commission. The consensus was that the two Commissions have much in common and that in addition to the exchange of meeting minutes and other material, more personal contact was desirable. The Chairman requested the Secretary to attend the next annual meeting of the Atlantic Commission which Mr. Heydecker said would be held in September 1957, date not set, in New York City.

Continuing the subject of meeting attendance, Mr. McConnell offered a resolution to the effect that officers of the Gulf States Marine Fisheries Commission attend, in addition to regular and special meetings of the Commission, fisheries meeting inside or outside the country when it appeared their presence would be to the best interest of the Gulf States. Following seconding by Dr. Holmes, the resolution was unanimously adopted. The resolution is third attached to these minutes.

Mr. Howard Lee brought up the question, if the Commission was confining itself to a strict interpretation of the compact in the matter of making recommendations, and read from Article IV of the Compact concerning the duty of the Commission. Mr. LeBlanc offered a resolution to the effect that the

Attorney General of each of the member states be asked to advise if the Commission has authority to direct recommendations to other than the governors or legislatures of the several states. Mr. Lee seconded. In discussion round the table, Mr. Heydecker said in the fifteen years operation of the Atlantic Commission no objection had been raised to its recommendations to the Congress or other subdivisions of the federal government. He suggested the Gulf Commission rely on the judgement of its Commissioners as the Atlantic Commission had done, and added that he believed that was the intent of the state enabling legislation. Following further discussion, Mr. LeBlanc withdrew the resolution.

Mr. Bailey referred to the report on the Gulf statistical program made the day previous by Mr. Charles Lyles of Fish and Wildlife Service, who has charge of the program, and proposed a resolution applauding the work of the statistical survey on the Gulf; pointing to its importance; and requesting the Service to make additional Saltonstall-Kennedy funds available to enable the work to progress as scheduled in the shrimp research program resolution adopted by the Commission at its January 21-22, 1954 meeting at Edgewater Park, Mississippi. Mr. McConnell seconded and upon vote the resolution was unanimously adopted. The resolution is fourth attached to these minutes.

Upon motion by Mr. Lee, second by Dr. Holmes and unanimous vote by the states, the minutes of the March 15-16, 1956 meeting of the Commission were approved without reading.

The Secretary referred to the report of annual audit of the Commission accounts, fiscal 1955-56, having been sent to all Commissioners upon completion by Peat, Marwick, Mitchell and Company. Both the audit, and the Commission officers' approved budget for fiscal 1956-57 were unanimously approved following motion by Dr. Holmes and on second by Mr. LeBlanc. The budget is fifth attached

The Secretary distributed a sheet showing production, unit price and revenue for the dredge shell industry for the past fiscal year of the member states. The compilation is sixth attached.

Mr. Harris nominated Mr. Grizzaffi of Louisiana for the office of Commission Chairman for the year 1956-57. The nomination was seconded by Mr. Mitts. No further nominations were made. Mr. Grizzaffi was unanimously elected Commission Chairman.

Mr. Gautier nominated Mr. Drinkard of Alabama for the office of Commission Vice-Chairman for the year 1956-57. The nomination was seconded by Dr. Holmes. No further nominees were presented. Mr. Drinkard was unanimously elected Commission Vice-Chairman for the year 1956-57.

Mr. Gautier offered a resolution acknowledging the efforts of Mr. David Jones on behalf of the Commission during his term of office as Commission Chairman with the recommendation that a copy of the resolution be sent Governor LeRoy Collins of Florida. Mr. McConnell seconded. The resolution, which is seventh attached to these minutes, was unanimously adopted.

The Secretary stated that the next meeting under the rotation plan was to be held in Texas. The dates being March 21-22, 1957. Mr. Bailey suggested that the meeting be held in Austin and to this everyone agreed.

The executive session was concluded at 11:30 AM as scheduled and the Commissioners adjourned to join the scientific session then in progress.

Prepared by: W. Dudley Gunn
Secretary-Treasurer

RESOLUTION

"WHEREAS, the International Law Commission has proposed an international convention to meet some of the problems relating to high seas fisheries, and

"WHEREAS, the United States Department of State is considering the United States policy with respect to the proposed convention, which gives consideration to the so-called 'principles of abstention.'

"Now therefore, be it resolved that the Gulf States Marine Fisheries Commission applauds the efforts of the International Law Commission and the United States Department of State toward a solution to the troublesome questions and problems relating to international fisheries on the high seas, and

"Be it further resolved that the Gulf States Marine Fisheries Commission urges that the efforts of the United States Department of State be directed toward reaching a position on the proposed convention that will give proper and just consideration to every circumstance affecting the major segments of the American fishing industry on the high seas, and

"Be it further resolved that the Gulf States Marine Fisheries Commission recognizes the validity and necessity for the United States having clearly set forth in the proposed convention adequate safeguards to protect the high seas fishing rights and interests of its nationals engaged in high seas fisheries or having historic rights therein, and

"Be it further resolved that the Gulf States Marine Fisheries Commission understands the proposed principle of abstention to be as follows: that where there is sufficient scientific evidence that a stock of fish on the high seas is being harvested to its maximum sustainable capacity by the nationals of a country or countries, nationals of other countries previously not engaged in the fishery or having no historic rights therein, should abstain from entering the fishery, and

"Be it further resolved that any application of the principle of abstention must and shall be carefully safeguarded by, and applied only upon the following criteria to be clearly specified in the convention as basic and essential conditions: (a) sufficient scientific evidence that there is an urgent need for measures of conservation; (b) that the conservation measures are based on sound and appropriate scientific findings; (c) that such measures do not discriminate against foreign fishermen, meaning that the nationals of the United States engaged in a high seas fishery or having historic rights therein shall not be discriminated against for any reason; (d) that such measures, if challenged, shall not remain obligatory or effective pending the contemplated arbitral procedures.

"Be it further resolved that in the formulation of the proposed convention and the enabling legislation for ultimate consideration of participation by the United States, the Gulf States Marine Fisheries Commission recognizes the particular interest of the American states in international conventions, and therefore urges, with all possible emphasis, that any wording, proposal or agreement be avoided that could possibly be interpreted to displace, interfere with or disrupt state fishery conservation as presently recognized and exercised by the states of the American Union, and that due and proper safeguards shall be erected to preserve such state freedom to act for the conservation of the fisheries in its territorial waters that are now established or may be established hereafter, and

"Be it further resolved that the Gulf States Marine Fisheries Commission urges that no proposal be agreed to by the United States that would displace any action or jurisdiction a state of the Union has over its own nationals outside its territorial limits, unless such state action over its own nationals on the high seas is in clear and specific conflict with a definite and clearly defined federal regulation as to a particular stock of fish on the high seas; it being the intent of this Commission to urge incorporation of such language in federal enabling legislation which will clearly limit its effect upon state law and administration, and

"Be it further resolved that the Gulf States Marine Fisheries Commission urges that the International Law Commission proposals and the enabling legislation be considered jointly and simultaneously by the United States Senate so that such proposals can be considered as a complete entity and not be distorted by piecemeal presentation.

"Be it further resolved that the Gulf States Marine Fisheries Commission, or any member state thereof, reserves the right to oppose partly or completely any document submitted to the United States Senate for ratification that does not include any or all of the foregoing provisions."

* * * * *

The foregoing is a true and exact copy of an original resolution unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held October 18th and 19th, 1956, at the Jung Hotel in the City of New Orleans, Louisiana

W. Dudley Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

RESOLUTION

Resolved that the Gulf States Marine Fisheries Commission accepts the kind offer of Dr. Gordon Gunter to prepare for publication by the Commission a summary of available biological information on the Weakfish Family, and

Be it further resolved that the Commission's Committee to Correlate Research and Exploratory Data be requested to review the manuscript before publication, as suggested by Dr. Gunter.

Be it further resolved that a sum not to exceed \$1,500.00 be expended for the publication and mailing of such publication.

* * * * *

The foregoing is a true and exact copy of an original resolution unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held October 18th and 19th, 1956, at the Jung Hotel in the City of New Orleans, Louisiana.

W. Dudley Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

RESOLUTION

Resolved that the Gulf States Marine Fisheries Commission requests its officers to attend marine fisheries meetings, in addition to regular or special meetings of the Commission, whether such meetings be held inside or outside the United States, when it appears their presence would be to the best interest of the Gulf States.

* * * * *

The foregoing resolution was unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held at the Jung Hotel, in the City of New Orleans, Louisiana, October 18-19, 1956.

W. Dudley Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

RESOLUTION

Resolved that the Gulf States Marine Fisheries Commission applauds the accomplishments of the Department of the Interior, Fish and Wildlife Service, Statistical Survey, for the collection and making available of certain valuable information on the shrimp and other fisheries of the Gulf of Mexico.

Be it further resolved that the Gulf States Marine Fisheries Commission requests the Department of the Interior, Fish and Wildlife Service to make available such additional Saltonstall-Kennedy Act funds as may be necessary for the gathering of any and all statistical data as outlined in the Gulf Shrimp Program resolution adopted by the Gulf States Marine Fisheries Commission at a special meeting held January 21-22, 1954, in Edgewater Park, Mississippi.

* * * * *

The foregoing resolution was unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held at the Jung Hotel, in the City of New Orleans, Louisiana, October 18-19, 1956.

