

**INTER-AMERICAN TROPICAL TUNA COMMISSION
COMISION INTERAMERICANA DEL ATUN TROPICAL**

Bulletin — Boletín

Vol. 16, No. 6

(Completing the Volume)
(Complemento del Volumen)

**BIBLIOGRAPHY OF EL NIÑO
AND ASSOCIATED PUBLICATIONS**

BIBLIOGRAFIA DEL NIÑO Y PUBLICACIONES AFINES

by — por

Merritt R. Stevenson and Helen R. Wicks

La Jolla, California

1975

CONTENTS — INDICE

ENGLISH VERSION — VERSION EN INGLES

	Page
ABSTRACT	451
INTRODUCTION	451
DESCRIPTION AND FORMAT	452
ACKNOWLEDGMENTS	453
BIBLIOGRAPHY	457

VERSION EN ESPAÑOL — SPANISH VERSION

	Página
EXTRACTO	454
INTRODUCCION	454
DESCRIPCION Y FORMATO	455
AGRADECIMIENTO	456
BIBLIOGRAFIA	457

BIBLIOGRAPHY OF EL NIÑO AND ASSOCIATED PUBLICATIONS

by

Merritt R. Stevenson and Helen R. Wicks

ABSTRACT

Citations from the fields of biological, physical and chemical oceanography, meteorology and marine fisheries are used to compile a new bibliography on El Niño phenomena and associated publications. An alphanumeric coding procedure relating this bibliography to a newly microfilmed version of the contents of this bibliography is described.

INTRODUCTION

Although the anomalous air/sea condition popularly known as El Niño has been the subject of various studies for many years, it has only been within the past decade that a concerted effort by an increasing number of marine scientists has been made to understand some of the causes of these complex fluctuations that occur most intensively in the marine environment off the Pacific coast of South America. The first attempt to consolidate the various references relating to El Niño by means of a bibliography was made about 10 years ago when a compilation was published in the Bulletin of the National Fisheries Institute of Ecuador (INPE). This bibliography was found to be quite useful in the initial stages of the compilation of the present bibliography.

The new bibliography on El Niño contains references to hundreds of papers and reports that deal not only with descriptions of past Niños but also publications which provide information on "normal" marine conditions in the eastern tropical Pacific Ocean. It is important to have access to both kinds of information in order to maximize our understanding of how and why an El Niño may occur one year but not the next.

The references contained in the bibliography were obtained primarily from local library sources including those of the National Marine Fisheries Service (La Jolla, Calif.) and the Inter-American Tropical Tuna Commission. Also the library of Scripps Institution of Oceanography kindly provided some materials. References were also obtained from cross checking of citations in various cited reports and papers. Additional useful references were suggested by a number of scientists active in El Niño related studies. In particular, the suggestions provided by Drs. William Quinn (Oregon State University), Warren Wooster (University of Miami), Jerome Namias (Scripps Institution of Oceanography and National Oceanic and

Atmospheric Administration) and Colin Ramage (University of Hawaii) of the USA and by Ing. Francisco Pesantes (National Fisheries Institute) of Ecuador and Drs. Romulo Jordan (Instituto del Mar) and Dr. Jorge Valdivia (Servicio Nacional de Meteorología) of Peru, were most helpful. Because of the renewed interest in El Niño, the *contents* of the bibliography are also being made available on microfiche cards through the financial support of the International Decade of Ocean Exploration office (National Science Foundation), the Intergovernmental Oceanographic Commission, and the Inter-American Tropical Tuna Commission.

DESCRIPTION AND FORMAT OF BIBLIOGRAPHY

The bibliographic citations have been arranged in alphabetical order. Data for referencing were taken directly from documents on hand but this was not always possible. In such instances, citations were based on previously published citations. Pagination of a citation may refer to either the number of pages in a reference or may refer only to specified pages in a reference. A number followed by a p. denotes the number of pages in the citation; a p. followed by a number denotes a specific page number.

Because of the broad interdisciplinary aspects of El Niño, (physical, biological and chemical oceanography, meteorology and marine fisheries) it is possible that some errors in citation may have inadvertently occurred. It is also recognized that some references may have been unintentionally omitted. Hopefully, future additions to the bibliography will correct these omissions.

At the end of each citation there is an alphanumeric notation which corresponds to a microfiche card and indicates major and minor category, followed by a 5-digit number.

Biological Oceanography	Physical Oceanography
01 Modeling	01 Air/Sea Interaction
02 Primary Producers	02 Descriptive Physical Studies
03 Secondary Producers	03 Modeling
04 Tertiary Producers	04 Others
05 Others	
Chemical Oceanography	Meteorology
01 Nutrient Chemistry	01 Large Scale Studies > 1,000 km scale
02 Dissolved Gases	02 Mesoscale Studies < 1,000 km scale
03 Trace Metals	03 Modeling
04 Others	04 Others

For example in B/O-02-00126, the first two numbers (02) represent a disciplinary subcategory and the final 5-digit number represents the specific number of the document. The first (or introduction) microfiche card of the INRS (IDOE El Niño Reference Set) is enclosed in this Bulletin as a

sample (see inside of the back cover). Due to differences in availability of many of the documents, it was not possible to also microfilm the references in alphabetical order. The citations in the Commission's El Niño bibliography, however, are in alphabetical sequence and the appropriate INRS microfilm coding number has been added at the end of each citation. It is intended that the microfilmed INRS be used with this printed bibliography for maximum effectiveness.

ACKNOWLEDGMENTS

The first bibliography on El Niño was prepared in 1964 by Dr. Malvern Gilmartin of the IATTC when on assignment at the National Fisheries Institute in Ecuador (INPE) and the ensuing INPE bibliographic report provided the initial encouragement for the present enlarged bibliography. This new bibliography could not have been completed without the dedicated efforts of a number of persons. The assistance of Ms. S. Barker in typing intermediate drafts of the bibliography is acknowledged with thanks. Ms. D. Czapinski worked closely with the authors in accessioning the documents prior to their being microfilmed. Ms. M. Fitzgerald also assisted in the final verification of the alphanumeric code of the bibliography. Mr. R. Wagner assisted in the verification of the initial draft copy of the bibliography. Mr. D. Gittings, Librarian at the National Marine Fisheries Service, NOAA Laboratory (La Jolla, Calif.) provided extremely valuable assistance during the project by providing documents for the verification of citations and for the microfilmed INRS. The cooperation of Mr. W. Goff, Head Librarian, Scripps Institution of Oceanography, in providing the use of a number of difficult to obtain documents, is acknowledged with appreciation.

BIBLIOGRAFIA DEL NIÑO Y PUBLICACIONES AFINES

por

Merritt R. Stevenson y Helen R. Wicks

EXTRACTO

Se emplean las anotaciones del campo biológico, físico y químico de la oceanografía, la meteorología y la pesca marina para compilar una nueva bibliografía sobre el fenómeno del Niño, y publicaciones afines. Se describe el procedimiento de un código alfanumérico relacionando esta bibliografía a una versión recientemente microfilmada del contenido de ésta.

INTRODUCCION

Aunque la condición anómala aire/mar conocida popularmente como el Niño ha sido sujeta a varios estudios durante muchos años, solamente durante el último decenio un número creciente de investigadores marinos unieron su esfuerzo para tratar de averiguar algunas de las causas de estas fluctuaciones complejas que ocurren más intensamente en el ambiente marino frente a la costa Pacífica de Sudamérica. El primer intento para consolidar las varias referencias relacionadas al Niño, mediante una bibliografía, se hizo hace unos 10 años cuando se publicó en el Boletín del Instituto Nacional de Pesca del Ecuador (INPE). Esta bibliografía fue bastante útil en las etapas iniciales de la compilación de la presente.

La nueva bibliografía del Niño incluye referencias de cientos de publicaciones e informes que tratan no solamente con descripciones de fenómenos anteriores del Niño, pero también con publicaciones que suministran información sobre condiciones "normales" marinas en el Océano Pacífico oriental tropical. Es importante poder obtener ambas clases de información con el fin de alcanzar una comprensión máxima de cómo y porqué ocurre el fenómeno del Niño en un año y no en el siguiente.

Las referencias incluídas en la bibliografía se obtuvieron principalmente de bibliotecas locales incluyendo la del National Marine Fisheries Service (La Jolla, Calif.) y de la Comisión Interamericana del Atún Tropical. Se recibió también algún material de la biblioteca del Scripps Institution of Oceanography. Se obtuvieron además referencias al re-examinar la bibliografía de varios informes y papeles mencionados. Varios investigadores activos en los estudios relacionados con el Niño suministraron otras referencias valiosas. Fueron especialmente útiles las referencias provistas por los Drs. William Quinn (Oregon State University), Warren Wooster (University of Miami), Jerome Namias (Scripps Institution of

Oceanography y National Oceanic and Atmospheric Administration) y Colin Ramage (University of Hawaii) de los EUA, y las del Ing. Francisco Pesantes (Instituto Nacional de Pesca) del Ecuador y los Drs. Rómulo Jordan (Instituto del Mar) y Jorge Valdivia (Servicio Nacional de Meteorología) del Perú. Debido al renovado interés sobre el Niño, el *material* de la bibliografía se encuentra disponible en tarjetas microfilmadas gracias al apoyo financiero del International Decade of Ocean Exploration office (National Science Foundation), la Comisión Intergubernamental Oceanográfica y la Comisión Interamericana del Atún Tropical.

DESCRIPCION Y FORMATO DE LA BIBLIOGRAFIA

Las referencias bibliográficas se han arreglado en orden alfabético. Los datos de las anotaciones se obtuvieron directamente de documentos que se encontraban a la mano, pero esto no fue siempre posible. En dichos casos, las referencias se basaron en otras publicadas anteriormente. La paginación de una referencia puede referirse ya sea al número de páginas de una referencia o solamente a un número específico de páginas relativas a ésta. Una cifra seguida por una p. indica el número de páginas de la referencia; si después de una p. sigue una cifra, indica el número específico de una página.

Debido a los amplios aspectos interdisciplinarios del Niño, (oceanografía física, biológica y química, meteorología y pesca marina) es posible que hayan pasado inadvertidos algunos errores en las anotaciones. Además puede que se hayan omitido sin intención algunas referencias. Se espera, sin embargo, que al ampliar la bibliografía en el futuro se corrijan estas omisiones.

Al final de cada mención se encuentra una anotación alfanumérica que corresponde a una tarjeta microfilmada e indica la categoría mayor o menor, seguida por una cifra de 5 dígitos.

Oceanografía biológica	Oceanografía física
01 Modelaje	01 Interacción aire/mar
03 Productores secundarios	02 Estudios físicos descriptivos
02 Productores primarios	03 Modelaje
04 Productores terciarios	04 Otros
05 Otros	
Oceanografía química	Meteorología
01 Química nutritiva	01 Estudios en gran escala—
02 Gases disueltos	escala > de 1,000 km
03 Huellas de metales	02 Estudios de mesoescala—
04 Otros	escala < de 1,000 km
	03 Modelaje
	04 Otros

Por ejemplo en B/O-02-00126, los dos primeros números (02) representa la subcategoría disciplinaria y los 5 dígitos que siguen, indican el número específico del documento. La primera tarjeta microfilmada (o introducción) del INRS (IDOE El Niño Reference Set) se incluye en este Boletín como una muestra (véase la parte interior de la cubierta posterior). Debido a que muchos de los documentos se obtuvieron de diferente modo, no fue posible microfilmear también las referencias en orden alfabético. Sin embargo, las anotaciones en la bibliografía del Niño de la Comisión, se encuentran en secuencia alfabética y se le ha agregado al final de cada cita el número apropiado del código del INRS. Se recomienda la utilización de las tarjetas microfilmadas junto con la bibliografía impresa para obtener un beneficio máximo.

