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AN ANNOTATED BIBLIOGRAPHY ON THE BIOLOGY AND
FISHERY OF THE SKIPJACK TUNA, KATSuwONUS PELAMIS,
OF THE PACIFIC OCEAN

BIBLIOGRAFÍA ANOTADA SOBRE LA BIOLOGÍA Y LA PESCA
DEL BARRILETE, KATSuwONUS PELAMIS, DEL
OCEANO PACIFICO

by—por
Witold L. Klawe and/y Mekoto Peter Miyake

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AN ANNOTATED BIBLIOGRAPHY ON THE BIOLOGY AND FISHERY 
OF THE SKIPJACK TUNA, KATSUWONUS PELAMIS, 
OF THE PACIFIC OCEAN

by

Witold L. Klawe and Makoto Peter Miyake

INTRODUCTION

The skipjack tuna, *Katsuwonus pelamis*, is an important resource of the tropical and subtropical waters of the world ocean. Fishermen of many countries exploit this resource; at the present time, the annual world catch is approximately 200 thousand metric tons. Many fishery experts believe that the skipjack is not being fully utilized while stocks of other tunas are being fished, in some areas, at levels exceeding their maximum sustainable yields. In addition to the importance of skipjack as a commercial fish and as a source of food, there is a small but expanding recreational fishery in some countries bordering the Pacific.

Skipjack tuna have been a source of food for many of the peoples of the Pacific region since ancient times, and have also enjoyed a prominent position in the culture of some of these peoples. In the area of present-day Japan, skipjack were fished during prehistoric times by the people of the Jomon culture, as shown by excavations in northeastern Honshu. The oldest written record of the Pacific skipjack dates back to about 712 A.D. and originates from Japan. Many Japanese written accounts attest that the skipjack tuna is deeply rooted in Japanese culture. The Japanese believed that the skipjack could bring good luck (in Japanese *katsuuo* is a homophone of “victory fish”). It is therefore no surprise that this fish was highly esteemed by the ancient Japanese.

Some important developments in the history of the Japanese commercial fishing fleet are related to the skipjack fishery; e.g., the first motorized fishing vessel in Japan was a skipjack boat, and the present-day Japanese longline fleet developed directly from the skipjack fleet.

Skipjack have also played a significant cultural and religious role in the lives of the Polynesians, who have named the fish *atu* (or *akau*). Unfortunately, most of the information concerning this subject has been lost. Some early writings by explorers, missionaries, scientists, and others first contacting the Polynesian people give a glimpse of a fascinating story. The fragmentary reports of skipjack fishery rituals and the language related to that fishery as preserved in the form of various reports, diaries, and the dictionaries of native tongues, together with the exquisite skipjack hooks on museum shelves and legends such as that of Nihooliki from Hawaii, are reminders of the importance of skipjack to the ancient Polynesians. The skipjack hook of the Polynesian fishermen, usually referred to as a bonito hook or bonito spinner, is without counterpart in other regions of the world. Since it is believed to have evolved from hook-types of neolithic Japan, it is difficult to understand how such hooks reached the people of Polynesia.

The importance of skipjack tuna to the Indians of the Americas is difficult to ascertain. Skipjack bones found in faunal remains of southern California indicate that this fish entered at least occasionally into the diet of some of the Indians.

This bibliography provides a list of publications pertaining to the biology and fishery of the Pacific skipjack tuna. Papers concerned with food technology, food chemistry, radio-chemistry, and certain other subjects are excluded. The main sources for our publication have been the existing bibliographies of tunas, which are listed and indexed accordingly. In addition, reports of various marine laboratories and other scientific
organizations have been checked; these are too numerous to list. We are fairly confident that all major works pertaining to skipjack tuna in the Pacific, printed prior to the end of 1966, appear in this bibliography. Only reports considered to be in permanent form are included. Annotations are based on actual examination of each of the entries listed here. The annotations do not evaluate a paper but serve rather to give a more precise idea of its contents if not revealed by the title alone. If the title sufficed in this respect, no annotation was prepared. A relatively small number of works believed to contain information pertinent to our bibliography could not be examined, but a list of such papers is provided.

Entries are listed alphabetically by author and chronologically for each author. Works ascribed to "Anonymous" appear at the end of the list. Titles of papers in European languages have been left in their original form, while those in other languages have been translated. Names of various periodicals appearing in this bibliography have been abbreviated (with some slight deviations) according to the format of the World List of Scientific Periodicals 1900-1960 (three volumes published by Butterworth's of London in 1963). To facilitate the use of this bibliography, complete names of all periodicals quoted and their places of publication are given in the "List of Abbreviations and Translations of Periodical Titles." Also provided are English translations of the names of Japanese journals; the names in both languages are cross-indexed. Most of the journals bearing names in more than one language are listed and cross-indexed under each of the languages. Junior authors' names are listed, and each is cross-referenced to the respective senior author. Headings listed in the subject index were prepared on the assumption that this bibliography would be used primarily by: (i) biologists in general and ichthyologists in particular, and (ii) fishery biologists working in the field of either commercial or recreational fisheries. To facilitate the use of this bibliography for Spanish-speaking readers, alphabetically arranged lists of the headings of the subject index are provided in English and Spanish.

ACKNOWLEDGMENTS

It is our great pleasure to acknowledge the assistance of the numerous individuals and scientific institutions from many parts of the world, who made possible our compilation. The generous cooperation we experienced was in itself truly rewarding.

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Mrs. Gayle J. Mildner ably assisted us with the tedious work of cataloging the entries and obtaining publications from various libraries. Mrs. Lucy Dupart prepared the Spanish translation. Mrs. Susan M. Egan did the enormous task of typing the manuscript.

BIBLIOGRAFÍA ANOTADA SOBRE LA BIOLOGÍA Y LA PESCA DEL BARRILETE, KATSUWONUS PELAMIS, DEL OCEANO PACÍFICO

por

Witold L. Klawe y Makoto Peter Miyake

INTRODUCCION

El atún barrilete, *Katsuwonus pelamis*, es un recurso importante de las aguas tropicales y subtropicales del océano mundial. Los pescadores de varios países explotan este recurso; actualmente, la captura mundial anual es aproximadamente de 200,000 toneladas métricas. Muchos expertos en la pesquería creen que el barrilete no es utilizado completamente, mientras los stocks de otros atunes son pescados en algunas áreas a niveles que exceden su rendimiento máximo sostenible. Además de la importancia del barrilete como pez comercial y como fuente de alimento, existe una pesquería pequeña recreativa que se está desarrollando en algunos países colindantes con el Pacífico.

El atún barrilete ha sido desde tiempos antiguos una fuente de alimentación para mucha gente en la región del Pacífico, y ha gozado de una posición preponderante en la cultura de algunos de esos pueblos. En el área que ocupa el Japón actualmente, el barrilete era pescado en tiempos prehistóricos por gente de la cultura Jomon, como lo demuestran las excavaciones al nordeste de Honshu. El registro escrito, más antiguo, que existe sobre el barrilete del Pacífico data aproximadamente del año 712 D.C. y es originario del Japón. Numerosos escritos japoneses confirman que el atún barrilete está profundamente arraigado en la cultura japonesa. Los japoneses creían que el barrilete podía traer buena suerte (en japonés *kaisyo* es un homófono de "pez victoria"). Consecuentemente no es sorprendente que este pez fuera estimado altamente por los antiguos japoneses.

Algunos de los adelantos importantes en la historia de la flota comercial japonesa están relacionados con la pesca del barrilete; c.d., el primer barco pesquero japonés de
motor fue un barco empleado para la pesca de barrilete, y la flota palangrera japonesa actual se deriva directamente de la flota dedicada a la pesca de esta especie.

El barrilete también ha tomado parte significativa en la cultura y religión de la vida de los polinesios, quienes le han dado a este pez el nombre de ata (o aku). Desafortunadamente la mayoría de los informes acerca de este sujeto se han perdido. Algunos escritos anteriores de exploradores, misioneros, científicos y de otras personas que trataron por primera vez con la gente polinesia hacen vislumbrar una historia fascinante. Informes fragmentarios escritos sobre los rituales de pesca del barrilete y el lenguaje relacionado a esa pesca, se conservan en forma de varios informes, diarios y diccionarios de lenguas nativas, junto con anzuelos de barrilete dedicadamente elaborados que se encuentran en los estantes de los museos, y leyendas como la de Nihooleli del Hawai, son recuerdos que representan la importancia que el barrilete tenía para los antiguos polinesios. Los anzuelos que usaban los pescadores polinesios en la pesca del barrilete, los cuales comúnmente son denominados anzuelos de bonito o “carricán de bonito” (bonito spinner), no tienen igual en otras regiones del mundo. Es difícil comprender cómo tales anzuelos llegaron a manos de los polinesios, ya que se cree que provienen de los tipos de anzuelo del Japón neolítico.

Es difícil descubrir la importancia que tuvo para los indios de las Américas el atún barrilete. Huevos de barrilete encontrados en residuos fáunicos en California meridional indican que este pez entraba por lo menos ocasionalmente en la dieta de algunos de los indios.

Esta bibliografía suministra una lista de publicaciones correspondientes a la biología y pesquería del atún barrilete en el Pacífico. Estudios referentes a la tecnología alimenticia, química alimenticia, radioquímica y ciertos otros sujetos son excluidos. Las fuentes principales correspondientes a nuestra publicación han sido las bibliografías existentes sobre atunes, las cuales están enumeradas y catalogadas de acuerdo. Además, se han examinado los informes de varios laboratorios marítimos y de otras organizaciones científicas; éstos son demasiado numerosos para enumerar. Estamos bastante seguros de que todos los trabajos principales correspondientes al atún barrilete del Pacífico, editados antes de terminar el año de 1966, aparecen en esta bibliografía. Se incluyen únicamente los informes que se consideran permanentes. Las anotaciones se basan en el examen actual de cada una de las entradas aquí referidas. Las anotaciones no evalúan un estudio, pero sirven más bien para dar una idea más precisa de su contenido si el título por sí mismo no lo explica. No se preparó ninguna anotación si el título a este respecto era suficiente. Un número relativamente pequeño de trabajos que se cree tengan información pertinente a nuestra bibliografía no pudo ser examinado, pero se suministra una lista de tales estudios.

Las entradas se enumeran alfabéticamente por autor y cronológicamente por cada autor. Los trabajos atribuidos al título “Anónimo” aparecen al final de la lista. Los títulos de los artículos en idiomas europeos se han dejado en su forma original, mientras aquellos en otros idiomas han sido traducidos. Los nombres de varias publicaciones que aparecen en esta bibliografía han sido abreviados (con algunas ligeras variaciones) de acuerdo al estilo del "World List of Scientific Periodicals 1900-1960" (tres volúmenes publicados por Butterworth de Londres en 1963). Para facilitar el empleo de esta bibliografía, los nombres completos de todas las publicaciones citadas y el lugar de su publicación, se dan en la “Lista de Abreviaciones y Traducciones de los Títulos Publicados.” Además se facilitan traducciones en inglés de los nombres de revistas japonesas; los nombres en ambos idiomas tienen contrarreferencia. La mayoría de las revistas con nombres en más de un idioma se enumeran y tienen contrarreferencia bajo cada uno de los idiomas. Los nombres de los autores noveles se enumeran y se comprueba cada uno con el respectivo autor. Los encabezamientos enumerados en el índice de los sujetos fueron preparados con la consideración de que esta bibliografía sería usada en primer
lugar por: (i) biólogos en general e ictiólogos en particular, e (ii) biólogos pesqueros que trabajan en el campo ya sea de la pesca comercial o recreativa. Con el fin de facilitar el uso de esta bibliografía para los lectores de habla española, se suministra alfabéticamente en español e inglés la lista de los títulos del índice de los sujetos.

RECONOCIMIENTO

Tenemos el mayor gusto en reconocer la ayuda que nos fue ofrecida por numerosas personas e instituciones científicas de varias partes del mundo, por medio de la cual fue posible realizar nuestra compilación. La generosa colaboración recibida fue en sí misma verdaderamente compensatoria.

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Annotations of Bibliographical Entries

AEFE, TOKIWARU

AHLSTROM, ELBERT AND ROBERT C. COUNTS

Aikawa, Hiroaki

Seasonal and yearly change in fishing grounds near Japan 1920-1930: migratory and sedentary skipjack in relation to the area and season; catch by research boat analyzed by area and in relation to surface water temperature.


Ages of skipjack in Japanese waters determined by annuli on the vertebrate centra and by body length; migration routes of some races near Japan hypothesized based on age, length and weight data.


Introductory textbook for population dynamics; many references to biology of skipjack.


General outline of skipjack fishing near Japan; distribution, migration, age composition, distinction of sedentary and migratory skipjack; skipjack caught by longline in winter discussed.


Textbook on fisheries biology and population dynamics covering all aspects of skipjack biology.

Aikawa, Hiroaki and Masuo Kato

Ages of 20 skipjack determined by a study of vertebrate centrum; relation between body length and number of annuli discussed.

Akçüz, E. F.

Alverson, Franklin G.

Baibote and purse-seine catches from logbook records; possible movements of skipjack discussed.

1960. Distribution of fishing effort and resulting tuna catches from the eastern
ALVERSON, FRANKLIN G., continued


Geographical distribution of catches and catch-per-unit-of-effort by baitboats and purse-seiners from logbook records.


K. pelanisi feeding on Benthosema pterota.


Dietary study based on examination of stomachs of 2317 skipjack from various fishing areas of eastern Pacific; variation in diet related to areas and to size of the fish; incidence of empty stomachs.


Geographical distribution of catches by purse-seiners and baitboats for years 1959-1962 by quarters of the year by one-degree areas; catch, effort, and catch-per-unit-of-effort data for five-degree areas of the eastern Pacific Ocean.

AMANO, K., H. TOZAWA and A. TAKASE


Analysis of radioactive iron found in the oxalic acid-soluble components of liver and stomach ash from skipjack collected in the Bikini area.

AMANO, RYOHEI


Review of California and Japanese purse-seine fishery; potential fishing grounds.

AMERICAN FISHERIES SOCIETY


ANDERSON, A. W., W. H. STOLTING, et al.


Distribution and description of adults; description of fishing industry.

ANGOT, MICHEL


Report on surveys carried out by the Institut Français d'Océanie; fishing gear discussed.


Description of fishing methods.
ANRAKU, MORIYA and TSUYOSHI KAWASAKI
Seasonal fluctuations in abundance of fish are compared by year and area; seasonal and geographical distribution of fish is discussed in relation to population size.

AUSTIN, THOMAS S.
Fishing survey.

AUSTIN, THOMAS S. and RICHARD A. BARKLEY
Predicting of catch based on oceanographic conditions.

AUSTIN, THOMAS S. and VERNON E. BROCK

BAESSLER, A.
Native fishery; fishing methods.

BAKER, ALAN N.
Found in stomachs of two species of marlins.

BARKLEY, RICHARD A.
Technique for predicting relative level of annual catch in Hawaiian fishery.

BARNHART, PERCY
Description and distribution.

BARRETT, ZADORE and ANNE ROBERTSON CONNOR
Changes in levels of blood lactate in fish following capture and tagging; blood lactate in exhausted fish; blood hemoglobin.

Changes in levels of blood lactate and muscle glycogen in fish following capture and tagging; blood lactate in exhausted fish; role of ambient temperature on levels of lactate and glycogen.
BARRETT, IZADORE and FRANK J. HESTER

BATES, DONALD H., Jr.
Trolling survey.

BELL, ROBERT R.
Review of six papers by various authors on age determination.

BERDEGUE A., JULIO
Description; fishery; distribution; commercial importance.
Object of commercial fishery; catch statistics; fishing seasons.

BERNAEI, H.

BESDNOV, L. N.
Component of ichthyofauna; Vietnamese name.

BINI, GIORGIO
Occurrence off Chile and Peru; maximum size; environmental conditions.
Distribution; size; methods of fishing.

BINI, GIORGIO and ENRICO TORTONESE
Unusually large fish reported.

BLACKIURN, MAURICE
Temporary extension of distribution and range.
BLACKBURN, MAURICE, continued


Availability in relation to oceanographic conditions.


Comparison of tuna catches and zooplankton volumes off Baja California.


Tuna catches compared with abundance of zooplankton and micronekton.


Distribution correlated with temperature.


Oceanographic conditions correlated with distribution and abundance.


Correlation analysis of abundance and zooplankton and micronekton abundance, and surface temperature; food discussed.


Oceanographic conditions correlated with distribution and abundance.


Influence of oceanographic conditions on abundance; influence of islands.


Influence of temperature on abundance in Gulf of Tehuantepec.


Distribution and abundance in Gulf of Tehuantepec.


BLACKBURN, MAURICE, continued


Review on effects of the environment on distribution and abundance.


Relationship between micronekton and skipjack tuna.


Composition, distribution and abundance of micronekton in relation to skipjack.


BLACKBURN, MAURICE and G. W. RAYNER


Live-bait fishing. Sandiops nepilichias and Trachurus decilitt used as bait.

BLACKBURN, MAURICE and J. A. TUBB


Kunstwes: abundant off south coast of New South Wales and north-east coast of Tasmania.

BLEEKER, P.


Reported from Indonesian waters.


Records of occurrence; synonymy; common names.


Record of occurrence; remarks on abundance and distribution; description; common names.


Synonymy; distribution; common names.


Occurrence reported.
BLEEKER, P., continued
1862.Sixième mémoire sur la faune ichthyologique de l'île de Batjan [in French].
Occurrence recorded.
1865. Enumération des espèces de poissons actuellement connues de l'île d'Amboine
Occurrence recorded.
1879. Enumération des espèces de poissons actuellement connues du lapou et description
Included in the check list.

BLUNT, C. E., Jr. and JAMES B. MESSERSMITH
1960. Tuna tagging in the eastern tropical Pacific, 1952-1959. Calif. Fish Game,
Tagging techniques; recoveries of tagged fish; migration.

BONHAM, KELSHAW
81-84.
Measuring methods; size composition; length-weight relationship.

BORISOV, N. I.
Caught with other tuna-like fishes; maximum size of commercially-caught fish.

BOURGOIS, FRANCOIS
6(6): 4-10.
Importance of Ecuadorian fishery; highlights of fishery biology; brief description of fishery.

BRANDHORST, WILHELM
1965. Die chilenische Fischerei und ihre weiteren Entwicklungsaussichten [in German].
Commercial importance; catch statistics.

BREIDER, CHARLES M. and DONN ERIC ROSEN
1966. Modes of reproduction in fishes. Natural History Press, Garden City, New
York: 941 p.
Spawning area and season.

BRIGGS, JOHN C.
Range.

BROADHEAD, GORDON C.
1958. Techniques used in the tagging of yellowfin and skipjack tunas in the eastern
Methods of tagging and tagging program of the IATTO.
BROADHEAD, GORDON C. and IZADORE BARRETT
Distribution and apparent abundance in relation to sea surface temperature.

BROADHEAD, GORDON C. and ARTHUR R. MARSHALL
Changes in tuna fleet caused by technological improvements in handling of gear and fish.

BROADHEAD, GORDON C. and CRAIG J. ORANGE
Composition of schools caught by purse-seiners and baitboats examined as to species and size of fish from pure and mixed schools; also evaluated for different areas of eastern Pacific.

BROCK, VERNON E.
Key to Hawaiian scombroids.
Size composition; growth; schooling; sexual maturity; sex ratio.
Distribution of adults and young; oceanographic conditions correlated with distribution of adults.
Selectivity of fishing gear; fishing areas.
Seasonal distribution and migration correlated with currents and oceanographic conditions; population structure deduced from serological studies, tagging and size composition, and growth.

BROCK, V. E. and J. C. MARR
Report of scientific activities; plans for the future.

BROCK, V. E. and R. H. RIFFENBURGH
Schooling as protective device; mathematical analysis.

BROWN, ROBERT P. and KENNETH SHERMAN
BROWN, ROBERT P. and KENNETH SHERMAN, continued
(415) : 45 p.
Report on monitoring oceanographic conditions and distribution of fish.

BUSNAG, DANIEL M.
1978. Spawning habits of some Philippine tuna based on diameter measurements of
Sexual maturity; spawning.

BUREAU OF FISHERIES, MINISTRY OF AGRICULTURE AND FORESTRY
1939. Results of promotion of exploitation of new albacore fishing grounds in
Results of exploratory fishing for albacore in central Pacific by 11 longliners; data include
skippjack catches and water temperature (pages 31-133).
1940. Results of promotion of exploitation of new albacore fishing grounds in 1939
Results of longline exploratory fishing for albacore in central Pacific by 11 vessels; data
include skippjack catches and water temperature in detail.

BUTLER, CHARLES
Vitamin A and D content of liver oil.

CABBAT, FELICITAO and BLUEBELL R. STANDAL
1964. The determination of the essential amino acid content of five Hawaiian fish by
column chromatography on ion-exchange resin. (Abstract). Proc. Hawaiian Acad. Sci. :
Evaluation as a source of protein in human diet.

CALKINS, THOMAS P.
1961. Measures of population density and concentration of fishing effort for yellow-
fin and skipjack tuna in the eastern tropical Pacific Ocean, 1951-1959 [in English
Quarterly variation in weighted and unweighted indices of density, and in index of con-
centration of effort.
1963. An examination of fluctuation in the "concentration index" of purse-seiners
and baitboats in the fishery for tropical tuna in the eastern Pacific, 1951-1961 [in
Changes in distribution and amount of seiner effort in eastern Pacific tuna fishery; quarterly
variations in indices of density and concentration; relationship between weighted and un-
weighted indices of density; relationship between number of exploited one-degree areas and
indices of concentration and density; relationship between indices of density and concentration
of baitboats and purse-seiners.

CANNON, RAYMOND
1936. How to fish the Pacific Coast—a manual for salt water fishermen. Lane Pub-
Description; common names; habitat; sport fishing techniques.

CANNON, RAY et al.
1966. The Sea of Cortez. Lane Magazine and Book Co., Menlo Park, California :
284 p.
Brief description; common names; sport fishing techniques.
CHABOIS, L. and F. CHABOIS
n. d. Petite histoire naturelle de Etablissements Français de l'Océanie [in French].
Brief description; common names; general biology.

CHAPMAN, WILBERT M.
32(4) : 165-170.
Records of occurrence; exploratory fishing.
Brief summary of current systems of eastern Pacific Ocean; correlation of oceanographic condi-
tions with occurrence of skipjack mentioned.

CHATWIN, BRUCE M.
1959. The relationship between length and weight of yellowfin tuna (Neothunnus
maccopterus) and skipjack tuna (Katsuwonus pelamis) from the eastern tropical
Pacific Ocean [in English and Spanish]. Bull. Inter-Am. Trop. Tuna Comm.,
3(7) : 305-352.
Length-weight relationship calculated for various areas of eastern Pacific.

CHEN, JOHNSON T. F.
1960. A Synopsis of the vertebrates of Taiwan [in Chinese]. Kai ming Book Store,
Keys; description.

CHU, YUEN-TEN et al.
1962. Nan hai yu lei chi (Synopsis of South Sea fishes) [in Chinese]. K'o sheh
chu pan she Co. Published jointly by: Institute of Oceanography, Academia Sinica,
Institute of Zoology, Academia Sinica, and Shanghai Fisheries College, 1148 p.
Description.

CHYUNG, MOON KI (CHUNG, M. K.)
1954. Korean fishes (Hakkoook ubo) [in Korean with an English summary].
Republic of Korea, Department of Commerce and Industry (Sang kong boo), Seoul,
517 p. + 56 p.
Classification; description.
1961. Illustrated encyclopedia, the fauna of Korea. (2) Fishes (Hakkoook dong-
muol dokam, Uru) [in Korean]. Choonging daxu chooship hoisa (Central Pub-
lishing Company), Seoul, : 861 p.
Description; classification.

CLEAVER, FRED C. and BELL M. SHIMADA
1950. Japanese skipjack (Katsuwonus pelamis) fishing methods. Comm Fish
History; biology; general account of fisheries.

CLEMENS, HAROLD B.
1956. Retiring larval scombroid fishes in shipboard aquaria. Calif. Fish Game,
42(1) : 69-79.
Ripe female caught while trolling.
CLEMENS, HAROLD B. and PHIL M. ROEDEL
   Historical sketch; description of methods and results; conclusions on migration.

CLEMENS, W. A. and G. V. WILBY
   One record from British Columbia; distribution; description.
   See Clemens and Wilby 1946.
   Description; two records from British Columbia; distribution; food.

CLOTHIER, CHARLES R.
   Osteology; menistics.

COBB, JOHN N.
   Catch statistics; common names.
   Fishing methods and fishing gear; wholesale trade, amount and value; catch statistics.
1919. The canning of fishery products—showing the history of the art of canning; the methods followed with each species, and suggestions for canning unutilized species; where, when and how they are obtained; together with other information of much value to canners. Miller Freeman, Seattle, 217 p.
   Object of commercial fishery off Hawaii.

COLLETTE, BRUCE B.
   Phylogenetic position.

COLLETTE, BRUCE B. and ROBERT H. GIBBS, Jr.
   Classification.
   General description; distribution; use as food; commercial importance.

COMMISSION TO POPULARIZE THE KNOWLEDGE OF FISHING GROUNDS
1958. Current report of fishing conditions for albacore, skipjack and saury for 1958 [in Japanese]. (Issued every five days and later combined into one volume). Gyo-
COMMISSION TO POPULARIZE THE KNOWLEDGE OF FISHING GROUNDS, continued
Fishing conditions in relation to currents and water temperature, in local fishing grounds off northern Japan, by five-day periods; catch and effort statistics; distribution of various types of schools; short-term prediction of fishing conditions; horizontal and vertical distribution of water temperature.
Seasonal catch; effort; catch per unit of effort off Japan; fishing conditions by area and time; seasonal variation in size composition; live-bait and purse-seine fishing.
Seasonal catch; effort and catch per unit of effort off Japan; fishing conditions by area and time; seasonal variation in size composition; live-bait and purse-seine fishing.

CONNER, GERALDINE
1929. Comparison of the catches north and south of the international boundary including fish taken in the territorial waters of the United States and Mexico and on the high seas. Fish Bull., Sacramento, (15) : 50-62.

CORWIN, GENEVIEVE A.

CRAIG, J. A.

CRÉJOU, RENÉ
Brief description; fishing methods; handling of catch.
Description of fish and trolling gear.

CURTIS, ANTHONY
Occurrence; fishing methods; brief description; common names.

CUSHING, JOHN E.
Individual variation in agglutinin content of fish blood.
Individual differences in erythrocyte antigens.
Review of serological investigation; blood types; blood systems; population genetics.
CUSHING, JOHN E. and GEORGE L. DURALL
Individual differences in erythrocyte antigens.

CUVIER, GEORGES and ACHILLE VALENCIENNES
Description and distribution, mostly pertaining to material from Atlantic Ocean.

DAVIES, DAVID H.
Listed as one of many fishes caught by sportmen in or near kelp beds.