W. Dudley Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

BUDGET
GULF STATES MARINE FISHERIES COMMISSION
FISCAL YEAR 1956-57

Operating Expenses

Salaries	\$ 10,800.00
Traveling	1,250.00
Rent of office	1,080.00
Stationery, printing and supplies	550.00
Telephone and telegraph	475.00
Postage	110.00
Electricity	95.00
Accounting	225.00
Insurance	250.00
Depreciation	450.00
Meeting expense	350.00
Payroll taxes	158.25
Sundry	<u>50.00</u>
	<u>\$ 15,843.25</u>

Capital Expense

Purchase of automobile	\$ 1,440.00
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(Budget Approved October 19, 1956)

DREDGE SHELL STATISTICS

<u>STATE (Fiscal)</u>	<u>CUBIC YARDS</u>	<u>UNIT PRICE</u>	<u>TOTAL REVENUE</u>
Alabama (1955-56)	2,715,751	10¢	\$ 271,575.13
Florida (1955-56)	961,817	10¢	96,181.67
Louisiana *	2,874,856	7½ & 12¢	491,106.21
Mississippi (1955-56)	None	10¢	4,166.66
Texas (1955-56)	<u>11,366,018</u>	8 & 10¢	<u>1,077,404.00</u>
	17,918,442		\$ 1,940,433.67

*Louisiana Production - 1955 calendar year - Revenue, fiscal year 1955-56

Mississippi - Minimum royalty on contract

Texas - 8¢ for 3/8 inch shell and smaller, loaded separately
10¢ for all other shell

RESOLUTION

Whereas, David C. Jones, Jr., Florida Legislative Member on the Gulf States Marine Fisheries Commission has served as Chairman of the Commission for the year 1955-56, and

Whereas, he has served in a most distinguished manner; having not only discharged in a highly commendable fashion the duties of such office as set out in the Commission directives, but having additionally served the member states through attendance at meetings and conferences concerning the marine fisheries at distant points both within and outside the United States.

Now therefore, be it resolved that the Gulf States Marine Fisheries Commission express to David C. Jones, Jr., its most sincere appreciation for the fine leadership he most generously provided the Commission during his term of office and during which period the objectives of the Compact so admirably progressed.

* * * * *

The foregoing resolution was unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held at the Jung Hotel, in the City of New Orleans, Louisiana, October 18-19, 1956.

W. Dudley Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

RESOLUTION

WHEREAS, during the last session of Congress a Committee of Conference indicated that grave danger existed to personnel and equipment of the American shrimp industry in the Gulf of Mexico from recent aggravations in those waters; and

WHEREAS, said Committee of Conference in due deference to such existing danger did direct the United States Coast Guard to increase the vigilance of its surveillance in the troublesome area of the Gulf of Mexico; and


WHEREAS, the Gulf States Marine Fisheries Commission at its regular semi-annual meeting on October 19, 1956 received information that the United States Coast Guard had, at that time, failed to provide adequate protection to the United States shrimp interests in the Gulf of Mexico as directed by the Conferees of the House and Senate of the United States; now therefore,

BE IT RESOLVED, by the Gulf States Marine Fisheries Commission that the United States Coast Guard be requested to comply effectively with the directive of the Conference Committee of the United States Congress by giving ample protection to the said United States shrimp interests in the Gulf of Mexico; and

BE IT FURTHER RESOLVED, that a copy of this Resolution be forwarded to the Secretary of the Treasury of the United States.

* * * * *

The above Resolution was authorized by the Gulf States Marine Fisheries Commission and its Secretary directed to make official distribution of same as indicated therein.



W. Dudley Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

GULF STATES MARINE FISHERIES COMMISSION
EDGEWATER PARK, MISSISSIPPI
EDGEWATER GULF HOTEL
BALL ROOM

March 15 (Thursday) & March 16 (Friday), 1956

P R O G R A M

(Mr. David C. Jones, Jr., Commission Chairman, Presiding)

9:00 AM GENERAL SESSION - CALL TO ORDER

ROLL CALL

INTRODUCTIONS

WELCOME: Mr. Walter J. Gex, Jr., President
Mississippi Seafood Commission

REPORT OF CHAIRMAN

ANNOUNCEMENTS

SHRIMP

9:30 AM THE SHRIMP BIOLOGICAL RESEARCH PROGRAM: (PANEL PRESENTATIONS BY FISH AND
WILDLIFE SERVICE AND UNIVERSITY CONTRACT REPRESENTATIVES)
Mr. T. J. Costello, Fish and Wildlife Service, Galveston, Presiding

Anatomical Study

Messrs: Joseph Young
Tulane Univ., New Orleans

Histological Study

Jerome E. Stein
Texas A&M College, Galveston

Tagging Experiments

Charles E. Dawson
Univ. of Texas, Port Aransas

Galveston Lab. Studies

Edward Chin
Fish & Wildlife Service, Galveston

DISCUSSION PANEL: COMMITTEE TO CORRELATE RESEARCH AND EXPLORATORY DATA

Messrs: Harold C. Loesch, Alabama Dept. Conservation, Bayou La Batre
F. G. W. Smith, Marine Laboratory, Univ. Miami, Coral Gables
Percy Viosca, Jr., La. Wild Life & Fisheries Comm., New Orleans
Gordon Gunter, Gulf Coast Research Laboratory, Ocean Springs
Howard T. Lee, Texas Game & Fish Commission, Rockport

10:30 AM THE NEW CONSOLIDATED SHRIMP STATISTICAL BULLETIN
Mr. Charles Lyles, Fish and Wildlife Service, New Orleans

DISCUSSION

10:50 AM THE BIOLOGICAL MANAGEMENT OF THE SHRIMP FISHERY
Dr. Gordon Gunter, Gulf Research Laboratory, Ocean Springs

DISCUSSION

11:20 AM RESULTS OF RECENT RED SHRIMP EXPLORATIONS
Mr. Harvey R. Bullis, Jr., Fish and Wildlife Service, Pascagoula

DISCUSSION

11:40 AM POINT OF SALE SHRIMP PROMOTION
Mr. Charles A. Murphy, La. Wild Life and Fisheries Commission, New Orleans

DISCUSSION

12 NOON ADJOURNMENT

12:30 PM COMMISSION LUNCHEON: TERRACE

1:30 PM GENERAL SESSION - CALL TO ORDER

FILM: Shrimp Farming

OYSTERS

2:00 PM THE OYSTER TECHNOLOGICAL PROGRAM: (PANEL PRESENTATIONS BY FISH AND
WILDLIFE SERVICE AND UNIVERSITY CONTRACT REPRESENTATIVES)
Mr. Charles Butler, Fish and Wildlife Service, Washington, Presiding

Physiological Study
of Bleeding and Coloration

Messrs: Milton Fingerman
Tulane Univ., New Orleans

Seasonal and Geographic
Variables Study on
Quality - Fresh and Frozen

E. A. Fieger
La. State Univ., Baton Rouge

Adaptability for Freezing
vs. Environmental, Composition
and Processing Variables

(Miss) Betty M. Watts
Fla. State Univ., Tallahassee

College Park Lab. Studies

Charles Butler

3:00 PM RESULTS OF INITIAL SURVEY OF SOUTHERN OYSTER DRILL
Mr. Charles R. Chapman, Fish and Wildlife Service, Pensacola

DISCUSSION PANEL: SHELL FISH COMMITTEE

3:30 PM STATE EXPANSION OF PUBLIC OYSTER REEFS
Mr. A. J. Harris, Jr., Alabama Dept of Conservation, Montgomery

DISCUSSION

3:50 PM STATE RECORDING OF DEAD SHELL RESOURCE
Mr. Cecil Reid, Texas Game and Fish Commission, Rockport

DISCUSSION

4:10 PM APPOINTMENT OF RESOLUTIONS COMMITTEE BY THE CHAIRMAN

4:15 PM ADJOURNMENT

4:30 PM MEETING OF RESOLUTIONS COMMITTEE - BALL ROOM

FRIDAY (MARCH 16)

8:30 AM COMMISSIONERS EXECUTIVE SESSION BREAKFAST - PARLOR E

9:00 AM SCIENTIFIC SESSION - BALL ROOM
Dr. Gordon Gunter, Moderator

This Session provides an opportunity for scientists present
to have discussed any subjects they wish to present.

10:00 AM GENERAL SESSION - CALL TO ORDER - BALL ROOM

ADDRESS: Mr. Francis W. Taylor, Warren Fish Company, Pensacola,
and National Fisheries Institute, Washington

10:20 AM SURVEY OF WORK OF THE BRANCH OF COMMERCIAL FISHERIES
Mr. A. W. Anderson, Fish and Wildlife Service, Washington

DISCUSSION

10:50 AM SURVEY OF WORK OF THE BRANCH OF FISHERY BIOLOGY
Mr. Paul E. Thompson, Fish and Wildlife Service, Washington

DISCUSSION

11:20 AM SOME BIOLOGICAL NOTES ON THE MENHADEN
Dr. Royal D. Suttkus, Tulane University, New Orleans

DISCUSSION

11:40 AM METHODS OF SURVEYING FLORIDA'S SALTWATER RECREATIONAL FISHERIES
Mr. Robert Ellis, The Marine Laboratory, Univ. of Miami, Coral Gables

DISCUSSION

12 NOON MOVIES - IN COLOR AND SOUND: PREPARED FOR T-V AUDIENCES

Salty Sands

Texas Game and Fish Commission

And Now The Sea

The Marine Laboratory, Univ. of Miami

Outboard Fisherman, USA

Fish and Wildlife Service cooperating
with Johnson Motors

12:45 PM RESERVE FOR ANY OTHER MATTERS TO BE PRESENTED

ADJOURNMENT

ENTERTAINMENT FOR THE LADY FOLK
TO BE ANNOUNCED AT THE MEETING

GULF STATES MARINE FISHERIES COMMISSION
312 Audubon Building
New Orleans 16, Louisiana

M I N U T E S

REGULAR MEETING, MARCH 15-16, 1956
Edgewater Gulf Hotel
Edgewater Park, Mississippi

OFFICIAL ATTENDANCE OF COMMISSIONERS:

	<u>PRESENT</u>	<u>ABSENT</u>
<u>ALABAMA:</u>	W. C. Holmes (Session 3/16/56)	William H. Drinkard Garet Van Antwerp, III
<u>FLORIDA:</u>	Ernest Mitts David C. Jones, Jr. Vern Merritt	
<u>LOUISIANA:</u>	Donald G. Bollinger	L. D. Young, Jr. C. C. Burleigh
<u>MISSISSIPPI:</u>	Stanford Morse, Jr. (Session 3/15/56) Hermes Gautier	Walter J. Gex, Jr.
<u>TEXAS:</u>	Travis Bailey	Howard D. Dodgen Jimmy Phillips
<u>PROXIES:</u>	A. J. Harris, Jr. A. J. Harris, Jr. James N. McConnell R. Lee Eddy, Jr. Hermes Gautier Howard T. Lee	(For William H. Drinkard) (For Garet Van Antwerp, III) (For L. D. Young, Jr.) (For C. C. Burleigh) (For Stanford Morse, Jr., 3/16/56) (For Howard D. Dodgen)
<u>STAFF:</u>	W. D. Gunn, Secy-Treas.	