AGRADECIMIENTO

La primera bibliografía del Niño fue preparada en 1964 por el Dr. Malvern Gilmartin de la CIAT, quien había sido asignado para trabajar con el Instituto Nacional de Pesca del Ecuador (INPE); y el consiguiente informe bibliográfico de INPE suministró el estímulo inicial de la bibliografía actual ampliada. Esta nueva bibliografía no hubiera podido terminarse sin el esfuerzo dedicado de varias personas. Se agradece la ayuda de la Srta. S. Barker quien escribió a máquina los borradores de la bibliografía. La Srta. D. Czapinski trabajó en estrecha colaboración con los autores evaluando los documentos antes de ser microfilmados. La Srta. M. Fitzgerald ayudó también en la verificación final del código alfanumérico de la bibliografía. El Sr. R. Wagner revisó la copia inicial en borrador de la bibliografía. El Sr. D. Gittings, bibliotecario del National Marine Fisheries Service, NOAA Laboratory (La Jolla, Calif.) prestó una ayuda extremadamente valiosa durante el proyecto al suministrar documentos para la comprobación de las anotaciones y para la microfilmación del INRS. Se agradece la colaboración del Sr. W. Goff, jefe bibliotecario de Scripps Institution of Oceanography, quien suministró varios documentos difíciles de obtener.

BIBLIOGRAPHY — BIBLIOGRAFIA

- Agassiz, A. 1891. Reports on the dredging operations off the west coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." Mus. Comp. Zool. Harv. Bull., 23: 1-90. B/O-05-00014, 00015.
- _____. 1906. V. General report of the expedition to the Eastern Tropical Pacific. Report on the scientific results. Mus. Comp. Zool. Harv. Mem. **33**(5): 1-50, 12 selected charts. B/O-05-00027, 00028.
- Air Ministry. 1956. Monthly meteorological charts of the eastern Pacific Ocean. Meteorological Office, No. 518. London. 122 p.
- Alaka, M. A. 1964. Problems of tropical meteorology—A survey. WMO Technical Note No. 62. World Meteorological Organization, Geneva. 37 p. MET-03-00011.
- Allen, John S. 1973. Upwelling and coastal jets in a continuously stratified ocean. Jour. Phys. Oceanogr., 3(3) : 245-257. P/O-02-00059.
- Allen, W. E. 1925. Statistical studies of surface catches of marine diatoms and dinoflagellates made by the Yacht "Ohio" in tropical waters in 1924. Trans. Amer. Micr. Soc., **44**(1): 24-30. B/O-05-00025.
- _____. 1939. Surface distribution of marine plankton diatoms in the Panama region in 1933. Scripps Inst. Oceanogr. Bull., Tech. Ser., **4**(7): 181-196. B/O-02-00005.
- Alpert, L. 1945. The intertropical convergence zone of the eastern Pacific region (I). Amer. Meteor. Soc. Bull., **26**(10): 426-432. P/O-02-00310.
- _____. 1946a. The intertropical convergence zone of the eastern Pacific region (II). Amer. Meteor. Soc. Bull., **27**(1): 15-29. MET-01-00025.
- _____. 1946b. The intertropical convergence zone of the eastern Pacific region (III). Amer. Meteor. Soc. Bull., **27**(2): 62-66. MET-02-00019.
- Alverson, F. G. 1960. Distribution of fishing effort and resulting tuna catches from the eastern tropical Pacific Ocean by quarters of the year, 1951-58. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull., **4**(6): 319-446. B/O-04-00010, 00011.
- _____. 1963a. The food of yellowfin and skipjack tunas in the eastern tropical Pacific Ocean. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull., **7**(5): 293-396. B/O-05-00018, 00019.

- _____. 1963b. Distribution of fishing effort and resulting tuna catches from the eastern tropical Pacific Ocean, by quarters of the year, 1959-62. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.*, 8(6): 317-379. B/O-04-00009.
- ANDELAIPP. 1967. *Organo informativo de la Asociación Nacional de la Industria Pesquera Panameña*. Circ. No. 28, Noviembre 1967, 6 p.
- Anderson, A. W. 1962. Oceanographic data report, Project CHIPER, March-April 1960. U. S. Navy Hydro. Office Mar. Sci. Dept., Inf. Mss. Rep. No. 0-38-62. P/O-02-00247.
- _____. 1963. Oceanographic survey in Central and South American waters. U. S. Navy Hydro. Office Mar. Sci. Dept., Inf. Mss. Rep. No. 0-55-62. P/O-02-00331.
- Anonymous. 1930. Temperatur und Salzgehaltbeobachtungen an der Oberfläche der Weltmeere, 1914-1929. *Arch. Deutsche Seewarte*, 49(2): 1-33. P/O-02-00367.
- _____. 1934. Dynamic oceanographic data for the Central Eastern Pacific Ocean . . . and surface temperature and salinity data for the Eastern Pacific Ocean . . . U. S. Navy Hydro. Office H. O. 212: 53 p. P/O-02-00332.
- _____. 1938. *Atlas of Climatic charts of the ocean*. U. S. Weather Bureau, U. S. Dept. Agric., Pub. No. 1247.
- _____. 1944. *World atlas of sea surface temperatures*. U. S. Navy Hydro. Office H. O. 225: 48 p. P/O-02-00272, 00273, 00274.
- _____. 1948. *Surface water temperatures at Coast and Geodetic Survey tide stations, Pacific Ocean*. U. S. Coast and Geodetic Survey, TW 2: 47 p. P/O-04-00023.
- _____. 1949. *Hydrographical observations made by RRS William Scoresby 1931-1938*. *Discovery Rep.*, 25: 143-280. P/O-02-00028, 00029.
- _____. 1950. *Atlas of Pilot charts, Pacific and Indian Oceans*. U. S. Navy Hydro. Office. H. D. 577. P/O-02-00333 thru 00336.
- _____. 1956. *Data collected by Scripps Institution vessels on EASTROPIC expedition, Sept.-Dec. 1955*. Univ. Calif., Scripps Inst. Oceanogr., Unpub. Rep. SIO Ref. 56-28: 156 p. P/O-02-00046, 00047.
- _____. 1962. *Surface water temperatures and salinity. Pacific Coast North and South America and Pacific Ocean Islands*. U. S. Coast and Geodetic Survey, Pub. 31-3: 71 p. P/O-02-00038.

- _____. 1965. Atlas of certain physical, chemical and biological properties off the coast of Peru in 1964. Atlas Inst. del Mar Peru. Unpaged. B/O-05-00001.
- _____. 1965. Data Report, Physical, chemical, current measurement and biological data, SWAN SONG Expedition, 21 August/December 1961. Univ. of Calif. SIO Ref. 66-1: 123 p. P/O-02-00048, 00049.
- _____. 1970. Biological production in Upwelling Ecosystems. Data Report for R/V T. G. THOMPSON cruise 36 (PISCO). Part 1: Hydrography and productivity. Special Report 42, Dept. of Oceanogr. Univ. of Wash., Seattle, Washington 97 p. P/O-04-00022.
- _____. 1973. Data Report, physical and chemical data CARROUSEL Expedition, student and training cruises. Univ. of Calif. SIO Ref. 73-25: 1-27. P/O-02-00051.
- Arriaga, Luis M. and Leonardo Vicuña Izquierdo. 1968. Estadísticas de la Actividad Pesquera en el Ecuador. INPE Bol. Inform. **3**(2): 1-121. B/O-04-00074, 00075.
- Arthur, R. S. 1960. A review of the calculation of ocean currents at the equator. Deep-Sea Res., **6**(4): 287-297. P/O-02-00187.
- _____. 1965. On the calculation of vertical motion in Eastern Boundary currents from determinations of Horizontal Motion. Jour. Geophys. Res. **70**(12): 2799-2803. P/O-03-00020.
- Austin, T. S. 1960a. I. Oceanography of the East Central Equatorial Pacific as observed during the expedition EASTROPIC. U. S. Fish. Bull., **60**: 257-282. P/O-02-00002.
- _____. 1960b. II. Summary 1955-57 ocean temperatures, Central Equatorial Pacific. Calif. Coop. Oceanic. Fish. Invest., **7**: 52-56. P/O-02-00263.
- Avaria, S. 1965. Diatomeas y Silicoflagelados de la bahía de Valparaíso Rev. Biol. mar. Valpo. **12**: 61-119. B/O-04-00058.
- _____. 1970a. Observación de un fenómeno de Marea Roja en la bahía de Valparaíso. Rev. Biol. mar. Valpo. **14**(1): 1-5. B/O-03-00027.
- _____. 1970b. Fitoplancton de la Expedición del "Doña Berta" en la zona Puerto Montt-Aysén. Rev. Biol. mar. Valpo. **14**(2): 1-17. B/O-02-00032.
- _____. 1971. Variaciones mensuales del fitoplancton de la bahía de Valparaíso, entre Julio de 1963 y Julio de 1966. Rev. Biol. mar. Valpo. **14**(3): 15-43. B/O-02-00033.

- _____. 1974. Estudios de Ecología Fitoplanctónica en la Bahía de Valparaíso. III. Fitoplancton 1972-1973. (manuscrito). B/O-02-00058.
- Avaria, S. and E. Orellana. 1974. Estudios de Ecología Fitoplanctónica en la Bahía de Valparaíso. III. Fitoplancton 1972-1973. (manuscrito). B/O-02-00059.
- Avila, E. 1953a. "El Niño" en 1953 y su relación con las aves guaneras: problemas básicos referentes a la anchoveta. Bol. Comp. Admin. Guano. **29**(5): 13-19. B/O-04-00063.
- _____. 1953b. Sobre el "Factor de Condición" usado en Biología Pesquera. Comp. Admin. del Guano. Bol. Cien. Tomo I; Vol. I, 19-32 p. + illus. B/O-01-00003.
- Avila, Quinto and Harold Loesch. 1965. Identificación de los Camarones (Penaeidae) Juveniles de los Esteros del Ecuador. INPE Bol. Cient. y Tec. **1**(3): 1-24. B/O-03-00002.
- Baer, Jean G. 1969. *Diphyllbothrium pacificum* tapeworm along coast of Peru. Jour. Fish and Res. Bd. Canada. **26**: 717-723. B/O-04-00002.
- Balech, E. 1962. Tintinnoidea y Dinoflagellata del Pacifico según material de las expediciones Norpac y Downwind del Instituto Scripps de Oceanografía. Rev. Mus. Arg. C. Nat. "B. Rivadavia." Cienc. Zool. **7**(1): 253 p. B/O-02-00043, 00044, 00045.
- Bandy, O. L. 1967. Cruise Report, Research Vessel Anton Bruun, Cruise 17. Special Rep. No. 7. Marine Lab. Texas A & M Univ. (unpublished). C/O-02-00003, 00004.
- Barandiaran, J. F. 1954. Investigaciones Oceanográficas en la Costa Norte del Perú. Rev. de Mar. Perú. **39**(3): 225-251 + 15 graphs. P/O-02-00373.
- Barber, R. T. 1967. The distribution of Dissolved Organic Carbon in the Peru Current System of the Pacific Ocean. Stanford Univ. Ph. D. Oceanography, microfilm No. 67-17,392. C/O-01-00007, 00008.
- Barber, R. T., Alan White and H. W. Siegelman. 1969. Evidence for a cryptomonad symbiont in the ciliate *cyclotrichium meunieri*. Jour. Phys. **5**(1) : 86-88. B/O-02-00054.
- Barber, R. T., R. C. Dugdale, J. J. MacIsaac and R. L. Smith. 1971. Variations in phytoplankton growth associated with the source and conditioning of upwelling water. Working Conference on the Analysis of Upwelling Ecosystems. Barcelona, 1970. Invest. Pesquer. **35**(1): 171-194. B/O-02-00006.