DAVIS, J. CHARLES
Description; common names.

de BEAUFORT, L. F., and W. M. CHAPMAN
Description; synonymy; records of occurrence.

de BUEN, FERNANDO
Commercia; important fishes.
Distribution correlated with oceanographic conditions.
Occurrence off Chile in two types of water.
Common names.
Description; fishery; food; sexual maturity.

de CASTELNAU, F.
Occurrence recorded.

DELSMAN, H. C. and J. G. F. HARDENBURG
Distribution; keys; fishery.

DEL SOLAR, ENRIQUE M.
Occurrence of Peruvian coast as influenced by oceanographic factors; stomach content and analysis.
DEMANDT, E.
   Description of native fishery; boats, fishing gear and methods, fishing areas and fishing seasons; cultural aspects of the fish and fishery.

DICK, MYVANWY M.
   Specimens from Galapagos and Society Islands.

DOMANTAY, JOSE S.
   Importance in commercial catch; fishing methods; fishing grounds.

DOMBRAIN, ATHEL
   General account of distribution and food.

DOUMENCE, F.
   Monthly fluctuations in landings.

DUNG, DOROTHY I. Y. and WILLIAM F. ROYCE
   Detailed measurements of samples from different areas.

DUNSTAN, D. J.
   Exploratory fishing.

ECKLES, HOWARD H.
   Description of juveniles.

EGO, KENJI and TAMIO OTSU
   Longline catches.

EIGENMANN, CARL H.
   Recorded from San Diego.
EIGENMANN, CARL H. and ROSA S. EIGENMANN
Occurrence recorded.

Referred from San Diego.

ELLIOTT, LOUIS D.
Description; brief description of the fishery.

Reprint of paper published by Elliott in 1922; one illustration of K. pelamis added but
title labeled as 3. calliasis.

Revised version of papers published by Elliott in 1922 and 1925.

ENDO, KINJI and WATARU SIMIDU
Nitrogen compounds occurring in extracts from dark and ordinary meat of skipjack, mackerel
and yellowtail analyzed and compared.

EVERMANN, BARTON W. and ALVIN SEAL
Records.

FICHTER, GEORGE S. and PHIL FRANCIS
Brief description; habitat; sport fishing methods.

FIEDLER, R. H. H.
Article based on "La pesca y las industrias pesqueras en el Perú" by Fiedler et al. 1943.

FIEDLER, REGINALD H., NORMAN D. JARVIE and MILTON J. LOBELL
Occurrence of Peru; observations on fish caught during exploratory fishing; oceanographic
conditions correlated with fishing; general remarks on biology of skipjack from Peruvian
waters.

FINCH, ROLAND
Brief description; size of commercially caught fish; short description of eastern Pacific fishery.

FINK, BERNARD D.
1965(1). Estimations from tagging experiments, of mortality rates and other

1965(2). A technique, and the equipment used, for tagging tunas caught by the
FINK, BERNARD D., continued

FISH, MARIE POLAND
Distribution; size; synonymy; seasonal distribution off Japan.

FISHERIES AGENCY, JAPAN
Records include skipjack caught by longline: measurements and sexual maturity data.
Records include skipjack caught by longline; data on collection of young specimens taken by plankton nets.
Data on skipjack taken by longline and larvae caught in plankton nets.

FITCH, JOHN E.
1964. First records for the bigeye thresher (Alopias superciliosus) and slender tuna (Allottunmi jalar) from California, with notes on eastern Pacific scombroid otoliths. Calif. Fish Game, 50(3) : 195-206.
Otoliths described and illustrated.
Distribution influenced by oceanographic conditions.

FLETCHER, A.
Experimental fishing; catches of skipjack.

FORMOSA GOVERNMENT-GENERAL FISHERIES EXPERIMENTAL STATION
Skipjack fishing conditions in Taiwan-Ryukyu waters discussed in relation to oceanographic conditions, particularly water temperature, catch and catch-per-trip by ten-day periods.
1931. Oceanographic investigations. Sect. 3. Northern oceanographic conditions
FORMOSA GOVERNMENT-GENERAL FISHERIES EXPERIMENTAL STATION


Seasonal fishing conditions for skipjack in Taiwan-Ryukyu waters discussed in relation to oceanographic conditions, such as surface water temperature and specific gravity; catch and catch-per-trip by ten-day periods.


Seasonal fishing conditions in Taiwan-Ryukyu waters of skipjack discussed in relation to oceanographic conditions, particularly surface water temperature and specific gravity; catch and catch-per-trip by ten-day periods.


Seasonal fishing conditions for skipjack in Taiwan-Ryukyu waters discussed in relation to oceanographic conditions, such as surface water temperature and specific gravity; catch and catch-per-trip by ten-day periods for 1930 and 1931.


Results of a longline exploratory fishing cruise in the South China Sea; catches analyzed by size and depth of hooks; tag records with detailed oceanographic data; data on length, sexual maturity and stomach contents of 42 skipjack.

FORSBERGH, ERIC D.


Catch of skipjack and zooplankton abundance correlated.

FOWLER, HENRY W.


Description; synonymy.


*Euthynus pelamis* listed from Hawaii.


*Euthynus pelamis* listed from Tahiti.


Description; synonymy.


Occurrence recorded 300 miles southeast of Chipperton Island.

1945. Los peces del Peru—catálogo sistemático de los peces que habitan en aguas
FOWLER, HENRY W., continued
Distribution; synonymy.
Synonymy; previously published records from Central Pacific.

FOX, D. L. and N. MILLOTT
1954. A biliverdin-like pigment in the skull and vertebrae of the ocean skipjack,
Biochemical study of unusually pigmented bones.

FRASER-BRUNNER, A.
Classification; phylogeny; distribution.

FUJII, YUTAKA
Results of tests using different techniques to study differences in DNA; serological reaction of antigen DNA compared between skipjack and mackerel vs. yellowfin and bigeye based on differences in the reaction of antibody and antigen against anti-yellowfin or anti-bigeye serum by the complement-fixation technique.
Serological properties of DNA eluted in each fraction by octeola-cellulose column fractionation analyzed by the complement-fixation technique; DNA of yellowfin and skipjack testis compared.

FUJIMAKI, MASAO, S. ODACIRI and C. INAGAKI
Vitamin C contents in fresh, cooked and canned meat of skipjack determined by several methods.

FUJINO, KAZUO and LUCIAN M. SPRAGUE

FUJISAKI, SHUJI
Seasonal fishing conditions of skipjack in Taiwan-Ryukyu waters discussed in relation to oceanographic conditions, such as surface water temperature and specific gravity; catch and catch-per-trip by ten-day periods for 1931 and 1932.

FUJITA, TSUNEHARU
General description of skipjack.
Fujita, Tsunenobu and Yojiro Wakiya
Scientific name, Japanese common names and Japanese standard names of fishes found in southern Japan.

Fukuda, Hironari
Succinic dehydrogenase contained in various parts of fish measured and compared between several species of fish.

Fukuda, Hironari and Toshiaki Higuchi
Amount of catalase contained in various portions of fish organs compared among various species of fish.

Fukuda, Masanobu and Shosuke Iizuka
Summary of exploratory live-bait fishing in Ryukyu waters; seasonal fishing conditions in relation to water temperature; catch records and oceanographic data.
Release data and lengths of 19 tagged skipjack.

Fukushima, Kiyoshi, I. Osakabe, T. Kikuchi and I. Okada
SH-group contents in white and dark flesh of skipjack and other species determined by polarography compared; change of SH-group contents during storage of flesh also examined.

Fukushima, Shinichi
Body temperature in body cavity and red muscle compared with water temperature for 18 skipjack caught near Japan.

Furuya, Kiyoshi
Catch records and oceanographic observations from South Sea waters.

Gabrielson, IRA N. and Francesca La Monte
Description; distribution.
GODFREY, MARY LYNNE
Fishery-oceanography surveys.

GODSIL, H. C.
Two kinds of tags; tagging techniques.
1937. The five tunas. In: The commercial fish catch of California for the year
Catch statistics; trend of tuna fishery.
1938(/1). Tuna tagging. Calif. Fish Game, 24(3) : 245-250.
Two kinds of tags; tagging tools; release records.
1938(2). The high seas tuna fishery of California. Fish Bull., Sacramento, (51) :
40 p.
Catch statistics; fishing area; fishing methods.
Illustrated keys.
1949. The tunas. In: The commercial fish catch of California for the year 1947
Historical sketch of fishery: catch statistics; distribution of fish, fishing methods.

GODSIL, H. C. and ROBERT D. BYERS
Meristics; morphometry, anatomy; description; classification.

GODSIL, H. C. and E. C. GREENHOOHD
1948. Some observations on the tunas of the Hawaiian region. California Division
of Fish Game. Bureau of Marine Fisheries (mimeogr.), 8 p.
Exploratory cruise report; distribution.
Calif. Fish Game, 38(2) : 239-249.
Exploratory cruise; distribution.

GOODING, REGINALD M.
1963. The olfactory organ of the skipjack Kanishonon pelamis (French and Spanish
abstracts). In: Rosén, H., Jr. (Ed.) Proceedings of the World Scientific Meeting on
the Biology of Tunas and Related Species. FAO, Fish. Rep., 3(6) : 1621-1631.
Acad. Sci.: 27.
Adults and young seen from underwater viewing chamber.
Wildl. Serv., (517) : 5 p.
Literature on association of skipjack with drifting objects mentioned.

GORBUNOVA, N. N.
1965. Srok i uslovija razmnozheniya skumbrievidnykh ryb (Pisces, Scombroidii).
Seasons and conditions of spawning of the Scombroid fishes [in Russian, English
Discussion of spawning and larval ecology in world oceans.
GOSLINE, W. A. and V. E. BROCK
Common names; descriptions; behavior and habitats; commercial importance; distribution; key.

GREENHOOD, EDWARD G. and STERLING P. DAVIS
1963. Tuna landings and production 1916 to 1961 (French and Spanish abstracts).
Historical account of commercial fishes; commercial importance in comparison with other tuna.

GRIFFITHS, RAYMOND C.
Environmental study with some reference to association of skipjack with oceanic fronts.
Association of skipjack with oceanic fronts mentioned.

GÜNTHER, ALBERT C. L. G.
Description, distribution and synonymy of Thynnus pelamys.
Synonymy; description; distribution.
Brief mention of distribution.

GUTIÉRREZ, TONATIÚH
Fishing area; commercial importance.

HALSTEAD, BRUCE W.
Case of ichthyosarcotoxism.
Ichthyosarcotoxism; symptoms; treatment.
Ichthyosarcotoxism: chemical characteristics; treatment.
Ichthyosarcotoxism: symptoms; treatment.
HALSTEAD, BRUCE W., TOSHIHARU KAWABATA, and THOMAS F. JUDEFIN
Increase of poisonings in Philippine Islands.

HALSTEAD, BRUCE W., and W. M. LIVELY, JR.
Ichthyosarcoctosis: symptoms; occurrences.

HARRE, JOHS.
Review of published works on analyses of age and growth.

HARADA, ISOKICHI
Description of a new species of an acanthocephalan, a parasite.

HASHIMOOTO, YOSHIO, S. YAMADA and T. MORI
Comparison of amounts of Vitamin B$_{12}$ contained in various portions of skipjack and other aquatic animals.

HAYASHI, SHIGEICHI
Includes discussion on population structure and growth in relation to spawning season and areas.

HELA, ILMO and TAIVO LAEVASTU
Mention of influence of temperature on migration noted by Uda and Watanabe 1958.

Influence of oceanographic conditions on distribution of fish and the fishery.

HEMPEL, GOTTHILF
Distribution correlated with temperature.

HENNEMUTH, RICHARD C.
1957. An analysis of methods of sampling to determine the size composition of commercial landings of yellowfin tuna (Nelhimum macropygeus) and skipjack (Ka-
HENNEMUTH, RICHARD C., continued
Analysis of optimal number of fish for individual samples and optimal number of monthly samples for statistical areas.
Morphometric comparison among skipjack from eastern Pacific, Hawaii and French Polynesia; presence of semi-independent population units discussed; lack of complete mixing between the populations of central and eastern Pacific suggested.
Length-weight relationship calculated for fish from three areas of the eastern Pacific.

HERALD, EARL S.
1951. Pseudofins on the caudal peduncle of juvenile scombroids. Calif. Fish Game, 37(3) : 355-357.
Remarks on biology; commercial importance.

HERRE, ALBERT W. C. T.
Occurrence recorded.
Occurrence recorded.
Occurrence recorded.
Recorded from Galapagos Islands.
Distribution; fishery.
Synonym; common names; range.

HERRE, ALBERT W. C. T. and U. F. UMALI

HESTER, FRANK J.
Behavior during purse-seine operations.

HIATT, ROBERT W. and DONALD W. STRASBURG
Occurrence in the area of study; food.
HIDA, THOMAS S.
Listed as a species of lesser importance for longline fishery.

HIGASHI, HIDEO
Proportion of flesh to total body weight; data on length, weight, etc.
1940(2). Utilization of fishery by-products from the South Seas (3) [in Japanese]. Nanyō suisan (So, Sea Fish.) 6(7) : 13-20.
Body parts normally discarded; ratio of viscera to body weight; review of hormones in various organs of fish.
1940(3). Utilization of fishery by-products from the South Seas (4) [in Japanese]. Nanyō suisan (So, Sea Fish.) 6(9) : 27-35.
Possible utilization of body parts usually discarded; ratio of weight of various body parts to total body weight; monthly catch data for 1939.
Ratio of weight of viscera and other body parts to body weight.
1941(1). Utilization of fishery by-products from the South Seas (8) [in Japanese]. Nanyō suisan (So, Sea Fish.) 7(1) : 33-37.
Possible utilization of liver; ratio of liver weight to body weight of skipjack caught near Palau.
1941(2). Utilization of fishery by-products from the South Seas (10) [in Japanese]. Nanyō suisan (So, Sea Fish.) 7(3) : 32-43.
Comparisons of vitamin contents and weights of various body parts of several species of fishes.
1941(3). Utilization of fishery by-products from the South Seas (11) [in Japanese]. Nanyō suisan (So, Sea Fish.) 7(5) : 43-47.
Distribution and amounts of vitamins A, D, and B₃ in various organs.
Vitamin A content of liver.
1942(1). Utilization of fishery by-products from the South Seas (13) [in Japanese]. Nanyō suisan (So, Sea Fish.) 7(7) : 29-32.
Amounts of vitamins D, B₁, and B₃ in liver.
Weights of various body parts; amounts of vitamins A, B₁, B₃ and D in liver.

HIGASHI, HIDEO and H. HIRAI
Comparison of nicotinic acid content in various organs in fish of two different sizes, in males and females, in fish from different areas by sex, area, depth and time of capture.

HIGASHI, HIDEO, Y. SHIMMA and H. TAGUCHI
1960. Studies on the fatty acids in marine animal livers. 1. Quantitative analysis
HIGASHI, HIDEO, Y. SHIMMA and H. TAGUCHI, continued
Free- and ester-type fatty acids from liver of tuna and marine animals separated into solid and liquid acids; iodine contents compared.

HIGGINS, BRUCE E.
Size-frequency composition of catches; causes of differences in size composition from various areas discussed.

HILDEBRAND, SAMUEL F.
Keys; description; distribution.

HIYAMA, YOSHIKO and FUJIO YASUDA
Description; outline of biology.

HOLDER, CHARLES FREDERIC
Description; fishing area and season; Note: section dealing with *Katsuwonus pelamis* is entitled: "The California bonito (Sarda chilensis)."
Listed as game and commercial fish.

HONMA, KATUJI
Biting response to live and artificial bait, and upon satiation.

HONMA, TERUTAKE
Comparison of skipjack and beef insulin molecules.
Protamine sulfate extracted from testis by two methods and its relation to sexual maturity examined; paper chromatography and other tests.

HORIGUCHI, YOSHISHIGE, D. KAKIMOTO and K. KASHIWADA
Amount of inositol in various organs compared.
HORIGUCHI, YOSHIHIGE, K. KASHIWADA and D. KAKIMOTO
Variety and abundance of inorganic elements contained in pyloric caeca compared with other species.

HORIGUCHI, YOSHIHIGE and K. KASHIWADA
Amount and composition of phosphorus compounds in pyloric caeca compared with those in muscle.

HORNELL, JAMES
Mention of potential fishery.
Description of Japanese, Polynesian and Californian fisheries for skipjack.

HOTTA, HIDEYUKI
Distribution based on stomach contents; monthly size composition used to estimate time of spawning.
Aquaria experiments on Pacific masked to determine amount of food ingested, and reaction of a school, containing various combinations of hungry and satiated fish, to food.

HOTTA, H., S. FUKUSHIMA, S. ODATE and Y. AIZAWA
Relation between bird flocks and fish schools; observations by airplane.

HOTTA, HIDEYUKI, T. KARIYA and T. OGAWA
“Biting” qualities analyzed in relation to amount and types of stomach contents, size, state of digestion, histological condition of stomach.

HOTTA, HIDEYUKI and TATSU OGAWA
1953. On the parasitic rate of *Acantobothra* (*Rhadinorhynchus katsuwonis Harada*) in skipjack (*Katsuwonus pelamis* [Linnaeus]) [in Japanese with an English
Frequency of occurrence and number of parasites per fish compared by area and age of fish; 1500 skipjack examined.
Quantitative and qualitative comparisons from five major commercial fishing areas off Japan; relation between contents and geographical distribution of food organisms; contents of young skipjack analyzed.

HOWARD, GERALD V.
Review of present knowledge on fluctuations in availability and variations in vulnerability; suggestions for future research.

HOWELL, R. LUIS and MAR JUÁREZ F.
Includes a review of reports on larvae and juveniles from various oceans.

HOSAKA, EDWARD Y.
Description; behavior; descriptions of commercial fishery and fishing methods; commercial importance.

HUNTER, JOHN R. and CHARLES T. MITCHELL
Size composition; food; ecology.

ICKES, HAROLD L.
General description of the fish and the fishery.

IGETA, YUZO

IKEBE, KENZO
Notes on past surveys of spawning grounds.

IKEBE, KENZO and T. MATSUMOTO
IKEBE, KENZO and T. MATSUMOTO, continued
Exploratory harpoon fishing; fish measures; oceanographic studies.
Nanyō suisan jōhō (So. Sea Fish. News), 1(6) : 2-12. (Translation by POHI, In:

ILLINGWORTH, NEIL
Reed, Wellington, N. Z., 256 p.
Description; distribution; habitat.

IMAI, SADAHIKO
1950. On the young stages of flying fish as the natural food for bonito [in Japanese
Species description of flying fish from tuna stomachs collected south of Japan.

IMAMURA, YUTAKA
1949. The skipjack fishery [in Japanese]. Suisan kōza (Text Fish) Japan Fisheries
Summary of knowledge about skipjack and its fishery in the Pacific.

IMANISHI, NOBORU
1960(1). Studies on the inorganic chemical constituents of marine fishes. 2. On
the chemical elements contained in ashes of Katsuwonus pelamis and Monacanthus
15-17.
Amounts of inorganic substances in various body parts.

1960(2). Studies on the inorganic chemical constituents of marine fishes. 3. On
the distribution and the relative quantities of alkaline elements and alkaline earth
elements in Katsuwonus pelamis and Monacanthus japonica [in Japanese with an
Distribution and amount of Ca, Mg, Na, and K in various organs.

1960(3). Studies on inorganic chemical constituents in sea fishes—the chemical
elements, and the relative quantities of calcium and phosphorus in Katsuwonus
Distribution and amount of P, Ca, and some other minerals in various organs; ratio of P to
Ca compared among organs and with organs in other fish.

1960(4). Studies on the inorganic constituents of marine fishes—V. On the non-
metallic constituents of deep-sea fishes, Katsuwonus pelamis and Monacanthus jap-

1960(5). Studies on the inorganic constituents of marine fishes—VI. On the dis-
tribution of zinc, copper and lead in deep-sea fishes, Monacanthus japonica and Kat-
16(2) : 79-82.
Amounts and distribution of Zn, Cu and Pb in the ashes of various body parts compared.

1961(1). Studies on the inorganic chemical constituents of marine fishes—IX. On
the methods to indicate the relative quantities of alkaline elements and alkaline-earth
IMANISHI, NOBORU, continued


Relative composition of Ca, Mg, Na and K in various organs of several species compared to habitat and growth of fish.


Amounts and distribution of Fe and Al in the ashes of various body parts compared.


Amount and distribution of Sn in the ashes of various organs compared.


Amounts and distribution of Mn in the ashes of various organs compared.

IMPERIAL FISHERIES INSTITUTE

(After 1936: IMPERIAL FISHERIES EXPERIMENTAL STATION)


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).


Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).
IMPERIAL FISHERIES INSTITUTE, continued

Fishing conditions in Japanese waters (including Formosa and Ryukyu waters).

Fishing conditions and biting quality in Japanese waters (including Formosa and Ryukyu waters).

Seasonal fishing conditions and biting quality in Japanese waters (including Formosa and Ryukyu waters).

Seasonal fishing conditions and biting quality in Japanese waters (including Formosa and Ryukyu waters).

Seasonal fishing conditions in Ryukyu waters.

Seasonal fishing conditions in Japanese waters; catch and effort statistics by prefecture and 10-day periods.

Seasonal fishing conditions for skipjack by area in Japanese waters; catch and effort statistics by prefecture and 10-day periods.

Fishing conditions; catch and effort data by prefecture and 10-day periods.

Fishing conditions and catch and effort data by prefecture and 10-day periods.

Fishing conditions; catch and effort data by prefecture and 10-day periods.

Catch and effort data by prefecture and 10-day periods.

Fishing conditions in Japanese waters by area and season.

Fishing conditions; catch and effort data by prefecture and 10-day periods; fish sizes recorded.

Fishing conditions; catch and effort data by prefecture and 10-day periods; fish sizes recorded.
IMPERIAL FISHERIES INSTITUTE, continued


Seasonal changes in fishing condition in Japanese waters.

1931(1). Skipjack fisheries [in Japanese]. In: Suisan shiken seiseki soran (General review of the results of fisheries research), Imperial Fisheries Experimental Station, Tokyo, 1035-1063 p.

Summary of skipjack research in vicinity of Japan, carried out by various organizations; results of experimental fishing using several types of gear.


Catch and effort data; fishing conditions near Japan by area and 10-day periods.


Catch and effort data; fishing conditions in Japanese waters by area and 10-day periods.


Fishing conditions in Japanese waters.


Catch and effort data; fishing conditions near Japan by area and 10-day periods.


Catch and effort data; fishing conditions near Japan by area and 10-day periods.


Fishing conditions in Japanese waters.


Catch and effort data; fishing conditions near Japan by area and 10-day periods.


Catch; effort; fishing conditions near Japan by area and ten-day periods.


Fishing conditions in Japanese waters.


Catch and effort data; fishing conditions, and average size of fish caught commercially in Japanese waters, by area and 10-day periods.


Fishing conditions in Japanese waters.


Catch and effort data, fishing conditions, and size of fish caught commercially in Japanese waters by area and 10-day periods; fishing related to temperature.
IMPERIAL FISHERIES INSTITUTE, continued

Release and recovery information of skipjack tagged in Ryukyu waters.

Summary of researches by prefectural research vessels in Japanese waters; water temperature and color; specific gravity; size and nature of skipjack schools; biting conditions; catch and effort statistics by season and area.

Release data of 67 skipjack tagged in Ryukyu waters.

Fishing conditions in Japanese waters in relation to migrations of skipjack; weather and oceanographic conditions.

Fishing logs of prefectural research boats in Japanese waters; water temperature and color; specific gravity; size and nature of schools; biting conditions; catch and effort data by area and 10-day periods.

Fishing logs of prefectural research vessels in Japanese waters; water temperature and color; specific gravity; size and nature of skipjack schools; biting conditions; catch and effort data by season and area.

Release and recovery information of skipjack tagged in Pacific Ocean and Ryukyu waters.

Fishing conditions in Japanese waters in relation to migrations of skipjack; weather and oceanographic conditions.

Fishing conditions in Japanese waters during the first half of 1936; size of fish caught.

Summary tables of experimental live-bait and longline fishing in Japanese waters by prefectural research vessels; mean length and weight of fish; number of schools found; water temperature and color; specific density; size and nature of schools; biting conditions; catch and effort statistics by area and 10-day periods.

Release information on 11 skipjack tagged in the Pacific.

Fishing conditions and seasonal shifts of fishing grounds in Japanese waters.

Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural
IMPERIAL FISHERIES INSTITUTE, continued

research vessels; catch by size; mean length and weight of fish; number, nature and size of
schools observed; biting conditions; water temperature and color; specific gravity, etc.; catch
and effort statistics by area and 10-day periods.


Release and recovery information on skipjack tagged near Japan.

(Jan.-June, 1937), 60 : 153-156.

Fishing conditions and seasonal shifts of fishing grounds in Japanese waters.

vest., Tokyo (Jan.-June, 1937), 60 : 157-201.

Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural
research vessels; catch by size; mean length and weight of fish; number, nature and size of
schools observed; biting conditions; water temperature and color; specific gravity.

(July-Dec., 1937), 61 : 172-175.

Fishing conditions in relation to water temperature and seasonal shifts of fishing grounds in
Japanese waters.


Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural
research vessels; catch by size; mean length and weight of fish; number, nature and size of
schools observed; biting conditions; water temperature and color; specific gravity.


Release and recovery information on skipjack in Japanese and Indonesian waters.

(Jan.-June, 1938), 62 : 140-145.

Fishing conditions in relation to water temperature and seasonal shifts of fishing grounds in
Japanese waters.

vest., Tokyo (Jan.-June, 1938), 62 : 144-168.

Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural
research vessels; catch by size; mean length and weight of fish; number, nature and size of
schools observed; biting conditions; water temperature and color; specific gravity.

(July-Dec., 1938), 63 : 116-118.

Fishing conditions and seasonal shifts of fishing grounds in relation to water temperature, in
Japanese waters.


Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural
research vessels; catch by size; mean length and weight of fish; number, nature and size of
schools observed; biting conditions; water temperature and color; specific gravity.

Dec., 1938), 63 : 142-156.

Release and recovery information on skipjack tagged in Japanese waters.

(Jan.-June, 1939), 64 : 120-123.

Fishing condition and seasonal shifts of fishing grounds in relation to water temperature in
Japanese waters.
IMPERIAL FISHERIES INSTITUTE, continued

   Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural research vessels; catch by size; mean length and weight of fish; number, nature and size of schools observed; biting conditions; water temperature and color; specific gravity.

   Fishing conditions and seasonal shifts of fishing grounds in relation to water temperature in Japanese waters.

   Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural research vessels; catch by size; mean length and weight of fish; number, nature and size of schools observed; biting conditions; water temperature and color; specific gravity, etc.

   Release information on 10 skipjack tagged in Japanese waters.

   Fishing condition and seasonal shifts of fishing grounds in relation to water temperature in Japanese waters.

   Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural research vessels; catch by size; mean length and weight of fish; number, nature and size of schools observed; biting conditions; water temperature and color.

   Fishing conditions and seasonal shifts of fishing grounds in relation to water temperature in Japanese waters.

   Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural research vessels; effort; catch by size; number, nature and size of schools observed; biting conditions; surface water temperature.

   Fishing conditions and seasonal shifts of fishing grounds in relation to water temperature and currents in Japanese waters.

   Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural research vessels; effort; catch by size; mean length and weight of fish; number, nature and size of schools observed; biting conditions; water temperature.

   Fishing conditions and seasonal shifts of fishing grounds in relation to water temperature in Japanese waters.

   Catch records of experimental live-bait and longline fishing in Japanese waters by prefectural
IMPERIAL FISHERIES INSTITUTE, continued

research vessels; catch by size; mean length and weight of fish; number, nature and size of schools observed; biting conditions; water temperature and color.

Fishing conditions and seasonal shifts of fishing grounds in Japanese waters.

Fishing conditions and seasonal shifts of fishing grounds in relation to temperature and currents in Japanese waters.

Fishing conditions and seasonal shifts of fishing grounds in relation to water temperature in Japanese waters.

Catch records of longline and live-bait fishing in Japanese waters by prefectural research boats.

INABA, TAKASHI

Abnormality in relation to season, locality and fish size.

INANAMI, YOSHIYUKI

Poor fishing explained by conditions near Palau, January-March, 1941.

Result of fishing survey; fishing seasons; size of fish.

Catch per day, per boat, near four major islands in the south seas, 1935-1940.

Description of juveniles.

As an analysis of the shift in tuna fishing grounds in relation to abnormal oceanographic conditions.

INIAEVSKII, A. N.

Common names; description; commercial importance; possibilities of utilization by Soviet fishery.
INOUE, MAKOTO
Analysis of the number of successful sets and catch per set of one- and two-boat seining operations off northern Japan, by species, type, and size of school.
History and development of purse-seine fishery in Japan; description of gear; scouting methods; seining operations; fishing performance compared by years; fishing grounds and seasons discussed in relation to other species of tuna; nature and size of schools in association with floating objects.

INOUE, MOTOO
Catch data include type and size of schools, sea and weather conditions.
Includes skipjack.
Possibility of exploitation of skipjack stocks by new fishing methods.
New fishing technique; exploitation of new grounds.
Use of trolling gear and light to attract fish to surface.

INOUE, MOTOO, R. AMANO and Y. IWASAKI
Relation of fish schools to floating objects; yearly variations and oceanographic conditions, 1951-1960.
An analysis of the abundance and movement (drift) of floating objects, and their relation to skipjack ecology.

INOUE, MOTOO and KUSUTARO YAMASHITA
The response of fish to artificial bait; trolling for midwater schools.
ISHII, NOBUTARO
Host for 10 species of trematodes.
Description of two species of parasites on the gill.

ISHII, NOBUTARO and TOSHISADA SAWADA
Listed as host for three species of trematodes.

ISHIKAWA, CHIYOMATSU et al. (Ed.)
Description; ecology.

ISHIYAMA, REIZO and KEISUKE OKADA
Eleven larval fish collected from the Phoenix Islands area described and identified as skipjack; non-biometric measurements.

IVERSEN, EDWIN S. and GARTH I. MURPHY
Results of several exploratory cruises.

IVERSEN, EDWIN S. and HOWARD O. YOSHIDA
Results of several exploratory cruises.

IVERSEN, ROBERT T. B.
Feeding behavior mentioned.

IWASAKI, YUKINOBU
Includes discussion of fishing conditions for skipjack in Mariana and Japanese waters.

JAPANESE FEDERATION OF TUNA FISHERMEN'S COOPERATIVE ASSOCIATION and JAPAN TUNA VESSEL OWNERS ASSOCIATION
Economic evaluation of skipjack live-bait fishery of Japan; comparison of this type of fishing with tuna longline fishing.
JENKINS, OLIVER P.
  Records.

JORDAN, DAVID STARR
  Description; distribution; common names.

JORDAN, DAVID STARR, and BARTON WARREN EVERMANN
  Description; synonymy; distribution.
  Description; distribution.
  Description; distribution.

JORDAN, DAVID STARR, BARTON WARREN EVERMANN and HOWARD WALTON CLARK
  Distribution; synonymy; common names.

JORDAN, DAVID STARR and CARL LEAVITT HUBBS
  Distribution; common names.

JORDAN, DAVID STARR and ERIC KNIGHT JORDAN
  Commercial importance; common names.

JORDAN, DAVID STARR and A. C. LOVEKIN
  Extensive school.

JORDAN, DAVID STARR and ALVIN SEALE
  Gymnothorax pelanis listed.
JORDAN, DAVID STARR and EDWIN CHAPIN STARKS
Records.

JORDAN, DAVID STARR, S. TANAKA, and J. O. SNYDER
Record from Japan; synonymy.

JOSEPH, JAMES
Feeding: relation of fecundity to length and weight; effect of preservation on diameter of ovum.

JOSEPH, JAMES and IZADORE BARRETT
Observations on captive fish.

JOUAN, HENRI
Symptoms of ichthiosarcotoxism.

JUNE, FRED C.
History of the fishery.
Biology; fishery.

KAFUKU, TAKEICHIRO
Structure, location and anatomy of dark muscles in relation to ordinary muscles compared among scambroids, including skipjack; development of dark muscle discussed from evolutionary point of view; functions of dark muscles deduced from the anatomy and from post-biochemical studies.

KAGOSHIMA PREFECTURAL FISHERIES EXPERIMENTAL STATION
Results of 14 exploratory live-bait fishing cruises in waters south of Japan; catch records and oceanographic data; fishing conditions in relation to water temperature, lengths, girths, and weights of more than 20 skipjack.
Results of 12 test fishing trips by a live-bait research boat in waters south of Japan; catch log and oceanographic data; fishing conditions in relation to water temperature; length, girths, and weights of skipjack; studies of maturity; summary of studies on larvae; collect-
KAGOSHIMA PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued


Summary and logbook data of longline experimental fishing in waters south of Japan during summer months, including records of a few skipjack.


Results of 16 exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; study of attraction of schools by marked drifting objects; larval collected by plankton nets; computational seasonal fishing conditions in relation to water temperature; fishing and biting conditions in relation to tide; monthly catch and effort statistics by local fisheries; analysis of fishing.


Results of nine exploratory live-bait fishing cruises in Taiwan-Ryukyu waters; catch records and oceanographic data; seasonal fishing conditions in relation to water temperature and currents; lengths, girths and weights recorded; experimental fishing in the new fishing grounds near Taiwan; ten small skipjack tagged; monthly catches and catches per trip landed to Makaraizaki by local fisheries.


Results of exploratory live-bait fishing cruises by two boats in waters near Taiwan, South Sea Islands (Palau), Philippine Islands and Indonesia; fishing conditions, weather, currents, baitfish situation, description of local fishing and logbook data.


Results of 11 exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; fishing conditions in relation to water temperature; lengths, girths, and weights.


Results of 11 exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; fishing conditions in relation to water temperature and currents; catch and effort statistics by month, by local fisheries; exploitation of new fishing grounds in the East China Sea.


Results of 10 exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; fishing conditions in relation to water temperature; monthly catch and effort statistics by local fisheries; exploitation of new fishing grounds in Ryukyu waters in the East China Sea.


Results of nine exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; fishing conditions in relation to water temperature.


Results of eight exploratory fishing cruises in Ryukyu waters and two cruises in Philippine waters; catch records and oceanographic data; fishing conditions in relation to water temperature, currents, and weather.

1934. Investigation of skipjack fishing [in Japanese]. Kagoshima-ken suisan shi-
KAGOSHIMA PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued


Results of eight exploratory fishing cruises by a live-bait research vessel in Ryukyu waters; catch records, water temperature data; fishing conditions discussed in relation to oceanographic conditions, weather, and biting; catches by these local fisheries given by 10-day periods and size classes of fish.


Results of nine exploratory live-bait fishing cruises in Ryukyu waters; catch records; results of oceanographic survey cruises in the same waters discussed in relation to fishing conditions; local catch statistics by 10-day periods; catches recorded by size classes of fish and 10-day periods.


Results of two exploratory fishing cruises in the Sulu Sea by a commercial boat; catch and water temperature data.


Results of two exploratory fishing cruises in the Sulu and Celebes seas by a commercial boat during the fall and winter, employing both the live-bait and longline methods; catch log and water temperature data.


Results of 10 exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; fishing conditions in the same waters discussed in relation to oceanographic conditions; local catch statistics by month; 20 to 40 skipjack measured and weighed on each cruise.


Results of four exploratory live-bait fishing cruises in the Celebes and Sulu seas by a commercial boat during the winter; catch records and water temperature data.


Release data of 45 skipjack tagged in Ryukyu waters; fish caught by pole and line and hand line.


Results of eight exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; mean length and weight of 10 samples of skipjack; fishing conditions in 1935 described in relation to oceanographic conditions; local catch statistics by month; relation between seasonal variations of fishing conditions and of oceanographic conditions compared for 1933-1935; catches and their values compared for 1928-1935; seasonal variation in size composition of catches in 6 years analyzed; temperature distribution on fishing grounds plotted for 1933-1935.


Results of four exploratory fishing cruises in the Sulu Sea by a commercial boat, employing both the live-bait and longline methods; catch records and water temperature data.
KAGOSHIMA PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued


Numbers of skipjack live-bait fishing boats by size classes in the Kagoshima Prefecture; statistics on engines, equipment, average number of trips per year, number of fishing days; economic data on operation of the boats.


Results of nine exploratory live-bait fishing cruises in Ryukyu waters; catch records and oceanographic data; mean length and weight of fish of 15 samples of about 20 fish each; seasonal fishing conditions described in relation to water temperature; local monthly catch statistics.


Results of two exploratory fishing cruises in the Sulu and Celebes seas by a commercial live-bait boat; catch records and water temperature data; comparison of condition factors of fish of South Seas and Ryukyu waters.


Release data with mean length and weight of 45 skipjack tagged in Ryukyu waters.


Results of seven exploratory live-bait fishing cruises in Ryukyu waters; catch records and water temperature data; seasonal fishing conditions related to water temperature; mean length and weight for eight samples of about 20 fish each; local monthly catch statistics.


Summary of one exploratory live-bait fishing cruise in the Sulu Sea by a commercial boat.


Release data of 36 skipjack tagged in Ryukyu waters.


Summary of nine exploratory fishing trips made by a live-bait research vessel south of Kyushu, Japan; general review of fishing conditions; monthly statistics of catch by commercial boats of Kagoshima Prefecture; mean lengths and weights of 15 samples of skipjack collected by the research vessel.


Results of four exploratory fishing cruises by a commercial boat in the Sulu Sea in the fall; catch (probably skipjack) and water temperature data.


Release records of 20 skipjack tagged in the East China Sea.

1941(1). Experimental skipjack fishing [in Japanese]. Kagoshima-ken suisan shi-
KAGOSHIMA PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued


Summary of 10 exploratory fishing cruises by a live-bait research vessel south of Kyushu, Japan; general review of fishing conditions; monthly statistics of catch by commercial boats of the prefecture; mean lengths and weights of eight skipjack samples.


Results of three exploratory fishing cruises in the fall and winter by a commercial vessel in the Sulu Sea; catch records and meteorological and oceanographic data.

KAKIMOTO, DAIICHI


Fresh and old ceca extract analyzed for their guanidine components, using paper partition chromatography method.


PABA and riboflavin measured by an improved method of bioassay.


Vitamin B₂₁ determined by two different bioassays.


Folic acid, citrovorum factor and another similar factor, extracted; amount and properties determined by bioassay and chemical methods.


Unknown factor extracted which promotes growth of Leuconostoc citrovorum.


Attempt to obtain more nearly pure amounts of an unidentified substance.


Tests for presence of vitamin B group in the crude crystals of the unknown factor; comparison of its effect on growth of Leuconostoc citrovorum with that of thiamine and other known materials.


Vitamin B₂₁ extracted.

KAKIMOTO, DAIICHI and A. KANAZAWA
Bioassay of Vitamins B components.
Determination and comparison of folic acid and folinic acid from various organs.

KAKIMOTO, DAIICHI, A. KANAZAWA and K. KASHIWADA
Analysis and identification by paper partition chromatography of amino-acids.
Amino acids determined and bioassayed and their composition compared with those of muscle.

KAKIMOTO, DAIICHI and HIROSHI MIZUMA
Separation of histidine with acid soil.

KAKIMOTO, DAIICHI and T. YOSHIMINE
Separation of arginine with activated charcoal at a specific pH.

KAMIMURA, TADAO
Abundance; fishing rate; ages of recruits at entry to fishery; spawning maturity; expansion of fishery in relation to population size.

KAMIMURA, TADAO and MISAO HONMA
Includes information reported by Murphy and Ikebata (1953) on sighting of fish schools.

KAMOHARA, TOSHIJI
Description.
1954(1). A list of fishes from the Tokara islands, Kagoshima Prefecture, Japan.
KAMOHARA, TOSHIJI, continued

Katsuwonus pelamis recorded.

Brief description of distribution, migration and spawning.


Distribution and migration of skipjack is Japanese waters.


List of Japanese local names of fish; brief description of distribution and migration, ecology, and behavior of skipjack.


KANAGAWA PREFECTURAL FISHERIES EXPERIMENTAL STATION

Data on worldwide catches of tuna by Japanese longline boats; includes data on effort, sampling coverage, and water temperature.


Catch and effort statistics of Japanese longline boats by month, area and species; water temperature data included.

KANAMURA, MASAMI and HARUO YAZAKI

Results of longline exploratory fishing east of the Philippine Islands; comparison of catch rates by different sizes of hooks; analysis of catches in relation to depth of hooks; somatic contents; oceanographic data.

KANEKO, NAOSHII

Water temperatures associated with best skipjack catches discussed by season; economic analysis of skipjack fishery.

KASHIWADA, KENICHI (KASHIWADA, KEN-ICHI)

Tests of seasonal variation in activity of proteolytic enzymes; comparison of these variations with skipjack catches and biting.
KASHIWADA, KENICHI (KASHIWADA, KEN-ICHI) continued


Attempt to determine the origin of ammonia in pyloric caeca.


Changes in nitrogen compounds during autolysis examined to determine origin of ammonia.


Attempts to determine origin of the ammonia generated in pyloric caeca and muscles of skipjack by an enzyme in pyloric caeca.

KASHIWADA, KEN-ICHI and D. KAKIMOTO


Chemical compounds related to nucleic acid from pyloric caeca studied to demonstrate presence of nucleic acid.

KASHIWADA, KENICHI, D. KAKIMOTO and Y. HORIGUCHI


Seasonal variations in chemical components of pyloric caeca; autolysis of pyloric caeca.

KASHIWADA, KENICHI, D. KAKIMOTO and A. KANAZAWA


Quantitative determination of organic acid in extracts from pyloric caeca; studies of its components by paper chromatography.

KASHIWADA, KENICHI, D. KAKIMOTO and T. YAMASAKI


Nature of nitrogen compounds in water-soluble substance of pyloric caeca.

KASK, JOHN L.


States of yellowfin and skipjack tuna stocks of the eastern Pacific Ocean.


Mention of catch and stocks; evaluation of research.

KATSUBE, SEI


Development of fishery reviewed.
KATSUMATA, TEIZO and YOSHIHISA TOGASAWA

Tests to determine if glycylglycine dipeptidase can be absorbed by subelute XE-64, and how active GG dipeptidase works during the process of extracting proteinase from skipjack pyloric caeca.

KAWABATA, TOSHIHARU, TOSHIYUKI MIURA and KATSUKO SHIMANUKI

Accumulation of radioactive isopes in various body portions analyzed and compared.

KAWAGUCHI, YOSUKE

Fishing conditions correlated with oceanographic conditions; migration routes of a few populations.

KAWAI, HIDEO

Physical oceanography of Kuroshio Current; relation of skipjack fishing to oceanographic conditions.


Seasonal changes in skipjack concentration relative to oceanographic conditions.

KAWAI, HIDEO and MINORU SASAKI

Seasonal northward shift of fishing grounds off north-eastern Japan analyzed in relation to northward extension of Kuroshio during summer.

KAWAI, TOMOYASU

Abundance and availability of skipjack in relation to oceanographic conditions and abundance of albacore.

KAWAMURA, HIROYOZO

Annual variation in skipjack fishing conditions; relation of fishing conditions to changes in oceanographic conditions; prediction of fishing conditions in 1939.
KAWAMURA, HYozo, continued
1940. Research and guidance program of South Sea Government-General Fisheries Experimental Station under the present tight international situation [in Japanese]. Suisan kai (J. Fish. Soc. Japan), 687: 24-26.
Abundance and distribution of fish in relation to currents.

KAWASAKI, TSUYOSHI
Population structure of northeastern Japan analyzed by length-weight relationship; yearly fluctuations in distribution discussed in relation to strength of current.

Age, growth and migrations of two types of skipjack, sedentary and migratory, off south-western Japan analyzed on the basis of size composition.

Age, growth and migrations of two types of skipjack, sedentary and migratory, off north-eastern and central Japan, analyzed on the basis of size composition.

Annual fluctuation of catches off northeastern Japan analyzed and population size estimated; growth, average weight, time of recruitment, of 3-year-old fish discussed in relation to population, abundance and oceanographic conditions.

Analysis of the between-seasonal changes in oceanographic structures and fishing conditions off southern Japan; general discussion on the oceanographic structures which produce good skipjack fishing.

Species composition of schools of tuna; length composition of skipjack in a school in relation to type of school.

Interspecific comparison of distribution, environment, and morphological features such as ratio of pectoral fin length to body length; evolution of tunas.

Study of seasonal growth of skipjack off northern Japan using length and weight data; growth rates compared among years (1951-1959); preliminary attempt to estimate amount of forage organisms from population size and growth rate of skipjack.

KAWASAKI, TSUYOSHI, continued
Ecology: relation between abundance and distribution.
1964. Population structure and dynamics of skipjack in the North Pacific and its
Spawning, migration, recruitment to the fishery, age of recruitment, population structure,
growth, emigration from fishing grounds, discussed from data on distribution of catches,
annual fluctuations in catch per unit of effort, size composition.
1965(2). Ecology and dynamics of the skipjack population (I), (II) [in Japanese].
Miyake (Part I) and by U. S. Joint Publications Research Service (Part II). Inter-
California, 54 p. and 79 p.
Comprehensive review of previous studies on classification, distribution, spawning, reproduction, larvae, juveniles, growth, age, feeding, bcing conditions, schooling behavior, association
with floating objects, environmental conditions, catch and effort statistics, population
structure, tagging, population dynamics, and fishing in relation to oceanographic conditions.
1966(2). Relationship between skipjack and Kuroshio current [in Japanese]. In:
Fish. Oceanogr., (7) : 63-64.
Also migration of various species.
69-72.
Spawning, racial studies, tagging, catch data, and longline catches reviewed to elucidate
population structure.

KAWASAKI, TSUYOSHI and MORIYA ANRAKU
1962. On the abundance and its fluctuation of the skipjack and albacore migrating to
Comparison of seasonal changes of skipjack abundance in relation to their migration off
northeastern Japan; discussion of possibility of predicting catch from the abundance early
in the season.

KAWASAKI, TSUYOSHI and MASAHIRO ASANO
Comparison of water temperature, time of fishing, schooling patterns, depth of capture, and
stomach contents for skipjack and albacore tuna taken off northern Japan in June by live-
baits fishery.

KAWASAKI, TSUYOSHI and AKIRA NAGANUMA
1959. On the fluctuation of the fisheries conditions in the live-bait fishery of skip-
Relationship between main fishing area and oceanographic conditions off northwestern Japan
for 1951-1955.
1961. An ecological study of fishes taken in the Tohoku sea area and the fishing
ground structure in the same area (preliminary report) [in Japanese with an English
Discussion of relationship between skipjack distribution and water temperature at 100 m,
in comparison to distribution of other tunas and sharks.
KAWASAKI, T., M. YAO, M. ANRAKU, A. NAGANUMA AND M. ASANO

Comparison of geographical distribution, distribution in relation to water temperature, weight-frequency distribution and stomach contents of 11 species of fish off northern Japan; discussion of these communities in relation to oceanographic conditions.

KAZANOVA, I. I.

Description of young based on published works, including some from the Pacific Ocean.

KIKUCHI, TAKEAKI, T. HIRANO, H. MOROOKA AND I. OKADA

Comparison of proteins in muscle tissue of 15 species of aquatic animals by polarographic method.

KIKUCHI, TAKEAKI, T. HIRANO AND I. OKADA

Study of proteins in dark meat, white meat, and various organs of skipjack by polarographic method.

KIMURA, KINOSUKE

General review of Japanese skipjack fishery; distribution and migration in relation to water temperature and currents; fishing seasons and conditions and various fishing grounds of Japan and South Seas; annual catch and effort statistics; age composition and size composition by area; length and weight range by ages.


General description of Japanese fishing areas and seasons and of distribution and migration in western Pacific.


Catches by commercial and research vessels east of Japan in 1936-1943 and 1947, by 1° squares and 10-day intervals, and corresponding sea-surface temperature.


Biting conditions discussed in relation to annual variation of oceanographic conditions and abundance of forage fishes; vertical movement in relation to vertical and horizontal structure of water temperature and to location of oceanic boundaries.

1954. Analysis of skipjack (Katsuwonus pelamis) shoals in the water of "Tohoku Kaiku" by its association with other animals and objects based on the records of
KIMURA, KINOSUKI, continued
Analysis of seasonal and geographical distribution and biting in the northwestern Pacific in relation to size and type of schools associated with drifting objects and various other animals.

KIMURA, KINOSUKI, M. IWASHITA and T. HATTORI
Discussion of schooling and vertical migration of skipjack.

KING, JOSEPH E. and ISAAC I. IKEHARA
Found in stomachs of yellowfin tuna.

KING, JOSEPH E. and PETER T. WILSON

KISHINOUE, KAMAKICHI
Description of large skipjack found in a Japanese fish market.
Classification of Pacific skipjack in relation to bonito.
New classification system for tunas and descriptions.
Comparison of locations and amounts of dark muscle among skipjack and other tunas; relationship between dark meat and circulatory system; comparison of circulatory system with dark muscle among several species of tuna.
Stomach content data; observation on rate of digestion, direction of ingestion, and injuries to fish in the stomachs.
New classification system for tunas; order Plecostei proposed.
KISHINOUYE, KAMAKICHI, continued

Colors of fluids from dark and white muscles of bigeye tuna and skipjack compared.


Fishing methods and relative efficiency of vessels.


Comparative anatomy of tunas, with emphasis on circulatory system.


Comments on Günther's and Lütken's description of tuna larvae; observations on juveniles.


Possible relationship of watery flesh to spawning.


Stripes on the body of juvenile and adult specimens.


General biology including phylogeny; fishing methods.


Growth and feeding of juveniles collected from stomach contents of tunas south of Japan; spawning season.


Description of larval and tuna-like fish collected off southern Japan; six specimens identified or assumed to be skipjacks.

KITAHARA, TASAKU

Description and a key to Scombridae.

KITAHARA, TASAKU and MITSUHIKO SHIMAMURA

Fishing conditions in relation to water temperature, specific gravity, and currents in Japanese waters.

KITANO, KIYOMITSU
1953. On the formation of the skipjack, Katsuwonus pelamis (Linnaeus), fishery ground off Kinkasan in the north-eastern sea area along the Pacific coast of Japan
KITANO, KIYOMITSU, continued
Description of oceanographic conditions off northeastern Japan; relation between upwelling and fishing.

KLAWE, WITOLD L.
Includes young skipjack.

Distribution of the captures of larval and juveniles: larval ecology; methods of collecting larvae and juveniles; extent and time of spawning.

KLAWE, W. L. and F. G. ALVERSON
K. pelamis feeding on P. opercularis.

KLAWE, WITOLD L., IZADORE BARRETT and BARBARA M. HILLSDON KLAWE
Includes data on K. pelamis.

KOBAYASHI, TADASHI
Summary of live-bait fishing by research boat; fishing conditions in relation to temperature and weather off southern and eastern Japan.

KOCHI PREFECTURAL FISHERIES EXPERIMENTAL STATION
Catch records of live-bait research boat south of Kochi Prefecture; fishing conditions in relation to water temperature; seasonal effect and catch data of the prefecture's commercial boats.

Experimental fishing with a purse-seine; effect of purse-seining on schools and live-bait fishing; fishing conditions off Kochi, Japan, in relation to currents and water temperature; description of fishing gears.

KOGA, SIGEYUKI
Young skipjack in stomachs of tunas and blue marlin.

1960. Studies on the fluctuation in catch of the tuna-fishing fleet—III. On the
KOYAMA, Y. 
Fishing conditions correlated with season.

KOIZUMI, TAKASHI
Catches include skipjack.

KONOSU, SHOJI, S. KATORI, R. ŌTA, S. EGUCHI and T. MORI 
Bioassay of the muscle of 10 species of fish for amino-acid composition.

KOYASU, SHOZO
Seasonal shift of the main fishing grounds near Japan.

Seasonal fishing conditions correlated with water temperature.

KUBO, ITSUO
Classification; catch; life history; reproduction; fishing conditions correlated with oceanographic conditions; migration; schooling ecology; feeding response.

KUBO, ITSUO and TOMOKICHI YOSHIWARA 
Textbook for population studies; includes studies on skipjack.

KUENNEN, R.

KUMADA, TOSHIRO et al.

KUMAMOTO PREFECTURAL FISHERIES EXPERIMENTAL STATION
Summaries of 19 exploratory live-bait fishing cruises in Ryukyu waters; seasonal fishing conditions in relation to water temperature and color; catch records; oceanographic data.
KUMAMOTO PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued


Summaries of 33 exploratory live-bait fishing cruises in Ryukyu and south Japanese waters; seasonal fishing conditions in relation to water temperature and color; catch records; oceanographic data.


Summaries of 34 exploratory live-bait fishing cruises in waters of the Ryukyu and southern Japan; seasonal fishing conditions in relation to water temperature; catch records; temperature and salinity profiles by month.


Summaries of 24 exploratory live-bait fishing cruises in the waters of the Ryukyu and southern Japan; seasonal fishing conditions in relation to water temperature; catch records; oceanographic data.


Summaries of 17 exploratory live-bait fishing cruises in Taiwan-Ryukyu waters; catch records; oceanographic data; fishing conditions in relation to water temperature, color and current; landing statistics by 10-day periods.


Summaries of 14 exploratory live-bait fishing cruises in waters of the Ryukyu and northeastern Japan; fishing conditions in relation to water temperature and color, currents, schooling, etc.; catch records; oceanographic data; comparison of the nature of biting and fishing conditions for the two areas; landing statistics by 10-day periods for three groups of fish.


Summaries of four experimental fishing trips in Ryukyu waters; fishing conditions in relation to water temperature and biting.

KURIHARA, MICHISHIKO


Trypsin inhibitor extracted.

KURODA, RYUYA


Comparison of distribution and catches in 1950-1955, by types of schools; seasonal and annual variations in distribution and catches in relation to oceanographic conditions.