COMMISSION COMMITTEE MEMBERS PRESENT (Not listed above)

Mary Schulman, Reece O. Bickerstaff, Gordon Gunter, Robert M. Ingle,
Harold C. Loesch, Lyle S. St. Amant, Percy Viosca, Jr.

STATE GOVERNMENT REPRESENTATIVES PRESENT (Not listed above)

James A. Allen, Theodore B. Ford, Barnett B. Larrimore, Charles A. Murphy.

FEDERAL GOVERNMENT REPRESENTATIVES PRESENT

A. W. Anderson, Charles Butler, Harvey R. Bullis, Jr., Charles R. Chapman, Edwin Chin, Albert W. Collier, Thomas J. Costello, Lester A. Keilman, Willis King, Charles Lyles, Paul E. Thompson.

STATE UNIVERSITY REPRESENTATIVES PRESENT

Charles E. Dawson, Robert Ellis, E. A. Fieger, Milton Fingerman, Harvye Lewis, A. V. Novak, Hurst H. Shoemaker, Jerome E. Stein, John F. Storr, Joseph Young.

FORMER COMMISSIONERS, REPRESENTATIVES OF INDUSTRY AND OTHERS PRESENT

Bert E. Thomas W. W. Gillis, Fernand S. Lapeyre, James M. Lepeyre, Lawrence W. Strasburger, Francis W. Taylor, A. J. Wegmann H. J. Bankston, S. W. Corbino, John M. Gardner, James L. McConnell, G. W. Melcher
William J. Ross.

GENERAL SESSION, MARCH 15, 1956

Mr. Jones, Commission Chairman, called the meeting to order at 9:30 AM and following brief introductory remarks requested the Secretary to call the roll of Commissioners. Introductions followed.

The Chairman introduced Mr. Reece O. Bickerstaff, attorney for the Mississippi Seafood Commission, who expressed the regrets of Mr. Walter J. Gex in not being able to attend the session, and acting for the latter, officially welcomed the group to the State of Mississippi.

The Chairman, following acknowledgement of the welcome, remarked that the shrimp biological research program which was recommended by the Commission to the U. S. Fish and Wildlife Service (herein reference, FWS) at the former's Edgewater Park meeting, January 1954, was to be reviewed first on the morning program, and introduced Mr. T. J. Costello of the FWS Galveston laboratory. Presiding at the presentation panel, Mr. Costello introduced other panel members, including; Messrs. Joseph Young of Tulane University, Jerome E. Stein of Texas A&M College, Charles E. Dawson of the University of Texas, and Edwin Chin of the FWS Galveston laboratory.

In opening remarks, Mr. Costello explained the purpose behind the program to be the gathering of information which might be useful in considerations of the management of the shrimp fishery. Dr. Young was introduced with the explanation that he had undertaken the matter of properly describing the shrimp.

Dr. Young said that no detailed anatomy of the shrimp had ever been done. To illustrate the nature of his project, the speaker had slides of drawings shown. The slides featured a large female shrimp, a cross section of the eye, and the swim legs.

In discussion, Dr. Young said he hoped to complete the anatomy of the shrimp ahead of the project schedule. In answer to a question from Mr. Costello, Dr. Gunter agreed that the shrimp had not been properly illustrated in the past. Mr. Costello answered another question saying that eventually FWS should be able to say; there are no known ways as regards to laws or gear to actually help the shrimp fisherman to establish a sustained yield basis, either that, or there are things that can be done in order to achieve that objective, and these are the things we recommend, and this is the biological research background for the suggested ways. Mr. Eddy remarked that the need for management was obvious but he did not believe the need had ever been demonstrated. He added that the excellence of Dr. Young's work is sufficient justification for the expenditure. Mr. Costello commented that it was conceivable they could finish up not being able to find any single method that will help the shrimp population, then again they might. He just could not say at this stage. They may find, he said, certain factors that can be controlled by man; mentioning pollutants that are toxic to immature shrimp may be emptying into some waters. In response to the question; "Do you consider the method of shrimp fishing detrimental to fishing grounds or other fish?" - Mr. Costello's answer was he doubted if it could be pinned down, but as a general statement and personal opinion, he did not believe it to be significantly detrimental to either. He said in Alaskan waters dragging in certain specific areas had to be limited due to disturbing the king crab during the molting period. But, he went on to say, from what knowledge he has of this region, his answer was no to the question. Another inquiry made of Mr. Costello was, if he considered shrimping destructive to fish caught by both commercial and sport fishermen. He said the question could not be adequately answered at this time but at this time his answer was no.

In presenting the second panelist, who was Mr. Dawson, it was explained that he was trying to develop a tagging device that will be useful down to the larval form of shrimp in order to check movements. Mr. Dawson said with use of the device migrations would be determined for the period while free, growth rates recorded, and that it might also be possible to determine fishing pressure from returns and thus help to answer some questions concerning management. The speaker explained that the old style tag interferes with the shrimp shedding and is a physical shock. He said mortality ran high in tests with the conventional tag conducted in the Port Aransas laboratory, but they hoped to develop a tag which would not interfere with the normal life of the shrimp. It will be very small, he added, and for that and other reasons, it will be necessary to find a salt water fast dye which will readily distinguish a tagged shrimp from other shrimp when the fisherman is sorting a catch. Preliminary laboratory tests with indelible marking is progressing very satisfactorily, it was reported, and some specimens which had carried the marking from 170 to 180 days were exhibited in bottles passed to the conferees. Similar exhibits were shown on the slide projector, the shrimp being blue and red. Such markings were described as being inexpensive and could be applied in a short period.

In discussion, Mr. Costello asked for the cooperation of the five member states in connection with the tagging and marking program to the end that if it were heard that any parties were contemplating a similar program to advise the FWS Galveston laboratory so that a representative of the laboratory could contact them. Mr. Dawson said if two or three agencies or individuals started such a program and it was not controlled the FWS program would have to be delayed until they felt sure a new stock of shrimp was available. He went on to say that there has to be some control over the various marking methods and that at present and until more clear cut regulation or agreement is devised, they considered it not advisable to reveal the exact methods which are involved in the present study. Mr. Eddy commented that he thought them well advised in withholding the techniques if they had not been developed to a stage where they are practical but if they had proven practical, it was in the public's interest to get the marking and tagging program underway. (Secretary's note: Some discussion regarding the program did not appear on the wire as speakers did not use the mikes, but it appears the Commissioners and others understood the program was about ready to be undertaken. A later check with FWS Galveston laboratory clarified this misunderstanding. The program is at least six months, or more, in the future).

Mr. Costello introduced Mr. Chin, who said studies of temperatures, salinities, light, oxygen, and copper salts as related to shrimp are in progress at the Galveston laboratory. Tests are being made, he said, to determine limits of temperature a shrimp can stand and to observe its behavior at varying degrees. Effort will be made, according to Mr. Chin, to learn if shrimp will seek an environmental temperature to which it appears best suited, and the result, he continued, may furnish valuable information on offshore and onshore movements of the populations. Other factors, it was said, are being worked with in about the same way. The conferees were advised that the Galveston laboratory is now holding three tanks of shrimp, with 15, 20 and 25 shrimp in each tank, to determine what level the nitrogenous end products will kill them. That shrimp apparently secrete a lot of ammonia, was said to be known but it is not known at what level it is toxic.

Mr. Viosca inquired about the effect on fish and other organisms of the ammonia secretions, to which Mr. Chin replied that no other tests were now in progress but that menhaden would be so observed. Continuing, Mr. Viosca said shrimp have a defense mechanism; that he had observed when shrimp and fish are taken in the same seine, the shrimp become frantic and jump; that the water would become soapy from some secretion; and that fish taken out and put in clear water would soon die. Mr. Costello said they would study that point.

Following introduction, Dr. Stein defined his project of the FWS shrimp program as being a histological study of the animal. This study, he said, would attempt to locate the fat and starch and find out what the muscles and nervous system are like. Drawings in color were displayed and tissues of various parts of the body were pointed out. Dr. Stein said he was also studying various tissues to determine how diseases would affect them and

what mortality could be expected. Toxicity is another study underway, as well as, a study of how the shrimp grows. The speaker expressed interest also in determining gland action which promotes the throwing off by the tissues of a red pigment following death of a shrimp.

In discussion, Mr. Viosca suggested that shrimp weight and volume ratios should be studied. Dr. Stein agreed this should be done throughout the year and added that shrimp take on a lot of water and growth during molting; and that they build up glycogen during cold weather for use during the summer. Mr. Viosca said he had observed shrimp gain weight more in the fall than other seasons of the year.

In closing Mr. Costello invited letters of inquiry as well as suggestions from the Commission.

Members present of the Commission's Committee to Correlate Research and Exploratory Data served as discussion leaders during presentation of the several shrimp research reports. Those panelist included Messrs. Harold Loesch of Alabama, Percy Viosca, Jr. of Louisiana, Gordon Gunter of Mississippi and Howard T. Lee of Texas.

The Chairman next introduced Mr. Charles Lyles, FWS, New Orleans for a report on the new consolidated shrimp statistical bulletin. At this point, copies of the printed report were distributed. The objectives of the statistical program were cited by the speaker to be to obtain the total catch of shrimp for the South Atlantic and Gulf areas. To be of significant value to the bio-statistician, it was said, must have included certain things; the area of capture, quantity of effort expended in making the capture, catch by species and size, and the depth at which the capture was made. Mr. Lyles pointed out that the quantity of economic data in the bulletin had been limited, only the catch by size, state by species, pounds and value, being included. Other data, not of particular interest to the industry, being excluded. The bulletin will appear monthly, it was said. Speaking of the methods of collecting data, it was pointed out that representatives interview as many vessel captains daily as possible and endeavor to gather information as to area, depth, time spent, and kind and size they estimate to have been caught. Other information will be added as the program progresses, according to the speaker. Estimates are for a month of shrimp fishing. Information is wired daily to Market News, New Orleans.