- Barkley, R. A. 1968. Oceanographic Atlas of the Pacific Ocean. Honolulu, Univ. of Hawaii Press. 20 p., 156 figures. P/O-02-00268 thru 00271.
- Barnhill, Betty L., Efrén Lopez L. and Anthony J. Les. 1974. Estudio sobre la Biología de los Peces del Rio Vinces. INPE Bol. Cient. y Tec. **3**(1).
- Barreda, M. 1953. Un Método Científico para estudiar la edad y crecimiento de los peces. Bol. Cien. Tomo I; Vol. I: 51-62 + 3 figures. B/O-04-00081.
- . 1954. Estudios hidro-biologicos efectuados en la Bahía de Pisco (1950-51-52). Bol. Cient. Comp. Admin. Guano. **1**(2): 50-92 + 22 tables, 6 maps, 7 figures. P/O-04-00024.
- . 1957. El plancton de la Bahía de Pisco. Bol. Comp. Admin. Guano. **33**(9): 7-24, **33**(10): 7-22, **33**(11): 11-18. B/O-02-00039.
- . 1958. El plancton de la Bahía de Pisco. Bol. del Comité Nacional de Protección a la Naturaleza, 16: 61-106. B/O-02-00030.
- Beebe, W. 1926. The Arcturus oceanographic expedition. Zoologica, 8: 1-45.
- Beers, J. R., M. R. Stevenson, R. W. Eppley and E. R. Brooks. 1971. Plankton populations and upwelling off the Coast of Peru, June 1969. B. C. F. Fish. Bull. **69**(4): 859-876. B/O-02-00004.
- Bennett, E. B. 1963. An oceanographic atlas of the eastern Tropical Pacific Ocean, based on data from EASTROPIC expedition October-December 1955. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. **8**(2): 31-165. P/O-02-00032A, 00032B.
- . 1965. Currents observed in Panama Bay during September-October 1958. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. **10**(7): 399-457. P/O-02-00054.
- . 1966a. Monthly charts of surface salinity in the eastern tropical Pacific Ocean. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull., **11**(1): 1-44. P/O-02-00053.
- . 1966b. Influence of the Azores high on sea level pressure and wind, and on precipitation, in the Eastern Tropical Pacific Ocean. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. **12**(1): 1-23. MET-01-00011.
- Berlage, H. P. 1957. Fluctuations of the general atmospheric circulation of more than one year, their nature and prognostic value. Roy. Neth. Met. Inst. Meded. en Verhand., No. 69: 152 p. MET-01-00054, 00055.

- _____. 1961. Variations in the general atmospheric and hydro-spheric circulation of periods of a few years duration affected by variations of solar activity. *Ann. New York Acad. Sci.* 95: 354-367. MET-03-00002.
- _____. 1966. The Southern Oscillation and World Weather. *Konin. Neder. Met. Inst. Meded en Verhand. No. 88*: 152 p. MET-01-00005, 00006, 00007.
- Berlage, H. P. and H. J. DeBoer. 1959. On the extension of the Southern Oscillation throughout the world during the period July 1, 1949 up to July 1, 1957. *Geof. pura e applicat. Milano*, 43: 287-295. MET-01-00022.
- _____. 1960. On the Southern Oscillation, its way of operation and how it affects pressure patterns in the higher latitudes. *Geof. pura e applicat. Milano*, 46: 329-351. P/O-03-00022.
- Berry, E. W. 1927. Meteorological observations at Negritos, Peru, December 1924 to May 1925. *Mon. Wea. Rev.* 55(2): 75-78. MET-01-00021.
- Bieri, R. 1957a. Distribution of planktonic Chaetognatha in the water masses of the Pacific. Univ. Calif. Ph.D. Dissertation. B/O-03-00009, 00010, 00011.
- _____. 1957b. Chaetognatha fauna off Peru in 1941. *Pacif. Sci.*, 11(3): 255-264. B/O-04-00013.
- _____. 1959. The distribution of the planktonic Chaetognatha in the Pacific and their relationship to water masses. *Limnol. and Oceanogr.*, 4: 1-28. B/O-03-00003.
- Bigelow, H. B. 1909. The Medusae. Reports on the scientific results of the expedition to the eastern tropical Pacific "Albatross" from October, 1904 to March, 1905. *Mem. Mus. Comp. Zool. Harv.*, 37: 243 p. plus 49 plates. B/O-05-00029 thru 00032.
- _____. 1912. XXVI The Ctenophores. Reports on the scientific results of the expedition to the Eastern Tropical Pacific in charge of Alexander Agassiz by the U. S. Fish Commission Steamer "Albatross" from October, 1904 to March, 1905. *Lieut. Comm. L. M. Garrett, U. S. N. Commanding. M. C. Z. Bull.* 54(12): 369-404. B/O-03-00046.
- _____. 1940. Eastern Pacific Expeditions of the New York Zoological Society XX Medusae of the Templeton Crocker and Eastern Pacific *Zaca* Expeditions, 1936-38. *Zoologica* XXV(3): 281-321. Text logi-20. B/O-04-00012.

- Bini, G. 1952. Osservazioni sulla fauna marina delle coste del Chile e del Perú con special riguardo alle specie ittiche in generale ed ai tonni in particolare. *Bol. Pesca, Pisc. Idrob. Ano XXVIII*, **7**(1): 3-52. B/O-04-00005.
- Bjerknes, J. 1961. "El Niño" study based on analysis of ocean surface temperatures 1935-57. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull* **5**(3): 219-307. P/O-02-00033.
- _____. 1966a. Survey of the El Niño 1957-58 in its relation to tropical Pacific meteorology. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.*, **12**(2): 1-62. MET-01-00010.
- _____. 1966b. A possible response of the atmospheric Hadley circulation to equatorial anomalies of ocean temperature. *Tellus* **18**(4): 820-829. MET-01-00012.
- _____. 1969. Atmospheric teleconnections from the equatorial Pacific. *Mon. Weath. Rev.*, **97**(3): 163-172. MET-01-00018.
- _____. 1972. Large-scale atmospheric response to the 1964-65 Pacific equatorial warming. *Jour. Phys. Oceanogr.* **2**: 212-217.
- Blackburn, Maurice. 1969. Peru Current. *Encyl. of Mar. Resour. E. E. Firth.*, Ed. Van Nortrand Reinhold Co. New York. 502-508 p. P/O-02-00008.
- Blackburn, Maurice and Associates. 1962. Tuna Oceanography in the Eastern Tropical Pacific. U. S. Fish. Wild. Serv., Spec. Sci. Rep. Fish., No. 400: 48 p. P/O-04-00035.
- Blandin, C. L. 1974. Características del Fenomeno de "El Niño" y la Influencia de la Corriente de Humboldt en las Costas del Ecuador. *Inst. Nac. de Meteor. e Hidro. Seccion de Climatologia Pub. No. 17-1*: 1-24. P/O-04-00003.
- Boisvert, Wm. 1969. Major currents off the West Coasts of North and South America. *U. S. Naval Ocean. Off. TR-221*: 34 p. P/O-02-00384.
- Boone, L. R. 1949. A prediction regarding the Humboldt Current. *Science* **110**: 642-644. MET-03-00003.
- Bowman, R. I. Ed. 1966. The Galapagos—Proceedings of the Symposia of the Galapagos International Scientific Project. Univ. Calif. Press, Berkeley, 318 p. B/O-04-00043 thru 00046.
- Brandhorst, W. 1958. Thermocline topography, zooplankton standing crop, and mechanisms of fertilization in the eastern tropical Pacific. *Jour. Cons.*, **24**(1): 16-31. B/O-05-00047.

- _____. 1959. Nitrification and denitrification in the eastern tropical north Pacific. *Jour. Cons.*, **25**(1): 3-20. C/O-01-00004.
- _____. 1965. Die chilenische Fischerie und ihre weiteren Enturcklungsauss-Berichte über Lanwirtschaft. Verlag Paul Parey. Hamburg und Berlin. Bd. 43(1965). H. 1, S. 1-200: 148-187. B/O-04-00003.
- Brinton, E. 1962. The distribution of Pacific euphausiids. *Scripps Inst. Oceanogr. Bull.*, **8**(2): 51-270. B/O-03-00004, 00005, 00006.
- Broadhead, G. C. and I. Barrett. 1964. Some factors affecting the distribution and apparent abundance of yellowfin and skipjack tuna in the eastern Pacific Ocean. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.* **8**(8): 419-473. B/O-04-00007.
- Burt, W. V. 1958. Selective transmission of light in tropical Pacific waters. *Deep-Sea Res.*, **5**(1): 51-61. P/O-02-00185.
- Cajas, Ignacia. 1967. m.s. Estudio de los Quetognatos del Plancton del Golfo de Guayaquil (tesis de grado). Universidad de Guayaquil. Fac. de Ciencias Químicas y Naturales. 66 p., 6 maps, 8 figures.
- Calkins, T. P. and B. M. Chatwin. 1967. Geographical distribution of yellowfin tuna and skipjack catches in the eastern Pacific Ocean, by quarters of the year, 1963-1966. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.*, **12**(6): 433-508. B/O-04-00008.
- Campbell, A. S. 1942. The oceanic Tintinnoinea of the plankton gathered during the last cruise of the "Carnegie." *Publ. Carneg. Inst. No. 537*: 163 p. B/O-02-00036, 00037.
- Capurro, L. R. A. 1961. Productivity measurements in the world ocean. *IGY Oceanogr. Rep. Parts I and II, 3A-4*: 1-625. B/O-02-00011 thru 00017.
- Carlsberg Foundation. 1937. Hydrographical observations made during the "DANA" Expedition 1928-30. In: *The Carlsberg Foundation's Oceanographical expedition around the world 1928-30. Copenhagen and London, Vol. 2, Dana-Report, No. 12*: 1-46. P/O-02-00388.
- Carranza, L. 1891. Contracorriente marítima observada en Paita y Pacasmayo. *Bol. Soc. Geogr. Lima*, **1**: 344-345. P/O-02-00316.
- Carrillo, Camilo N. 1892. Disertación sobre las corrientes oceánicas y estudios de la corriente Peruana ó de Humboldt. *Bol. Soc. Geogr. de Lima. Tomo 11*: 72-110. P/O-02-00315.
- Castillo, Julio. 1965. Exploracion Bio-Oceanologica basica del area Callao-Punta Aguja, Crucero E-6503. Instituto del Mar del Perú, Informe No. 3: 14 p. + graphs. B/O-05-00006.

- Castracane, F. 1886. Report on the Diatomaceae. Report of the Scientific results of the voyage of H. M. S. Challenger during the years 1873-1876. Challenger Reports. Botany, 2.
- Caviedes, C. N. 1973. Secas and El Niño: Two simultaneous climatological hazards in South America. Proc. Assoc. Amer. Geogr. 5: 44-49.
- Charney, J. G. 1960. Non-linear theory of a wind-driven homogeneous layer near the equator. Deep-Sea Res., 6(4): 303-310. P/O-02-00183.
- Chiriboga, G., Hector A. 1974. Las Ballenas en el Pacifico Sur Oriental. Inst. Oceanografico Armada del Ecuador, Guayaquil. 1-54. B/O-04-00068.
- Chirichigno, Norma F. 1974. Clave Para Identificar Los Peces Marinos Del Peru. Minist. de Pesq. Inst. del Mar del Peru. Inform. No. 44 Callao, Peru, Julio 1974. B/O-05-00016.
- Clark, F. N. 1954. Biología de la anchoveta. Bol. Cient. Comp. Guano., 1(2): 98-131. B/O-04-00030.
- Clarke, E. 1962. Research on marine resources in Chile, Ecuador and Peru, Fish. News Int., 1(5): 44-50. B/O-05-00007.
- Clarke, Robert. 1962. Whale observations and whale marking off the coast of Chile in 1958 and from Ecuador towards and beyond the Galapagos Islands in 1959. Norsk-Hvalfangst-tid., 51(7): 265-287. B/O-04-00056.
- Cleve, P. T. 1894. Les Diatomées de l'Equateur. Le Diatomiste, 2: 99-103, plus charts. B/O-03-00026.
- Cobo, Mario and Harold Loesch. 1966. Estudio Estadístico de la Pesca del Camarón en el Ecuador y de algunas Características Biológicas de las Especies Explotadas. INPE Bol. Cient. y Tec. 1(6): 1-25. B/O-05-00020.
- Cobo, Mario and Sheyla Massay. 1969. Lista de los peces Marinos del Ecuador. INPE Bol. Cient. y Tec. 2(1): 1-68. B/O-04-00006.
- Cochrane, J. D. 1958. The frequency distribution of water characteristics in the Pacific Ocean. Deep-Sea Res. 5(2): 111-127. P/O-02-00003.
- _____. 1967. Preliminary report on the TEXAS A & M EASTROPAC CRUISE. Texas A & M Ref. 67-S-T: 21 p. P/O-02-00364.
- Cochrane, J. D. and Salvador Zuta. 1970. Equatorial Currents East of the Galapagos Islands in February-March 1967. m.s. of ALAMINOS work during EASTROPAC. P/O-02-00037.