1959. On the tuna purse seine and the fishing conditions (preliminary report)
KURODA, RYUYA, continued
Scien. Fish.), 9(1, 2) : 1-7.
Comparison of trawling purse-seining grounds and skipjack pole and line fishing grounds
off northeastern Japan.
1965. How should fisheries-oceanographic studies be on the Kuroshio current?—
The relationship between Kuroshio and fisheries resources in nearshore and offshore
waters off northeastern Japan [in Japanese]. In: Symposium on the Kuroshio Current
Seasonal and yearly fluctuations in abundance in relation to oceanographic conditions.

KURONUMA, KATSUZO
1961. A check list of fishes in Vietnam. Division of Agriculture and Natural Re-
sources, United States Operations Mission to Vietnam, United States Consultants, Inc.,
Common names.

LAEVASTU, TAIVO and HORACIO ROSA, JR.
1963. Distribution and relative abundance of tunas in relation to their environment
[French and Spanish abstracts]. In: Rosa, H., Jr. (Ed.) Proceedings of the World
Scientific Meeting on the Biology of Tuna and Related Species. FAO, Fish. Rep.,
3(6) : 1835-1851.

LA MONTE, FRANCESCA
City, New York, 202 p.
Description; common names; distribution.

LAMOTHE-ARGUMEDO, RAFAEL
1965. Trematodos de peces (II)—Presencia de los trematodos Biomphalaria plicatum
(Linton, 1928) Stunkard, 1951, y Lecithochirium microsporum Chandler, 1954, en
Univ. Mèx., 36(1 and 2) : 147-157.
Host of an intestinal parasite.

LANDA, ANTONIO
Ang., 17(4) : 12-13.
Description of the Latin American fisheries for tuna in the Pacific Ocean, with emphasis on
Peru; catch statistics.

LANDBERG, LEIF C. W.
1966. Tuna tagging and the extra-oceanic distribution of curved, single-piece shell
Migration of skipjack discussed.

LANG, O. W. and N. D. JARVIS
1943. Tuna. p. 175-198 (In: Principles and methods in the canning of fishery
Description, fishing methods; handling of catch: processing.

LEGAND, MICHEL
1950. Contribution à l'étude des méthodes de pêche dans les territoires français de
Fishing methods for skipjack.
LEGEND, MICHEL, continued
Observations on skipjack specimens from the cruise.

LESSON, RENÉ PRIMAVERE
Occurrence and description: case of ichthyosarcootoxicism.

LINDBERG, C. U.
Listed from the sea of Japan.

LINDBERG, C. U. et al. (Ed.)
Illustration; common and scientific names.

MACINNES, I. G. (ed.)
Distribution in Australian waters: size range; fishing seasons.

MACLEAY, WILLIAM

MAEDA, HIROSHI
Ecological studies on animals aggregating under night-light.

MAGNUSON, JOHN J.
Feeding behavior of captive fish; influence of variations in feeding stimuli on fish encountered during exploratory cruises; visual acuity.

MAGNUSON, JOHN J. and JOHN H. PRESCOTT

MANACOP, PORFIRIO R.
Brief remarks on K. pelamis as a commercial species; spawning season and areas.
MANAR, THOMAS A.
Potential yield of Pacific stocks.
Outline of the fisheries; population structure; reproduction; evaluation of population size; exploitation of new stocks in the mid-water layer.

MANN, F. GUILLERMO
Description; common names; distribution; commercial importance.

MANNING, JOHN A.
Occurrence off Chile; commercial prospects.

MANTER, HAROLD W.
Host for trematodes.

MARR, JOHN C.
Records and description of juveniles; measurements of ovarian eggs; sexual maturity; fish lengths.
Mortality of tagged fish and fish kept in captivity.
Discussion of methods.

MARR, JOHN C. and ALBERT L. TESTER
Discussion of the possible expansion of fishing grounds, development of new fishing techniques, and assessment of population structure and potential yield.
MARSHALL, TOM C.
Description, common names, distribution in Australian waters.

MARTIN, CLARO
Fishing seasons, grounds, gear and methods; handling; marketing.

MARTIN, JOHN WILSON

MARUKAWA, HISATOSHI
Juveniles from the stomach of dolphin identified; maturing ovaries examined; eggs described.
1939(1). Fisheries of the South Sea Islands (2); Present status of fisheries of the islands [in Japanese]. Nanyō suisan (So. Sea Fish.), 5(3) : 8-17.
History and present status of skipjack fisheries in Palau waters; seasonal fluctuation in catches in relation to oceanographic conditions and spawning season; seasonal variation in average size of fish.
1939(2). Fisheries of the South Sea Islands (4); Bait fishes for tuna and skipjack [in Japanese]. Nanyō suisan (So. Sea Fish.), 5(5) : 4-10.
Live-bait fishing.
1939(3). Fisheries of the South Sea Islands (6); Natural food of skipjack and tuna [in Japanese]. Nanyō suisan (So. Sea Fish.), 5(7) : 12-14.
Analysis of stomach contents of yellowfin tuna and skipjack.
Review of fisheries; availability of fish in relation to spawning; catch statistics; correlation of fishing conditions with oceanographic conditions discussed for Mariana and Caroline Islands.

MASUDA, SHOICHI (Ed.)
Classification; development and present status of fisheries; life history; ecology and biology; distribution and migration; fishing techniques; regulations and management; marketing.

MATSUBARA, KIYOMATSU
Description of fisheries; annual migration pattern; spawning; relation of fishing grounds to oceanographic conditions.
1955. Fish morphology and hierarchy (Gyoryū no keitai to kensaku), Part I [in Japanese]. Ishizaki shoten, Tokyo, 789 p.
Evolution of stomatoid fish; ecology; distribution; classification.
MATSUBARA, KIYOMATSU and AKIRA OCHIAI
Comprehensive review of life history, ecology, stocks, distribution and migration.

MATSUBARA, KIYOMATSU, AKIRA OCHIAI and TAMOTSU IWAI
Introduction to ecological, biological and taxonomical studies.

MATSUBARA, SHINNOSUKE
Description; distribution in Japanese waters; spawning; common names.

MATSUI, KIZO
Relative growth of brain of fisies from Palau; water and fat content, and proportion, in weight, of various parts of brain.
Weight, length, and maturity of gonads from 134 skipjack collected during October to December; maturity stages established.

MATSUMOTO, TAKESHI
Results of exploratory fishing of two baitboats in July 1937; oceanographic observations.

MATSUMOTO, WALTER M.
Sessions and areas of spawning; methods of collecting.
Also deals with identification of adults by same technique.
Includes methods of capture.
Skippack included in this review.
1966(3). Distribution and abundance of tuna larvae in the Pacific Ocean. In:
MATSUMOTO, WALTER M., continued


Review based on published and unpublished data; spawning season deduced from abundance of larvae.

MATSUMURA, FUMIO, H. BABA and T. MORI


Arginase from white and dark flesh measured and compared.

MATSUMURA, FUMIO and KANEHIRA HASHIMOTO


Nine species, including skipjack, analyzed.


Crystalline myoglobin analyzed and compared with horse and human myoglobin by spectrophotometry.


Oxy- and methemoglobin from several species of fish analyzed and compared with hemoglobin of horse by spectrophotometry.


Includes analysis of myoglobin components in red meat and ordinary meat of tunas.

MATSUMURA, F., K. HASHIMOTO and N. HARUTA


Six species of fish and a horse analyzed.

MATSUMURA, FUMIO, S. KÔNOSU, R. OTA, S. KATORI and K. TANAKA


Four species of fish, including skipjack, analyzed.

McCulloch, ALLAN R.


McKENZIE, M. K.


Biology; identification key; distribution in New Zealand and Australian waters.
MCNEELY, RICHARD L.
Description of boats and gear.

MEAD, GILES W., JR.
1949. Preliminary report on tuna fishing trip off Central America (April 23-June
Biological observations made during a commercial fishing trip.

MEEK, SETH E., and SAMUEL F. HILDEBRAND
Mention that skipjack will likely be recorded from the waters off Panama.

METELKIN, L. I.
1957. Promysel tunov [in Russian]. TINRO, Primorskoee Knizhnoe Izdatel'stvo,
Vladivostok, 64 p.
Brief account of the biology.

MIKASHA, A. F.
Body composition and other food technology data.

MIE PREFECTURAL FISHERIES EXPERIMENTAL STATION
1930(1). Investigation of skipjack fishing grounds and guidance in fishing [in
Stn) for 1927 : 1-17.
Records of catches and oceanographic observations from seven experimental fishing trips;
seasonal fishing conditions described in relation to temperature and specific gravity of water
through 1927 in Japanese waters.

1930(2). Investigation of skipjack fishing grounds and guidance of fishing [in
Logbook records and oceanographic observations of 21 experimental fishing trips by a live-
but research vessel; seasonal fishing conditions described in relation to oceanographic con-
ditions off eastern Japan.

Weekly oceanographic and fishing conditions in Japanese waters; relation of direction and
velocity of currents to catches, discussed by area and season; catch statistics by area and
month; logbook records, including oceanographic and chronological observations, schools
observed, biting conditions, weight and length of skipjack.

Oceanographic and fishing conditions by 10-day periods in Japanese waters; logbook records,
including information on weather, water temperature and other, size, density and type of
schools, biting conditions, length, weight and condition factors of skipjack.

Oceanographic and fishing conditions by 10-day periods in Japanese waters; relationship be-
tween atmospheric pressure and catch analyzed; logbook records, including information on
weather, water temperature and color, size, density and type of schools, biting conditions,
length, weight, and condition factors of skipjack.
MIE PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued


Oceanographic and fishing conditions by 10-day periods in Japanese waters; some information on fish and school size, biting conditions of school.


Oceanographic and fishing conditions by 10-day periods in Japanese waters; some information on fish and school size, biting conditions.


Oceanographic and fishing conditions by 10-day periods in Japanese waters; some information on fish and school size, biting conditions, fishing effort; release and recovery data of tagged skipjack; analysis of seasonal variation in floating objects associated with fish schools; seasonal changes in catch per unit of effort.


Release and recovery data of 131 skipjack tagged in 1961, fishing conditions by 10-day periods near Japan discussed in relation to migration of fish schools; oceanographic conditions; some analysis on type and size of schools, and biting conditions; abundance and migration of skipjack compared with previous years.


Release data of 118 skipjack tagged in 1962, and recovery data from past tagging; skipjack fishing conditions by 5-day periods near Japan discussed in relation to migration of fish schools; oceanographic conditions; analyses on type and size of schools and biting conditions; abundance and migration compared with previous years.


Analysis of the accuracy of 1965 forecast.


Abundance, type and size of schools, biting conditions, by 5-day periods; catch per unit of effort and catch analyzed.


Release records of 376 tagged skipjack and data on six recoveries; discussion of migratory movements.

MIGDALSKI, E. C.


MIGITA, MASAO and KYOSHI ARAKAWA


Amount of melanophorhormone in pituitary gland of deep-sea fishes compared with that of pelagic fishes.
MILLER, DANIEL J., DAN GOTSHALL and RICHARD NITSOS
Description; distribution.

MINAMI, DAIJIRO
History and outlook of skipjack and tuna fisheries.

MITO, SATOSHI
Spawning season and area; description of eggs and larvae.

MIURA, SADANOSUKE
Discussion of skipjack distribution, habitat, population structure, spawning ecology, young, biting conditions, native trapnet fishing methods, bait fish, seasonal change in flora and fauna in relation to seasonal changes in behavior, etc., in the South Sea, especially near the Philippine Islands.

MIYAMA, YOSHIMICHI and ISAMU OSKABE

MIYAMOTO, HIDEO
Description and use.

MIYAUUCHI, SAICHI
Comparison of chemical components, protein components, rate of autolysis and rate of digestion by pepsin in white and dark flesh of skipjack and bluefin tuna; analysis of proportion of dark muscle to total weight of flesh.

MIYAUUCHI, D. T.
Insulin content.

MOISEEV, P. A.
Oceanographic conditions governing distribution.

MOLTENO, C. J.
Observations on behavior from Japanese waters based on Kishinouye's (1923) report.

MORGAN, ROBERT
General discussion of various fisheries including that for skipjack.
MORI, TAKAJIRO, Y. HASHIMOTO and Y. KOMATA
Analysis of B-vitamins in dark and white flesh.

MORITA, TOMOKAZU
Relationship of seasonal variation in fishing to oceanographic conditions in the waters southern of Japan.
Relation of seasonal changes in fishing grounds off southern Japan to vertical oceanographic structure in terms of seasonal migration of stocks.

MUNRO, IAN S. R.

MURAMATSU, SHOGO

MURAYAMA, BINZO and SHIRO OKURA
Catch and catch-per-unit-of-effort of eight purse-seiners in Japanese waters.
Description of gear; results of commercial fishing operations by season, area, fish schools and weather conditions.

MURAYAMA, SHIGEKO and KIUKUKO TANBE
Analysis of 17 species of fishes; comparison between species and specimens.

MURPHY, GARTH I., and ISAAC I. IKEHARA

MURPHY, GARTH I., and EDWIN L. NISKA
Catches; gear described; factors affecting fishing.
MURPHY, GARTH I. and TAMIO OTSU

MURPHY, GARTH I. and RICHARD S. SHOMURA

Gear described; amount and axial distribution of catches.


Results; factors affecting catch.

MURPHY, GARTH I., KENNETH D. WALDRON, and GUNTER R. SECKEL

Availability related to oceanographic factors.

NAKAMURA, EUGENE L.


Visual acuity of captive specimens.


NAKAMURA, EUGENE L. and JOHN J. MAGNUSON

Coloration of live K. pelamis mentioned.

NAKAMURA, EUGENE L. and WALTER M. MATSUMOTO

Ecology of larvae; vertical distribution; spawning season.

NAKAMURA, EUGENE L. and JAMES H. UCHIYAMA

Includes K. pelamis.

NAKAMURA, HIROSHI

Bisexual gonad described.
NAKAMURA, HIROSHI, continued
Scientific and Japanese standard names; occurrence; commercial catches of scombroid fishes in Formosan waters.
Catch distribution, migration, size, ecology, and spawning; appendix includes classification and short species descriptions.
Brief mention of migrating schools; schooling by size.
Relation of tuna distribution in Pacific and Indian Oceans to current systems; relation of migration and spawning to currents and other environmental factors.
Distribution of young based on collections from larval net tows and tuna stomachs.
Distribution and migration in relation to water temperature and currents.

NAKAMURA, HIROSHI and YOSHIO HIYAMA
Reproduction and young.

NAKAMURA, IZUMI
Phylogenetic relationship of the various tunas.

NAKAMURA, IZUMI and SHOJI KIKAWA
Comparison of vertebral characteristics of tunas and related species.

NAKAMURA RESEARCH STAFF
Distribution of effort and catches in waters south and southeast of Japan; morphometric data; sex ratios; fecundity; juveniles.
NAKANO, TOMOO and YASUHIKO TSUCHIYA

NEAVE, FERRIS
Caught in a gill net.

NICHOLS, JOHN T. and PAUL BARTSCH
Brief description; distribution.

NICHOLS, JOHN TREADWELL and ROBERT CUSHMAN MURPHY
Recorded from Ecuador.

NIGRELLI, ROSS F. and H. W. STUNKARD
Taxonomy of Hirudinella, an endoparasitic trematode of many scombrids.

NIKOL'SKII, G. V.
Brief description; commercial importance.
Brief description; commercial importance; fishing methods.

NISHIKAWA, SADAICHI
Catch fluctuations and patterns of surface temperature examined.

NISHIMURA, MINORU
Vertical distribution and abundance off northeastern New Zealand assessed by echo sounders; longline catches compared with echo sounder records.

NOMURA, SHUNZO
Young from stomachs of longline caught tuna.
NORDHOFF, CHARLES
  Detailed description of native fishery, fishing methods, gear and boats; economic importance; folklore.
Nsei (pseud.)
  Association with bird flocks.
  Advantages of symbiotic association.

OBATA, TEKKAI
  Exploratory fishing in Indonesian waters.

OITA PREFECTURAL FISHERIES EXPERIMENTAL STATION
  Summary of 15 cruises in waters south of Kyushu, Japan; fishing conditions in relation to water temperature and color; fishing success and type of fish school.
  Live-bait and purse-seine fishing in waters off southern Japan; fishing conditions in relation to temperature and currents.

OKADA, KANAME et al.
  Illustration; description; distribution; ecology; fishing methods.

OKADA, YAICHIRO
  Description; habits; common names.

OKADA, YAICHIRO and KIYOMATSU MATSUBARA

OKADA, YAICHIRO, K. UCHIDA and K. MATSUBARA
  Description; illustration.

OKADA, YO K.
  Host for a trematode.
OKAJIMA, KIYOSHI

1937(1). A general review of fisheries in the South Sea Islands (1) [in Japanese].
Nanyō saisam (Se. Sea Fish.), 3(3): 13-16.

History and present status of tuna fishing in Micronesia: catch statistics by area and year.
1927, 1933-1935.

1937(2). A general review of fisheries in the South Sea Islands (2) [in Japanese].
Research staff, facilities and management of South Sea fishery investigations, mainly catch
and catch effort statistics for 1936.

OKAMOTO, GOROZO

1940. On the composition of shoals of “Katuo,” Enthynnus vagans (Lesson), in the
northern Japanese waters as analyzed by the body-weight [in Japanese with an English
Seasonal changes in body-weight; population identity and age composition of catches.

OKAMURA, KINTARO and HISATOSHI MARUKAWA

Water color, specific density, temperature, and plankton related to fishing success; stomach
contents; juvenile skipjack from dolphin stomach described.

OKINAWA PREFECTURAL FISHERIES EXPERIMENTAL STATION

1929. Experimental skipjack fishing [in Japanese]. Okinawa-ken saisam shikenjō
jigyō hōkoku (Prog. Rep. Okinawa Pref. Fish. Expt. Stn) for 1926-1928: 1-12; 36-
46; 121-136.
Logbook and oceanographic records of live-bait research vessels in Ryukyu waters, 1926-
1928, relation of fishing to oceanographic conditions.

1931(1). Experimental skipjack fishing [in Japanese]. Okinawa-ken saisam shikenjō
Logbook and oceanographic records from 14 trips of a live-bait research boat in Ryukyu
waters; relation of fishing to oceanographic conditions, weather and biting.

1931(2). Investigation of the maturity of skipjack [in Japanese]. Okinawa-ken saisam
shikenjō jigyō hōkoku (Prog. Rep. Okinawa Pref. Fish. Expt. Stn) for 1930:
106-107.
Length, width and weight of body and gonads of 13 skipjack from Ryukyu waters.

Catch and oceanographic records from 15 trips of a live-bait vessel in Ryukyu waters.

Catch and oceanographic records from 12 trips of a live-bait vessel in Ryukyu waters.

1940. Experimental skipjack fishing [in Japanese]. Okinawa-ken saisam shikenjō
Catch records from seven trips of a live-bait vessel in Ryukyu waters; catches correlated
with water and air temperatures.

1943. Experimental skipjack fishing [in Japanese]. Okinawa-ken saisam shikenjō
Catch records from five trips of a live-bait vessel in Ryukyu waters; comparison of catch
and catch-per-trip between 1935 and 1941; catches correlated with water and air temperatures.
OKUDA, YUZURU
Comparison of amino-acids and other chemical components of white and dark flesh of skipjack.

OMMANNEY, F. D. et al.
Numbers of fish tagged; recovery rate.

OMORI, KAGEYU and MASANOBU FUKUDA
Catch and oceanographic records from eight trips in Ryukyu waters.

OMORI, KAGEYU and SABURO KAWABE
Catch and oceanographic records from 10 trips in waters south of Kyushu.
Catch and oceanographic records from nine trips in Kyushu-Ryukyu waters.

OMURA, YASOHACHI
Development of fishery reviewed; size of fish.

ONO, TOYOKI and FUMIO NAGAYAMA
Effect of autolysis on vitamin A potency during storage; comparison with vitamin A of mackerel.

ONODERA, MATSUJI
Muscle fat and condition factors in fish from South Seas and Japanese waters; length and weight data from 60 specimens; condition factors compared by fish size.

ORANGE, CRAIG J.
Gonad index; size of females at first spawning; areas and time.

ORANGE, CRAIG J. and GORDON C. BROADHEAD
Availability controlled by environmental factors; catch statistics.
ORANGE, CRAIG J., MILNER B. SCHAEFER, and FRED M. LARMIE
1957. Schooling habits of yellowfin tuna (Neothunnus macropterus) and skipjack (Katsuwonus pelamis) in the eastern Pacific Ocean as indicated by pure seine catch records, 1946-1953 [in English and Spanish]. Bull. Inter-Am Trop. Tuna Commn, 2(3) : 81-126.

Seventy-two per cent of catch shown to originate from pure schools; areal and temporal variations noted; catch-per-set data included.

ORCES, GUSTAVO

Specimen from Manta, Ecuador; commercial importance mentioned.

OSHIMA, MASAMITSU

Experience of a live-bait vessel in the South Seas; some observations on skipjack gonads.

OSHIMA, YASUO and TOMOKICHI YOSHIHARA

OSIPOV, V. G.

Brief account of exploratory fishing by a hithoat in NW Pacific in 1956 and 1957, short review (based principally on Japanese literature) of distribution and habitat of Pacific tunas and their fisheries: especially in NW Pacific.


Distribution and abundance in relation to Kuroshio Current.

OSIPOV, V. G., I. V. KIZEVETTER, and A. V. ZHURAVLEV

General account of biology: possibilities for a Soviet fishery; technological data.

OTSU, TAMIO

Incidental catch of skipjack in longline fishery.


OYA, TAKZO and T. TAKAHASHI

Water extracts of skipjack and whole liver tested for their ability to accelerate growth in mice.
PADOA, EMANUELE
   Spawning season in Japanese waters.

PALUMBO, R. F., A. H. SEYMOUR and A. D. WELANDER
   Flesh of a few skipjack tested for radioactivity from tests of nuclear devices near Christmas Island.

PARROTT, ARTHUR W.
   Description; common names.

PHILLIPS, W. J.
   Records of occurrence and distribution.
   Occurrence recorded.
   Classification; synonymy; references.
   Brief description of native fishery.

PHILLIPS, W. J. and E. R. HODGKINSON
   Appearance in the Auckland market.

PROBATOV, A. N.
   Mentioned as an object of live-bait fishery.

QUIBBON
1922. California’s fish-packing industries. Fish Trades Gaz., 40 (2029) : 35.
   Average weight; fishing season.

RADOVICH, JOHN
   Distribution as affected by water temperature.
Raney, Edward C.
Description; distribution; habits; sport fishing techniques.

Reeves, Cora D.
Occurrence recorded.

Reintjes, John W. and Joseph E. King
Found in stomachs of yellowfin tuna.

Research Division, Fisheries Agency of Japan
Data by five-degree areas and months; incidental catches of skipjack included.
Data by 5-degree areas and months; incidental catches included.

Richardson, John
Distribution, synonymy.

Ridgway, George J.
Immunology and serology.
Interspecific differences in sera of various tunas studied by diffusion precipitation analysis.

Robins, J. P.
Explanatory fishing (trailing); apparent preferred temperatures.

Roedel, Phil M.
Description: range; fishery; common names.
Description: range; fishery; common names.
ROEDEL, PHIL M., continued
Tagging techniques; recoveries of tagged fish; migration.
19-34.
Common and scientific names.

ROEDEL, PHIL M., and JOHN E. FITCH
In: J. C. Marr (Ed.) Pacific Tuna Biology Conference—August 14-19, 1961—

RONQUILLO, INOCENCIO A.
1952. Commercial aquatic fauna of the Philippines. II. Vertebrates. In: Philip-
List of commercial species, including K. pelamis.
1953. Food habits of tunas and dolphins based upon the examination of their
stomach contents. Philipp. J. Fish., 2(1) : 71-83.
1963. A contribution to the biology of Philippine tunas [French and Spanish ab-
stracts]. In: Rosa, H., Jr. (Ed.) Proceedings of the World Scientific Meeting on
Biological observations on fish caught during rolling surveys.

ROSA, HORACIO, JR.
1950. Scientific and common names applied to tunas, mackerels and spear fishes
of the world with notes on their geographic distribution. Progress Report on the
Compilation of Scientific and Common Names of Important Food Fishes. Food and

ROSA, H., JR. and T. LAEVASTU
1962. World distribution of tunas and tuna fisheries in relation to environment,
p. 34-35. (Abstract). In: J. C. Marr (Ed.) Pacific Tuna Biology Conference—
(415) : 45 p.
Distribution influenced by oceanographic and topographical features.

ROTHSCHILD, BRIAN J.
Population model for the central and eastern Pacific Ocean.
1965. Hypothesis on the origin of exploited skipjack tuna (Katsuwonus pelamis) in
(512) : 20 p.
1966(1). Skipjack tuna (Katsuwonus pelamis) resources of the trust territory of
Description and history of the fishery.
1966(2). Major changes in the temporal-spatial distribution of catch and effort in
the Japanese longline fleet. In: Thomas A. Manar (Ed.), Proceedings, Governor's
Skipjack included in this study.
1966(3). Preliminary assessment of the yield potential of the skipjack tuna in the
ROTHSCHILD, BRIAN J., continued

ROUGHLEY, T. C.
Occurrence off Australia.
Distribution; description; size of commercially-caught fish.

ROXAS, HILARIO A. and CLARO MARTIN
Records of occurrence.

ROYCE, WILLIAM F.
Found in stomachs of three species of marlin.

ROYCE, W. F. and TAMIO OTSU
Association with bird flocks; scouting for schools of skipjack from vessels and aircraft.
Scouting cruises.

SACHET, MARIE-HELENE
Occurrence off Clipperton Island recorded.

SAIKI, MASAMICHI, K. SHIRAI, S. OHNO and T. MORI

SAITO, ICHIRO
Comprehensive review of biology and fisheries.

SAITO, KANAME
Analysis of density and shape of blood cells; hemoglobin contents; some discussion on relation between these results and ecology.
SAITO, KANAME, continued


Analysis of more than 10 species of fish; includes study of ratio of weight of various hematopoietic organs to body weight.


Analysis of the concentration of salt solution required to cause hemolysis; amount of hemoglobin determined.


The ease of binding between serum proteins of several species of fish and dyes (i.e. methyl orange, bromophenol blue and methylene blue) tested by equilibrium dialysis. paper electrophoretic analysis and spectrophotometry.

SAKAI, MORISABURO and MICHIO UNO


Surveys of fishing effort by Japanese tuna vessels.

SAKAMOTO, ICHITARO


SARDONE, L. T.


General review of fishery; fishing areas.

SASAKI, TAKEKO


Yearly and seasonal variations in fishing conditions related to water temperature.

SASAKI, TAKEKO and ISAKU TAKEHISA


Shift of fishing ground; seasonal sea temperature variation; temperature range of skipjack distribution.

SCHAFFER, MILNER B.