Mr. Jones introduced Dr. Gunter who spoke on the subject of the biological management of the shrimp fishery. One thing which the Gulf shrimp have in common was said to be that they spawn offshore and come inshore to raise. Considering the larval form first, the speaker said that form undergoes 12 to 14 changes while drifting in the water. One female shrimp will spawn approximately 1,000,000 eggs, according to Dr. Gunter. If you will admit, he said, there are 25,000,000 pounds of spawning shrimp in the Gulf and say they are large shrimp, 20 to the pound, figures will show larvae to be present in terms of trillions. It was added that

it would be impossible to conserve or control these larval shrimp which might run to 40 trillion from the suggested 25,000,000 pounds of spawning shrimp. Referring to the two other phases of the life history of the shrimp, the speaker said they go into shallow waters to raise, grow, and then come back into the open ocean. Considering first the open ocean phase, it was said that the shrimp has by this time become fairly large, that its natural life span is becoming short, and that, since it is a choice food, the shrimp has many enemies. Dr. Gunter said he could see nothing to do during this phase but catch them first before something ate them up. Going back to the shallow waters, the speaker said, there were two facts which should be known; how fast the shrimp die and how fast they grow. It is not known how fast shrimp die, he said, but some information is available on how fast they grow, for example; Mr. Viosca showed about 1919 that shrimp grow at the rate of 1/25 of an inch (1mm) a day, and that some people in North Carolina now say that growth rate is a little slow. But supposing they do grow 1/25 of an inch a day, the speaker went on to say, that would mean a 25 mm shrimp would grow at least to 50 mm in a month, and increase its weight about 7 times, which means it would double its weight in about a weeks time. Continuing, that means 50% of the shrimp can die in a weeks time but the weight would be the same, the shrimp would be larger and better market shrimp. A 50% mortality per week was said to be equal to 93.8% mortality per month, at which rate a total population, starting with all those larvae, could be wiped out in about 7 months time. Such mortality was pointed to as being absurd since the population, although it may fluctuate, is never wiped out. It was added that the chances are the highest mortality is among the larvae and not in the bays, the shallow waters; that it is probable the lowest mortality of the shrimp life history occurs in the shallow waters. Dr. Gunter stated as an obvious conclusion that it would be best to leave the shrimp alone, and not fish them in the shallow waters, until they get larger and go outside. In concluding, the speaker said the bays and natural environment must be conserved because if they were not the shrimp would have no place to go.

Mr. Harvey R. Bullis, Jr., FWS, Pascagoula, reported on explorations for deep water red shrimp, (Hymenopenaeus robustus). Back in 1950, he said the Oregon first found red shrimp and since then a short period of time in each trawling cruise was given to checking the prospective producing areas. The scattered drags eventually gave the exploratory unit a sketchy picture showing red shrimp to be present throughout the Gulf in all depth bottom ranges of about 190 to 270 fathoms and a maximum depth range of 150 to 400 fathoms, according to the speaker. In 1955, at the completion of shallow water shrimp exploration, a special program was said to have been set up to provide some usable knowledge on the potential commercial catch rates. It was added that from preliminary work two general areas appear to have good production potentiality; one being southwest of the Dry Tortugas and the other being between the Mississippi River Delta and Cape San Blas, Florida, in depths of about 190 to 250 fathoms. Last year, Mr. Bullis said drags were made out to the 1,000 fathom curve to get additional information on which deep water species are present in the Gulf, the result being that so far 87 species have been taken, including

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5 'undescribed' species, all of which are edible but only 50 of which are sufficiently large to be of commercial value if ever found in enough quantities. A species described as (Peneopsis megalops) was said to be found along with the red shrimp and that catch rates of the former, which tallied 50 to 60 to the pound, heads-on weight, ran from 10 to 200 pounds per drag. It was pointed out that there seems to be a seasonal ranging of highest catch rates of red shrimp from 190 to 270 fathoms, which 80 fathom range is about twice the present range of the commercial fishery working on three different species of shrimp. It usually takes a week to find the area of best production of red shrimp, it was said.

Information was given on four exploratory cruises for red shrimp completed during the past year: Cruise 29, March 1955, off Mississippi and Alabama, 90# per hour catch rate for trip per three hour drag with 80' balloon trawls, greatest concentration in depths of 240 to 270 fathoms where drags averaged slightly over 100# each; Cruise 32, July 1955, south of Dry Tortugas, 180# to 210# for 3 to 4 hour drags using 80' nets, 16 drags made, 5 nets torn up, 2 complete rigs lost, believe loss of gear due to sunken ships; Cruise 34, September 1955, last half of same, Mississippi Delta to Cape San Blas, average drag 225#, 150# - 295# per three hour drag with 80' trawls for those that did not bog or tear up, best fishing to date; Cruise 36, February 1956, same ^{area} as Cruise 34, bad weather permitted only six days fishing, total catch about 2,000# of 26-30 count heads-on.

The Chairman next introduced Mr. Charles A. Murphy, Louisiana Wild Life and Fisheries Commission, New Orleans, who said his presentation was listed in the program as point of sale shrimp promotion, that he wished to change the title substituting the word seafood for shrimp. The primary purpose of our program on promotion, the speaker said, is to relate it to the people who actually use the product after the biologists find out where it is and the fishermen catch it. The speaker referred to the early days of commercial fishing in Louisiana, starting with the arrival of the Canadians in the state. In line with promoting seafood sales for the benefit of the Louisiana fishermen, many of whom are descendants of the early Canadians, Mr. Murphy said the Division of Commercial Seafoods expected to issue the third edition of the Louisiana directory of seafood dealers in the near future. Another sales approach mentioned was the restaurant and hotel operators through personal contact with them at major gatherings, as well as through the medium of exhibits, in such key cities as New Orleans, Atlanta, Washington, Chicago, Houston and Los Angeles. The National Restaurant Association has been promoting the idea of getting people to dine out at least once a week, and to cooperate in the campaign and at the same time promote Louisiana seafoods, Mr. Murphy said they decided on postage meter advertising. Envelopes of various New Orleans business organizations now using the meters were passed among the conferees. Acceptance by the organizations has been so good, it was added, that 20 meters are now in operation instead of the original 10 meters, and it was estimated that during March over 1,000,000 pieces of mail will carry the advertising imprint of the meters all over the country. It was mentioned that one of the great dangers of this form of advertising is that it can be over done. Letters from the presidents of the two national associations,

restaurant and hotel, were read. In conclusion, the speaker said that they have been trying to build good will for the domestic historic fishery of Louisiana and that like good health, good will is something you cannot have too much of.

Mr. Jones adjourned the morning general session at 12 Noon with the extending of a cordial invitation to the conferees to the Commission luncheon.

The afternoon general session was called to order at 2:00 PM. Mr. Charles Butler, FWS, Washington, was introduced to preside at a panel presentation of the FWS Oyster Technological Program. Panelist included, Doctors Milton Fingerman of Tulane University, E. A. Fieger of Louisiana State University and Harvy Lewis of Florida State University.

Dr. Fieger said they had put up oysters in packages after washing with both water and with salt solution, and also, glazing with water or glazing with salt solution. One series was said to have been put up in which the packages were over-wrapped without glazing. With regard to results it was stated that where the oysters are packaged and over-wrapped with good glazing paper, within six months those oysters are beginning to develop an off flavor, rancid flavor, a yellow discoloration, or color appears on the surface of the oysters; that is, those on the surface layer. It was recommended that oysters so packaged should not be stored longer than six months. It was reported that where oysters are glazed with either water or saline, they are in good condition, good quality, up to nine months. Glazing with 65% salt solution was said to improve the flavor. Dr. Fieger said best results had been obtained when the oysters were vacuumed packed, and recommended this method of packaging. Oysters in cans, in ice, not frozen, had an extension of from 10 to 15 days storage life when treated with a standard biotic (Secretary's note: Name of biotic given but not clearly recorded), but the bacterial count was said to start to rise very rapidly after 15 days. It was reported packs of oysters from Alabama, Mississippi and Louisiana were put up during the winter and that this procedure would be repeated when warm weather comes in order to compare prime condition oysters with those not quite so good. This sub-project includes following through frozen storage. One serious trouble being encountered was said to be a green discoloration developing on the body of frozen stored oysters, it appearing as if the skin becomes more transparent and shows the color of the internal organs of the oyster, which is objected to by the trade.

Mr. Butler explained the objective of the project contracted to the Florida State University to be the development of products which are practically ready for use on the table. He introduced Dr. Lewis for a progress report on the project.

Dr. Lewis said determination of the ph of an oyster has been used to indicate whether or not an oyster is fresh because as they deteriorate they become more acid. If ph is going to be used as a test for freshness of the southern oyster, a different scale will have to be devised, according to

the speaker, because of the low ph even in the summer time when they are very fresh. It was said that in some cooked products, the type of deterioration is different from the change that takes place with the fresh oysters, a rancid odor being noticeable. Dr. Lewis said there is a new test which seems fairly helpful in measuring this rancidity. Another test was mentioned which assists in studying changes that take place in cooked oysters. Speaking of breaded raw and precooked oysters, it was reported the former lose moisture while frozen and they stick together so, they are hard to cook, while, with regard to tests on the latter, effort is being made to improve them by the use of certain oxidents so that the keeping period may be extended. It was reported that nutritive studies indicate oysters to be of a very good source of some of the B vitamins and that they still have a very high vitamin content when oysters are not considered to be in top quality. Some work was reported to have been done thus far on preservation of oysters using irradiation to the end that changes can be studied. Under these tests, fresh oysters were said not to have changed in appearance but that the odor was a little strong. We have been unable to prevent oxidative changes that take place with the irradiation, according to the speaker. More of this work is contemplated, using frozen oysters.