- Coker, R. E. 1908a. Condición en que se encuentra la pesca marina desde Paita hasta Bahía de la Independencia. Bol. Minist. Fomento, Lima. **6(2)**: 89-117.
- _____. 1908b. Condición en que se encuentra la pesca marina desde Paita hasta Bahía de la Independencia. Bol. Minist. Fomento, Lima. **6(3)** 54-95.
- _____. 1908c. Condición en que se encuentra la pesca marina desde Paita hasta Bahía de la Independencia. Bol. Minist. Fomento, Lima. **6(4)**: 62-99.
- _____. 1910. The fisheries and the guano industry of Peru. U. S. Fish. Bull., **28(1)**: 333-365. B/O-05-00024.
- _____. 1918. Ocean temperatures off the coast of Peru. Geogr. Rev., 5: 127-135. P/O-02-00257.
- _____. 1919. Habits and economic relations of the guano birds of Peru. Proc. U. S. Nat. Mus., 56: 449-511. B/O-05-00005.
- Contreras de Cajas, L. 1966. m.s. Estudio sistemático y Ecológico de la Fam. Soleniadeae del Fitoplancton del Golfo de Guayaquil (tesis de grado doctoral). Universidad de Guayaquil-Ecuador. Fac. de Cien. Químicas y Naturales. 71 p., 1 map, 2 tables, 2 diagrams, 42 figures.
- Craig, A. K. 1968. Marine desert ecology. Final Report, Contract No. N00014-67-A-0320-0001 Project NR 388-086/12-20-66. Office of Naval Res. 199 p. B/O-05-00038, 00039, 00040.
- Crocker, R. S. 1967. The shrimp industry of Central America, the Caribbean Sea, and Northern South America. U. S. Fish. Wild. Serv., Fishery Leaf. No. 74: 127 p. B/O-04-00049, 00050.
- Cromwell, T. 1953. Circulation in a meridional plane in the central equatorial Pacific. Jour. Mar. Res. 12: 196-213. P/O-02-00234.
- _____. 1956. Eastropic Expedition: What it seeks, and where it fits into practical industrial fishing. Pacif. Fisherm. July 1956. P/O-02-00056.
- _____. 1958. Thermocline topography, horizontal currents and "ridging" in the eastern Tropical Pacific. Inter-Amer. Trop. Tuna Comm. Bull. [in English and Spanish]. **3(3)** : 135-164. P/O-02-00030.
- Cromwell, T., R. B. Montgomery and E. D. Stroup. 1954. Equatorial undercurrent in Pacific Ocean revealed by New Methods. Science **119(3097)**: 648-649.

- Cromwell, T. and J. L. Reid, Jr. 1956. A study of oceanic fronts. *Tellus*, **8**(1): 94-101. P/O-02-00130.
- Cromwell, T. and E. Bennett. 1959. Surface drift charts for the eastern tropical Pacific Ocean. *Inter-Amer. Trop. Tuna Comm. Bull.* [in English and Spanish]. **3**(5): 217-237. P/O-02-00031.
- Currie, R. 1953. The Callao Painter. *Weather*, **8**(10): 308-311. P/O-02-00206.
- Darwin, C. 1845. *Journal of Researches into the Natural History of the countries visited during the voyage of H. M. S. Beagle round the world, under the command of Capt. Fitz Roy, R. N.* John Murray, London. 519 p. P/O-04-00015 thru 00020.
- Deacon, G. E. R. 1957. Marine science in the south-east Pacific Ocean. *Nature*. **179**(4550): 66-68. P/O-02-00055.
- DeBuen, F. 1955a. Notas sobre un viaje de Estudios de Oceanografía aplicada en el extremo norte de la costa chilena. *Bol. Cient. Comp. Adminis. del Guano*. Vol. II: 25-39. B/O-05-00046.
- . 1955b. El estudio de la edad y el crecimiento en peces, viviendo en medios oceánicos diferentes y especialmente en la anchoveta a chicora (*Engraulis ringens*). *Bol. Cient. Comp. Adminis. del Guano* Vol. II: 41-47. B/O-04-00080.
- . 1957. Pelagic fishes and oceanographic conditions along the northern and central coast of Chile.. *Proc. UNESCO Sympos. Phys. Oceanogr., Tokyo*. 1955: 153-155. B/O-04-00014.
- De Lavalle, J. A. 1917. Informe preliminar sobre la causa de la mortandad de aves ocurrida en el mes de marzo del presente año. *Mem. Comp. Adm. Guano*. VIII: 61-84.
- . 1924. Estudio de la emigración de las aves guaneras ocurrida en los meses de mayo y junio del año 1923. *Mem. Comp. Adm. Guano*. XV: 94-107.
- De Miro, Montserrat, Roberto Jimenez, Elena Gualancañay and Maria Luzuriaga. 1974. Produccion Primaria y Pigmentos Fotosinteticos del Fitoplancton Marino del Ecuador. *Inst. Oceanogr. Armada del Ecuador, Guayaquil*. Pub. CM-BIO-1-74: 12 p. B/O-02-00052.
- De Miro, Montserrat and Maria Luzuriaga. 1974. Foraminiferos Planc-tonicos vivos en aguas superficiales ecuatorianas. *Inst. Oceanogr. Armada del Ecuador, Guayaquil*. Pub. CM-BIO-3-74: 14 p. B/O-03-00050.

- De Miro, Montserrat and Elena Gualancañay. 1974. Foraminiferos bentonicos de la plataforma continental de la Provincia de Esmeraldas, Ecuador. Inst. Oceanogr. Armada del Ecuador, Guayaquil, Pub. CM-BIO-4-74: 12 p. B/O-03-00049.
- de Sánchez, Yolanda Mora, Hermes León Mora and Wilson Espinosa R. 1969. Estadísticas de la actividad Pesquera en el Ecuador hasta 1968. INPE Bol. Inform. 4(2): 1-138. B/O-04-00037, 00038, 00039.
- De Sylva, D. 1962. Red-water blooms off northern Chile, April-May 1956, with reference to the ecology of the swordfish and striped marlin. Pac. Sci. 16(3): 271-279. B/O-02-00010.
- Doberitz, R. 1967a. Teleconnections and phase relations of rainfall at the tropical Pacific Ocean. Final Tec. Rep. Contract No. DA-91-591-EUC-3983, European Research Office, U. S. Army. 15 p., 6 tables, 11 figures. MET-03-00007.
- . 1967b. Zum Küstenklima von Peru. Eizelveröffentlichungen des Seewetteramtes Nr. 59, Deutscher Wetterdienst, Hamburg. 115 p., 24 figures.
- . 1969. Cross spectrum and filter analysis of monthly rainfall and wind data in the tropical Atlantic region. Bonner Meteor. Abhand. 11: 43 p. MET-01-00027.
- Doberitz, R., H. Flohn, and K. Schütte. 1967. Statistical investigations of the climatic anomalies of the equatorial Pacific. Bonner Meteor. Abhand. 7: 9-38 of 76 p. MET-03-00005, Entire Volume.
- Dulanto, L. G. 1955. Ensayo sobre la zoonomía de las aves guaneras del Perú. Bol. Cient. Comp. Admin. del Guano, Vol. II: 73-121 + graphs.
- Duperrey, M. L. 1829. Voyage autour du monde sur la Corvette de Sa Majesté, "La Coquille" pendant les années 1822, 1823, 1824 et 1825. Hydrographic. Arthur Bertrand, Paris. 164 p. + maps. P/O-02-00322, 00323.
- Eastropac Atlas. 1970. Cuthbert M. Love, Ed. Vol. 4 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00278 thru 00282.
- . 1971a. Cuthbert M. Love, Ed. Vol. 2 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00275, 00276, 00277.
- . 1971b. Cuthbert M. Love, Ed. Vol. 3 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00295 thru 00298.
- . 1972a. Cuthbert M. Love, Ed. Vol. 1 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00290 thru 00294.

- _____. 1972b. Cuthbert M. Love, Ed. Vol. 5 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00299 thru 00302.
- _____. 1972c. Cuthbert M. Love, Ed. Vol. 6 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00283, 00284, 00285.
- _____. 1973. Cuthbert M. Love, Ed. Vol. 7 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00303 thru 00306.
- _____. 1974. Cuthbert M. Love, Ed. Vol. 8 NOAA, NMFS. Circ. 330. unpagged. P/O-02-00286 thru 00289.
- Echegaray R., Ing. Medardo and Ing. Juan Chang-say Y. 1974. Contenido de algunos metales pesados en especies marinas peruanas. *Pacific Sur. Ciencia y Derecho*. **3**(2): 81-101. B/O-03-00053.
- Eguiguren, D. Victor. 1894. Las Lluvias de Piura. *Bol. Soc. Geogr. de Lima*. Tomo IV: No. 7-9: 241-258. MET-02-00014.
- Elliott, D. L. and J. J. O'Brien. 1975. The mesoscale wind field over an upwelling region. Submitted to *Mon. Weath. Rev.* (In press).
- Ericson, David B. and Goesta Wollin. 1967. *The Ever Changing Sea*. Illus. by Ingrid Niccoll. Knopf, New York, 1967. Chap. 2: 41-88. 366 p. P/O-01-00017.
- Evermann, B. W. and L. Radcliffe. 1917. The fishes of the west coast of Peru and Titicaca Basin. *U. S. Nat. Mus. Bull.*, 95: 1-166. B/O-04-00019, 00020.
- Farina, Luigi and Pedro Valverde. 1966. Observaciones sobre la Motorización de algunos Pequeños Barcos Pesqueros. *INPE Bol. Inform.* **2**(4): 1-20. P/O-04-00002.
- Fedorov, K. N. 1961. Some peculiarities of the currents and the ocean level at the equator [in Russian]. *Okeanologiya, Akad. Nauk. SSSR*. 1: 3-11. P/O-02-00325.
- Fiedler, R. H. 1944. The Peruvian Fisheries. *Geogr. Rev.*, 34: 96-119. B/O-04-00069.
- Fiedler, R. H., N. D. Jarvis and M. J. Lobell. 1943. La pesca y las industrias pesqueras en el Peru. *Comp. Admin. Guano, Lima*. 371 p.
- Findlay, A. G. 1853. Oceanic currents and their connection with the proposed Central American Canals. *Jour. Roy. Geogr. Soc.*, 23: 218-240. P/O-02-00261.
- Fisher, R. L. 1958. Preliminary report on Expedition DOWNWIND, Univ. of Calif., SIO IGY Cruise to the southeast Pacific. *IGY World Data Center A. IGY Gen. Rep. Ser.*, No. 2: 58 p. plus 12 figures. P/O-04-00014.