Mixed schools of skipjack and yellowfin tuna.
SCHAEFER, MILNER B., continued
Occurrence of young; management discussed.
Growth; age; spawning.
Occurrence off Peru in waters of the counter current and in tongues of warm water.
History of fishery in the eastern Pacific; status of studies of skipjack and of bait species; research by IATTC.
Studies of eastern Pacific fishery; stocks of skipjack and bait species; research by IATTC.
Review of Pacific fishery.
History of fishery in the eastern Pacific; status of stocks of skipjack; scientific investigations by IATTC.
1959(1). Report on the investigations of the Inter-American Tropical Tuna Com-
SCHAEFER, MILNER B., continued
Fishing areas; condition of the eastern Pacific tuna stocks.


Abundance correlated with some oceanographic conditions.


Previsicks of eastern Pacific fishery; function of Inter-American Tropical Tuna Commission.


Distribution related to temperature.

SCHAEFER, MILNER E., BRUCE M. CHATWIN, and GORDON C. BROADHEAD
Tagging in eastern Pacific; recovery rates; effect of temperature, size of fish and handling or recovery rate; rates of tag recovery on basis of estimating fishing mortality; migrations; dispersion; tagging mortality; loss of tags; estimation of growth.

SCHAEFER, MILNER B., and JOHN C. MARR
Description of young.

SCHAEFER, MILNER B., and CRAIG J. ORANGE
Examination of gonads and ovarian eggs; stages of maturity described; relationship among fish size, weight of gonads, and size of ovarian eggs; areas of spawning; sex ratio.
ANOTATED SKIPJACK BIBLIOGRAPHY

SCHMIDT, P. J. (P. Yu. Shmidt)
Synonymy: preserved specimen described.

SCHULTZ, LEONARD P.

SCHWEIGGER, ERWIN
Distribution off Peru as related to areas, seasons and oceanographic factors; remarks and observations on general biology.
Observations and remarks on biology of skipjack off Peru; distribution as related to oceanographic factors.
Fishing season and areas.

SCOTT, TREVOR D.
Description and distribution.

SEALE, ALVIN
Listed as foot fish; common names.
Records of captures from Galapagos Islands.

SECKEL, GUNTER R.
Association between availability and oceanographic conditions.
Oceanographic conditions used to predict relative success of Hawaiian summer fishery.

SECKEL, GUNTER R., and THOMAS S. AUSTRIN
Relation between oceanographic factors and availability.
SECKEL, GUNTER H. and KENNETH D. WALDRON

Association between fishing success and oceanographic conditions.

SERVENTY, D. L.
Description; distribution; common names.
Distribution in Australian waters; fishing season.

SETTE, OSCAR E.
Report on research in central Pacific; factors affecting distribution and catch; methods of capture.
Fluctuations in catch per unit of effort.

SETTE, O. E. and BRIAN J. ROTHSCCHILD
Summaries of horizontal and vertical distribution; population structure; estimate of potential yield.

SHAPIRO, SIDNEY
Historical review of the fishery; biology; ecology.
General account of the fishery.

SHIBATA, KEISHI
Scouting with fish finders; stomach contents.

SHIBUSAWA, K.
SHINO, SUEO M.


New species of parasitic copepod.


Description of male forms of Caligus kawamae; female forms compared with those of related species.


Description of a parasitic copepod.


External parasites Caligus coryphaenae and C. productus on K. pelamis from NE and NW Pacific.


External parasite Caligus bonito on K. pelamis from eastern Pacific.


Host for two species of Caligus.

SHIMADA, BELL M.


Detailed subject index.


Young skipjack from stomachs of longline-caught marlin, sailfish and yellowfin tuna.


Description of five specimens, table of published records of young from Pacific Ocean.


Longline catches.


Bilboat and purse-seine catches for 1952-55 in the eastern Pacific by one-degree areas; relation between oceanographic conditions and fishery discussed.

SHIMADA, BELL M., and MILNER B. SCHAEFER


History of the fishery; methods of fishing; fishing areas; fluctuations in annual catches; amount of fishing effort; fishing effort and apparent abundance found to be unrelated.
SHIMAMURA, KANAE

Relationship between the average specific gravity of sea water in the fall and next spring, and skipjack catches per boat in the next season in waters south of Japan; catch statistics and effort data for 1912-1926.

SHIMIZU, WATARU

Comparison of chemical components in the muscle of several species of fish.

Comparison of amount of nitrogen in muscles of migratory and non-migratory fishes.

Discussion of relation between chemical composition and taste of several tuna species.

SHIMODA, MOKUCHI

History and present status of Japanese tuna fisheries in tropical regions; summary of exploratory trolling and longline fishing in Indonesian waters; results of longline tuna fishing with mothership; prospects of future tuna fishing industry.

SHIPPEY, HERBERT H.

Distribution and abundance during a poor and a good fishing year compared and discussed.

SHIRAI, KAZUO, M. SAIKI and S. OHNO

Cd^{113m} detected in contaminated skipjack.

SHIRAISHI, YOSHIKO

Catch data by month and by area, marketing research.

SHIZUOKA PREFECTURAL FISHERIES EXPERIMENTAL STATION

Results of 11 exploratory trips by a livebait research boat; fishing discussed in relation to season, water temperature and locality; landing data by month and port.
1932(3). Fish school scouting survey by airplanes, 1930 [in Japanese]. Shizuoka-
SHIZUOKA PREFECTURAL FISHERIES EXPERIMENTAL STATION, continued
Summary of aerial surveys on tuna fishing grounds off eastern Japan; distribution of tuna schools.
Results of 10 exploratory trips by a livebait research boat in waters off eastern Japan; fishing conditions related to water temperature and color.
Summary of aerial surveys on tuna fishing grounds off eastern Japan; distribution of tuna schools.
Results of several exploratory trips by a livebait research boat in waters off eastern Japan; fishing conditions in relation to season, area and water temperature; local testing data by month.
Fishing conditions in waters of southern and eastern Japan, in relation to season, area, water temperature and biting quality; catch statistics.
Summary of aerial surveys on tuna fishing grounds; catch records; distribution of tuna schools.
Results of 10 exploratory trips by a livebait research vessel in waters off eastern and southern Japan; fishing conditions discussed in relation to season and water temperature; landing data by month.
Summary of aerial surveys on tuna fishing grounds; catch records; distribution of tuna schools.
Summary of aerial scouting on tuna fishing grounds off eastern Japan.

SHMIDT, P. YU. (P. J. SCHMIDT)
Brief account of Japanese fishery.
SHOMURA, RICHARD S.
Changes related to depth.

Incidental longline catches.


Experimental fishing with gill-nets.

Field experiments with gill nets.


Review; skipjack included.

SHOMURA, RICHARD S. and GARTH I. MURPHY
Sporadic catches.

SILLIMAN, RALPH P.
History of Hawaiian and eastern Pacific fisheries; history of tuna research.

Estimates derived by the population-simulation method.

SIVASUBRAMANIAM, K.
Variation of catches with longitude.

SMAYDA, THEODORE J.
Relationship between standing crop of zooplankton and catch of skipjack.
SMITH, ROBERT O.
Summarized version of another report by the same author [Smith 1947(2)].

Account of pre-World War II Japanese fishery and a post-war survey.

SMITH, O. R. and M. B. SCHAEFER

SNOGRASS, ROBERT EVANS and EDMUND HEller
Listed from Revillagigedos, Cocos and Galapagos.

SOLDATOV, V. K. and G. I. LINDBERG
Description; distribution.

SOUTH SEAS GOVERNMENT-GENERAL FISHERIES EXPERIMENTAL STATION
Unsuccessful attempts to fish skipjack using a purse-seine with livebait in the Ponape area; possibility of developing fishery discussed.

Results of comprehensive exploratory fishing using trolling gear and livebait; availability of bait fishes investigated.

Data on exploratory fishing by Hakuho-maru, 1925-1929.

Data on exploratory fishing in the South Seas area.

General description of climate and oceanographic conditions, fishing and skipjack distribution in the waters near Ponape Islands, bait fish survey.

1937(6). Investigation of the waters near Truk Islands [in Japanese]. Nanyō-
SOUTH SEAS GOVERNMENT-GENERAL FISHERIES
EXPERIMENTAL STATION, continued


General description of weather, oceanographic and fishing conditions; livebait fisher; data records of exploratory trolling (1930) and livebait fishing for skipjack (1930-1934).


Catch and effort statistics by area and year in the South Seas area, 1922-36: monthly catch statistics for 1933-1937 discussed in relation to monthly mean weight of skipjack; catches and fishing conditions analyzed in relation to water temperature.


Results of exploratory fishing by two research livebait vessels; description of fishing conditions on local banks.


Results of exploratory longline fishing.


Summary of exploratory longline fishing in Indonesian waters; observations of fish schools.


Results of exploratory livebait fishing in Wolai waters; observations of skipjack schools; 100 skipjack tagged.


Results of exploratory livebait fishing; five samples examined for length, weight, sex and condition.


Summary of three exploratory longline cruises.


Results of exploratory longline fishing.

SOUTH SEAS GOVERNMENT-GENERAL FISHERIES SECTION


Tables of catches by species, areas, and year for 1922-1935 in the South Seas.

SPRAGUE, LUCIAN M.

SPRAGUE, LUCIAN M., continued
Subpopulation studies based on blood groups.

SPRAGUE, LUCIAN M. and JAMES R. HOLLOWAY
1962. Studies of the erythrocyte antigens of the skipjack tuna (Katsuwonus pelamis).
Am. Nat., 96(889) : 233-238.
Seraological differentiation of populations in the Central Pacific.

SPRAGUE, LUCIAN M., JAMES R. HOLLOWAY, and LESLIE I. NAKASHIMA
1963. Studies of the erythrocyte antigens of albacore, bigeye, skipjack, and yellowfin
tunas and their use in subpopulation identification [French and Spanish abstracts].
In: Rosa, H., Jr. (Ed.) Proceedings of the World Scientific Meeting on the Biology
of Tunas and Related Species. FAO, Fish. Rep., 3(6) : 1381-1393.
Blood-group systems and blood factors discussed in relation to population structure.

SPRAGUE, LUCIAN M., and LESLIE I. NAKASHIMA
36 (Abstract). In: J. C. Macr (Ed.) Pacific Tuna Biology Conference—August
1962(2). Studies on the erythrocyte antigens of the skipjack tuna (Katsuwonus
pelamis), p. 36-37 (Abstract). In: J. C. Macr (Ed.) Pacific Tuna Biology Conference—August
Blood groups; population studies.

SQUIRE, JAMES L., JR.
(174) : 8 p. 21 charts.
Sport-fishing grounds in Hawaiian waters.

STARKS, EDWIN CHAPIN
1918(1). The mackerel and mackerel-like fishes of California. Calif. Fish Game,
4(3) : 118-129.

STARKS, EDWIN CHAPIN and EARL LEONARD MORRIS
Occurrence recorded.

STEAD, DAVID G.
Description; distribution.
1908. The edible fishes of New South Wales. Department of Fisheries, New South
Wales, Sydney: 123 p.
Description; distribution.

STEINBECK, JOHN and EDWARD F. RICKETTS
1941. Sea of Cortez—A leisurely journal of travel and research with a scientific
appendix comprising materials for a source book on the marine animals of the Pa-
Record of captures.
STRASBURG, DONALD W.
Shark damage to longline-caught tuna.

Response to different kinds of baitfishes; response to various physical and chemical stimuli.

Larval ecology as determined from plankton collections.

Relation of diet on behavior.

STRASBURG, DONALD W. and JOHN C. MARR
Underwater observation on the coloration pattern.

STRASBURG, DONALD W. and H. S. H. YUEN

Methods for behavior studies at sea.

SUDA, AKIRA
Seasonal and geographic distribution of occurrences of young and juvenile; determination of spawning time and nursery areas; identification of young.


Preliminary tagging experiments conducted aboard the "Shinyo-mara" in Micronesian waters, 1957-1959.

SUGIMURA, KEI-I CHIHOH, H. TAIRA, N. HOSHINO, H. EBSAwa and T. NAGAHARA
Six marine species analyzed and compared.

SUN, TSZI-ZHEN
Description of larvae; spawning seasons and areas.
SUYEHIRO, YASUO
   Analysis and comparison of stomach contents of skipjack taken from good-biting and poor-biting schools.
   (English translation by Bureau of Commercial Fisheries, Honolulu, 1960).
   Analysis of biting conditions near Japan in terms of area, migratory behavior, season, weather, time of day and quality and quantity of stomach contents.
   Anatomy of islets of Langerhans.
   Anatomy of digestive system; stomach contents; difference in feeding habits of migratory and non-migratory school.
   Anatomical and cytological description.
   General discussion of ecology, physiology and habitat.

SUZUKI, SHOSUKE and KINGO SUZUKI
   Discussion of technical aspects of setting purse seines around tuna schools.

TACHIKAWA, TAKUITSU
   Catch by prefectures; seasonal shift of fishing grounds; fishing effort by prefecture; economic structure of fishing operations reviewed.
1924. Ocean conditions and fishing conditions in the waters adjacent to Kinkazan. 1. [in Japanese]. Teisui, 3(10) : 45-48.
   Annual catch and effort statistics of Okinawa Prefecture; oceanographic conditions in Ryukyu waters.
   Economic situation discussed; some suggestions for increasing catches; fishing development in tropical waters.

TAIHOKU PROVINCE FISHERIES EXPERIMENTAL STATION
   Results of 14 exploratory fishing trips to Taiwan-Ryukyu waters by a livebait research vessel; general fishing conditions by season; oceanographic conditions; weather; biting; fish size; catch and effort data of provincial fishery, by boat and month.
TAIHOKU PROVINCE FISHERIES EXPERIMENTAL STATION, continued

Results of 24 exploratory fishing trips to Taiwan-Ryukyu waters by a live-bait research vessel: general fishing conditions by season; oceanographic conditions, weather, biting, size of fish; catch and effort data of provincial commercial fishery, by boat and month; fishing related to water temperature, specific gravity and water color.

Results of 24 exploratory fishing trips to Ryukyu waters: fishing conditions by season; oceanographic conditions: weather, biting quality; nature of schools; stomach contents; fish size; maturity; fishing conditions experienced by commercial boats; catch and landing statistics in Taiwan-Ryukyu area.

Summary of 23 exploratory fishing trips by a live bait research vessel in Taiwan-Ryukyu waters; description of seasonal fishing conditions; catch statistics.

Summary of 29 exploratory fishing trips by a live bait research vessel in Taiwan-Ryukyu waters.

Fishing conditions in 1930 in Taiwan-Ryukyu waters in relation to oceanographic conditions, migration and bait supply.

Summary of 15 exploratory fishing trips by a live bait research vessel in Taiwan-Ryukyu waters.

Summary of 12 experimental fishing trips by a live bait research vessel in Taiwan-Ryukyu waters; results of oceanographic studies.

Summary of 15 exploratory fishing trips by a live bait research vessel in Taiwan-Ryukyu waters.

Summary of 10 exploratory fishing trips by a live bait research vessel in Taiwan-Ryukyu waters; relationship between catches and water temperature.

TAKADA, K0JI and U. NISHIMOTO
Abundance and distribution of choline in various organs of skipjack and mackerel.

TAKAHASHI, NISUKE
TAKAHASHI, NISUKE, continued
Wildl. Serv., [56]: 3-15.
Comment and criticism on establishment of Order Plecocei.
1926. On the Plecocei, an order of the Teleostoma established by Prof. Kishinouye.
New Order Plecocei by Kishinouye critically reexamined from anatomical viewpoint.

TAKAMI,
Seasonal skipjack fishing conditions off eastern Japan in relation to water temperature and currents.

TAKAYAMA, I., N. IKEDA and S. ANDO
Seasonal fishing grounds and catches discussed in relation to water temperature; catch records from prefectural research vessels.

TAKAYAMA, ITARO and H. YOSHIDA
Geographic distribution of skipjack fishing effort; description of skipjack fleet; catch and landing data by area and type of gear; description of fishing areas off Japan.

TAKAYAMA, SHIGENE

TAKEDA, SHIGEO

TANAKA, SHIGEHO
1912. Figures and description of the fishes of Japan, including Ryukyu Islands, Bonin Islands, Formosa, Kurile Islands, Korea and Southern Sakhalin [in English and Japanese]. Maruzen Co., Tokyo, 8: 129-144.
Description; notes on behavior and ecology; common names; market value of fishes.
Relation between distribution and water temperature.
Revised version of Tanaka (1912).

TANAKA, SHIGEHO and TOKIHARU ABE
Description and general outline of biology.
TANAKA, SHIGEHO, I. AMEMIYA et al.

TANAKA, YU
Fishing conditions in the Japanese and Mariana waters.

TARANETZ, A. IA.
Classification; distribution.

TAUCHI, MORISABURO
Migratory route in the western Pacific; fishing mortality rate based on body weight, age and tagging data.

TEMMINCK, C. J. and H. SCHLEGEL
Description; compared with description of other authors.

TEMPLE, ALAN
Experimental fishing.

TENISON-WOODS, J. E.
Occurrence recorded.

TERUI, KENZO
Scouting and fishing methods; swimming velocity and other aspects of behavior; migration and population structure in Japanese waters in relation to currents.

TESTER, ALBERT L.

TESTER, ALBERT L. and EUGENE L. NAKAMURA
TESTER, ALBERT L., HEENEY YUEN, and MICHIO TAKATA
Response to artificial bait and liquid attractants.

TESTER, ALBERT L., P. B. VAN WEEL, and JOHN J. NAUGHTON
Trolling for pelagic fishes.

THILENIUS, G.
Fishing methods and school size.

THOMPSON, HAROLD
Distribution; seasonal occurrence.

THOMPSON, WILL F.
Occurrence.
Caught with other fish.
1919(2). The absence of the dolphin fish. Calif. Fish Game, 5(4) : 203.
Seasonal appearance.
Occurrence.

TINKER, SPENCER WILKIE
Description, distribution; common names.

TOGASAWA, YOSHIHISA
Effects of sulf-hydyl reagents on the activity of glycylglycine dipeptidase extracted from skipjack pyloric caeca.
Study of interrelationship between Mg and the enzyme, glycylglycine dipeptidase contained in skipjack pyloric caeca.
TOGASAWA, YOSHIHISA and TEIZO KATSUMATA
Effects of various metal ions on the activity of the glycylglycine dipeptidase extracted from skipjack pyloric caeca.

TOHOKU REGIONAL FISHERIES RESEARCH LABORATORY
Review of live bait fishery in Japanese waters; catch, effort, catch-per-unit-of-effort (CPUE), fishing conditions, occurrence of schools associated with floating objects, biting condition, school size, body, length-weight relationship, age, gonad weight-body length relationship, and morphometric measurements analyzed by area and season; catch statistics and CPUE by half-degree areas and 10-day periods; fishing conditions by area and season in relation to oceanographic conditions.
Review of live bait fishery in Japanese waters; catch, effort, catch-per-unit-of-effort (CPUE), fishing conditions, occurrence of schools associated with floating objects, biting condition, school size, body, length-weight relationship, age, gonad weight-body length relationship, and morphometric measurements analyzed by area and season; catch statistics and CPUE by half-degree areas and 10-day periods; fishing conditions by area and season in relation to oceanographic conditions.
Relation of fishing conditions to currents and water temperature off northern Japan by five-day periods; catch and effort statistics; distribution of various types of schools; short-term predictions of fishing conditions; horizontal and vertical distribution of water temperature.
Review of live bait fishery in Japanese waters; relation of seasonal fishing condition to oceanographic condition by area; catch statistics and catch-per-unit-of-effort by half-degree areas and 10-day periods; catch, effort, fishing conditions, occurrence of schools associated with floating objects, biting conditions, school size, length-weight relationship, size composition, and growth analyzed by time and area.
Relation of fishing conditions to currents and water temperature off northern Japan by five-day periods; catch and effort statistics; distribution of various types of schools; short-term predictions of fishing conditions; horizontal and vertical distribution of water temperature.
Review of live bait fishery in Japanese waters; seasonal fishing condition by area in relation to oceanographic conditions; catch statistics; catch, effort, fishing conditions, occurrence of schools associated with floating objects, biting conditions, school size, size composition, and populations analyzed by time and area.
Review of live bait fishery in Japanese waters; catch, effort, catch-per-unit-of-effort: fishing
TOHOKU REGIONAL FISHERIES RESEARCH LABORATORY, continued

Review of livebait fishery in Japanese waters; catch, effort, catch-per-unit-of-effort; fishing fleet; relation of seasonal changes in fishing grounds and fishing condition to oceanographic conditions; seasonal variation in size composition by areas.

Relation of fishing conditions to currents and water temperature off northern Japan by five-day periods; school types, and their distribution; short-term predictions of fishing conditions; horizontal and vertical distribution of water temperature; length composition by areas.

Review of livebait fishery in Japanese waters; relation of seasonal fishing conditions to oceanographic conditions by area; catch statistics and catch-per-unit-of-effort by half-degree areas and 10-day periods; catch, effort, fishing conditions, occurrence of schools associated with floating objects, biting conditions, school size, length-weight relationship, size composition, and growth; analysis of time and area.

Relation of fishing conditions to currents and water temperature off northern Japan by five-day periods; school types, and their distribution; short-term predictions of fishing conditions, horizontal and vertical distribution of water temperature, length composition by areas.

Catch, effort and catch-per-unit-of-effort statistics of commercial livebait and purse-seine fisheries of Japan, by one-degree squares and ten-day periods; size, composition of catches by month and area; average weight of size classes; distribution of skipjack densities.

TOHOKU REGIONAL FISHERIES RESEARCH LABORATORY
MARINE RESOURCES DIVISION

Summaries of past skipjack research; history of fishery; population structure; age and growth; tagging; relation between biting conditions and stomach contents, biting conditions and types of schools, relation of abundance to oceanographic conditions; geographical, vertical, and seasonal distribution; scouting with echo sounders; methods of predicting fishing conditions.

Relation of fishing conditions to currents and water temperature by five-day periods; catch and effort statistics; distribution of various types of schools; short-term prediction of fishing conditions.

TOHOKU REGIONAL FISHERIES RESEARCH LABORATORY
MARINE RESOURCES DIVISION, continued
Cond. Tohoku Reg. Fish. Res. Lab.), 1-46. (Issued every 5 days and later combined
into one volume).
Relation of fishing conditions to currents and water temperature off northern Japan by 3-day
periods; catch and effort statistics; distribution of various types of schools; short-term pre-
dictions of fishing conditions; horizontal and vertical distribution of water temperature.

TOHYAMA, YUZO, S. TETSUOMOTO, S. FUKUYA and S. YAMADA
10(4) : 153-155.
Analysis of amounts of insulin extracted from Langerhans islets of eight species of fish.

TOKAI UNIVERSITY, FISHERIES RESEARCH LABORATORY
1962. Skipjack resources. The 4th and 5th cruises of Tokai Daigaku-Maru [in
Catches, oceanographic data, general fishing conditions, number, nature and size of fish
schools observed during two trips of research sailboat in waters southeast of Japan; size
composition of sedentary and migratory skipjack; vertical distribution studied by fish finders
during fishing.

TOMINAGA, SEIJIRÔ
Outline of life history; behavior and habitat determined from type of fishing.
1957. Katsuuo—shūsei to gyo hō (Skipjack behavior and fishing methods) [in Ja-
General description of Japanese skipjack fisheries; relation of fishing to oceanographic con-
ditions; migration; abundance; yearly fluctuation; spawning; population structure; effect of
fishing on the population; behavior (migration, schooling, biting, etc.) in relation to fish-
ing methods, etc.
1963. Anatomical sketches of 500 fishes (Gohyaku-shu gyotai kaibō zusetsu) (1)
in Japanese], (Divided into two books as plates and text). Kadekawa-shoten,
Comparative anatomy of fish with special emphasis on feeding habits and anatomy of mouth;
illustrations, ecology, food and behavior compared between species; fishing methods; dis-
tribution, migration and fishing conditions relative to oceanographic conditions; population
size; illustration and description of normal and abnormal specimens.

TOMIYAMA, ICHIRO, T. ABE and T. TOKIOKA
1958. Colored illustrations of animals (Genshoku dōbutsu dai-zukin), Vol. II
Short description; common names; taxonomy; distribution.

UCHIDA, KEITARÔ
1923. On the jumping and flight of fishes and other marine animals [in Japanese].
Discussion of motivation; classification.
1930. Gyo-ru, enkō-ru, tōsaku-ru (Fishes, Cyclostomes and Ostracoderms) [in
Japanese]. In: Iwanami-kōza, Seibutsu-gaku (Iwanami Lecture Series—Biol.), Iwa-
Behavior and ecology.
1966. Sakana inteishō (Common names of fishes) [in Japanese]. Asahi-shimbun-
sha, Tokyo, 223 p. + 33 p.
Also includes classification and distribution in Japanese waters.
UCHIDA, RICHARD N.


UCHIHASHI, KIYOSHI
Anatomy of brain; ecology; fishing methods; food; behavior discussed in relation to the brain.

UDA, MICHTAKA (MITITAKA)
Relation of catch to surface water temperature; annual variation of fishing grounds relative to strength of currents.

Changes in body weight due to growth and exploitation of populations or age groups.

Distribution of schools associated with floating objects and oceanographic conditions; density, biting conditions and catchability analyzed in relation to types of schools and stomach content.

Investigations off northeastern Japan.

Brief discussion of distribution and fishing conditions in relation to oceanographic conditions.

Includes discussion of migratory behavior as inferred from size composition and recovery of one tagged fish.

Relation between early-season and peak catches; catches discussed as related to oceanographic conditions.

Brief discussion on the relation between annual fishing conditions and oceanographic conditions.

Analysis of catches relative to oceanographic conditions.
UDA, MICHTAKA (MITITAKA), continued


1952. On the relation between the variation of the important fisheries conditions and the oceanographical conditions in the adjacent waters of Japan 1. J. Tokyo Univ. Fish., 38(3) : 363-389.


1962(2). Localized concentration of tunas in the eddies along oceanic fronts, p. 39-46 (Abstract). In: J. C. Marr (Ed.) Pacific Tuna Biology Conference—August 14-
UDA, MICHITAKA (MITITAKA), continued
Longterm population fluctuation in relation to oceanographic conditions.
Migration related to ocean currents.
UDA, MICHITAKA and TOSHIYUKI HIRANO
Relationship between distribution and currents: future problems.
UDA, MICHITAKA and MAKOTO ISHINO
Includes an analysis of ocean eddies based on model experiments.
UDA, MITITAKA and JIRO TSUKUSHI
Migration routes and population structure inferred from seasonal variations in fish size.
UDA, MITITAKA and N. WATANABE
UEHARA, SUSUMU
Distribution of fishing grounds in relation to temperature at 200 m.
UEYANAGI, SHOJI
Distribution and abundance of larvae based on material from stomachs of spear-fishes.
UEYANAGI, SHOJI, continued
Swimming behavior; optical acuity.

UEYANAGI, SHOJI and HISAYA WATANABE
Includes descriptions, keys for identification, and size-frequency data.

UI, HOZO
Description; general distribution and fishing near Kii Peninsula.

ULREY, ALBERT B.
Occurrence recorded.