Dr. Lewis replied to a question from the floor, saying, she thought precooked oysters are pretty good, and added, that the only thing is they do not keep long and even in frozen storage get rancid after a few weeks. Mr. James N. McConnell inquired as to the length of time it is safe to eat oysters after they have been thoroughly washed and put in the refrigerator, a normal refrigerator, not a freezer. Dr Fieger said in their work they are put in pint cans and placed in ice. He estimated 10 days to be as long as an oyster should be kept and added, that beginning with the 10th day the bacterial count starts going sky high. Mr. McConnell then inquired as to the best way to tell when an oyster starts to go bad, when you do not have a chemical for checking, was it little bubbles forming. Dr. Fieger agreed about the bubbles and added that odor was also an indication. Mr. Bollinger asked Dr. Fieger if he had done any experimenting on breaded and then frozen oysters. Dr. Fieger said that work was being done at Florida State University. Mr. Bollinger inquired if Dr. Fieger vacuumed the raw oysters and then froze them. The reply was that he had and that he considered them the best oyster we have as far as comparing the vacuum pack frozen oyster with those in the cartons, either glazed or over-wrapped.

Mr. Butler, referring to the physiological approach, said we know nothing about the composition of the oyster or what happens inside an oyster during its growth period. He added that it is possible the studies at Tulane University could furnish information which would assist in such problems as loss of fluids and rancidity. Dr. Fingerman was introduced.

Dr. Fingerman said that during the past year they had been trying to find out why the southern oyster loses more fluids than the northern oyster. Oysters have been shucked under various conditions, he said, and it had been found that oysters shucked as done commercially in shucking houses

lose 50% of their body weight in 15 minutes. It was added that carefully shucked oysters, oysters which have not had the outer layer pierced, only cuts this to one-half the loss. This, he said, was not too great a savings when it is considered that shucking in the mentioned conservative fashion requires four times as long. Having established these facts, efforts are being made to find ways to prevent losses. One test mentioned was that of sneaking up on the oyster in the aquarium and placing a wedge between the shells when they are open and allowing the wedge to remain for 24 hours. If an oyster is prevented from opening and closing its shell it will lose weight, a figure of 20% of the body weight in six hours, being given. The theory we are currently working on, according to Dr. Fingerman, is that any type of irritation or external stimulus applied to an oyster will cause it to lose body fluid. It was added that the oyster seems to have a certain amount of fluid between its shells, not very much, but they secrete this fluid as needed. It was reported that the anatomical relationship of the various fluids of the oyster had not yet been determined, but it had been found an oyster can regulate its salinity and that fluid in the heart is constant. In conclusion the speaker said experiments were now underway on feeding oysters, lethal temperatures and salinity of environment.

Some one suggested to Dr. Fingerman that judging from the tests it might be a good thing to find a greater market for oyster juice. Dr. Fingerman said he had not given up the problem yet, that the FWS was going to send him some Chesapeake Bay oysters to check differences. Dr. Fingerman answered two questions which were not picked up. He said to the first question that it appears to make no difference in the body weight of the oyster whether it be from low, medium, or high salinity. To the other, he said, he knew of no experiments of freezing oysters in the shell.

With reference to work at the FWS, College Park laboratory, Mr. Butler mentioned one project as collection of samples for composition studies and this by seasons. Last year he said, samples were received as follows: 19 from Louisiana, 11 from Alabama, 4 from Mississippi, 4 from Florida, 3 from Georgia and 3 from South Carolina (one other state was mentioned by Mr. Butler but not plainly recorded). The speaker said by the time the southern oyster begins to fatten the oyster season is pretty well along, with the market peak having passed.

Mr. Butler asked Dr. Fieger to tell about the bacterial count. Dr. Fieger said the count on freshly stored oysters, washed with water, did not rise until the 10th day. In frozen oysters the bacterial count slowly rises during storage. It was mentioned that the bacterial count in shrimp drops during frozen storage. Dr. Novak, who is associated with the Louisiana State University project, said they had developed a color indicator test for oysters which determines the count in a three hour period. Dr. Fieger said Dr. St. Amant had been furnishing samples monthly and from the samples it had been found glycogen reached a minimum in August; that the rise to October was slow, then rapid starting in October. Mr. James N. McConnell inquired if the glycogen content improved in June over just when the oyster spawned. Dr. Fieger said he had not found much difference between April and June. Mr. McConnell said counter oysters are pretty good in New Orleans in June and July.

Dr. Lewis was asked to explain irradiation and the use of Cobalt 60 for the tests at Florida State University. Cobalt 60, she said, is an isotope of cobalt and that it gives off small particles called the gamma rays. It was added that material that is treated with gamma irradiation is safe to handle immediately and that it is being used not only in the treatment of meat and fishery products that can be completely sterilized but also in improving the keeping quality of cereals and similar products.

Mr. Butler asked the panelist for a brief summary of work to be done at the three universities next year.

Dr. Fingerman reported: Compare fluid content of northern and southern oysters; temperature resistance; fluid relationship of different fluids; work out circulatory system; check on fluid loss when heated; find out about brown pigment in oysters and its function.

Dr. Lewis summarized: Develop a good frozen product; prevent clinging together of raw oysters by faster freezing; develop a frozen oyster stew which will prevent the double cooking of oysters, and try to prevent curdling; work out use for liquor from oysters; further rancidity tests; improve vitamin content by care in shucking.

Dr. Fieger mentioned: Continue study on frozen oysters; preparation of different types of packaging; storage of fresh oysters to lengthen life; determine amino acid content.

Members present on the Commission's Shell Fish Committee served as discussion leaders during presentation of the oyster technological reports. Those panelists included Messrs. Harold Loesch of Alabama, Robert M. Ingle of Florida, Percy Viosca, Jr. of Louisiana, Gordon Gunter of Mississippi and Howard T. Lee of Texas.

Mr. Charles R. Chapman of the FWS Pensacola laboratory was introduced for presentation of a report titled "Results of an Initial Survey of the Southern Oyster Drill". By way of introductory remarks, the speaker said that the economic importance of the Southern Oyster Drill, Thias had been a matter of discussion and concern for many years. All of the Gulf Coast States have felt the impact of this predator upon their oyster industries. Large areas of good oyster bottom are commercially barren of oysters and the annual loss to the industry is probably very large due to predation by this animal. However, he said, the true cost inflicted over the Gulf as a whole is not known nor has sufficient work been done to evaluate correctly the damage caused by this animal except in a few isolated instances. The objectives of this survey were pointed out as follows: To determine the economic loss or possible benefit to the oyster industry in order to learn how much we are justified in spending for drill control in areas now in production; to locate areas where the oyster industry might be expanded and the drill is not likely to be an important predator and; to determine the extent of present producing and potential but non-producing bottom on the entire Gulf Coast. The survey is conducted

in three parts, according to Mr. Chapman, namely a review of literature and records, interviews with qualified persons and the physical inspection of the marine bottoms of the entire Gulf Coast where there is a possibility of oyster culture. During the course of the report large maps were referred to, the maps being of several secondary bays in the Pensacola area, including Blackwater, East Bay, and Escambia Bay. Another map was of all of Perdido Bay which body of water forms a portion of the Alabama-Florida line. The maps showed, as a result of the survey; productive and potential bottom; low and high and intermediate salinity areas; upper and lower limits of the intermediate area; maximum drill migration in dry periods; and polluted areas. Maps of Pensacola Bay and adjoining Santa Rosa Sound were not provided but data were given of findings in these bodies of water.

In discussion Mr. James N. McConnell said they had found in Louisiana that 75 to 90% of the oysters attacked by drills were drilled through the outside and not through the shell. Mr. Chapman said they had found the same thing; and continuing said drills cannot stand salinities too low; that in all areas samples of snails are being collected for further study; and that a standard dredge was being used for the survey. Answering a question by Dr. St. Amant, Mr. Chapman said the number of drills collected by the dredge varied. Mr. Loesch inquired if the west side of bays have less drills than the east side, and Mr. Chapman said he had found it true. The Secretary asked Mr. Chapman if a time table had been set up for the survey and in what direction it was to move. Mr. Chapman said they hoped to finish up northwest Florida and survey Mississippi Sound next; that when in the field they could run about 10 square miles of water per day. He added that the FWS boat was so old they could not get too far from base. In answer to a question by Dr. St. Amant, Mr. Chapman explained the methods being used in the collection of information on pollution and also the collection of hydrographic data.

Mr. Jones introduced Mr. A. J. Harris, Alabama Department of Conservation, to explain the Alabama program for expanding the public oyster reefs. Mr. Harris said the program was progressing nicely, that a bottom tract of 500 to 600 acres had been recently acquired and that they were in the process of acquiring by lease an adjoining tract of 600 to 700 acres. With some 1,800 acres having been previously leased, the speaker said the total would run to approximately 3,000 acres for development into public reefs. The 3,000 acre bottom tract was said to be about 30 miles by water from Mobile and about 15 miles from Bayou La Batre. Mr. Harris continued, saying that in May and June 1955 Alabama planted 40,000 to 50,000 barrels of shell on the 1,800 acres and this planting season expected to plant some shell on the more recently acquired tracts, but mainly seed oysters. It was said that the Alabama leases specify that the state has exclusive rights to same; that the season is opened and closed as deemed biologically wise by the Director of Conservation. Speaking of pollution, it was pointed out that the State Health Department closes the subject area when pollution is found, and this becomes necessary during certain periods of the year. However, it was added that Mobile is constructing a multi-million dollar sewage disposal plant which will go a long way toward ending the trouble.

A program of taking soundings to determine all bottoms suitable for oysters is anticipated, according to Mr. Harris, and the program of oyster reef expansion is expected to move forward.

In discussion, Mr. Wegmann suggested to Mr. Harris that the state closely watch the catch brought in as he had observed a high percentage of shell accompanying oysters which are landed. Mr. Wegmann also suggested that oysters be transplanted from an area north of Mobile Bay, said to be a permanently polluted area, to the recently acquired bottoms. Mr. Harris assured Mr. Wegmann the suggestions would be taken under consideration.

Mr. Howard T. Lee, Texas Game and Fish Commission, was called upon for a report on how the program of surveying the dead shell resource of Texas was progressing. He stated the objective of the program to be the surveying of all of the Texas buried mud shell deposits and try to regulate the removal of the shell so that it would not interfere with oyster production and other fisheries in the bays. The survey will be conducted with the use of modified fathometer known as a sub-strata acoustic probe, according to Mr. Lee, who added that the instrument would be installed on the Commission's new boat built for that specific purpose. Preliminary tests in Aransas Bay were said to be expected during early April and the program launched not later than May 1. The speaker said the boat could carry 10 to 15 observers at one time and that he would keep the Secretary informed as to progress so that a date for an observer run could be set for those of the other member states who wished to see the instrument in operation.