- Fleming, J. A., C. C. Ennis, H. U. Sverdrup, S. L. Seaton and W. C. Hendrix. 1945. Observations and results in physical oceanography. Oceanography 1-B In: Scientific Results of Cruise VII of the Carnegie during 1928-1929 under Command of Captain J. P. Ault. Carneg. Inst. Pub. No. 545: 315 p. P/O-02-00172 thru 00175.
- Fleming, R. H. 1935. Oceanographic studies in the Central American Pacific. Univ. of Calif. Ph.D. Dissertation. Univ. of Calif. 167 p. plus 55 figures. P/O-02-00215 thru 00219.
- _____. 1938. Tides and tidal currents in the Gulf of Panama. Jour. Mar. Res., 1: 192-206. P/O-03-00007.
- _____. 1940. A contribution to the oceanography of the Central American region. Proc. Sixth Pac. Sci. Congr., 3: 167-175. P/O-02-00392.
- Flohn, H. 1967. Dry equatorial zones and asymmetry of the global atmospheric circulation. Bonner Meteor. Abhand. 7: 3-8 p. MET-02-00015. Entire Vol. MET-03-00005.
- Flores, Luis, Oscar Guillén and Julio Vildivia. 1966. Informe Preliminar del Crucero de Invierno 1965 (Mancora-Morro Sama). Inst. del Mar del Perú, Inform. No. 11: 1-34. P/O-04-00033.
- Forrester, W. D. 1964. Thermocline structure in the Equatorial Pacific. Jour. Mar. Res. 22(2): 142-151. P/O-02-00004
- Forsbergh, E. D. 1961. STEP-1 Expedition, 15 September-14 December 1960. Part II. Biological, photometric and additional chemical data. Univ. Calif. Scripps Inst. Oceanogr., unpub. Rep., SIO Ref. 61-18: 66 p. P/O-02-00127.
- _____. 1963. Some relationships of meteorological, hydrographic and biological variables in the Gulf of Panama. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. 7(1): 1-109. P/O-02-00119, 00120.
- _____. 1969. On the climatology, oceanography and fisheries of the Panama Bight. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. 14(2): 49-385. P/O-02-00116, 00116A thru 00118.
- Forsbergh, E. D. and J. Joseph. 1963. Phytoplankton production in the southeastern Pacific. Nature 200(4901): 87-88. B/O-02-00019.
- _____. 1964. Biological production in the Eastern Pacific Ocean. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. 8(9): 479-527. B/O-02-00034.

- Forsbergh, E. D. and W. W. Broenkow. 1965. Oceanographic observations from the eastern Pacific Ocean collected by the R/V SHOYO MARU, October 1963-March 1964. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull., **10**(2): 83-237. P/O-02-00377, 00378.
- Freyre, Alfredo. 1967. Fishery development in Peru. Stud. Trop. Oceanogr. Miami 5: 391-411.
- Frijlink, C. P. M. 1925. Bijdrage tot het Probleem der Klimaatwisselingen (Contribution to the problem of climatic change). Natuur Utrecht. 45: 372-374. MET-02-00016.
- Funder, T. P. 1916. Hydrographic investigations from the Danish School Ship "VIKING" in the southern Atlantic and Pacific in 1913-1914. Medd. Komm. Havundersogelser, Ser. Hydrogr., **2**(6): 1-28. P/O-02-00114.
- Garcia, G. Pedro. 1921. Observaciones hidrologicas. Bol. del Cuerpo de Ing. de Minas. No. 102. Lima.
- Garcia, M. 1946. La correlación entre la Corriente Peruana y la meteorología. Bol. Soc. Geogr. Lima, **63**(1-2): 82-92. P/O-01-00014.
- Garth, J. S. 1948. The Brachyura of the "ASKOY" expedition, with remarks on carcinological collecting in the Panama Bight. Amer. Mus. Nat. Hist. Bull. 92: 1-66. B/O-04-00029.
- Garvine, Richard W. 1974. Dynamics of small-scale oceanic fronts. Jour. Phys. Oceanogr. **4**(4): 557-569. P/O-02-00179.
- Garvine, Richard W. and J. D. Monk. 1974. Frontal structure of a river plume. Jour. Geophys. Res., **79**(15): 2251-2259. P/O-02-00330.
- Gill, A. E. and A. J. Clarke. (preprint). Wind induced upwelling coastal currents and sea level changes. Dept. of Appl. Math and Theoret. Physics. Univ. of Cambridge. P/O-03-00018.
- Gilmartin, Malvern. 1964. Compilacion Bibliografica. Sobre la Oceanografía de las Aguas Litorales de Colombia, Ecuador y Peru, con especial referencia al fenomeno "El Niño." INPE Bol. Cient. y Tec. **1**(1): 1-15. P/O-04-00005.
- Goering, J. J. and D. Wallen. 1967. The vertical distribution of phosphate and nitrite in the upper one-half meter of the southeast Pacific Ocean. Deep-Sea Res., **14**(1): 29-33. C/O-01-00002.
- Graham, H. W. et al. 1943. Biological results of the last cruise of the CARNEGIE. Pub. Carneg. Inst., No. 555: 92 p. B/O-02-00038.

- Graham, H. W. and N. Bronikovsky. 1944. The genus *Ceratium* in the Pacific and North Atlantic Oceans. Pub. Carneg. Inst. No. 565: 209 p. B/O-03-00039, 00040, 00041.
- Graves, M. E., E. Schweigger and J. Valdivia P. 1955. Un año anormal: Bol. Cient. de la Compañía Adminis. del Guano. Lima. Vol. II: 49-71. P/O-02-00178.
- _____. 1957. El Año 1955: Suplemento Científico. Bol. de la Compañía Adminis. del Guano Vol. XXXIII(7): 5-20 and Vol. XXXIII(8): 7-18. Lima. P/O-02-00177.
- Groves, G. W. and F. Grivel. 1962. Some relationships between Sea Level and Wind in the Equatorial Pacific. Geof. Intern. 2(1): 14 p. plus charts. P/O-01-00007.
- Guillén, Oscar. 1964. Informe No. 28: Distribucion del Contenido de Fosfatos en la Region de la Corriente del Peru. Inst. de Invest. de los Recursos Marinos. Lima, Peru. Informe 28: 38 p. plus charts, (also listed as A, B, C with separate titles). C/O-03-00001.
- _____. 1967. Anomalies in the waters off the Peruvian coast during March and April 1965. Stud. Trop. Oceanogr. Miami. 5: 452-465. P/O-04-00013.
- _____. 1971. The "EL NIÑO" phenomenon in 1965 and its relations with the productivity in coastal Peruvian waters. In: Fertility of the Sea. 1: 308 p. 187-196. B/O-02-00002.
- Guillén, Oscar and Francisco Vasquez. 1966. Informe preliminar del Crucero 6602 (Cabo Blanco-Arica). Inst. del Mar del Perú, Lima. Informe No. 12: 27 p. P/O-04-00006.
- Guillén, Oscar and R. I. de Rondan. 1968. Produccion Primaria de las Aguas Costeras del Peru en el año 1964. Inst. del Mar del Peru. Bol. 1(7): 349-376. B/O-02-00009.
- Guillén, Oscar, B. R. de Mendiola and R. I. de Rondan. 1971. Primary productivity and phytoplankton in the coastal Peruvian waters. In: Fertility of the Sea; 1: 308 p. 157-185. B/O-00003.
- Gulland, J. A. 1971. The fish resources of the Ocean. Ed. J. A. Gulland. Fishing News Limited. Surrey, England. 136-145 p. B/O-04-00062.
- Gunther, E. R. 1936a. A Report on Oceanographical Investigations in the Peru Coastal Current. Discovery Reports. Vol. 13: 107-276 (plates XIV-XVI). P/O-02-00389, 00390.
- _____. 1936b. Variations in behaviour of the Peru Coastal Current with a historical discussion. Jour. Roy. Geogr. Soc., 88: 37-65. P/O-02-00262.

- Guzmán, L. 1969. Contribución a la Sistemática de los Dinoflagelados Tecados de la Bahía de Valparaíso (in literis). Tesis para optar al título de Biólogo Marino, Area de Matemáticas y Ciencias Naturales. Univ. de Chile, Valparaíso.
- Guzman, L. and I. Campodónico. 1972. Fitoplancton de red en Puerto Eden, Chile (26 de Marzo al 2 de Abril de 1971). *Ans. Inst. Pat., Punta Arenas (Chile)*: **3**(1-2): 209-219. B/O-02-00055.
- Halpern, David. 1974. Variations in the density field during coastal upwelling. *Téthys*. **6**(1-2): 363-374. P/O-02-00321.
- Hasle, G. R. 1969. An analysis of the phytoplankton of the Pacific Southern Ocean: Abundance, composition, and distribution during the Bratteg Expedition, 1947-1948. *Skr. Norske. Vidensk. Akad. Nr. 52*: 1-168. B/O-02-00060, 00061.
- Hendey, N. I. 1937. The plankton diatoms of the southern seas. *Discovery Rep.* 16: 151-364. B/O-03-00023, 00024, 00025.
- Hermosilla, J. 1972. Variaciones estacionales de los Dinoflagelados y Tintínidos en la Bahía de Concepción, Chile, *Bol. Soc. Biol. Concepción*. **44**: 149-159.
- _____. 1973. Contribución al conocimiento sistemático de los Dinoflagelados de la Bahía de Concepción, Chile. *Gayana*, **200**. Concepción. **24**: 1-149.
- Hertlein, L. G. and A. M. Strong. 1955. Marine mollusks collected during the "ASKOY" expedition to Panama, Colombia, and Ecuador in 1941. *Amer. Mus. Nat. Hist. Bull.* **107**: 159-318. B/O-04-00027, 00028.
- Hidaka, Koji. 1954. A contribution to the theory of upwelling and coastal currents. *Trans. Amer. Geophys. Un.*, **35**: 431-444. P/O-03-00008.
- _____. 1958. Computation of the wind stresses over the oceans. *Records of Oceanogr. works in Japan*. **4**(2): 77-98. MET-01-00008.
- _____. 1962. Non-Linear theory of an equatorial flow with special application to the Cromwell Current. *Jour. Oceanogr. Soc. Japan*. **20th Anniv. Vol.** 223-241. P/O-03-00013.
- _____. 1966. Non-Linear computation of the equatorial upwelling. *Jour. Oceanogr. Soc. Japan*. **22**(4): 145-153. P/O-03-00012.
- Hildebrand, S. F. 1946. A descriptive catalog of the shore fishes of Peru. *U. S. Nat. Mus. Bull.* **189**: 1-530. B/O-04-00021 thru 00026.
- Holladay, C. G. and J. J. O'Brien. 1974. Mesoscale variability of sea surface temperatures. (Submitted to *Jour. Phys. Oceanogr.*)

- Holmes, R. W. 1958. Surface chlorophyll "A," surface primary production, and zooplankton volumes in the Eastern Pacific Ocean. *Rapp. Cons. Explor. Mer.* 144: 109-116. B/O-02-00031.
- _____. 1963. A summary of productivity measurements in the southeastern Pacific Ocean. U. S. A. E. C., Div. Tech. Inform., TID-7633/18-57. B/O-02-00008.
- Holmes, R. W., M. B. Schaefer and B. M. Shimada. 1957. Primary production, chlorophyll, and zooplankton volumes in the tropical eastern Pacific Ocean. [in English and Spanish]. *Inter-Amer. Tropical Tuna Comm. Bull.* 2(4): 129-169. B/O-02-00023.
- Holmes, R. W. et al. 1958. Physical, chemical and biological oceanographic observations obtained on expedition SCOPE in the Eastern Tropical Pacific, November-December 1956. U. S. Fish Wild. Serv. Spec. Sci. Rep. Fish. 279: 1-117. P/O-02-00062, 00063.
- Holmes, R. W. and Maurice Blackburn. 1960. Physical, Chemical and Biological observations in the eastern Tropical Pacific Ocean: SCOT Expedition, April-June 1958. U. S. Fish Wild. Serv., Spec. Sci. Rep. Fish., No. 345: 1-106. P/O-02-00122, 00123.
- Hurlburt, H. E. 1974. The influence of coastline geometry and bottom topography on the Eastern Ocean circulation. Mesoscale Air-Sea Interaction Group, Tech. Rep. ONR Contract NONR-N00014-67-A0235-0002 and NSF Grant GA-29734: 103 p. P/O-03-00009, 00010.
- Hurlburt, H. E. and J. D. Thompson. 1973. Coastal upwelling on a β -Plane. *Jour. Phys. Oceanogr.* 3(1): 16-32. P/O-03-00014.
- Hutchinson, G. E. 1950. Vertebrate Excretion. *Amer. Mus. of Nat. Hist. Bull.* 96: 1-554. B/O-05-00008 thru 00013A.
- Ianniello, John P. and R. W. Garvine. 1975. Stokes transport by gravity waves for application to circulation models. *Jour. Phys. Oceanogr.* 5(1): 47-50. P/O-03-00028.
- Ichiye, T. 1966. Vertical currents in the equatorial Pacific. *Jour. Oceanogr. Soc. Japan.* 22(6): 274-284. P/O-03-00001.
- Ichiye, T. and J. R. Petersen. 1963. The anomalous rainfall of the 1957-58 winter in the equatorial central Pacific arid area. *Jour. Met. Soc. Japan.* 41(3): 172-182. MET-01-00017.
- Idyll, C. P. 1973. The Anchovy crisis. *Scient. Amer.* 228(6): 22-29. B/O-04-00051.