ULREY, ALBERT B. and PAUL O. GREELEY
Common names; synonymy.

ULRICH, HEINZ
Brief account on distribution; common names.

UMALI, AUGUSTIN F.
Includes data on distribution.

UNO, MICHIO
Seasonal changes in fishing grounds compared in relation to oceanographic conditions.

UNO, MICHIO and TUNEO KONAGAYA
Analysis of sounds made by skip-jack during live-bait fishing operation.

VAN CAMPEN, WILVAN G.
Longline catches.
VAN CAMPEN, WILVAN G., continued
Description of vessels; fish distribution; fishing methods.
Experiment in operating Samoan cannery with tunas (including skipjack) caught by Japanese
fishing boats.

VAN CAMPEN, WILVAN G., and EARL E. HOVEN

VAN CLEAVE, HARLEY J.
Skipjack as host.

VAN CLEVE, RICHARD
Report on the research activities and plans for the future.

VAN PEL, H.
1956(1). A survey of fisheries resources in the British Solomon Island Protectorate
with recommendations for their development. South Pacific Commission, Noumea: 32 p. (mimeogr.).
Listed; common names.
Included in fish fauna.
Brief description of existing live-bait fishery.
Economic importance.
Occurrence recorded; common names.

VAN PEL, H. and L. C. DEVAMBEZ
1957. The fisheries industry of French Polynesia. South Pacific Commission,
Noumea: 29 p. (mimeogr.).
Tahitian fishery for skipjack described; some observations from other parts of French
Polynesia.

VESEY-FITZGERALD, BRIAN and FRANCESCA LA MONTE
Occurrence of California; marlin feeding on a school of skipjack.
VILDOSO, AURORA CHIRINOS DE
1958. Clave para la identificación de los peces peruanos de la familia Scombridae.—
Presentación de las principales clasificaciones existentes sobre esta familia [in Spanish].
Key; description; anatomy, phylogeny.

WADE, CHARLES B.
1950(1). Juvenile forms of Neothunnus macrops, Katsuwonus pelamis and
Description of young.

1950(2). Observations on the spawning of Philippine tuna. Fishery Bull. Fish
Study of gonads of troll-caught fish.

Distribution and abundance of larvae caught with plankton nets; ecology of larvae.

WAITE, EDGAR R.
Occurrence recorded.

WALDRON, KENNETH D.
1956. Variation in the occurrence and abundance of skipjack in Hawaiian waters
Environmental factors influencing distribution.

1963. Synopsis of biological data on skipjack Katsuwonus pelamis (Linnaeus) 1758
(Pacific Ocean). In: Rosa, H., Jr. (Ed.) Proceedings of the World Scientific Meeting
on the Biology of Tunas and Related Species. FAO, Fish. Rep. 2(6) : 695-748.
Identity; distribution; biometrics; life history; population; exploitation.

Data summarized in series of charts.

WALDRON, KENNETH D. and JOSEPH E. KING
Study based on analysis of stomach contents.

WALFORD, LIONEL A.
Sacramento (28) : 181 p.
Description; distribution.

1937. Marine game fishes of the Pacific Coast from Alaska to the equator. Sta
Description; general account of distribution and life history.

WALTERS, VLADIMIR
1966. On the dynamics of filter-feeding by the wavyback skipjack (Euthynnus
Position of gill covers during movement.
WANG, I-KANG

Classification; description; distribution.

WARFEL, HERBERT E.

History of fishery; exploration for tuna; description; distribution.

WATANABE, HARUO

Results of experimental fishing by trolling and longlining.

WATANABE, HISAYA

Vertical distribution of young skipjack inferred from their occurrence in stomach contents of tuna and marlin.
Mean weight of skipjack found in stomach contents of tunas and billfishes by area, time, and season.

WATANABE, NOBUO


WATANABE, HISAYA and S. UEYANAGI


WELSH, J. P.

Commercial catch related to availability of bait.
Analysis of stomach contents of commercially-caught fish.
Exploratory fishing using various trolling gear.

WHITEHEAD, S. S.

WHITLEY, G. P.
Caught while trolling.

WILSON, CHARLES BRANCH
Host for a parasitic copepod.

WILSON, PETER T.

WILSON, ROBERT C.
Tagging and tagging techniques.

WILSON, ROBERT C. and THOMAS S. AUSTIN
Exploratory fishing.

WILSON, ROBERT C., EUGENE L. NAKAMURA and HOWARD O YOSHIDA
Exploratory fishing and oceanographic conditions.

WILSON, ROBERT C. and MAURICE O. RINKEL
Exploratory fishing and oceanographic conditions.

YABE, HIROSHI
Abundance and distribution of saury on the skipjack fishing grounds; saury found in stomach contents of skipjack.
Spawning area and season.
1952(2). A study of skipjack spawning in the Satsunan Sea area [in Japanese]. In: Suigangaku no gakkan—Nihon gakujutsu shinkôkai (General Review of Fishery Scı-
YABE, HIROSHI, continued

ence, Japan Association for the Advancement of Science), Tokyo: 182-199.

Monthly variations in ratio of gonad weight to body weight; occurrence of fully-matured eggs in gonads; relation between season of full maturity and fish size; measurements of ovarian eggs; fecundity studies.


Skipjack larvae identified and described; some discussion of skipjack spawning areas.

YABE, HIROSHI, N. ANRAKU, and T. MORI


Description of fishing grounds and season; analysis of food, distribution and other biological features of young tunas.

YABE, HIROSHI and TAKUMI MORI


YABE, HIROSHI and SHOJI UEYANAGI


Tuna larvae collected between 1949 and 1960; description and comparison of larvae of various tunas; geographic, seasonal, and vertical distribution, mainly in western Pacific.


YABE, HIROSHI, SHOJI UEYANAGI and HISAYA WATANABE


Larvae captured by surface and subsurface net hauls.

YABE, HIROSHI, YOICHI YABUTA and SHOJI UEYANAGI


YABUTA, YOICHI


Analysis of seasonal variation in stomach contents; length-frequency data for young skipjack found in stomach.

YAMADA, KINJIRO, H. TOZAWA, K. AMANO and A. TAKASE


1955(2). Studies on the radioactivity in certain pelagic fish—III. Separation and

YAMAGAWA, MAKOTO and TAKESHI ITO

YAMAGUCHI, KAZUO
Skipjack fishery in Japan.

YAMAGUTI, SATYU (YAMAGUCHI, SACHU)
Host for five species of trematodes.
Host for larval cestodes.
Supplementary description of Rhadinorhynchus katsuwonii Harada, 1928.
Katsuwonii listed as one of hosts for Anisakis salaris.
Description of two species of parasitic copepods found on skipjack.
Host for trematodes.
Host for nematodes.
One parasitic species from skipjack reported and described.
Listed as host for 19 species of trematodes.
Host for parasitic copepods.
Listed as host for four species of trematodes.
Listed as host of Nipporhynchus katsuwonii.
YAMAMOTO, SHIGEO
Analysis of anatomy, focus and visual range of skipjack eye.

YAMAMOTO, SHOKICHI
Outline of skipjack fisheries and processing industry.
1940. Discussion of the improvement of the quality of skipjack products made from the tropical skipjack [in Japanese]. Nanyo suisan (So. Sea Fish.), 3(11) : 21-35.
Quality of skipjack from tropical and Japanese waters compared.

YAMANAKA, HAJIME
Summary of past reports on the relationship between fishing conditions and oceanographic conditions in the eastern, central and western Pacific; relationship between pink-ton and concentration of skipjack; possibility of forecasting fishing conditions discussed.

YAMANAKA, HAJIME and YOSHIO KUROHIJI
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YAMANAKA, HAJIME, YOSHIO KUROHIJI and JIRO MORITA
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YAMANAKA, ICHIRO
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Relation of distribution to current system; possibility of new fishery on unexploited population.

YAMASHITA, DANIEL T.
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YAMASHITA, DANIEL T. and KENNETH D. WALDRON
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YAMASHITA, KUSUTARO
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YOSHIDA, HOWARD O.
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YUEN, HEENY S. H.
Measurements based on motion-picture records.

ZHAROV, V. I., IU. L. KARPECHENKO, and G. V. MARTINSHE
Brief account of biology and fishery.

ANONYMOUS
Catches statistics; fishing areas.
ANONYMOUS, continued

1939. The skipjack tuna fisheries [in Japanese]. Kaiyō gyogō (Ocean. Fish.,
Tokyo), 4(3) Yol. 35: 1-42.
Development of fisheries in Japan, Micronesia and Indonesia; outline of fishing areas and
seasons, monthly catches and effort, and fishing conditions near Japan; auxiliary fishing
equipment; results of fish scouting from air; economics of fisheries.

1941(1). A symposium on the investigation of tuna and skipjack spawning grounds
[18]: 1-11)

Summary of knowledge and direction of future studies.

1941(2). Pacific skipjack indigenous to Sulu Sea [in Japanese]. Nanyō suisan
Spawning grounds near Palau.

Rep. U. S. Fish Wildl. Serv., [42]: 7-10.)
Oceanographic observations and experimental longline fishing in 1941.

Review of Japanese and U.S. fishery; possibilities for Australian fishery; distribution in
Australian waters.

10(9): 35-37.
Young collected; collection of young in other parts of the Pacific Ocean mentioned.

10(11): 31-32.
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Distribution.


Observations on schools.


Remarks on size, composition of commercial catches.


1949(4). Pacific Oceanic Fishery Investigations—Hawaiian tuna fishery—July
Fishing conditions.

Fishing conditions; size composition of landed catch.

Fishing conditions.

Captures of fish weighing 75 lbs.
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Sighting of surface school.


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Scouting for surface schools.


Scouting for surface school.


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Tagging cruise.


Scouting for surface schools.


Tests with attractant solutions; oceanographic conditions governing distribution and abundance.


Tagging methods and techniques.
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  Tagging cruise.

1953(11). Pacific Oceanic Fishery Investigations—"Charles H. Gilbert" scouts for
  Scouting for surface schools.

1953(12). Pacific Oceanic Fishery Investigations—skipjack tuna concentrations dis-
covered off Hawaiian Islands by "Charles H. Gilbert" (Cruise 13). Comm Fish.
Rev., 13(10) : 41-42.
  Scouting; experiments with artificial bait.

1953(13). Pacific Oceanic Fishery Investigations—large skipjack tuna concentrations
found in Hawaiian area by "Hugh M. Smith" (Cruise 22). Comm Fish Rev.,
15(11) : 33-34.
  Scouting for surface schools.

1953(14). Suisan nenkan (Year book of fisheries) for 1953 [in japanese]. Suisan-
sha Co., Tokyo.
  Fishing conditions in relation to oceanographic conditions; catch statistics; effort; market
and production trends; market management and special actions related to fishery.

1954(1). Australian tunas—distribution; identification. Fish. News, Canberra,
13(2) : 5-8. (Translation into Japanese by T. Yamamoto. Tuna Fishg, 1954, No. 8).

1954(2). Pacific Oceanic Fishery Investigations—skipjack tuna found abundant in
  Scouting cruise.

1954(3). Pacific Oceanic Fishery Investigations—skipjack tuna abundance at season-
al low in Hawaiian waters reports the "Hugh M. Smith" (Cruise 24). Comm
Fish Rev., 16(2) : 22.
  Scouting cruise; experiments with artificial bait.

1954(4). Pacific Oceanic Fishery Investigations—two-vessel expedition catches 100
  Exploratory long-lining.

1954(5). Pacific Oceanic Fishery Investigations—albacore tuna discovered north of
Hawaii by "John R. Manning" (Cruise 19). Comm Fish Rev., 16(5) : 33-34.
  Long-line catches.

1954(6). Pacific Oceanic Fishery Investigations—Hawaiian skipjack tuna distribu-
tion studied. Comm Fish Rev., 16(5) : 35.
  Scouting methods.

1954(7). California—tuna tagged by clipper "Saratoga" (Cruise C-1-54). Comm
Fish Rev., 16(6) : 9.
  Tagging cruise.

1954(8). Pacific Oceanic Fishery Investigations—good tuna fishing reported and
new long-line gear tested in Line Islands area by "John R. Manning" (Cruise 20).
Comm Fish Rev., 16(8) : 32-33.
  Exploratory long-lining; incidental catches.

1954(9). Pacific Oceanic Fishery Investigations—tuna schools plentiful in Hau-
awaiian area reports "Hugh M. Smith" (Cruise 26). Comm Fish Rev., 16(8) : 33-34.
  Scouting cruise.
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Capture of post-larvae.

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Tagging cruise.

1955(9). Pacific Oceanic Fishery Investigations—"Hugh M. Smith" reports alba-
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core tuna scarce in May north and northeast of Hawaii (Cruise 29). Comm Fish.
Rev., 17(9) : 68-69.
Caught on longline.
1955(16). Pacific Oceanic Fishery Investigations—first tagged tuna recoveries in
1955(17). Pacific Oceanic Fishery Investigations—more skipjack tuna tagged by
Tagging and tagging techniques (electroanesthesia).
1955(12). Pacific Oceanic Fishery Investigations—good yellowfin tuna catches near
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1955(13). Pacific Oceanic Fishery Investigations—skipjack tagging cruise by
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1955(14). Pacific Oceanic Fishery Investigations—new albacore grounds located by
Scouting (trailing).
1955(15). Pacific Oceanic Fishery Investigations—North Pacific oceanographic
Scouting (trailing).
1955(16). Pacific Oceanic Fishery Investigations—more tagged tuna recovered in
1955(17). Pacific Oceanic Fishery Investigations—tagged skipjack tuna recovered
1955(18). California—tuna tagged off west coast of Mexico by "Southern Pacific"
Tagging cruise.
sha Co., Tokyo, ca. 800 p.
Fishing conditions in relation to oceanographic conditions; catch statistics; effort; market
and production trends; market management and special actions related to fishery.
1956(1). Pacific Oceanic Fishery Investigations—albacore tuna survey in North
Incidental longline catch.
1956(2). Pacific Oceanic Fishery Investigations—skipjack tuna-scouting trip com-
1956(3). Pacific Oceanic Fishery Investigations—fertility of eastern tropical Pacific
Scouting for surface schools.
1956(4). Pacific Oceanic Fishery Investigations—tagged tuna recoveries indicate
1956(5). Pacific Oceanic Fishery Investigations—sonic fish finder used by "Charles
Scouting for tuna: echolocating apparatus, trolling, longlining.
1956(6). Pacific Oceanic Fishery Investigations—yellowfin tuna abundance studied
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Exploratory fishing.


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Tagging and exploratory fishing.


Tagging and tagging techniques.


Report on research activities.

1957(9). Discovery of 'Skipjack Hole' aids large-scale tuna tagging in Hawaiian waters. Comm Fish. Rev., 19(9) : 46-47.

Discovery of permanent congregation of fish.


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Tagging in area of aggregation.


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Studies of environment in area of aggregation.


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Experimental fishing with gill nets.


Scouting for schools during an oceanographic cruise.


Fishing conditions in relation to oceanographic conditions; catch statistics; effort; market and production trends; market management and special actions related to fishery.

1961(12). Katsu to maguro (Skipjack and tuna). Japanese Federation of Tuna Fishermen's Co-operative Association and Japan Tuna Fishermen's Federation, Tokyo, 43 p.

Outline of Japanese tuna fisheries; catch and effort data.


Catch statistics; size composition of catch.


Catch statistics, including catch per successful trip; size composition of catch.


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Sighted from a raft equipped for underwater observations.


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Behavior studies of feeding schools; collecting of skipjack for sea-shore aquaria.

1963(3). Seasonal availability of Hawaiian skipjack tuna may be predicted from studies of oceanographic climate. Commn Fish. Rev., 25(2) : 23.

Predicting availability based on oceanographic and meteorological conditions.


Plans for an exploratory fishing cruise.


Experiments with trained captive fish.


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1963(8). Central Pacific Fisheries Investigations—predictions on abundance of sum-
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   Aviation logs and number, location, size, time, etc. of schools of fish and marine mammals observed during the flights, northeast of Japan.
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Okinawa Pref. Fish. Exp. Stat., 1943
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Orange, Schaefer and Larmie, 1957
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Tahoku Pref. Fish. Exp. Stat., 1927
(1), (2); 1928, 1929, 1930, 1931,
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Tohoku Reg. Fish. Res. Lab., 1955,
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(6), (7), (8), 1952(1), (2), (3),
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(8), (11), (12), (13), 1954(2),
(3), (4), (5), (6), (7), (8), (9),
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(5), (7), (8), (9), (10), (12),
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(4), (5), (6), (7), (8),
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(4), (5), (6), (7), (8),
(9), (10); 1963(1), (2), (3), (4), (5),
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(6), (7), (8), (9), (10), 1966(3),
(7), (10), (12), (13), (15),
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(7), (10), (11), (12), (16), (18)
Higashi and Hirai, 1948
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(15); 1958(27); 1959(21); 1960
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(14); 1964(12); 1965(22); 1966
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Angot, 1959
Berdegue, 1960
Blackburn and Tubb, 1950
Brandhorst, 1965
Broadhead and Barrett, 1964
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Conner, 1929
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Filler, Jarvis and Lobell, 1943
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Gutierrez, 1965
Hennemann, 1959(1)
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Iwasaki, 1966
June, 1951(1), (2)
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Kawai, 1939
Kawai and Sasaki, 1962
Kawasaki, 1955(1), (2); 1957, 1958,
1963(2); 1965(1); 1966
Kawasaki and Anraku, 1962
Kawasaki and Naganuma, 1959
Kawasaki, Yao, Anraku, Naganuma
and Asano, 1962
Kimura, 1941, 1942, 1949, 1954
Kitano, 1953
Koyasu, 1931(1)
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MacInnes, n. d.
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Masuda, 1963
Matsubara, 1942
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Morita, 1960
Murayama and Okura, 1930
Nakamura, 1939(1)
Okada, 1955
Okamur and Marukawa, 1909
Omura, 1916
Osinov, 1960
Osinov, Kizyevet and Zhuravlev, 1964
Probatov, 1958
Ronquillo, 1963
Rothshild, 1965
Royce and Otsu, 1954, 1955
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Sardone, 1957
Schaefer, 1955(2), (3); 1956, 1957
(2); 1959(2)
Schaefer, Chatwin and Broadhead, 1961
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Serventy, 1941(2)
Sette and Rothshild, 1966
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Shimada, 1958
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Smith, 1947(1), (2)
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Squire, 1963
Takayama and Yoshida, 1933
Thompson, 1943
Tohoku Reg. Fish. Res. Lab., 1955,
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1962(2); 1963(2)
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Uchida, R. N., 1966
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Uehara, 1962
Waldron, 1963
Whitehead, 1929
Yabe, Anraku and Mori, 1953
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Yamanaka, 1962
Yamashita, 1958
Yogi, 1914 (1), (2)
Yonezawa, 1930
Anonymous, 1929, 1939, 1931 (1); 1953 (13); 1956 (16); 1960 (6); 1961 (12); 1963 (1); 1965 (7); (19), (24); 1966 (9), (14), (16)

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Amano, 1965
Broadhead and Barrett, 1964
Commission to Popularize the Knowledge of Fishing Grounds, 1958, 1964, 1965
Formosa Gov.-Gen, Fish, Exp. Stat., 1930, 1931, 1932, 1933, 1940
Fujisaki, 1934
Fukada and Iizuka, 1959 (1)
Imamura, 1949
Imp. Fish. Inst., 1924 (1), (2), (3), (4), (6); 1925 (1), (2), (3); 1926 (1), (2), (3), (4); 1927 (1), (2), (3), (4); 1928, 1929 (1), (2); 1930 (1), (2), (3), (4), (5); 1931 (2), (3), (4), 1932 (1), (2), (3); 1933 (1), (2), (3); 1934 (1), (2), (3); 1935 (1), (2), (3); 1936 (1), (2), (3), (4); 1937 (1), (2), (4), (5); 1938 (1), (2), (4), (5); 1939 (1), (2); 1940 (1), (2), (3), (4); 1941 (1), (2), (3), (4); 1942 (1), (2), (3), (4); 1943 (1), (2), (3), (4)
Inanumi, 1942 (1), (4)
Inoue, 1961, 1965 (1)
Kagoshima Pref. Fish. Exp. Stat., 1925, 1926 (1); 1927, 1928 (1); 1929, 1930, 1931, 1932, 1933, 1934, 1935 (1), (2), (3); 1936 (1); 1937 (1); 1938 (1), (2); 1939 (1); 1940 (1); 1941 (1)
Kawaguchi, 1963
Kawai, 1955, 1959
Kawai and Sasaki, 1962
Kawasaki, 1955 (1), (2); 1958, 1963 (2); 1964, 1965 (1)
Kawasaki and Anraku, 1962
Kawasaki, Yao, Anraku, Naganuma and Aasano, 1962
Kimura, 1941, 1949, 1954
Kobayashi, n. d.
Kochi Pref. Fish. Exp. Stat., 1923, 1924
Kubo, 1966
Kuroda, 1955
Marr and Tester, 1966
Marukawa, 1940
Masuda, 1963
Matsubara and Ochiai, 1965
Matsumoto, 1937
Mizus, 1941
Murayama and Okura, 1952
Nakamura Research Staff, 1949
Nita Pref. Fish. Exp. Stat., 1925, 1926
Okajima, 1937 (1)
Okinawa Pref. Fish. Exp. Stat., 1929, 1931 (1); 1943
Omoroi and Fukuda, 1938
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Osirov, 1960
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Shimoda, 1937
Shizuoka Pref. Fish. Exp. Stat., 1932 (1), (2); 1935 (1); 1936 (1), (2); 1937 (1)
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Suyeiro, 1938
Tachikawa, 1921, 1952 (1)
Taihoku Prov. Fish. Exp. Stat., 1927 (1), (2); 1931
Takami, 1950
Takarayama, Ikeda and Ando, 1934
Terui, 1919
Tohoku Reg. Fish. Res. Lab., 1955, 1957, 1959 (1), (2); 1960 (1), (2); 1961 (1), (2); 1962 (1), (2); 1963 (1)
Tokai Univ. Fish. Res. Lab., 1962
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Uda and Tsukushi, 1934
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Yamanaka, 1962
Yao, 1966
Yonezawa, 1950
Anonymous, 1939, 1941(1); 1953 (14); 1954(15); 1955(19); 1956 (22); 1957(15); 1958(27); 1959 (21); 1960(16); 1961(111); 1962 (18); 1963(14); 1964(12); 1965 (22), (23); 1966(2), (17)

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Commission to Popularize the Knowledge of Fishing Grounds, 1958, 1964, 1965
Fujisaki, 1934
Fukuda and Iizuka, 1939(1)
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Imamura, 1949
Imp. Fish. Inst., 1924(1), (2), (3), (4), (5), (6); 1925(1), (2), (3); 1926(1), (2), (3), (4), 1927(1), (2), (3), (4); 1928, 1929(1), (2); 1930(1), (2), (3), (4), (5), 1931 (2), (3), (4); 1932(1), (2), (3); 1933(1), (2), (3), 1934(1), (2), (3), (4); 1935(1), (3), (4); 1936(1), (3), (4); 1937(1), (2), (4), (5); 1938(1), (2), (4), (5); 1939 (1), (2), 1940(1), (2), (3), (4); 1941(1), (2), (3), (4); 1942(1), (2), (3), (4); 1943(1), (2), (3), (4)
Inoue, 1961
Iwashiki, 1966
Kagoshima Pref. Fish. Exp. Stat., 1925, 1926(1); 1927, 1928(1), (2); 1929, 1930, 1931, 1932, 1933, 1934, 1935(1); 1936(1); 1937(1); 1938 (1); 1939(1); 1940(1); 1941(1)
Kawai, 1955, 1959
Kawai and Sasaki, 1962
Kawasaki, 1932, 1955(1), (2); 1958, 1963(2); 1964, 1965(1)
Kawasaki and Anraku, 1962
Kawasaki and Naganuma, 1959
Kawasaki, Yao, Anraku, Naganuma and Asano, 1962
Kochi Pref. Fish. Exp. Stat., 1923, 1924
Kohama, 1914
Koyasu, 1931(1), (2)
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Kuroda, 1955, 1965
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Miura, 1941
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Nakamura Research Staff, 1949
Oita Pref. Fish. Exp. Stat., 1926
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Saito, I., 1960
Sasaki, 1939
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1962(18); 1963(14); 1964(12); 1965(22), (24), (27); 1966(2), (17)

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Kagoshima Pref. Fish. Exp. Stat., 1927, 1928(1); 1931, 1937(1), (3)
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Taihoku Prov. Fish. Exp. Stat., 1927(1), (2); 1928, 1931
Takayama, Ikeda and Ando, 1934
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Yamashita, 1958
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(10); 1957(8); 1958(13); 1961 
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Fisheries Agency, Japan, 1963
Formosa Gov.-Gen. Fish. Exp. Stat., 
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Hotta, 1953
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Hotta and Ogawa, 1953, 1955
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Illingsworth, 1961
Imai, 1950
Imamura, 1949
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Kimura, 1950
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Miura, 1941
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Nakamura, 1962(1), (2)
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Nakamura Research Staff, 1949
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Nakamura, 1939(1)
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Ronquillo, 1953
Saito, 1950
Schaefer, 1955(2); 1957(1); 1958(1); 
1959(1); 1960, 1961(1); 1962
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Uchihashi, 1953
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Yamanaka, 1962
Yamasita, 1966
Yanagi, 1911
Yamase, 1953
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Yokota, Torigama, Kanai and Nomura, 1961
Yonezawa, 1950
Yuen, 1959
Zhavor, Karpechenko and Martinsen, 1961
Anonymous, 1953(13); 1957(8); 1958(3), (10), (13), (17), (19); 1960(7); 1965(3); 1966(19)

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Angot, 1959, 1960
Austen, 1957
Baessler, 1905
Bleeke, 1854, 1860(1)
Broek and Marr, 1960
Broeka and Riffenburgh, 1960
Chabouis and Chabouis, n. d.
Curtis, 1938
Cushing, 1964
Dick, 1964
Dung and Royce, 1953
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Legrand, 1930
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Matsumoto, 1958, 1961
Murphy and Ikhera, 1955
Nakamura, E. L., 1965
Nakamura and Matsumoto, 1966
Nordhoff, 1927, 1930
Phillipps, 1956
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Sprague, 1963
Sprague and Holloway, 1962
Sprague, Holloway and Nakashima, 1963
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Van Campen, 1953
van Pel and Devanber, 1957
Waldron, 1964
Wilson and Austin, 1957, 1959
Wilson, Nakamura and Yoshida, 1958
Wilson and Rinkel, 1957
Yoshida, 1960, 1966(2)
Anonymous, 1956(3), (18), (19), (21); 1957(2), (3), (8); 1958(6), (8), (12), (13), (16), (17), (19); 1959(9); 1960(1), (8); 1961(3), (4); 1962(4), (8), (14); 1963(1); 1964(2)