Answering Mr. James N. McConnell's question, Mr. Lee said the instrument will give a picture of the bottom to a depth of 100 feet from the bottom of the boat; that mud shell deposits have been found as deep as 75 feet, with the reef 30 feet thick; that the probe itself cost about \$15,000 and the boat about \$12,000; that maintenance would probably be expensive; and that the income from shell to his Commission ran about \$800,000 per year.

The Chairman announced the general session for the day ended. Mr. Jones asked each of the member states to select one of their delegation to serve on a resolutions committee to meet following adjournment. The Commissioners were reminded of the executive session breakfast set for Friday morning at 8:30; other conferees, of the scientific session set for 9:00 AM; and all present, of the second general session to begin at 10:00 Friday morning. The Chairman explained the purpose of the resolutions committee was to get resolutions in order for the executive session and the reason he was giving the executive breakfast was that he had observed at past meetings a number of Commissioners of necessity had to leave prior to conclusion of the session when it was scheduled lastly on the meeting agenda. The Thursday, March 15, general session adjourned at 4:15 PM.

FRIDAY (MARCH 16)

The morning session was called to order as scheduled and the Chairman introduced Mr. Francis W. Taylor, Warren Fish Company, Pensacola, and currently President of National Fisheries Institute. In his address, Mr. Taylor said the Institute has a membership of approximately 500 from all branches of the fishing industry, including wholesalers, retailers, brokers and buyers. Mention was made of the six different branches of the NFI. The department which handles public relations was referred to as one of the most active and one that does a great deal of good for industry. Ads and copy, it was said, are put in magazines, supplements and other media for public consumption, with the J. Walter Thompson Advertising Agency preparing most of the material. "Fish Parade", according to Mr. Taylor, was featured during the lenten seasons and will be featured again during the current year. Fish consumption was said to have increased 10 to 15% in October of last year and it was the expressed thought of the speaker that the mentioned publicity contributed considerably to the increase. Referring to other committees, it was said traffic endeavors to hold rates low; legislative keeps the membership informed of current legislation; industrial products studies ways of keeping down waste and increasing utilization of the product; and quality concerns itself with delivering better seafoods to the housewife. In concluding, Mr. Taylor said he had found most people appreciate the value of trade organizations but that many do not take enough interest in the organizations.

Mr. A. W. Anderson, FWS, Washington, was next introduced to report on the activities of the Branch of Commercial Fisheries which had not been previously covered. Mr. Anderson expressed the regrets of Messrs. Farley and Suomela of FWS for being absent from the meeting. The former had to remain in Washington, he said, due to March 19 Senate hearings on fisheries bills, and the latter was said to be in the Dominican Republic. With regard to the anchovies and sardine-like fishes Commission resolution requesting research on these fisheries, it was reported they were endeavoring to work it into the regular program of the Gulf exploratory fishing vessel Oregon and to send samples to their Maryland laboratories for various tests and canning. Mr. Anderson said this would give a good start for work to be picked up by the Pascagoula laboratory, when it is completed. Speaking of the Pascagoula building, he said, title to the land given by the City of Pascagoula is being examined and it is expected bids for the building will be opened soon. A possible completion time was given as this fall. With regard to the economic survey of the shrimp industry, it was said the FWS part of the survey is well along and that reports from contractors are being analyzed. As reports are analyzed, he said they will be made available, not waiting for all to be gathered under one cover. In concluding, Mr. Anderson said there are a number of programs national in scope which are of interest to the Gulf area but that he would not go into these because a progress report on the program would be available about April 15, the same being prepared in advance of the May meeting of the Saltonstall-Kennedy Advisory Committee.

Following introduction by the Chairman, Mr. Paul E. Thompson, FWS, Washington, said that he wished to give a summary of the tests made of the effects on marine life by under water explosions, the paper being a follow up of the resolution on the subject adopted at the October 1955 Commission meeting and directed to the FWS. Parts of the paper will not be covered here since a copy of same is being made a part of these minutes and attached hereto.

Mr. Thompson said they assumed the resolution referred principally to the area outside of the state tidelands because of the fact that the Department of Interior is issuing leases in that area. Mr. James N. McConnell said maybe the resolution was not explicit enough but it was his understanding it was meant to get assistance from the FWS on studying the problems on the inside waters. Mr. Eddy read the resolution: "Resolved that the Gulf States Marine Fisheries Commission requests the Department of the Interior, Fish and Wildlife Service, to institute at its earliest possible convenience a program which will include such projects as will furnish information relative to the effects to water bottoms and aquatic life resulting from seismographic or geophysical activities and explorations and all development operations for gas, oil and/or other minerals." Mr. McConnell, referring to Mr. Thompson's paper said that Louisiana would try black powder. Mr. Harris said Alabama was glad to know of the minimized effect of black powder explosions since his state had recently leased some water bottoms and expected to lease more. Mr. Eddy, giving background on the resolution, said it resulted from requests of menhaden and snapper fishermen; the snapper fishermen being from Panama City, Pensacola and Mobile and who fish off the Louisiana coast during certain seasons and come into Morgan City. Mr. Eddy said it was at Morgan City that he received these requests, and was informed by the fishermen that although the effects of the explosions are not noticeable in dead fish, those lumps on which the charges are fired are noticeably devoid of fish for several months afterwards. It was added that it seems to have changed the habits of those particular fish. Continuing, Mr. Eddy said that the shrimp fishermen approached them with this problem; wherever an area which is ordinarily productive in shrimp has been subjected to seismic explorations, charges fired every 1,200 to 1,400 feet depending on what the shot point distance is for that particular exploration company, that area becomes rather unproductive for an undetermined period after the exploration. Concerning the menhaden fishermen, it was said they see no dead menhaden on the surface but they are aware of the absence of fish in these areas thereafter. Mr. Eddy, referring to some observations made by Dr. St. Amant on the effect of seismographic operations with charges up to a thousand pounds, said, that they are pretty familiar with the immediate physical effects of the charges but that they are still uninformed as to the biological effects on a particular fishery; adding, does it discourage, change, or otherwise effect the normal patterns of migrations and feeding in the area so that it works a hardship on our fishermen in that it increases their cost? That, it was said, was the idea behind the resolution. He stated that they have

at their disposal most everything that is in the library and competent people to research in libraries, but that they would like to have some field activity which would assure them, or inform them, just to what extent seismographic operations have on a fishery, biologically, not the physical effects of a charge being fired in the proximity of a fish. In conclusion, he said, he was quite sure dynamite will kill fish if it is close enough to them, and that they also know what effects it has on the bottom, on at least certain types of bottom, but that they did not know if a species is discouraged from coming into an area which it has traditionally inhabited.

Dr. St. Amant said that many Louisiana oystermen came from Dalmatia and Jugoslavia and they have expressed concern for the oyster crop due to seismic operations because of observations made of the results of explosions in their native lands. He said the oyster people say the coast of these countries, where there is rock and sand bottom, there is an extensive growth of underwater seaweed and because of the clearness of the water fish can be seen to move back and forth, but that after an explosion with dynamite, there are huge areas where the seaweed patches disappear and the fish avoid the area.

Mr. James N. McConnell said he was with Dr. Nelson Gowanloch when experiments were made several years ago and that shrimp people, the press and others were also present. He told of the experiments, as follows: we shot 800 pounds suspended in 18 feet of water, 9 feet from the bottom. Fish, shrimp and crabs were put in cages. The crab cages had each crab in a separate compartment. From the shot point outward cages were placed every 50 feet. All fish were killed up to a distance of 300 to 400 feet. The fish used for experiments were all croakers. No dead shrimp were found even within 50 feet of the explosion and no dead shrimp were found on checking the following day. The oyster barrels used to suspend the charges were blown 300 feet in the air. People were trawling in the area at the same time we shot, were trawling the next day, and were getting catches. Some shrimp were kept for a week after the explosion and did not die during the period. Of the crabs killed they included only the old male ones. The old crabs had a spot right back of the eyes which looked like an ice pick had punctured the hole.

Mr. Harris answered a question from Mr. Wegmann, saying that Alabama requires the oil companies to take an experienced man on exploration trips, at oil companies' expense, whose duty was to see that the exploratory crew stays clear of the oyster and snapper reefs. The Chairman told Mr. Thompson that he had been talking with some of the members present on the Commission regarding the Clearwater meeting resolution and they would like to have some further work done on the subject, if possible, and particularly from the biological angle.

Dr. Royal D. Suttkus, Department of Zoology, Tulane University, who was scheduled to deliver a paper on menhaden, was unable to attend the meeting.

Mr. Robert Ellis, The Marine Laboratory, University of Miami, was introduced by the Chairman to present a paper on the methods employed in surveying Florida's saltwater recreational fisheries. The Marine Laboratory, according to Mr. Ellis, is making the survey as part of the fisheries research program being conducted for the Florida State Board of Conservation, the responsibility of the former being planning, supervision, tabulation and analysis. It was said the State Board of Conservation has provided some essential data and advice and the services of nineteen conservation agents for half of their working time who will collect most of the information in the field. The purpose of the survey was defined to be the determination of the value to the State of its recreational fisheries in salt and brackish waters in a twelve month period, the amount of time spent fishing and the catches of different kinds of fish. With reference to survey methods, it was said they consist basically of determining the catch and expenses data on a daily basis for representative fishermen and multiplying the averages by the number of fishermen days. For interview purposes, it was pointed out the recreational fishing methods have been divided into the following categories: charter boat, party boat, large private boat, private skiff, rental boat, pier, bridge, shore and spear-fishing. Fishermen or parties, selected at random, will be interviewed in each of these categories, according to Mr. Ellis. The participation of residents and tourist, and seasonal and area catch and fishing pressure trends, he said in conclusion, will be measured.

The Chairman inquired of Mr. Ellis if a similar survey was being made in freshwater. The latter said it was not but he thought there should be a similar survey undertaken. Mr. Harris said Alabama has a similar project underway in freshwater which is being financed with Dingell-Johnson funds in the amount of \$15,000. Mr. Ellis said he would like very much to exchange notes with project leaders in any state which might be making a survey of the subject character.