- Instituto Hidrografico. 1968. Operacion Oceanografica Marchile 1-Datos Fisico-Quimicos. Realizada por la P. G. CHIPANA entre el 20 de Febrero y el 20 de Marzo de 1960. Valparaiso, Republica de Chile, Inst. Hidro. de la Armada. unpaged. P/O-02-00345, 00346.
- Instituto de Investigaciones Pesqueras. 1971. Consejo Superior de Investigaciones Cientificas Patronato Juan de la Cierva. Barcelona, Spain. **35**(1) :1-362. B/O-05-00041 thru 00044.
- Instituto Nacional de Pesca del Ecuador. 1966a. Fondos Arrastrables de la Plataforma continental del Ecuador. Dept. de Oceanograf. Pesca Experimental. INPE Bol. Inform. **4**(1): 1-9 plus maps. B/O-04-00055.
-
- 1966b. Proyecto de El Niño. Un estudio intergubernamental de las aguas costeras del Pacifico de la America del Sur. Informe de datos No. 1, noviembre 1963-diciembre 1964. Guayaquil. 531 p. P/O-02-00136 thru 00147.
-
- 1967a. Proyecto de El Niño. Un estudio intergubernamental de las aguas costeras del Pacifico de la America del Sur. Informe de datos No. 2 enero 1965-mayo 1966. Guayaquil. 759 p. P/O-02-00148 thru 00163.
-
- 1967b. Proyecto de El Niño. Un estudio intergubernamental de las aguas costeras del Pacifico de la America del Sur. Informe de datos No. 3, mayo 1965-marzo 1966. Guayaquil. 362 p. P/O-02-00164 thru 00171.
-
- 1971. II Censo Pesquero Nacional 1971. Rep. del Ecuador. Vol. 1 (Pesca Artesanal).
-
- 1972a. Pesca Exploratoria-Crucero No. PEA-1/72. INPE Bol. Inform. **6**(1): 1-10 plus figures. B/O-05-00026.
-
- 1972b. Pesca Exploratoria-Cruceros Nos. PEA-2/72, PEP-3/72. INPE Bol. Inform. **6**(2): 1-27. B/O-03-00030.
- Instituto Oceanografico de la Armada. 1973. Atlas Oceanografico Vol. 1, Julio 1971-Mayo 1972. Inst. Oceanogr. de la Armada. Guayaquil, Ecuador. Vol. 1: 72 p.
- Inter-American Tropical Tuna Commission. 1966. Oceanographic Observations in the Gulf of Guayaquil, 1962-64. Part 1. Physical and chemical; Data Report No. 1, La Jolla. [in English and Spanish]. 1503 p. P/O-02-00074 thru 00104.

- _____. 1968. Oceanographic Observations in the Gulf of Guayaquil, 1962-1964. Part 2. Biological, chemical, and physical; Data Report No. 2. La Jolla. [in English and Spanish]. 494 p. P/O-02-00064 thru 00073.
- James, P. A. A. 1953. Aguaje, the Callao Painter. *Weather*, **8**(7): 208-209. P/O-02-00221.
- Jiménez S., Roberto. 1974. Marea Roja, Debida a un ciliado en el Golfo de Guayaquil, Ecuador. *Inst. Oceanogr. Armada del Ecuador, Guayaquil*, Pub. CM-B10-2-74: 11 p. B/O-02-00053.
- Jones, James. 1969. Surfacing of Pacific Equatorial Undercurrent: Direct Observation. *Science* **163**(3874): 1449-1450. P/O-02-00011.
- Kajuiira, K. 1952. Velocity distribution of Wind Currents in Eastern Part of Equatorial Pacific. *Jour. Oceanogr. Soc. Japan*. **8**(1): 15-21. P/O-03-00029.
- Kelley, J. C. 1974. Spatial characteristics of nutrient and phytoplankton fields in upwelling areas. *Téthys*. **6**(1-2) : p. 453. P/O-03-00027.
- Kerhallet, C. P. de. 1869. General examination of the Pacific Ocean. U. S. Navy Hydro. Office. H. O. 5.
- Kierstead, H. and L. B. Slobodkin. 1953. The size of water masses containing plankton blooms. *Jour. Mar. Res.* **12**(1): 141-147. B/O-01-00004.
- Kindle, J. C. 1974. The horizontal coherence of inertial oscillations in a coastal region. *Geophys. Res. Lett.* **1**(3): 127-130. P/O-02-00365.
- King, J. E. 1958. Variations in the abundance of zooplankton of the Central Pacific in respect to equatorial upwelling. *Proc. 9th Pac. Sci. Cong. Bangkok, 1957*. 16: 98-107. B/O-05-00023.
- King, J. E., T. S. Austin and M. S. Doty. 1957. Preliminary report on Expedition Eastropic. U. S. Fish Wild. Serv. Spec. Sci. Rep. Fish. 201: 155 p. P/O-02-00060, 00061.
- King, J. E. and T. S. Hida. 1957. Zooplankton abundance in the central Pacific. Part II. U. S. Fish Wild. Serv. Fish. Bull. **57**(118): 365-387. B/O-03-00007.
- Kirkpatrick, R. Z. 1926. Panama tides. *Proc. U. S. Nav. Inst.* **52**(4): 660-664. P/O-02-00256.
- Knauss, J. A. 1960. Measurements of the Cromwell Current. *Deep-Sea Res.* **6**(4): 265-286. P/O-02-00044.
- _____. 1961. The structure of the Pacific equatorial counter-current. *Jour. Geophys. Res.*, **66**(1): 143-155. P/O-02-00391.

- _____. 1964. Equatorial Current Systems. In: *The Sea: Ideas and observations on progress in the study of the seas*. Vol. 2: 235-252. Interscience, New York, 554 p. P/O-02-00125.
- _____. 1966. Further measurements and observations of the Cromwell Current. *Jour. Mar. Res.* **24**(2): 205-240. P/O-02-00121.
- Koepcke, H. 1952. Sobre el proceso de transformación de la materia orgánica en las playas arenosas marinas del Perú. *Publ. Mus. Hist. Nat. "Javier Prado," Zoologica* 8: 1-24. B/O-04-00057.
- Kofoid, C. A. 1907. New species of dinoflagellates. In: *Reports on the scientific results of the expedition to the eastern tropical Pacific . . . "Albatross," from October, 1904, to March, 1905*. *Mus. Comp. Zool. Harv. Bull.*, **50**(6): 163-207. B/O-03-00042.
- Kofoid, C. A. and J. R. Michener. 1911. New genera and species of dinoflagellates. In: *Reports on the scientific results of the expedition in the eastern tropical Pacific . . . "Albatross," from October, 1904 to March, 1905*. *Mus. Comp. Zool. Harv. Bull.*, 54: 267-302. B/O-03-00029.
- Kofoid, C. A. and A. S. Campbell. 1929. A conspectus of the marine and freshwater Ciliata belonging to the sub-order Tintinnoinea, with descriptions of new species principally from the Agassiz expedition to the eastern tropical Pacific 1904-1905. *Univ. Calif. Pub. Zool.*, 34(1): 1-404. B/O-03-00031 thru 00035.
- Kofoid, C. A. and A. M. Adamson. 1933. The Dinoflagellata: The family Heterodiniidae of the Peridinioidae. In: *Reports on the scientific results of the expedition to the eastern tropical Pacific . . . "Albatross," from October, 1904 to March, 1905*. *Mem. Mus. Comp. Zoo. Harv.*, **54**(1): 1-136. B/O-03-00047, 00048.
- Krasske, G. 1941. Die Kieselalgen des chilenischen Küstenplanktons. *Arch. Hydrobiol.* 38: 260-287. B/O-02-00049.
- Kreuger, A. F. and T. I. Gray, Jr. 1969. Long-term variations in equatorial circulation and rainfall. *Mon. Wea. Rev.* 97(10): 700-711. MET-01-00014.
- Landa, A. 1953. Analisis de muestras diarias de fitoplancton superficial en Chimbote, Julio 1951 a Junio 1952. *Bol. Cient. Comp. Admin. Guano.* **1**(1): 63-75 + 24 p. illustrations. B/O-02-00065.
- Lange, R. 1970. "Alisio" un "Humboldt-Strom" (trade wind and Humboldt Current). *Der Wetterlotse, Hamburg.* **22**(286-287): 156-162.
- Lastres, D. E. C. 1935. La Corriente del Perú. *Rev. del Cons. Oceanogr. Ibero-Amer.*, **6**(1): 45 p. P/O-02-00220.

- Lavalle and J. A. Garcia. 1912. De una hipotesis sobre la grande mortalidad de las aves producteras de guano y su emigracion de las islas. Mem. Comp. Adm. del Guano. No. 3. Lima.
- _____. 1918. La contracorriente ecuatorial como causa determinante del fenómeno marino conocido con el nombre de "aguaje." Bol. Soc. Geogr. Lima. 33: 313-330. P/O-02-00260.
- LaViolette, Paul E., Walter Howard and Curtis Mason. 1968. Monthly Charts of Mean Minimum and Maximum Sea Surface Temperature in the Pacific Ocean. Nav. Oceanogr. Off. Washington, D. C., 20390. IR No. 68-2. 53 p. P/O-02-00115.
- Lemasson, L. and B. Piton. 1968. Anomalia dinamica de la superficie del mar a lo largo del Ecuador en el Oceano Pacifico: Armada Argentina. Bol. del Serv. de Hidro. Naval. 6(3): 296-303. P/O-02-00045.
- Lettau, B. 1974. Pressure-wind relationships in the equatorial surface westerlies. Mon. Wea. Rev. 102: 208-218. MET-01-00024.
- Lobell, M. G. 1942. Some observations on the Peruvian Coastal Current. Trans. Amer. Geophys. Un. 2: 332-336. P/O-02-00249.
- Loesch, Harold. 1966. Observaciones de Ballenas en Aguas Ecuatorianas. INPE Bol. Cient. y Tec. 1(4): 1-17. B/O-04-00018.
- Loesch, Harold and Efren Lopez. 1966. Observaciones sobre la Langosta de la Costa Continental del Ecuador. INPE Bol. Cient. y Tec. 1(5): 1-30. B/O-04-00016.
- Loesch, Harold and Mario Cobo. 1966. Estudios sobre las Poblaciones de Camarón Blanco en el Ecuador. INPE Bol. Cient. y Tec. 1(7): 1-47. B/O-04-00015.
- Loesch, Harold and Mario Cobo. 1972. Algunas Notas sobre el Analisis de los Datos de Pesca de Arrastre del Instituto Nacional de Pesca. INPE Bol. Cient. y Tec. 2(2).
- Loesch, Harold and Quinto Avila. 1964. Claves para la Identificacion de Camarones Peneidos de Interes Comercial en el Ecuador. INPE Bol. Cient. y Tec. 1(2): 1-29. B/O-04-00017.
- Loesch, Harold and Quinto Avila. 1966. Observaciones sobre la presencia de Camarones Juveniles en Dos Esteros de la Costa del Ecuador. INPE Bol. Cient. y Tec. 1(8): 1-30. B/O-03-00001.
- Longhurst, A. R. 1971. The Clupeoid resources of tropical seas. Oceanography and Marine Biology, An Annual Review. Edit. by H. Barnes. Vol. 9: 349-385. B/O-04-00031.