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Aikawa, 1941, 1942, 1949
Aikawa and Kato, 1938
Bell, 1964
Bonham, 1946
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Brock and Marr, 1960
Gosline and Brock, 1960
Hamre, 1963
Hayashi, 1959
Herald, 1961
Imamura, 1949
Kagoshima Pref. Fish. Exp. Stat., 1926(1)
Kawasaki, 1955(1), (2); 1957, 1960, 1963(1); 1964, 1965(1)
Kishinouye, 1923, 1924
Kubo, 1966
Magnuson, 1963(1)
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Nakamura, 1959, 1962(1)
Okamoto, 1940
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Schaefer, 1951, 1960, 1961(1)
Schaefer, Chatwin and Broadhead, 1961
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Tomimaga, 1943, 1957, 1965
Waldron, 1963
Walford, 1937
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Yamashita and Waldron, 1959
Yao, 1965
Yokota, Toriyama, Kanai and Nomura, 1961
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Barkley, 1963
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Brock and Marr, 1960
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Cabbat and Standal, 1964
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Hennemuth, 1950(1)
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Herre, 1940
Hida, 1966
Higgins, 1966
Hosaka, 1944
Howard, 1963
Iversen, 1962
Iversen and Yoshida, 1957
Jenkins, 1903
Jordan, 1925
Jordan and Evermann, 1905
Jordan and Jordan, 1922
Jordan and Lovekin, 1926
June, 1950, 1951(1), (2)
Kamimura and Honma, 1963
Kask, 1964
Kawasaki, 1964, 1965(1); 1966
King and Wilson, 1957
Mañar, 1966(1), (2), (3)
Marr, 1963(1)
Marr and Tester, 1966
Masuda, 1963
Matsubara and Ochiai, 1965
Morgan, 1956
Murphy and Ikehara, 1955
Murphy and Niska, 1955
Murphy and Shimura, 1953(1)
Murphy, Waldron and Seckel, 1960
Nakamuta, 1965
Otsu, 1954, 1965
Royce and Otsu, 1954, 1955
Schaefer, 1951, 1957, 1963(1); 1966
Seckel, 1963, 1964
Seckel and Austin, 1962
Seckel and Waldron, 1960
Sette, 1954
Sette and Rothschild, 1966
Shippen, 1961
Shimura, 1959, 1963(1), (2), (3);
1964, 1966
Shimura and Murphy, 1955
Silliman, 1966(1)
Smith and Schaefer, 1949
Sprague, 1963
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Squire, 1963
Strasburg, 1959, 1960, 1961
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Sun', 1960
Tester, 1952
Tester and Nakamura, 1957
Tester, van Weel and Naughton, 1955
Tinker, 1944
Tominaga, 1957
Uchida, R., N., 1961, 1966
Uda, 1963(2)
Vesey-Fitzgerald and La Monte, 1949
Waldron, 1936, 1963, 1964
Walters, 1966
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Yamashita, 1958
Yamashita and Waldron, 1958, 1959
Yoshida, 1966(1), (2)
Yuen, 1959, 1963, 1966
Anonymous, 1948(2), (3), (4); 1949
(1), (2), (4), (5), (6), 1950(3),
(6), (9); 1951(4), (5), (6), (7), (8); 1952(1), (2), (3); 1953(1),
(2), (3), (4), (6), (7), (8), (11),
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(12), (13); 1954(2), (3), (5), (6), (9), (12), (13); 1955(3), (3), (7), (9), (10), (11), (13), (14), (15), (16), (17); 1956(1), (2), (4), (7), (10), (11), (12), (14), (15), (19); 1957(1), (5), (6), (7), (8), (9), (11), (12), (13), (14); 1958(2), (3), (4), (5), (7), (9), (14), (15), (18), (19), (20), (21), (23), (26); 1959(2), (3), (6), (7), (8), (10), (12), (13), (15), (16), (17), (18), (19), (20); 1960(2), (3), (7), (8), (10), (11), (12), (13), (14); 1961(3), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17); 1963(1), (2), (3), (4), (6), (7), (8), (9), (10), (12), (1964(4), (5), (6), (8), (9), (10), (11), (12), (13), (14), (15), (17), (18), (19), (21); 1965(7), (19), (11), (12), (17), (18)

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Brock, 1965
Brock and Mar, 1960
Cushing, 1952(1), (2); 1953, 1964
Cushing and Durrill, 1957
Fujii, 1953(1), (2)
Fujino and Sprague, 1966
Kawasaki, 1965(1); 1966
Manar, 1966(1), (3)
Mar, 1962, 1963(1)
Marr and Tester, 1966
Otsu, 1965
Ridgway, 1962(1), (2)
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Schaefer, 1961(1); 1962(1); 1963(1)
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Sprague and Holloway, 1962
Sprague, Holloway and Nakashima, 1963
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Waldron, 1963
Anonymous, 1958(19); 1960(1), (3); 1961(3), (4); 1962(8), (10); 1963(1), (8); 1964(8); 1965(1), (3), (6), (8), (12); 1966(8)

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Bleeker, 1851, 1856, 1860(2); 1862, 1865
Cleaver and Shimada, 1950
Delsman and Hardenburg, 1934
Herre, 1940
Imp. Fish. Inst., 1938(3)
Kagoshima Pref. Fish. Exp. Stat., 1928(2); 1935(2), (3); 1936(2); 1937(2); 1938(2); 1939(2); 1940(2); 1941(1), (2)
Kawasaki, 1965(1)
Kubo, 1966
Matsubara, 1942
Matsumoto, 1966(3)
Miura, 1941
Nakamura, 1959
Obata, 1940
Shimoda, 1937
South Seas Gov.-Gen. Fish. Exp. Stat., 1939(3)
Tominaga, 1957
Anonymous, 1939

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Bourgeois, 1965
Imp. Fish. Inst., 1951(1)
Okajima, 1957(2)
Sette, 1954
Yamana, 1962
Anonymous, 1958(19)

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Aikawa, 1933, 1937, 1941, 1942, 1949
Anano, 1965
Anraku and Kawasaki, 1966
Bleeker, 1840, 1860(1); 1879
Brock, 1965
Cleaver and Shimada, 1950
Commission to Popularize the Knowledge of Fishing Grounds, 1958, 1964, 1965
Doumenge, 1965
Dung and Royce, 1953
Fujita, 1902
Fujita and Wakiya, 1915
Fukuda and Iizuka, 1959(1), (2)
Fushimi, 1953
Godsil and Byers, 1944
Goodwin, 1955
Harada, 1928
Hayashi, 1959
Hela and Laevasu, 1961, n. d.
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Herre, 1940
Higgins, 1966
Higashi and Yasuda, 1961
Hornell, 1930
Hotta, 1960
Hotta, Fukushima, Odate and Aizawa, 1961
Hotta, Kariya and Ogawa, 1959
Hotta and Ogawa, 1953, 1955
Howard, 1963
Igeta, 1955
Imai, 1950
Imamura, 1949
Imp. Fish. Inst., 1924(1), (2), (3), (4), (5), (6); 1925(1), (2), (3); 1926(1), (2), (3), (4); 1927(1), (2), (3), (4); 1928, 1929(1), (2); 1930(1), (2), (3), (4), (5); 1931(1), (2), (3), (4); 1932(1), (2), (3), (4); 1933(1), (2), (3), (4); 1934(1), (2), (3), (4); 1935(1), (2), (3), (4); 1936(1), (2), (3), (4); 1937(1), (2), (3), (4); 1938(1), (2), (3), (4); 1939(1), (2), (3), (4); 1940(1), (2), (3), (4); 1941(1), (2), (3), (4); 1942(1), (2), (3), (4); 1943(1), (2), (3), (4); 1944(1), (2), (3), (4)

Inaba, 1928
Inoue, 1959, 1961, 1965(1), (2)
Inoue, Amano and Iwasaki, 1963, 1966
Ishii, 1935
Ishii and Sawada, 1938
Ishikawa, et al., 1931
Iversen, 1962
Iwasaki, 1966
Jordan and Hubbs, 1925
Jordan, Tanaka and Snyder, 1913
Jouan, 1867
Kagoshima Pref. Fish. Exp. Stat., 1925, 1926(1), (2); 1927, 1928(1); 1929, 1930, 1931, 1932, 1933, 1934, 1935(1); 1936(1); 1937(1), (2), 1938(1); 1939(1); 1940(1); 1941(1)
Kamimura, 1966
Kineko, 1952
Kishi, 1952
Kitsub, 1921
Kawaguchi, 1963
Kawai, 1955, 1959, 1963
Kawai and Sasaki, 1962
Kawasaki, 1953(1), (2); 1957, 1958, 1959, 1960, 1963(1), (2); 1964, 1965(1), (2); 1966
Kawasaki and Asano, 1962
Kawasaki and Nakanuma, 1959, 1961
Kawasaki, Yao, Anraku, Nakanuma and Asano, 1962
Kimura, Iwasita and Hattori, 1952
Kishinouye, 1894, 1895, 1919(1); 1922(1)
Kitahara and Shinmura, 1912
Kitano, 1953
Kobayashi, n. d.
Kochi Pref. Fish. Exp. Stat., 1923, 1924
Kohama, 1914
Kozumi, 1935
Koyasu, 1931(1), (2)
Kubo, 1966
Kuroda, 1955, 1959, 1965
Lindberg, 1947
Maeda, 1957
Manar, 1966(1), (2)
Marr and Tester, 1966
Manukawa, 1921
Masuda, 1963
Matsubara, 1891, 1942
Matsubara and Ochiai, 1965
Matsubara, Ochiai and Iwai, 1965
Matsumoto, 1966(3)
Metelkin, 1957
Mito, 1961
Miyama and Oshikawa, 1958
Miyamoto, 1952
Molteno, 1948
Morgan, 1956
Morita, 1959, 1960
Murayama and Okura, 1950, 1952
Nakamura, 1954, 1959, 1965
Nakamura and Uchiyama, 1966
Nakamura Research Staff, 1949
Nishikawa, 1934, 1965
Oita Pref. Fish. Exp. Stat., 1925, 1926
Okada, 1926, 1955
Okada, Uchida and Matsubara, 1935
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Okamoto, 1940
Okamura and Marukawa, 1909
Okinawa Pref. Fish. Exp. Stat., 1929,
  1931(1), (2); 1940, 1943
Omori and Fukuda, 1938
Omori and Kawabe, 1937(1), (2)
Onuma, 1916
Onodera, 1941
Osipov, Kizevetter and Zhuravlev, 1964
Padou, 1956
Probator, 1958
Richardson, 1846
Saito, 1960
Sakai and Uno, 1940
Sasaki, 1939
Sasaki and Takehisa, 1932
Schaefer, 1955(3)
Schmidt, 1931
Shapiro, 1948(1), (2)
Shibukawa, 1932
Shino, 1952, 1954, 1959(1)
Shimamura, 1927
Shizuoka Pref. Fish. Exp. Stat., 1932
  (1), (2), (3); 1935(1), (2);
  1936(1), (2), (3); 1937(1), (2);
  1938
Shiraishi, 1941
Shmidt, 1948
Shomura, 1966
Soldatov and Lindberg, 1930
Suda, 1933, 1961(1)
Sun, 1950
Suyehiro, 1936, 1938, 1941, 1942
Suzuki and Suzuki, 1959
Tachikawa, 1921, 1924
Takanami, 1950
Takayama, Ikeda and Ando, 1934
Takayama and Yoshida, 1933
Takeda, 1941
Tanaka, 1912, 1926, 1931, 1951, 1966
Tanaka and Abe, 1955
Tanaka, Amemiya et al., 1933
Taranetz, 1937
Tauchi, 1943
Temminck and Schlegel, 1850
Terui, 1919
Tohoku Reg. Fish. Res. Lab., 1955,
  1957, 1959(1), (2); 1960(1), (2);
  1961(1), (2); 1962(1), (2); 1963
  (7), (2)
  Div., 1952, 1955, 1957
Tokai Univ. Fish. Res. Lab., 1962
Tomimaga, 1943, 1957, 1965
Tomiyama, Abe and Tokioka, 1958
Uchida, K., 1966
Uda, 1951, 1952, 1933, 1935(1), (2);
  1936, 1938(1), (2); 1939, 1940(1)
  (2), (3); 1941, 1948, 1952, 1953
  (7), (2); 1956(1), (2); 1957,
  1961, 1962(1), (2); 1963
Uda and Ishino, 1958
Uda and Tsukushi, 1954
Uda and Watanabe, 1938
Uchimura, 1962
Ud, 1929
Uno, 1965
Uno and Konagaya, 1960
Walford, 1937
Yabe, 1951, 1954(1), (2)
Yabe, Anraku and Mori, 1953
Yabe and Mori, 1950
Yabe and Ueyamagi, 1962(1)
Yabuta, 1953
Yamaguchi, 1942
Yamaguti, 1934(1), (2); 1935(1);
  (2), (3)
Yamamoto, 1923
Yamanaka, 1950, 1962, 1966
Yanagi, 1911
Yao, 1935, 1962, 1966
Yokota, Toriyama, Kanai and
  Nomura, 1961
Yonezawa, 1950
Yoshida, 1966(1), (2)
Anonymous, 1939, 1953(14); 1954
  (13); 1955(19); 1956(22); 1957
  (15); 1958(27); 1959(21); 1960
  (15), (16); 1961 (11), (12); 1962
  (18); 1963(14); 1964(12); 1965
  (22), (25), (26); 1966(2), (16).
  (17); n. d. (2), (3)

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Brock, 1949
Delaman and Hardenburg, 1934
Fraser-Brunner, 1950
Godsil, 1945
Goshie and Brock, 1960
Jordan and Evermann, 1905
Jordan and Hubbs, 1925
Kishinouye, 1923
Kitahara, 1897
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Kubo, 1966
Matsubara, 1955
McCulloch, 1922
McKenzie, 1961
Nakamura and Kikawa, 1966
Okada and Matsubara, 1938
Sverdrup, 1941(1)
Taranetz, 1937
Ueyanagi and Watanabe, 1964
Vildos, 1958
Watanabe and Ueyanagi, 1962
Yabe, Yabuta and Ueyanagi, 1963

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Aikawa, 1937, 1941, 1949
Aikawa and Kato, 1938
Bonham, 1946
Chatwin, 1959
Formosa Gov.-Gen. Fish. Exp. Stat., 1940
Hennemuth, 1959(2)
Higashi, 1942(2)
Ikebe and Matsumoto, 1937
Kagoshima Pref. Fish. Exp. Stat., 1934,
1935(1); 1936(1); 1937(1); 1938(1), (2), 1940(1); 1941(1)
Kawasaki, 1952, 1963(1); 1965(1)
Kubo, 1966
Kubo and Yoshiwara, 1957
Manar, 1966(3)
Masuda, 1963
Mie Pref. Fish. Exp. Stat., 1955, 1956,
1957
Nakamura and Uchiyama, 1966
Nakamura Research Staff, 1949
Okamoto, 1940
Onoda, 1941
Ronquillo, 1963
Saito, I., 1950
Schaefer, 1960
South Seas Gov.-Gen. Fish. Exp. Stat.,
1930(3)
Tester and Nakamura, 1957
Tohoku Reg. Fish. Res. Lab., 1955,
1957, 1959(2); 1963(2)
Tokai Univ. Fish. Res. Lab., 1962
Tominaga, 1957
Uda, 1941
Yabe, 1954(2)
Yabe, Anraku and Mori, 1955
Yamamoto, 1940
Yamanaka, 1950

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Aikawa, 1933, 1941, 1942, 1949
Alverson, 1939, 1950, 1965(2)
Amano, 1965
Angot, 1959, 1960
Anraku and Kawasaki, 1955
Austin, 1957
Barrett and Connor, 1952, 1964
Bini, 1954
Blackburn and Rayner, 1951
Bourgois, 1965
Brookhead and Barrett, 1964
Brookhead and Marshall, 1960
Brookhead and Orange, 1960
Brook and Marr, 1960
Caikins, 1961, 1963
Chapman, 1946
Cleaver and Shimada, 1950
Commission to Popularize the Knowledge of Fishing Grounds, 1958,
1964, 1965
Demantay, 1940
Eckles, 1949(1)
Fink, 1965(2)
Flett, 1944
Formosa Gov.-Gen. Fish. Exp. Stat.,
1930, 1931, 1932, 1933
Fujiwasi, 1934
Fukuda and Fuzuka, 1939(1)
Goldsil, 1952; 1949
Hennemuth, 1937
Higgins, 1966
Hildebrand, 1946
Honda, 1966
Hornell, 1950
Hosaka, 1944
Hotta, Karita and Ogawa, 1959
Igeta, 1965
Ikebe and Matsumoto, 1937, 1938
Imamura, 1949
Imp. Fish. Inst., 1924(1), (2), (3),
(4), (5), (6); 1925(2), (3); 1926
(1), (2), (3), (4); 1927(1), (2),
(3), (4); 1928, 1929(1), (2), 1930
(1), (2), (3), (4), (5); 1931(1),
(2), (3), (4); 1932(1), (2), (3),
1933(1), (2), (3); 1934(1), (2),
(3); 1935(1), (2), (3), (4); 1936(1),
(3), (4), (5); 1937(1), (2), (4),
(5); 1938(1), (2), (4), (5); 1939
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(1), (2); 1940(1), (2), (3), (4); 1941(1), (2), (3), (4); 1942(1),
(2), (3), (4); 1943(1), (2), (3), (4)
Inamori, 1942(1), (2), (3)
Inoue, 1965(1)
Inoue, Amano and Iwasaki, 1963, 1966
Iwasaki, 1965
June, 1950, 1951(1), (2)
Kagoshima Pref. Fish. Exp. Stat., 1925,
1926(1); 1927, 1928(1), (2); 1929,
1930, 1931, 1932, 1933, 1934,
1935(1), (2), (3); 1936(1), (2),
(3); 1937(1), (2), (3); 1938(1),
(2), (3); 1939(1), (2), (3); 1940
(1), (2), (3); 1941(1), (2)
Kamimura, 1966
Kamohara, 1961
Kaneo, 1932
Katsube, 1921
Kawaguchi, 1963
Kawai, 1955, 1959, 1963
Kawai and Sasaki, 1962
Kawasaki, 1957, 1958, 1963(2); 1964,
1965(1); 1966
Kawasaki and Anraku, 1962
Kawasaki and Asano, 1962
Kawasaki and Naganuma, 1959, 1961
Kawasaki, Yao, Anraku, Naganuma
and Asano, 1962
Kimura, Iwashita and Hattori, 1932
King and Wilson, 1937
Kishinouye, 1919(1); 1923
Kobayashi, n. d.
Kochi Pref. Fish. Exp. Stat., 1923, 1924
Koyasu, 1931(1), (2)
Kubo, 1966
Kumamoto Pref. Fish. Exp. Stat., 1927,
1928, 1929, 1930, 1931, 1932, 1946
Kuroda, 1935, 1963
MacInnes, n. d.
Manar, 1966(1), (3)
Marr and Tester, 1966
Martin, 1938, 1962
Marukawa, 1939(1), (2); 1940
Masuda, 1965
Matsubara, 1942
Matsubara and Ochiai, 1965
Matsumoto, 1937, 1966(2)
McNeely, 1961
Mead, 1949
Metelkin, 1957
Mie Pref. Fish. Exp. Stat., 1930(1),
(2); 1935, 1955, 1956, 1957, 1958, 1959,
(3)
Minami, 1942
Miura, 1941
Morita, 1929
Muramatsu, 1960
Murphy and Niska, 1953
Nakamura, 1939(1)
Nakamura, E. L., 1965
Nishikawa, 1965
Oita Pref. Fish. Exp. Stat., 1926
Okajima, 1937(1)
Okinawa Pref. Fish. Exp. Stat., 1929,
1931(1); 1936, 1937, 1940, 1943
Omori and Fukuda, 1938
Omori and Kawabe, 1937(1), (2)
Omura, 1916
Oshima, 1943
Osipov, 1960
Probator, 1958
Rothschild, 1966(1)
Royce and Otsu, 1955
Saito, I., 1960
Sardone, 1957
Sasaki, 1939
Sasaki and Takehisa, 1932
Schaefer, 1932(2); 1933, 1954, 1955
(1), (2), (3); 1956, 1957(1), (2);
1958(1), (2); 1959(1), (2); 1960,
1961(1); 1962(1), (2); 1963(1)
Schaefer, Chatwin and Broadhead, 1961
Sette, 1954
Sette and Rothschild, 1966
Shapiro, 1948(1), (2)
Shimada, 1958
Shimada and Schaefer, 1956
Shimamura, 1927
Shimoda, 1937
Shippin, 1961
Shiraishi, 1941
Shizuoka Pref. Fish. Exp. Stat., 1932
(1), (2), (3); 1935(1), (2);
1936(1), (2), (3); 1937(1), (2);
1938
Shmitz, 1948
Shomura, 1963(2); 1964
Silliman, 1966(1)
Smith, 1947(1), (2)
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South Seas Gov.-Gen. Fish. Exp. Stat., 1937(2), (3), (4), (5), (6); 1938, 1939(1), (4), (5)
Strasburg, 1959, 1961
Strasburg and Marr, 1961
Strasburg and Yuen, 1960(1), (2)
Suda, 1961(2)
Suyehiro, 1936, 1938, 1942
Tachikawa, 1921, 1932(1), (2)
Takami, 1950
Takayama, 1963
Takayama, Ikeda and Ando, 1934
Takayama and Yoshida, 1933
Tanaka, 1966
Terui, 1919
Tester and Nakamura, 1957
Tohoku Reg. Fish. Res. Lab., 1955, 1957, 1959(1), (2); 1960(1), (2); 1961(1), (2); 1962(1), (2); 1963(1), (2)
Tokai Univ. Fish. Res. Lab., 1962
Tominaga, 1943, 1957, 1963
Uchida, R. N., 1966
Uchihashi, 1953
Uda, 1932, 1933, 1935(1), (2); 1936, 1938(1), (2); 1939, 1940(1), (2), (3); 1941, 1948, 1963(1)
Uda and Tsukushi, 1934
Uda and Watmshbe, 1938
Uj, 1929
Uno, 1965
Uno and Konagaya, 1960
van Pel, 1956(3)
van Pel and Devambez, 1957
Waldron, 1963
Waldron and King, 1963
Warriell, 1950
Welsh, 1950(1)
Wilson, 1963
Wilson and Austin, 1957, 1959
Wilson, Nakamura and Yoshida, 1958
Wilson and Rinkel, 1957
Yabe and Mori, 1950
Yamaguchi, 1942
Yamamoto, 1923, 1940
Yamanaka, 1950, 1962

Yamashita, 1958, 1966
Yao, 1953, 1956, 1966
Yogi, 1914(1), (2)
Yokota, Toriyama, Kanai and Nomura, 1961
Yonezawa, 1950
Yoshida, 1960, 1966(1)
Yuen, 1959, 1962
Anoxynous, 1939, 1948(3); 1949(4), (5), (6); 1950(4), (6), (8); 1951(3); 1953(14), 1954(12), (13); 1955(3), (19); 1956(10), (14), (18), (21), (22); 1957(2), (3), (6), (7), (12), (15); 1958(3), (3), (6), (8), (12), (16), (20), (27); 1959(2), (7), (9), (17), (18), (19), (21); 1960(2), (4), (9), (16); 1961(3), (4), (6), (7), (11); 1962(18); 1963(1), (4), (7), (10), (14); 1964(1), (10), (12); 1965(1), (22), (23), (24), (25); 1966(2), (3), (14), (15), (17)

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Akawa, 1942
Angot, 1959
Austin, 1937
Brock, 1965
Bur. Fish. Min. Agr. For., 1939, 1940
Ego and Otsu, 1952
Fornos Gov.-Gen. Fish. Exp. Stat., 1940
Furuoka, 1955
Hida, 1966
Higgins, 1966
Imp. Fish. Inst., 1935(1), (4); 1936(3); 1937(2), (3); 1938(1); 1939(2); 1940(2), (4); 1941(2); 1942(2); 1943(2), (4)
Iversen and Murphy, 1955
Kagoshima Pref. Fish. Exp. Stat., 1926(2); 1935(2), (3); 1937(2)
Kamimura, 1966
Kamamura and Yazaki, 1940
Kawasaki, 1964, 1965(1)
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Kubo, 1966
Manar, 1966(2)
Masuda, 1963
Murphy and Ikeda, 1955
Murphy and Otsu, 1954
Murphy and Shomura, 1953(1), (2)
Nishimura, 1961
Otsu, 1954
Rothschild, 1966(2)
Schaefer, 1957(2)
Sette and Rothschild, 1966
Shimada, 1951(4)
Shimada, 1937
Shizuoka Pref. Fish. Exp. Stat., 1932(2); 1936(2)
Shonura, 1953, 1959
Shonura and Murphy, 1955
Sivasubramaniam, 1963
South Seas Gov.-Gen. Fish. Exp. Stat., 1934(1); 1939(2); 1943(2)
Strasburg, 1958
Suda, 1953
Tominaga, 1957
van Pel and Devambes, 1957
Waldron, 1963
Watanabe, 1940
Wilson, Nakamura and Yoshida, 1956
Wilson and Rinkel, 1957
Anonymous, 1954(4), (5), (8), (10); 1955(9); 1956(1), (5); 1957(3); 1958(25); 1960(2); 1961(2); 1962(9), (12), (15); 1963(1), (4), (6), (10); 1964(2), (11); 1965(3); 1966(12)

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Aikawa, 1941, 1949
Alyu, 1966
Angot, 1959
Barrett and Connor, 1962, 1964
Blunt and Messersmith, 1960
Broadhead, 1958
Brock, 1956
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Clemens and Roedel, 1964
Fink, 1955(1), (2); 1966
Fukuda and Iizuka, 1939(2)
Godsil, 1936, 1938(1)
Imp. Fish. Inst., 1934(4); 1935(2); 1936(2), (6); 1937(3), (3); 1938(3), (3); 1939(3); 1940(3)
Iversen and Yoshida, 1937
Kagoshima Pref. Fish. Exp. Stat., 1928(1); 1936(3); 1958(3); 1939(3); 1940(3)
Kask, 1964, 1966
Kawasaki, 1965(1); 1966
Landberg, 1966
Manar, 1966(1), (2)
Marr, 1963(1), (2), (3)
Marr and Tester, 1966
Matsumoto and Ochiai, 1965
Matsumoto, 1937
Migdalski, 1953
Ommarrey et al., 1963
Roedel, 1954
Rothschild, 1963
Schaefer, 1955(1), (2); 1956, 1957(1); 1958(1), (2); 1959(1); 1960, 1961(1); 1962(1); 1963(1)
Schaefer, Chatwin and Broadhead, 1961
Sette and Rothschild, 1956
Shonura, 1966
South Seas Gov.-Gen. Fish. Exp. Stat., 1939(4)
Sprague, 1963
Suda, 1961(1), (2)
Tani, 1943
Uda, 1936, 1963(2)
Waldron, 1963
Wilson, 1953
Wilson and Austin, 1957, 1959
Yamashita and Waldron, 1968, 1959
Anonymous, 1950(3); 1953(5), (9); (10); 1954(7), (11), (12), (13), (14); 1955(1), (2), (4), (6), (7), (8), (9), (11), (13), (16), (17), (18); 1956(4), (6), (10), (12), (13), (14), (16), (17), (20); 1957(7), (2), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14); 1958(2), (5), (6), (7), (8), (9), (10), (11), (12), (14), (15), (16), (17), (18), (19), (20), (22), (23), (24); 1959(3), (3), (6),
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(10), (11), (13), (14), (16); 1960
(2), (9), (13); 1961 (3), (6),
(8); 1962 (13); 1963 (1), (15);
1964 (1); 1965 (1); 1966 (5), (16)

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Suda, 1953
Sun, 1960
Tominaga, 1943, 1957, 1965
Ueyanagi, 1965, 1966(1)
Ueyanagi and Watanabe, 1964
Wade, 1950(1)
Waldron, 1963
Waldron and King, 1963
Walford, 1937
Watanabe, 1958, 1960
Watanabe and Ueyanagi, 1962
Yabe, 1953, 1954(1), (2); 1955
Yabe, Anraku and Mori, 1953
Yabe and Ueyanagi, 1962(1), (2)
Yabe, Ueyanagi and Watanabe, 1966
Yabe, Yabuta and Ueyanagi, 1963
Yabuta, 1953
Yokota, Torigawa, Kanai and Nomura, 1961
Yoshida, 1966(2)
Anonymous, 1941(1); 1948(2); 1954(1); 1958(19); 1960(3); 1963(1); 1964(5); 1965(18), (19); 1966(8)
LIST OF ABBREVIATIONS AND TRANSLATIONS OF PERIODICAL TITLES

LISTA DE LAS ABBREVIACIONES Y TRADUCCIONES DE LOS TÍTULOS DE REVISTAS

Mie-kēnitsu daigaku kenkyū nempō. Tsu City, Mie.
ANOTATED SKIPJACK BIBLIOGRAPHY


Dōbutsugaku zasshi.—see Zool. Mag., Tokyo.