Before concluding the session, Mr. Jones asked Dr. Gunter for a summary of things of interest which were discussed by the scientists at their morning session. Dr. Gunter, who served as moderator for the scientific session, said Dr. Novak of Louisiana State University explained in detail his method of testing for the abundance of bacteria in seafoods by the colorimetric test for acid production. The summarizing thought with regard to the fish preservation discussion, according to Dr. Gunter, was that there was much more to be known. Continuing, he said there was some discussion of shrimp biology, especially the evidence for the fast growth rate, and added, that shrimp management problems were also considered. Mr. Viosca, he said, gave a summary of his recommendations on the proper closed seasons for shrimp fishing in Louisiana.

Mr. Eddy inquired of Dr. Gunter as to the thinking of the scientists with reference to the laws governing the opening and closing of inshore waters for shrimping. Dr. Gunter said there was no particular argument about it, no vote was taken, but he did not think there was any disagreement about the fast growth and the fact that the growth of the shrimp is practically

explosive in the summer. He added he thought there would be more and bigger and better shrimp if they are left alone in the summer time. Dr. Gunter said Louisiana has a different problem than other Gulf states due to a great deal more estuarine area, and bays of less width, that if a lot of fishermen were excluded from fishing on the inside waters they would have great distances to go, which would make the fishery uneconomical. He said he did not think the biology of the shrimp would be much different, one state to another. Mr. Eddy said there are two schools of thought in Louisiana, one adhering to Dr. Gunter's point of view regarding prohibition of taking the juveniles and the young immature shrimp in the inside, these being the big fishermen, and the other being the small shrimp fishermen who feel if it is to the interest of the shrimp industry to restrict the small shrimp why is not consideration given to closing the offshore fishery during the period when the white shrimp are heavily laden with spawn. It was added that the matter had never been resolved scientifically, and Dr. Gunter was asked if he had any remarks relative to fishing the brood stock.

Dr. Gunter said one of his assumptions is that there always seems to be enough brood stock, that there are two pieces of information which led him to something of that conclusion with regard to shrimp. He said in 1940 or 1941 there was a terrific cold wave and it killed fish all over the Texas Coast, at least. The cold wave was said to have hit the Atlantic Coast also and all the shrimp disappeared, apparently killed. The Bureau of Fishing Investigations went all over the South Atlantic shrimp-ing area and they could not find a hat full of shrimp, according to Dr. Gunter, and following the survey, sent out a circular to all shrimp fishermen not to fish, that the shrimp were beat down, and if they caught any more they would destroy the brood stock. There was not any that spring because they were practically all killed but the next fall they came back as numerous as ever, he said. Referring to the other piece of information, Dr. Gunter said Mr. Percy Viosca made an observation quite different, he noticed that there was a parasite which effects the reproductive organs of the shrimp, that it was so heavy one year that it had castrated 90% of the shrimp in Louisiana. The next year, he said, the crop was just as good as ever. Dr. Gunter added that the shrimp has not been beaten down by fishing, or at least there is no evidence that the stock can be lowered by fishing so much that you will not have any. He said another point to talk about when you consider protecting the young is that if you kill a little shrimp you kill a spawning shrimp too, that it makes no difference if you kill it a day before it is supposed to spawn or if you kill it when it was little.

Mr. Eddy, remarking on Dr. Gunter's reasoning, expressed the opinion that it makes quite a lot of difference when you take shrimp, that if you take a spawning shrimp you have destroyed progeny in toto, whereas, if you take a juvenile, that shrimp might have fallen many times between the juvenile stage and the adult stage. Dr. Gunter said that was quite true except that if you take a hundred juvenile shrimp you are going to destroy some spawning shrimp because the mortality rate will permit some of them to get through,

that there were a great deal more smaller ones than larger ones, so when you take the smaller ones you are taking the ones which will die naturally as well as the ones which will survive if you did not take them. It was Mr. Eddy's view that it would be better to catch shrimp when the chances are numerous, without taking a spawning individual, than to wait until they had reduced themselves to a mere spawning brood stock, that it would be better to intensify the fishing inshore than it would be to intensify the fishing on the brood stock. Concerning mortality, Dr. Gunter said he believed it was highest among the larvae. He said it has been suggested that more shrimp come in than the ground can support. Mr. James N. McConnell remarked that it was his information that the supply of shrimp was in direct ratio to the food supply, and that if the food was not available they would not reach maturity. He asked Dr. Gunter's opinion, who replied he thought that true, and added that he thought the environmental factors to be more important than what the fishermen do to them because, for instance, the white shrimp fishery in Texas has gone to nothing during the drought. When conditions are right, Dr. Gunter expressed the belief that the white shrimp will come back and about 20,000,000 pounds per year will be caught because under present conditions that is all the area can support.

With no further business to be presented at the session, the Chairman adjourned the meeting at 12:15 PM prior to the showing of films in order that those who had to leave would feel free to do so. Films in color titled, Salty Sands, another And Now The Sea were enjoyed by the group, the former being a conservation production of the Texas Game and Fish Commission and the latter being a production of The Marine Laboratory, University of Miami, showing various phases of marine fisheries work. These films, together with a Japanese produced film showing development of the shrimp from the egg to the adult stage, rounded out the film showing part of the program, the shrimp film having been shown immediately following the Thursday lunch hour.



Prepared by: W. Dudley Gunn
Secretary-Treasurer

WDG-c

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Edgewater Park, Mississippi
Edgewater Gulf Hotel
March 15-16, 1956

"THE EFFECT OF UNDERWATER EXPLOSIONS ON FISHES"

Paul E. Thompson
U. S. Fish & Wildlife Service
Washington, D. C.

Limited local research has been done on the effects of underwater explosions on fish. Seismographic explorations for new deposits of oil in the coastal waters of California and in the Gulf of Mexico, together with studies conducted by the Department of the Navy, have provided opportunities for determining the apparent destruction of fishes by various explosions. The total effect of underwater explosions is not known, but various studies and observations indicate that the solution of the problem does not lie in prohibiting seismic operations, but rather in regulating seismic activities so as to hold destruction of valuable commercial and sports fishes to a minimum.

The data on the effects of underwater explosions on fish mortality consist principally of estimates and observations of destruction of fish life caused by the detonation of a given explosive of a given size at a particular depth. Counts are usually made of dead fish which come to the surface in the vicinity of the explosion. In the past, dredge samples have been made to ascertain the numbers of fish which sank to the bottom. In more recent investigations divers and biologists have searched the ocean floor for evidence of destruction caused by seismic explosions. The only accounting made of those fishes, which were injured internally but not killed, has been in California waters where fish were held in underwater pens during seismic operations.

Fitch and Young (1948) found that in California coastal waters explosions varying between 10 and 160 pounds were most destructive to those species which possess an air bladder. Furthermore, shots exploded a few feet under the surface killed over twice as many fish as those exploded under the floor of the ocean.

Aplin (1947) reported that 10 pound sticks of 60 percent petro-gel detonated in California waters killed an average of 5 pounds of fish per pound of explosive and 100 pounds of fish per shot. He found, however, no apparent relationship between water depth or size of explosive and the total amount (weight) of fish killed. Of further interest is the fact that the explosions apparently had no effect on lobsters. From the result of this work, there is a possibility that abalones may be damaged.

(Thompson, #2)

Gowanloch and McDougall (1945) reported that 200 and 800 pound shots of 60 percent gelatine dynamite detonated on the floor of the Gulf had little or no effect on "jumbo" shrimps and oysters. The effects of the 800 pound charges were practically the same as the 200 pound charges among various fishes and shrimp. Fishes at distances greater than 200 feet from the point of detonation evidently were unharmed.

Coker and Hollis (1950), observing the effects of very high explosives, varying between 250 and 1200 pounds per shot and detonated at depths from 17 to 134 feet, found no relation between either the weight or number of fish killed and the size of the charge. There appeared to be no selective mortality for size of fish. Generally fish were damaged or killed within a radius of 100-200 yards from the point of detonation.

Detonation of heavy submerged charges of high explosives in the Patuxent River, Maryland, have demonstrated high mortalities to fish (Tiller and Coker, 1955). The surveys conducted in this area indicated that over a period of years the fish population has not decreased when compared to populations of adjacent areas. The authors do not expect any change in the fishery other than those of a biological nature which might also occur in areas where explosive tests are not being conducted.

In Lake Maracaibo, Smith (1948) reported that 50 pound charges of 58 percent nitroglycerine caused immediate death to all fish life within a radius of 100 feet of the point of detonation. At water depths of 35 feet or less, 10 pounds of dynamite had a lethal range of about 100 feet; a 25-pound charge had a lethal range of approximately 165 feet and a 50-pound charge had a lethal range up to 300 feet. At a water depth of 70 feet, however, the 50 pound charge had a lethal range of only 150 to 175 feet.

Koyama (1954) investigated the effects of underwater explosives in Japanese waters. An English summary furnished with the paper did not give definite weights or sizes of charges used, however, fish in untold numbers were killed and examined to determine cause of death. It is assumed that the charges were high explosives.

In 1951, experiments were conducted in California waters for the specific purpose of determining whether methods of seismographic exploration for oil could be found that would reduce fish mortality. (Hubbs and Rechnitzer, 1952) The experiments were a joint enterprise between Scripps Institution of Oceanography and the Union Oil Company of California under a permit granted by the California Department of Fish and Game. The original purpose of the experiments was to determine whether small charges of dynamite jettied into the bottom might be exploded without causing serious harm to fish life in the over-lying water. Repeated trials demonstrated that both dynamite and Hercomite were destructive to fish life. During the investigations fish were held in experimental cages at various water levels

(Thompson #3)

and distances from the charge. Fish kills resulted from all dynamite and Hercomite explosions. The lethal effects of jetted dynamite explosions were not eliminated by a reduction of the charges from 10 pounds to only 1-1/4 pounds.