- Longuet-Higgins, M. S. 1965. Some dynamical aspects of ocean currents. *Qtrly. Jour. Roy. Meteor. Soc.* **91**(390): 425-451. P/O-03-00011.
- Lopez, Efren and Jaime Barragan. 1974. Estudio Biologico Pesquero de la Langosta de Espina del Pacifico Ecuatoriano (Crustacea: Decapoda: Palinuridea). *Pacific Sur. Ciencia y Derecho.* **3**(2): 59-79. B/O-03-00052.
- Madden, R. et al. 1971. Rawinsonde data obtained during the Line Islands Experiment. Vol. I, Data reduction procedures and thermodynamic data. Vol. II, wind data. NCAR-TN/STR-55. Boulder, Colo., National Center for Atmospheric Research. MET-01-00038 thru 00045.
- Maeda, Sonosuke and Ricardo Kishimoto. 1970. Upwelling off the coast of Peru. *Jour. Oceanogr. Soc. Japan.* **26**(5): 300-309. P/O-02-00039.
- Malkus, J. S. 1958. On the structures of the trade wind moist layer. *Papers in Physical Oceanography and Meteorology.* M. I. T. and W. H. O. I., Vol. XIII, No. 2. MET-02-00011.
- _____. 1962. Large-scale interactions. In: *The Sea.* Vol. 1: 88-294. Interscience. New York. 886 p. P/O-01-00001, 00002, 00003.
- Manheim, F., G. T. Rowe and D. Jipa. 1975. Marine phosphorite formation off Peru. *Jour. Sedim. Petrol.* **45**(1): 243-251.
- Mann, A. 1907. A Report on the diatoms of the Albatross voyage in the Pacific Ocean, 1888-1904. *Contr. Nat. Herb. Wash.,* **10**(5): 221-444. B/O-03-00036, 00037, 00038.
- Marmer, H. A. 1930. Panama tides. *Proc. U. S. Nav. Inst.,* **56**(333) : 1003—1008. P/O-02-00368.
- _____. 1951. The Peru and Niño currents. *Geogr. Rev.* **41**: 337-338. P/O-02-00235.
- Martelly, J. 1955. La Corriente Humboldt; contribución a su conocimiento experimental y ensayo sobre su teoria mecánica. *Rev. Biol. Mar., Valparaiso.* **5**: 17-57. P/O-02-00250.
- Martinez, F., Carlos. 1974. Prospeccion de Atunes y Peces Espada en el Oceano Pacifico Oriental al Este de Los 110°W segundo semestre de 1971. *Pacific Sur. Ciencia y Derecho.* **3**(2): 7-57. B/O-03-00051.
- McNider, R. and J. J. O'Brien. 1973. A multi-layer transient model of coastal upwelling. *Jour. Phys. Oceanogr.* **3**(3): 258-273. P/O-03-00032.
- Mears, E. G. 1942. Humboldt Current in 1941. *Science.* **95**: 433-434. (7 year cycle disproved). P/O-02-00223.

- _____. 1943a. Boundaries of the Humboldt Current. *Jour. Wash. Acad. Sci.* **33**(5): 125-130. P/O-02-00224.
- _____. 1943b. The Callao painter. *Sci. Monthly.* 57: 331-336. P/O-02-00227.
- _____. 1944a. The ocean current called "The Child." *Ann. Rep. Smithson. Inst.* (1943). 245-251. P/O-02-00226.
- _____. 1944b. Research in Pacific Oceanography. *Jour. Geophys.* 43(2).
- Meek, S. E. and S. F. Hildebrand. 1923-1928. The marine fishes of Panama. *Field Mus. Nat. Hist., Zoo. Ser.* Vol. 15: 1-330, 331-707, 709-1045. B/O-04-00004.
- Mendiola, B. de. 1958. Breve estudio sobre la variación cualitativa anual del plancton superficial de la Bahía de Chimbote (Perú). *Bol. Comp. Admin. Guano.* **34**(12): 7-17 p. B/O-02-00001.
- Menzies, R. J. and E. Chin. 1966. Cruise Report, Research Vessel Anton Bruun Cruise II, Special Report No. 1. Marine Lab. Texas A & M Univ. (unpublished). P/O-02-00025A, 00025B.
- Mereschkowsky, C. 1900. Note on diatoms from Chíncha Guano. *Ann. and Mag. of Nat'l. History.* Ser. 7, 6: 481-489. B/O-03-00012.
- Merriman, D. 1955. El Niño brings rain to Peru. *Amer. Science* 43: 63-76. P/O-02-00237.
- Meyer, R. M. 1966a. Contribucion al estudio del fitoplancton del paso de Drake (1960-61). *Cienc. Mar.* 1: 41-82. B/O-02-00056.
- _____. 1966b. Contribucion al estudio del fitoplancton recolectado en el Paso de Drake durante los años (1961-62). *Cienc. Mar.* 1: 109-120. B/O-02-00057.
- _____. 1970. Algunas observaciones sobre los muestras de fitoplancton recolectadas en la Operacion Oceanografica MARCHILE V. Feb.-Mar. 1967. *Inv. Mar.* **1**(4): 73-91. B/O-02-00051.
- Meyer, R. M. and Orellana, E. Algunas observaciones sobre la distribucion del fitoplancton marino recolectado durante la "Operacion Oceanografica MARCHILE VII." Marzo, 1968. *Inv. Mar.* 5 (En prensa).
- Miller, F. R. and R. M. Laurs. 1975. The El Niño of 1972-73 in the Eastern Tropical Pacific Ocean. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.* **16**(5): 403-448. P/O-01-00008.

- Ministerio De Defensa Nacional Armada Nacional. 1970. Crucero Oceanografico en el Caribe Colombiano. Oceano, 1-1969. Resultados preliminares. Bogota, Pub. DO-1: 96 p. P/O-02-00036.
-
- _____. 1971. Crucero Oceanografico en el Pacifico Colombiano. Pacifico, 1-1970. Resultados preliminares. Bogota, Pub. DO-2: 103 p. P/O-02-00034, 00035.
- Montgomery, R. B. 1962. Equatorial Undercurrent Observations in Review. Jour. Oceanogr. Soc. Japan. 20th Anniv. Vol. 487-498. P/O-02-00021.
- Morla, Ovidio R. and Yolanda Mora de Sanchez. 1967. Estudio de prefactibilidad para la Instalacion de un varadero-taller de reparaciones a naves pesqueras. INPE Bol. Inform. 3(1).
- Mossman, R. C. 1924. Indian Monsoon rainfall in relation to South American weather 1875-1914. India. Met. Dept. Mem. **23**(6): 157-245. MET-01-00056.
- Mugica, Ramon. 1969. Ondas internas en el mar norte del Peru. Univ. de Piura. Separata del No. 478: 1-7. 4 figures, 4 charts. P/O-02-00007.
- Murakami, T. 1974. Atmospheric response to heat sources during July. UHMET 74-04. Honolulu, Univ. of Hawaii. 50 p. MET-03-00001.
- Murphy, R. C. 1923. The oceanography of the Peruvian littoral with reference to the abundance and distribution of marine life. Geogr. Rev. 13: 64-85. B/O-04-00052, 00053.
-
- _____. 1925a. Bird Islands of Peru. The record of a sojourn on the west coast. Putnam, New York. 362 p. B/O-04-00076 thru 00079.
-
- _____. 1925b. Recent oceanographic phenomena along the coast of South America. Mon. Weath. Rev. **53**(3): 116-117. P/O-02-00251.
-
- _____. 1926. Oceanic and climatic phenomena along the west coast of South America during 1925. Geogr. Rev. 16: 26-54. P/O-01-00006.
-
- _____. 1932. The Humboldt and Niño currents. Geogr. Rev. **22**: 148-150. P/O-01-00011.
-
- _____. 1936. The oceanic birds of South America. Amer. Mus. Nat. Hist. New York, 2 Vols. 1245 p. Vol. I—B/O-05-00003, 00004. Vol. II—B/O-05-00002.
-
- _____. 1937. Notes on the findings of the "William Scoresby" in the Peru Coastal current. Geogr. Rev. 27: 295-300. P/O-02-00236.

- _____. 1939. The littoral of Pacific Colombia and Ecuador. *Geogr. Rev.* 29: 1-33. P/O-02-00307.
- _____. 1942. Pacific campaign of the schooner Askoy-Darien, Colombia, Ecuador. *Amer. Geophys. Un.* 23: 336-338. P/O-04-00021.
- _____. 1954. El guano y la pesca de anchoveta. *Informe Oficial Comp. Admin. Guano.* (1954): 1-39. B/O-04-00041.
- Namias, J. 1960. The meteorological picture 1957-58 p. 31-41. In: Symposium on "The changing Pacific Ocean in 1957 and 1958." *Rep. Calif. Coop. Oceanic. Fish. Invest.* Vol. 7: 31-41. MET-01-00002.
- _____. 1973. Response of the equatorial countercurrent to the subtropical atmosphere. *Science*, 28 Sept. 181: 1244-1245. P/O-01-00005.
- National Oceanic and Atmospheric Administration, Environmental Data Service 1974 onward. *Marine Climatological Summaries (Eastern Pacific)—Vol. 1 (1961)*. Asheville, N. C. National Climatic Center. MET-04-00005 thru 00009.
- Nicholls, N. 1973. The Walker Circulation and Papua New Guinea rainfall. *Tech. Rep. No. 6, Bur. Meteor. Australia*, 13 p. MET-01-00013.
- Nichols, J. T. and R. C. Murphy. 1922. On a collection of marine fishes from Peru. *Amer. Mus. Nat. Hist. Bull.* 46: 501-516. B/O-04-00073.
- _____. 1944. A collection of fishes from the Panama Bight, Pacific Ocean. *Amer. Mus. Nat. Hist. Bull.* 38: 217-260. B/O-04-00054.
- Nielsen, Steemann, E. 1934. Die Verbreitung, Biologie und Variation der *Ceratium* im sudlichen Stillen Ozean. *Dana Expedition. 1928-30. Dana Rep.* 4: 1-67. B/O-02-00029.
- O'Brien, J. J. 1975a. Models of coastal upwelling—a review. *Proc. of Symposium on Numerical Physical Oceanography.* (Nat. Acad. Sci.). Wash., D. C. (In press).
- _____. 1975b. Spatial inhomogeneity in the ocean. *NATO Conf. In: Modelling of Marine Systems, Chapter 12.* Ed. J. Nihoul, Elsevier, Amsterdam.
- O'Brien, J. J. and J. S. Wroblewski. 1973. On advection in phytoplankton models. *Jour. Theor. Biol.* 38: 197-202. B/O-01-00001.
- O'Brien, J. J. and H. E. Hurlburt. 1974. An equatorial jet in the Indian Ocean, *Theory. Science.* 184(4141): 1075-1077. P/O-03-00031.