Ecol. Monogr.—Ecological Monographs. Durham, N.C.


Fish. Newsl., Canberra—Fisheries Newsletter. Commonwealth Director of Fisheries, Department of Primary Industries, Canberra.


Fish Trade Gaz.—Fish Trades Gazette. London.


Formosa Fish. Mag.—Formosa Fisheries Magazine. Taiwan suisan zasshi. Tainan (Taipei).

Geogr. Rev.—Geographical Review. New York, etc.


Hokūyō—See No. Pacif.

IMR Ref., Univ. Calif.—IMR Reference. Institute of Marine Resources, University of California. La Jolla, California.

J. Fac. Sci. Tokyo Univ.—Journal of the Faculty of Science, Tokyo University. Tokyo.
J. Immun.—Journal of Immunology. Baltimore, Maryland.
J. Tokyo Univ. Fish.—Journal of the Tokyo University of Fisheries. Tokyo suisan daigaku kenkyū hōkoku. Yokosuka City, etc.
Kagaku—See Science, Tokyo.
Kagoshima daigaku, suisan gakubu kyō—See Mem. Fac. Fish, Kagoshima Univ.
Kagoshima suisan semmon gakū kenkyū hōkoku—See J. Kagoshima Fish. Coll.
Kaiyō gyogyō—See Ocean. Fish., Tokyo.
Maguro gyogyō—See Tuna Fishg.
Maguro shiryo—See Tuna Data, Fish. Res. Lab., Tokai Univ.
Mid-Pacific, Mag.—Mid-Pacific Magazine. Honolulu.
tural Fisheries Experimental Station. Kanagawa-ken suisan shikenjō geppō. Miura
City.
Monogr. Acad. Nat. Sci Philad.—Monographs. Academy of Natural Sciences of
Philadelphia.
Expt. Stn.
Nankai-ku suisan kenkyūsho, maguro kenkyū panfaretto—See Tunu Res. Paphr., Nankai.
Nanyō suisan—See So. Sea Fish.
Stn.
New York.
Natuurw. Tijdchr. Ned.-Indië.—Natuurwetenschappelijk Tijdschrift voor Nederlandsch-
Indië. Weltevreden.
perimental Station. Mie-ken suisan shikenjō jihō, Shima-gun.
Fish.
Conserv. Ass.
keizai kenkyūsho. Tokyo.
Nōrinshō, Suisan kōshū-jo kenkyū hōkoku—See J. Shimosoneki Coll. Fish.
Research Laboratory. Nankai-ku suisan kenkyūsho hōkoku, rinjigō. Kochi City.
Ôyō kishō—See Appl. Met., Sapporo.
Pan-Am. Fisherm.—Pan-American Fisherman. San Diego, California.
Pesca Mar., Los Ang.—Pesca y Marina. Los Angeles.
Pesca, Lima.—Pesca, Lima.
Pesca, Los Angeles.—Pesca, Los Angeles, California.
Pesca Yearbook.—See Pesca, Anuario.
Philipp. J. Fish.—Philippine Journal of Fisheries. Manila, Quezon City.


Revta Biol. Mar.—Revista de Biología Marina. Valparaiso, Chile.


Saishū to shiiku—See Collecting Breed.


So. Sea Fish.—South Sea Fisheries. Nanyō suisan. Tokyo.


Suisan kagaku—See Fish. Sci., Tokyo.


Suisan kenkyū-shi—See J. Fish. Res.


Suisan kōshūjo kenkyū hōkoku—See J. Imp. Fish Inst.


Suisan kōza—See Text Fish.
Suomalaisen Eläint- ja Kasvituoteellisen Seuran Varannoon Tiemonnnot—See Arch. Soc. ’Vanamo’.
Taiwan suisan zasshi—See Formosa Fish. Mag.
Text Fish.—The Text of the Fishery. Suisan koza. Tokyo.


Tuna Data, Fish. Res. Lab., Tokai Univ.—Tuna Data, Fisheries Research Laboratory, Tokai University. Tokai daigaku, suisan kenkyūsho, naguro shiryō. Shinizu City.


Unit to sora.—See Sea and Sky.


Univ. Calif. SIO Ref.—Scripps Institution of Oceanography—Reference. University of California San Diego. La Jolla, California.


Wld Fishg.—World Fishing. London.


LIST OF JUNIOR AUTHORS

ABE, TOKIHarU
Tomiyama, Abe and Tokioka, 1958
Tanaka and Abe, 1955
AIZAWA, YUKIO
Hotta, Fukushima, Odate and Aizawa, 1961
ALYERSON, F. G.
Klawe and Alverson, 1964
AMANO, KEISHI
Yamada, Tozawa, Amano and Takase, 1955(1), (2)
AMANO, RYOHEI
Isoue, Amano and Iwasaki, 1963, 1966
AMEMiya, IKUSAKU
Tanaka, Amemiya et al., 1933
ANDO, SEIJI
Takayama, Ikeda and Ando, 1934
ANRAKU, MORIYA
Kawasaki and Anraku, 1962
Kawasaki, Yao, Anraku, Naganuma and Asano, 1962
ANRAKU, NOBORU
Yabe, Anraku and Mori, 1953
ARAKAWA, KIYOSHI
Migita and Arakawa, 1948
ASANO, MASAHiro
Kawasaki and Asano, 1962
Kawasaki, Yao, Anraku, Naganuma and Asano, 1962
AUSTIN, THOMAS S.
Wilson and Austin, 1957, 1959
Seckel and Austin, 1962
BABA, HARUO
Matsuura, Baba and Mori, 1953
BARKLEY, RICHARD A.
Austin and Barkley, 1962
BARRETT, IZAdORE
Joseph and Barrett, 1963
Klawe, Barrett and Klawe, 1963
Broadhead and Barrett, 1964
BARTSCH, PAUL
Nichols and Bartsch, 1945
BROADHEAD, GORDON C.
Orange and Broadhead, 1959
Schaefer, Chatwin and Broadhead, 1961
BROCK, VERNON E.
Austin and Brock, 1959
Gosline and Brock, 1960
BYERS, ROBERT D.
Goslin and Byers, 1944
CHABouis, F.
Chabouis and Chabouis, n. d.
CHAPMAN, W. M.
de Beaufort and Chapman, 1951
CHATWIN, BRUCE M.
Schaefer, Chatwin and Broadhead, 1961
CLARK, HOWARD WALTON
Jordan, Evermann and Clark, 1930
CONNOR, ANNE ROBERTSON
Barrett and Connor, 1962, 1964
COUNTS, ROBERT C.
Ahlstrom and Counts, 1958
DAVIS, STERLING P.
Greenhood and Davis, 1963
DEVAMBEZ, L. C.
von Pel and Devambez, 1957
DURALL, GEORGE L.
Cushing and Durall, 1957
EBISAWA, HARUE
Sugimura, Taira, Hoshino, Ebisawa and Nagahara, 1954
EGUCHI, SADAYA
Kosaka, Katori, Ota, Eguchi and Mori, 1956
EIGENMANN, ROSA S.
Eigenmann and Eigenmann, 1890, 1892
EVERMANN, BARTON WARREN
Jordan and Evermann, 1896, 1905
Jordan, Evermann and Clark, 1930
FITCH, JOHN E.
Roedel and Fitch, 1962
FRANCIS, PHIL
Fichter and Francis, 1965
FUKUDA, MASANOBu
Omori and Fukuda, 1938
FUKUSHIMA, SHINICHI
Hotta, Fukushima, Odate and Aizawa, 1961
FUKUYA, S.
Tohyama, Tetsumoto, Fukuya and Yamada, 1941

GIBBS, ROBERT H., JR.
Collette and Gibbs, 1963, 1965

GOTSHALL, DAN
Miller, Gotshall and Nitos, 1961

GREELEY, PAUL O.
Ulrey and Greeley, 1928

GREENHOOD, E. C.
Godsil and Greenhood, 1948, 1952

HARDENBURG, J. G. F.
Delsman and Hardenburg, 1934

HARUTA, NAOHISA
Matsura, Hashimoto and Haruta, 1939

HASHIMOTO, KANEISHA
Matsura and Hashimoto, 1934, 1935, 1956, 1959
Matsura, Hashimoto and Haruta, 1959

HASHIMOTO, YOSHIIO
Mori, Hashimoto and Komata, 1936

HATTORI, TOSHIIO
Kimura, Iwashita and Hattori, 1952

HEFFER, EDMUND
Snodgrass and Heller, 1905

HETER, FRANK J.
Barrett and Hester, 1934

HIGUCHI, TOSHIKI
Fukuda and Higuchi, 1954

HILDEBRAND, SAMUEL F.
Meek and Hildebrand, 1923

HIRAI, H.
Higashi and Hirai, 1948

HIRANO, TOSHIYUKI
Kikuchi, Hirano and Okada, 1957
Kikuchi, Hirano, Morioka and Okada, 1958
Uda and Hirano, 1964

HIYAMA, YOSHIO
Nakamura and Hiyama, 1957

HODGKINSON, E. R.
Phillipps and Hodgkinson, 1922

HOLLOWAY, JAMES R.
Sprague and Holloway, 1962
Sprague, Holloway and Nakashima, 1963

HONMA, MISA0
Kaminura and Honma, 1963

HORIGUCHI, YOSHISHIGE
Kashiwada, Kakimoto and Horiguchi, 1952

HOSHI0, NAOJI
Sugimura, Taira, Hoshino, Ebisawa and Nagahara, 1954

HOVEN, EARL E.
Van Campen and Hoven, 1956

HUBBS, CARL LEAVITT
Jordan and Hubbs, 1923

IIZUKA, SHOSUKE
Fukuda and Iizuka, 1939(1), (2)

IKEDA, NOBUO
Takayama, Ikeda and Ando, 1934

IKHEARA, ISAAC I.
King and Ikehara, 1956
Murphy and Ikehara, 1955

INAGAKI, CHOTEN
Fujimaki, Oda and Inagaki, 1953

ISHINO, MAKOTO
Uda and Ishino, 1958

ITO, TAKESHI
Yamagawa and Ito, 1926

IWAI, TAMOTSU
Matsubara, Ochiai and Iwai, 1965

IWASAKI, YUKINOBU
Inoue, Amano and Iwasaki, 1963, 1966

IWASHITA, MITSUO
Kimura, Iwashita and Hattori, 1952

JARVIS, NORMAN D.
Fiedler, Jarvis and Lebell, 1943
Lang and Jarvis, 1943

JORDAN, ERIC KNIGHT
Jordan and Jordan, 1922

JUAREZ, F., MAR
Howell and Juarez, 1954

JUDEFIN, THOMAS F.
Halstead, Kawabata and Judefin, 1961

KAKIMOTO, DAICHI
Horiguchi, Kakimoto and Kashiwada, 1950
Horiguchi, Kashiwada and Kakimoto, 1953
Kashiwada and Kakimoto, 1952
Kashiwada, Kakimoto and Horiguchi, 1952
Kashiwada, Kakimoto and Kanazawa, 1954
Kashiwada, Kakimoto and Yamasaki, 1953
KANAI, FUKUKO
Yokota, Toriyama, Kanai and Nomura, 1961

KANAZAWA, AIKIO
Kakimoto and Kanazawa, 1957, 1959
Kashiwada, Kakimoto and Kanazawa, 1954
Kakimoto, Kanazawa and Kashiwada, 1953, 1957

KARIYA, TEIJI
Hotta, Kariya and Ogawa, 1959

KARPECHENKO, IU. L.
Zharov, Karpechenko and Martinsen, 1961

KASHIWADA, KENICHI
Horiguchi, Kakimoto and Kashiwada, 1950
Horiguchi and Kashiwada, 1953
Horiguchi, Kashiwada and Kakimoto, 1953
Kakimoto, Kanazawa and Kashiwada, 1953, 1957

KATO, MASUO
Aikawa and Kato, 1938

KATORI, SHINICHI
Konosu, Katori, Ota, Eguchi and Mori, 1956
Matsuura, Konosu, Ota, Katori and Tanaka, 1955

KATSUMATA, TEIZO
Togawa and Katsumata, 1956

KAWABATA, TOSHIHARU
Halstead, Kawabata and Judefin, 1961

KAWABE, SABURO
Ono and Kawabe, 1937(1), (2)

KAWASAKI, TSUYOSHI
Anraku and Kawasaki, 1966

KIKAWA, SHOJI
Nakamura and Kikawa, 1966

KIKUCHI, T.
Fukushima, Osakabe, Kikuchi and Okada, 1957

KING, JOSEPH E.
Reintjes and King, 1953
Waldron and King, 1963

KIZEVETTER, I. V.
Osipov, Kizevetter and Zhuravlev, 1964

KLAWE, BARBARA M. HILSDON
Klawe, Barrett and Klaue, 1965

KOMATA, YASUSHI
Mori, Hashimoto and Komata, 1956

KONAGAYA, TUNEO
Uno and Konagaya, 1960

KONOSU, SHOJI
Matsuura, Konosu, Ota, Katori and Tanaka, 1955

KUROHIJII, YOSHIKO
Yamanaka and Kurohiji, 1966
Yamanaka, Kurohiji and Morita, 1966

LAEVASTU, TAIKO
Hela and Laevastu, 1961
Hela and Laevastu, n. d.
Rosa and Laevastu, 1962

LA MONTE, FRANCESCA
Gabrielson and La Monte, 1930
Vesey-Fitzgerald and La Monte, 1949

LARMIE, FRED M.
Orange, Schaefer and Larmie, 1957

LINDBERG, G. J.
Soldatov and Lindberg, 1930

LIVELY, W. M., JR.
Halstead and Lively, 1954

LOBELL, MILTON J.
Fiedler, Jarvis and Lobell, 1943

LOVEKIN, A. C.
Jordan and Lovekin, 1926

MAGNUSON, JOHN J.
Nakamura and Magnuson, 1965

MARR, J. C.
Brock and Marr, 1960
Schaefer and Marr, 1948
Strasburg and Marr, 1961

MARSHALL, ARTHUR R.
Broadhead and Marshall, 1960

MARTIN, CLARO
Roxas and Martin, 1937

MARTINSEN, G. V.
Zharov, Karpechenko and Martinsen, 1961

MARUKAWA, HISATOSHI
Okamura and Marukawa, 1909

MASTUBARA, KIYOMATSU
Okada, Uchida and Matusbara, 1935
Okada and Matusbara, 1938, 1953

MATSUMOTO, TAKESHI
Ikebe and Matsumoto, 1937, 1938

MATSUMOTO, WALTER M.
Nakamura and Matsumoto, 1966
MESSERSMITH, JAMES B.
Blunt and Messersmith, 1960

MILLOT, N.
Fox and Millott, 1954

MITCHELL, CHARLES T.
Hunter and Mitchell, 1966

MIURA, TOSHIYUKI
Kawabata, Miura and Shimizu, 1963

MIZUMA, HIROSHI
Kakimoto and Mizuma, 1956

MORI, TAKAJIRO
Hashimoto, Yamada and Mori, 1953
Konomi, Katoki, Ota, Eguchi and Mori, 1956
Matsuura, Baba and Mori, 1953
Saiki, Shirai, Ohno and Mori, 1957

MORI, TAKUMI
Yabe, Anraku and Mori, 1953
Yabu and Mori, 1950

MORITA, JIRO
Yamakaa, Kurohiji and Morita, 1966

MOROKOA, HIROSHI
Kikuchi, Hirano, Morooka and Okada, 1958

MORRIS, EARL LEONARD
Starks and Morris, 1907

MURPHY, GARTH I.
Iversen and Murphy, 1955
Shimura and Murphy, 1955

MURPHY, ROBERT CUSHMAN
Nichols and Murphy, 1944

NAGAHARA, TAROH
Sugimura, Taia, Hoshino, Ebisawa and Nagahara, 1954

NAGANUMA, AKIRA
Kawasaki and Nagamura, 1959, 1961
Kawasaki, Yao, Anraku, Nagamura and Asano, 1962

NAGAYAMA, FUMIO
Ono and Nagayama, 1952

NAKAMURA, EUGENE L.
Wilson, Nakamura and Yoshida, 1958
Tester and Nakamura, 1957

NAKASHIMA, LESLIE I.
Sprague and Nakashima, 1962(1), (2)
Sprague, Holloway and Nakashima, 1963

NAUGHTON, JOHN J.
Tester, van Weel and Naughton, 1955

NISHIMOTO, U.
Takada and Nishimoto, 1955

NISKA, EDWIN L.
Murphy and Niska, 1953

NITSOS, RICHARD
Miller, Gotshall and Nitos, 1961

NOMURA, SEIZI
Yokota, Toriyama, Kanai and Nomura, 1961

OCHIAI, AKIRA
Matsumura and Ochiai, 1965
Matsumura, Ochiai and Iwai, 1965

OHNO, SUSUMU
Saiki, Shirai, Ohno and Mori, 1957
Shirai, Saiki and Ohno, 1957

OKADA, IKUNOSUKE
Kikuchi, Hirano, Morooka and Okada, 1958
Fukushima, Osakabe, Kikuchi and Okada, 1957
Kikuchi, Hirano and Okada, 1957

OKADA, KEISUKI
Ishiyama and Okada, 1957

OKURA, SHIRO
Murayama and Okura, 1950, 1952

ODAGIRI, S.
Fujimaki, Odagiri and Inagaki, 1953

ODATE, SHIGERU
Hotta, Fukushima, Odate and Aizawa, 1961

OGAWA, TATSU
Hotta, Kariya and Ogawa, 1959
Hotta and Ogawa, 1955, 1955

ORANGE, CRAIG J.
Broadhead and Orange, 1960
Schaefer and Orange, 1956

OSAKABE, ISAMU
Fukushima, Osakabe, Kikuchi and Okada, 1957
Miyama and Osakabe, 1958

OTA, RYOZO
Konomi, Katori, Ota, Eguchi and Mori, 1956
Matsuura, Konomi, Ota, Katori and Tanaka, 1955

OTSU, TAMIO
Ego and Otsu, 1952
Murphy and Otsu, 1954
Royce and Otsu, 1954, 1955
PRESCOTT, JOHN H.
Magnuson and Prescott, 1966

RAYNER, G. W.
Blackburn and Rayner, 1951

RICKETTS, EDWARD F.
Steinbeck and Ricketts, 1941

RIPPLENBERGH, R. H.
Brock and Rippcnburgh, 1960

RINKEL, MAURICE O.
Wilson and Rinkel, 1957

ROEDEL, PHIL M.
Clemens and Roedel, 1964

ROSA, HORACIO, JR.
Laevastu and Rosa, 1963

ROSEN, DONN ERIC
Breder and Rosen, 1966

ROTHE, BRIAN J.
Sette and Rothschild, 1966

ROYCE, WILLIAM F.
Dung and Royce, 1953

SAIKA, MASAMICHI
Shirai, Saki and Ohno, 1957

SASAKI, MINORU
Kawai and Sasaki, 1962

SAWADA, TOSHIADA
Ishii and Sawada, 1938

SCHAEFER, MILNER B.
Orange, Schaefer and Larnie, 1957
Shimada and Schaefer, 1956
Smith and Schaefer, 1949

SCHLEGEL, H.
Temminck and Schlegel, 1850

SEALE, ALVIN
Evermann and Seale, 1907
Jordan and Seale, 1906

SECKEL, GUNTER R.
Murphy, Waldron and Seckel, 1960

SEYMOUR, A. H.
Palumbo, Seymouur and Welander, 1966

SHERMAN, KENNETH
Brown and Sherman, 1962

SHIMADA, BELL M.
Cleaver and Shimada, 1950

SHIMAMURA, MITSUHKO
Katayama and Shimamura, 1912

SHIMANUKI, KATSUKO
Kawabata, Miura and Shimanuki, 1963

SHIMMA, YAICHIRO
Higashi, Shimma and Taguchi, 1960

SHIRAI, KAZUO
Saiki, Shirai, Ohno and Mori, 1957

SHIMURA, RICHARD S.
Murphy and Shomura, 1953(1), (2)

SIMIDU, WATARU
Endo and Simidu, 1955

SNYDER, J. O.
Jordan, Tanaka and Snyder, 1913

SPRAUGE, LUCIAN M.
Fujino and Sprague, 1966

STANDAL, BLUEBELL R.
Cabbat and Standal, 1964

STARKS, EDWIN CHAPIN
Jordan and Starks, 1967

STOLTING, W. H.
Anderson, Stolting et al., 1953

STRASBURG, DONALD W.
Hiatt and Strasburg, 1960

STUNKARD, H. W.
Nigrelli and Stunkard, 1947

SUZUKI, KINGO
Suzuki and Suzukl, 1939

TAEKI, KIKUKO
Mutayama and Tabei, 1936

TAGUCHI, HISAKO
Hicushi, Shimma and Taguchi, 1960

Taira, HIRAKADZU
Sugimura, Taira, Hoshino, Ebisawa and Nagahara, 1954

Takahashi, TOYO-O
Oya and Takahashi, 1936

TAKASE, AKIRA
Amano, Tozawa and Takase, 1956
Yamada, Tozawa, Amano and Takase, 1955(1), (2)

TAKATA, MICHIO
Tester, Yuen and Takata, 1954

TAKEHESA, ISAKU
Sasaki and Takehisa, 1932

TANAKA, KIYOE
Matsuura, Kenou, Ota, Katori and Tanaka, 1955

TANAKA, SHIGEHO
Jordan, Tanaka and Snyder, 1913
TETSUMOTO, SOGO
Tohyama, Tetsumoto, Fukuya and Yamada, 1941

TOGASAWA, YOSHIHISA
Katsumata and Togasawa, 1960

TOKIOKA, TAKASHI
Toriyama, Abe and Tokioka, 1958

TORIYAMA, MASAHIRO
Yokota, Toriyama, Kanai and Nomura, 1961

TORTONESE, ENRICO
Bini and Tortoneese, 1955

TOZAWA, HARUMI
Amano, Tozawa and Takase, 1956
Yamada, Tozawa, Amano and Takase, 1955 (1), (2)

TSUCHIYA, YASUHIKO
Nakano and Tsuchiya, 1960

TSUKUSHI, JIRO
Uda and Tsukushi, 1934

TUBB, J. A.
Blackburn and Tubb, 1950

UCHIDA, KENICHI
Okada, Uchida and Matsubara, 1935

UCHIYAMA, JAMES H.
Nakamura and Uchiyama, 1966

UEYANAGI, SHOJI
Watanabe and Ueyanagi, 1962
Yabe and Ueyanagi, 1961, 1962
Yabe, Ueyanagi and Watanabe, 1966
Yabe, Yabuta and Ueyanagi, 1963

UMALI, A. F.
Herre and Umali, 1948

UNO, MICHIO
Sakai and Uno, 1940

VALENCIENNES, ACHILLE
Cuvier and Valenciennes, 1831

van WEEL, P. B.
Tester, van Weel and Naughton, 1955

WAKIYA, YOJIRO
Fujita and Wakiya, 1915

WALDRON, KENNETH D.
Murphy, Waldron and Seckel, 1960
Seckel and Waldron, 1960
Yamashita and Waldron, 1958, 1959

WATANABE, HISAYA
Ueyanagi and Watanabe, 1964
Yabe, Ueyanagi and Watanabe, 1966

WATANABE, N.
Uda and Watanabe, 1938

WELANDER, A. D.
Palumbo, Seymour and Welander, 1965

WILBY, G. V.
Clemens and Wilby, 1946, 1949, 1961

WILSON, PETER T.
King and Wilson, 1957

YABUTA, YOICHI
Yabe, Yabuta and Ueyanagi, 1963

YAMASHITA, KUSUTARO
Isoue and Yamashita, 1963

YOSHIDA, H.
Takayama and Yoshida, 1933

YOSHIIHARA, TOMOKICHI
Oshima and Yoshiihara, 1952

YAMADA, S.
Tohyama, Tetsumoto, Fukuya and Yamada, 1941

YAMADA, SHIGEHIDE
Hashimoto, Yamada and Mori, 1953

YAMASAKI, TOSHIORI
Kasaiwada, Kakimoto and Yamasaki, 1953

YAO, MASAKAZU
Kawasaki, Yao, Annaku, Naganuma and Asano, 1962

YASUDA, FUJIO
Hiyama and Yasuda, 1961

YAZAKI, HARUO
Kanamara and Yazaki, 1940

YOSHIDA, HOWARD O.
Iversen and Yoshida, 1957

YOSHIMINE, TETSUO
Kakimoto and Yoshimine, 1956

YOSHIIWARA, TOMOKICHI
Kubo and Yoshiiwara, 1957

YUEN, HEENY S. H.
Strasburg and Yuen, 1958, 1960
Tester, Yuen and Takata, 1954

ZHURAVLEV, A. V.
Osipov, Kizevetter and Zhuravlev, 1964
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KIMURA, KINOSUKE
KODAMA, MASAHIRO, K. IIZUKA and T. HARADA
1934. Weight ratio of various body parts and analyses of the normal constituents of fresh flesh of important South Sea fish [in Japanese]. Taiwân sótokufu suisan shikenjō jigyō hōkoku (Progress Report, Formosa Government-General Fisheries Experimental Station) 1932, Technological Section: 1-6.

MATSUBARA, SHINNOUSHIKE

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