Experiments with black powders having lower peak intensities and lower frequencies were then undertaken, and the tests proved highly successful. Very few fish were killed either inside or outside the cages even when the weight of the charges was increased to 45 pounds and fired on the bottom or just below the surface. Below surface shots were found to be most destructive when dynamite or Hercomite high explosives were used. In several trials where fish within cages were so close as 10 feet to 10 pound black powder charges, the cages were destroyed but the fish were not killed. The successful use of black powder can be visualized from the statement, "The resistance of fish to black powder explosions was dramatically exhibited in Exp. 54, in which 10 pounds of black powder exploded so close that the cage was badly damaged and partly covered with debris and the door was blown in. Though covered with mud, the two fish that failed to escape showed no signs of damage."

From this thorough study of the effects of seismic explosions Hubbs and Rechnitzer concluded, "The experiments strongly indicated that it would be safe to utilize even large charges (to at least 45 pounds) of black powder, as a source of energy for submarine seismographic surveys."

In 1952, Fry and Cox (1953) conducted tests to verify the results presented by Hubbs and Rechnitzer. Many complaints had been received by the California Department of Fish and Game about fish kills from seismic explosions. Although most of the valid complaints were based on dynamite explosions, many were the result of hearsay and rumors. The Department's biological research diving crew joined seismic operations of an oil company in June 1952. Newspaper representatives, sportsmen, county officials, commercial fishermen and other interested parties were invited to attend.

Immediately following the detonation of a charge, the Fish and Game and the oil company divers went down in the area affected by the explosion. No dead or injured fish were found following the explosions detonated during first day of the tests. A more severe test was given the black powder charges on the second day. A school of rockfish (Sebastodes) was located in about 55 feet of water. All divers descended and reported large numbers of fish present in the water. A standard 45 pound charge was then fired 6 feet under the surface. The three divers again descended and all found live fish in quantity, none of which appeared to be harmed in any way. Rockfish subjected to the tests were apparently oblivious to the explosions as feeding never ceased and seven were taken by rod and reel before the divers had reached the bottom following the explosion.

Conclusion

Earlier seismic operations using dynamite, Hercomite and other high explosives have proven lethal to fish. Dynamite charges as small as 1-1/4 pounds jettied 10 feet into the bottom were proven to be lethal in tests conducted in California coastal waters. In a joint operation under permit from the California Department of Fish and Game, Scripps Institution of Oceanography and one of the major oil companies of California conducted very thorough tests of dynamite, Hercomite and black powder as a source of energy for seismographic observations. It was concluded that black powder was not lethal to fishes using charges up to 45 pounds. To verify the results of this work, the California Department of Fish and Game conducted even more severe tests with black powder. With the aid of divers to search the ocean floor for evidencd of damage to all marine life, the State of California no longer considers seismographic observations a problem of consequence since black powder has replaced dynamite as the energy source.

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(Thompson #5)

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SUMMARY OF MATTERS OF GENERAL INTEREST RESULTING FROM THE EXECUTIVE SESSION
OF THE GULF STATES MARINE FISHERIES COMMISSION, EDGEWATER PARK, MISSISSIPPI
MARCH 15-16, 1956

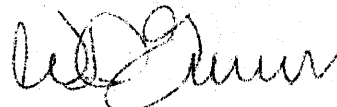
Motion was passed that the Commission go on record by advising the U. S. State Department and members of Congress of the several Gulf States that the Commission opposes extension of seaward jurisdiction by foreign powers which will interfere with fisheries operations upon the high seas by other nations and that this Commission supports the position of the U. S. in protecting the freedom of the high seas for fishing purposes.

A resolution was adopted which endorses sales promotion of seafood products by the member states and recommends that a program of this character be undertaken by the member states.

A motion was passed requesting the member states to cooperate with the Fish and Wildlife Service in that agency's contemplated shrimp marking and tagging program.

A motion was passed regarding meeting programing which provides for a general session the first day, with all reports and papers being presented in extract or summary form; a scientific session for the second day so that reports and papers presented the day previous can be discussed between state staff representatives and those who made the presentations; and an executive session only, for the Commissioners on the second day, which session is to be convened immediately following a Commissioner's breakfast.

New Orleans was decided upon as the site for the regular fall meeting of the Commission.



Prepared by: W. Dudley Gunn
Secretary-Treasurer

WDG-c

M I N U T E S

EXECUTIVE SESSION, EDGEWATER PARK, MISSISSIPPI, MARCH 15-16, 1956

The Chairman, Mr. David Jones, called the executive session to order immediately following breakfast, which was shortly after nine o'clock and asked if it were desired that the minutes of the Clearwater, Florida, October 20-21, 1955 meeting be read. The Chairman, following round table suggestions, declared the minutes approved without reading.

The Secretary distributed and read a statement which reflected the Commission's financial position at the close of business February 29, 1956. The financial statement, unanimously approved on vote by states following motion by Mr. Bailey and seconded by Mr. Gautier, is first attached to these minutes.

Mr. Jones announced that Messrs. Bailey, Harris, Mitts, Eddy and Morse served on the resolutions committee, which met on Thursday following the general session, and asked Mr. Bailey for a report. It was reported that no prepared resolutions were submitted but that several subjects were discussed which were to be presented at the executive session.

Miss Schulman told of the claims of some of the South American countries being to 200 miles seaward; of the resolution of the third conference of the Inter-American Jurist Council of the Organization of the American States, Mexico City on January 16, 1956; of the unsuccessful attempt of some of the South American countries not to hold a meeting of the specialized Conference of the OAS on the Conservation of Natural Resources of the Continental Shelf and Oceanic Waters in Ciudad Trujillo, March 15, 1956, as planned, to consider the resolution adopted at Mexico City in January; and of the concern of Florida because of the seaward claims of some of the South American countries, due to 850 trawlers based in Florida that work offshore from Mexico. Mr. Eddy said the resolution adopted at Mexico City did not lay claim to 200 miles seaward. It was his suggestion that the matter be left up to the individual states for any action they may wish to take. Mr. Bailey said he would like to see the Commission go on record as being either for or against. Mr. Gautier said he thought the Commission should do something and Mr. Mitts agreed. Mr. Harris prepared and presented the following motion:

"That the Commission go on record by advising the U. S. State Department and members of Congress of the several Gulf States that the Commission opposes extension of seaward jurisdiction by foreign powers which will interfere with fisheries operations upon the high seas by other nations and that this Commission supports the position of the U. S. in protecting the freedom of the high seas for fishing purposes."

Mr. Bailey seconded the motion. On vote by states, Alabama, Florida, Mississippi and Texas voted for the motion. Mr. Bollinger of Louisiana voted for the motion while Messrs. McConnell and Eddy abstained from voting. It was agreed that the Chairman advise Mr. Henry Holland, Assistant Secretary of State, in Ciudad Trujillo of the Commission's action.

Mr. Bailey offered a motion, seconded by Mr. McConnell, to the effect that member state fisheries administrations be requested to cooperate with the Fish and Wildlife Service in the contemplated shrimp marking and tagging program to the end that the Service be advised of any other agency which may be planning a similar marking program so that they may be contacted and a plan worked out to avoid any confusion of marks or tags. On vote by states, the motion was unanimously passed.

Mr. Harris offered a resolution relative to seafood sales promotion, recommending the several state fisheries administrations to develop such a program. Mr. Gautier seconded. Upon vote by states, the resolution was unanimously adopted, and is second attached to these minutes.

The Secretary explained that the resolution adopted in October 1955 at the Clearwater meeting, to bring Commission employees under the Social Security Act, was considered insufficient in certain details by the Social Security people. Mr. Harris offered to draft an acceptable resolution which would indicate, among other items, that the Commissioners were not to be included in the coverage, and giving the Commission Chairman power to execute the required contract with the Secretary of the Department of Health, Education, and Welfare. Mr. Harris put this in the form of a motion which was seconded by Mr. Lee. Upon vote by states, the motion passed unanimously. It is third attached to these minutes.

The matter of programing Commission meetings was next discussed. Mr. Bailey, on conclusion of the discussion, offered a motion to the effect that in the future Commission meeting programs provide for a general session on the first day and that all reports or papers, be in the form of extracts or brief summaries; that the second day's general session be a scientific session where reports or papers presented during the first general session could be discussed between state staff representatives and those who presented reports or papers the day previous; that the Commissioners not meet in general session on the second day but in executive session; and that the executive session begin with the Commissioners assembling for breakfast which would be paid for out of Commission funds, including the breakfast of that day, March 16, 1956. Mr. McConnell seconded the motion. Upon vote by states, the motion was unanimously passed.

The Secretary stated the next regular meeting, under the rotation plan, would be held in Louisiana on October 18-19, 1956. The Louisiana Delegation decided upon New Orleans as a meeting place.

With no response forthcoming on call for further business, Mr. Jones adjourned the executive session shortly after 10:00 AM so that the Commissioners could join other conferees for the second general session



Prepared by: W. Dudley Gunn
Secretary-Treasurer

WDG-c

GULF STATES MARINE FISHERIES COMMISSION

FINANCIAL POSITION
CLOSE OF BUSINESS, FEBRUARY 29, 1956

Cash in Bank	\$ 12,166.20	
Petty Cash & Stamps	<u>27.19</u>	\$ 12,193.39
Checks Outstanding		<u>114.49</u>
Balance		\$ 12,078.90

Membership Dues Account -

Alabama: Deposit 3/5/56		<u>1,000.00</u>
Amount available for operating expenses through 6/30/56		\$ 13,078.90
Estimated expenses 3/1/56 - 6/30/56		<u>5,072.00</u>
Estimated balance 6/30/56		\$ <u>8,006.90</u>

A RESOLUTION

RESOLVED, that the Gulf States Marine Fisheries Commission endorses sales promotion of seafood products by the several member states and recommends that a program of this character be undertaken, employing experienced personnel, and using such advertising media as radio, television and newspapers, in addition to the making of personal contacts with hotels, restaurants, fairs and schools in the respective states to further promote the sale of seafoods.

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The foregoing Resolution was unanimously adopted by the Gulf States Marine Fisheries Commission, March 16, 1956, at a regular meeting held at the Edgewater Gulf Hotel in the City of Edgewater Park, Mississippi.



W. Dudley Gunn
Secretary-Treasurer