- Orellana, E. 1971. Sistemática (Dinoflagellatae) y distribución del fitoplancton marino en una área del Pacífico Sud-Oriental. (In literis). Tesis para optar al título de Profesora de Biología, Univ. Católica de Valparaíso. 92 p. + 48 figures. B/O-02-00066, 00067.
- Pacific Science Association. 1961. Oceanography; SE Pacific. Inform. Bull. Vol. 13(1): 9-10. MET-01-00029.
- Pak, Hasong and J. R. V. Zaneveld. 1973. The Cromwell Current on the East Side of the Galapagos Islands. Jour. Geophys. Res. **78**(33): 7845-7859. P/O-02-00040.
- _____. 1974. Equatorial front in the eastern Pacific Ocean. Jour. Phys. Oceanogr. **4**(4): 570-578. P/O-02-00133.
- Patzert, William C. and Mizuki Tsuchiya. 1974. Some ideas concerning the mechanism for El Niño. (abstract). Proces-Verbaux No. 13. IUGG, IAPSO First Spec. Assembly, Melbourne. January 1974. P/O-01-00013.
- Peng, E. Y. and Y. Hsueh. 1974. Further results from diagnostic modeling of coastal upwelling. Téthys. **6**(1-2): 425-432. P/O-03-00026.
- Petersen, George. 1935. Estudios climatologicos del Noroeste peruano. Bol. Soc. Geol. del Peru. Tomo VII. Fasc. 2: 1-141.
- _____. 1937. Pholodomya Olssoni n. sp y El Neogenico Superior de Tumbes (Peru). Tomo IX: 23-36.
- _____. 1960. Tumbes das trophische Kuestengebiet im nord-westlichen Peru, Peraunische Post. Lima 6° Jahre. N° 2 y 3 1960.
- Petersen, G., Georg and Ramon Mugica M. 1972. Historia Maritima Del Peru. EL MAR: Gran Personaje. Tomo I, Volumen 1:473 p. + 88 p. prologo. P/O-04-00027 thru 00032.
- Pettersen, J. 1910. Unperiodische Temperaturschwankungen im Golfstrom und deren Beziehungen zu der Luftdruckverteilung. Ann. Hydrogr. Mar. Meteorol., **38**: 397-417.
- Pezet, F. A. 1896. La Contra-corriente "El Niño," en la costa norte del Perú. Bol. Soc. Geogr. Lima. **5**: 457-461. P/O-04-00025.
- Piccone, A. 1886. Diatomées. In: "Alghe del Viaggio di Circumnavigazione della Vettor Pisani." Notarisia, **3**: 259-260, 283-287. B/O-03-00043.
- Pike, A. C. 1970. The Inter-Tropical Convergence Zone studied with an Interacting Atmosphere and Ocean Model. AFCRL-70-0069. Sci. Rep. No. 2: 25 p.
- Pizarro, M. 1973. Estudios de ecología fitoplanctónica en la Bahía de Valparaíso. I. La temperatura superficial y la radiación solar, Rev. Biol. mar. Valp. **15**(1): 77-105. B/O-02-00035.

- Popovici, Z. 1962. Corrientes oceánicas y la pesca peruana. Anuario de Pesca, Lima. 1961/1962: 162-172. B/O-04-00001.
- _____. 1963. Horizontes oceánicos de Sudamérica. Anuario de Pesca, Lima. 1962/1963: 32-74. P/O-02-00255.
- Posner, G. S. 1954. The Peru Current. *Scient. Amer.* **190**(3): 66-71. P/O-02-00326.
- _____. 1957. The Peru Current. *Bull. Bingham Oceanogr. Coll.* **16**(2): 106-151. P/O-04-00034.
- Puls, C. 1895. Oberflächentemperaturen und Strömungsverhältnisse des Äquatorial gürtels des Stillen Ozeans. *Arch. Deutsche Seewarte*, **18**(1): 37 p. + 3 charts. P/O-02-00320.
- Quinn, W. H. 1971. Late Quaternary Meteorological and Oceanographic Developments in the Equatorial Pacific. *Nature*. 229: 330-331. MET-01-00009.
- _____. 1974. Monitoring and Predicting El Niño Invasions. *Jour. Appl. Met.* **13**(7): 825-830. MET-01-00001.
- Quinn, W. H. and W. V. Burt. 1970. Prediction of abnormally heavy precipitation over the Equatorial dry zone. *Jour. Appl. Meteor.* **9**(1): 20-28. MET-01-00003.
- _____. 1972. Use of the Southern Oscillation in weather prediction. *Jour. Appl. Meteor.* **11**(4): 616-628. MET-01-00004.
- Quiroga, Domingo and others. 1964a. Apuntes e informaciones sobre las Pesquerías en la Provincia de El Oro. *INPE Bol. Inform.* **1**(1).
- _____. 1964b. Apuntes e informaciones sobre las Pesquerías de la Provincia de Manabí. *INPE Bol. Inform.* **1**(2): 66 p. B/O-04-00070.
- _____. 1964c. Apuntes e Informaciones sobre las Pesquerías en la Provincia del Guayas y Los Rios. *INPE Bol. Inform.* **1**(4): 64 p. B/O-04-00060.
- Quiroga, Domingo and Aníbal Orbes Armas. 1964a. Apuntes e Informaciones sobre la Situación de la Producción Pesquera Ecuatoriana y sus Mercados. *INPE Bol. Inform.* **1**(3): 28 p. B/O-04-00071.
- _____. 1964b. Apuntes e Informaciones sobre las Pesquerías en el Archipiélago de Colón (Islas Galápagos). *INPE Bol. Inform.* **1**(5): 18 p. B/O-04-00072.

- _____. 1964c. Apuntes e Informaciones sobre las Pesquerias en la Provincia de Esmeraldas. INPE Bol. Inform. **1**(6): 22 p. + 3 appendices, 11 illustrations, 1 map. B/O-05-00048.
- Rahm, G. 1937. Zoologische Probleme an der südamerikanischen Westküste, besonders über das Massensterben im Pazifik. C. R. 12e Cong. Int. Zool. Lisboa 1935 Vol. 2, Sec. V: 1237-1247. B/O-05-00045.
- Raimondi, D. A. 1891. Fenómeno llamado El Pintor. Bol. Soc. Geogr. Lima. 1: 58-67. P/O-02-00314.
- Rakestraw, N. W., P. L. Horrer and W. S. Wooster. 1957. Oceanic observations of the Pacific: 1949. Univ. Calif., Scripps Inst. Oceanogr. Pub. 364 p. Inside cover, p. 11, p. 338-349 (14 p.). P/O-02-00379.
- Rakestraw, N. W., J. L. Reid, P. Rudnick and W. S. Wooster. 1960. Oceanic observations of the Pacific: 1950. Univ. Calif., Scripps Inst. Oceanogr. Pub. 508 p. Inside cover, p. xxii, p. 418-458 (43 p.). P/O-02-00380.
- Ramage, C. S. 1970. Meteorology of the South Pacific tropical and middle latitudes. In: Scientific exploration of the South Pacific (W. S. Wooster, ed.) p. 16-29. Washington, D. C., National Academy of Sciences. MET-01-00015.
- _____. 1975. Preliminary discussion of the meteorology of the 1972-73 El Niño. Bull. Amer. Meteor. Soc. **56**(2): (In press).
- Ramirez, R. B., S. Palma G. and H. Barrientos C. 1974. Productividad primaria de las aguas costeras y oceánicas de las zonas norte y central de Chile. (Operacion Oceanografica Marchile VIII) CONA, CHILE, Pub. No. 1: 1-19 plus 14 figures. B/O-02-00047.
- Rampi, L. 1950. Peridiniens rares ou nouveaux pour le Pacifique Sud-Equator. Inst. Oceanogr. Bull., Monaco. 974: 1-11. B/O-02-00046.
- Rao, G. V. and T. S. Murty. 1973. Some case studies of Vertical Circulations Associated with Oceanic Fronts. Jour. Geophys. Res. **78**(3): 549-557. P/O-03-00019.
- Reid, J. L., Jr. 1959. Evidence of a South Equatorial Countercurrent in the Pacific Ocean. Nature. 184: 209-210. P/O-02-00041.
- _____. 1961a. On the formation and movement of the South Pacific intermediate water. 10th Pac. Sci. Cong. 21 Aug.-6 Sept., 1961. Abstracts of Symposium papers. 337-338. P/O-02-00238.

- _____. 1961b. On the Geostrophic Flow at the Surface of the Pacific Ocean with respect to the 1,000-decibar Surface. *Tellus*. **13**(4): 489-502. P/O-02-00010.
- _____. 1962. On circulation, phosphate-phosphorus content, and zooplankton volumes in the upper part of the Pacific Ocean. *Limnol. and Oceanogr.* **7**(3): 287-306. B/O-03-00008.
- _____. 1973. The Shallow salinity minima of the Pacific Ocean. *Deep-Sea Res.* **20**: 51-68. P/O-02-00012.
- Reid, J. L., Jr., R. S. Arthur and E. B. Bennett. 1963. Oceanic observations of the Pacific: 1951. Univ. Calif. Scripps Inst. Pub. 598 p. Inside cover, p. xxvii, p. 479-539 (63 p.). P/O-02-00381.
- Reid, J. L., Jr., R. S. Arthur, E. B. Bennett and V. A. Wyllie. 1963. Oceanic observations of the Pacific: 1956. Univ. Calif. Scripps Inst. Oceanogr. Pub. 458 p. Inside cover, p. xxxi, p. xxxii, p. 265-277, p. 279-285 (23 p.). P/O-02-00382.
- Reid, J. L., Jr., Henry Stommel, E. Dixon Stroup and Bruce A. Warren. 1968. Detection of a deep boundary current in the Western South Pacific. *Nature, London*. **217**(5132): p. 937. P/O-02-00225.
- Renner, J. A. 1963. Sea surface temperature monthly average and anomaly charts, eastern tropical Pacific Ocean, 1947-58. U. S. Fish Wild. Serv. Spec. Sci. Rep., Fish. 442: 1-57. P/O-02-00385.
- Rivera, P. 1968. Sinópsis de las diatomeas de la Bahía de Concepción, Chile. *Gayana, Bot. Concepción*. **18**: 1-111. B/O-03-00044, 00045.
- _____. 1969. Silicoflagelados de la Bahía de Concepción, Chile. *Bol. Soc. Biol., Concepción*. **41**: 199-206. B/O-03-00054.
- _____. 1973. Diatomeas de la Bahía de Concepción, Chile, II. *Bol. Soc. Biol., Concepción*. **46**: 169-175.
- Robinson, M. K. and R. A. Bauer. 1971. Atlas of monthly mean sea surface and subsurface temperature and depth of the top of the thermocline North Pacific Ocean. Monterey, Calif. Fleet Numerical Weather Central. 24 p. and 72 figures. P/O-02-00329.
- Roden, G. I. 1962. Oceanographical aspects of the Eastern Equatorial Pacific. *Geof. Intern. Mexico*. **2**(4): 77-92. P/O-02-00309.
- _____. 1963. Sea level variations at Panama. *Jour. Geophys. Res.* **68**(20): 5701-5710. P/O-02-00005.
- Roden, G. I. and G. W. Groves. 1960. On the statistical prediction of ocean temperatures. *Jour. Geophys. Res.* **65**(1): 249-263. P/O-02-00006.

- Rodewald, M. 1956. Die Wassertemperaturen und ihre Anomalien bei den japanischen und nordamerikanischen. Wetterschiffen im Nordpazifischen Ozean. Dtsch. Hydrog. Z. **9**(6): 289-298. P/O-02-00338.
- _____. 1957a. Die Temperaturen der pazifischen Küstengewässer Nordamerikas von 1920 bis 1955. Dtsch. Hydrog. Z. **10**(4): 147-151. P/O-02-00339.
- _____. 1957b. Das Kalte pazifische Jahr 1955. Dtsch. Hydrog. Z. **10**(4): 151-157. P/O-02-00340.
- _____. 1958. Die Anomalie der Wassertemperatur und der Zirkulation im Nordpazifischen Ozean und an der Küste Perus im Jahre 1955. Dtsch. Hydrog. Z. **11**(2): 78-82. P/O-02-00375.
- _____. 1959. Die ostpazifische "Warmwelle" von 1957/1958. Dtsch. Hydrog. Z. **12**(4): 204-210. P/O-02-00254.
- _____. 1960. Kaltwasser unter dem Äquator (Pazifischer Ozean 1955). Dtsch. Hydrog. Z. **13**(3): 142-143. P/O-02-00253.
- _____. 1964. Die Asymmetrie im zeitlichen Verlauf der Wassertemperatur-Anomalien in Puerto Chicama. Dtsch. Hydrog. Z. **17**(3): 105-114. P/O-03-00025.
- _____. 1968. Die Temperatur des Küstenwassers in Puerto Chicama (Peru) 1964 bis 1968. Dtsch. Hydrog. Z. **21**(1): 21-22. P/O-02-00327.
- Rodriguez, L. 1966. Primera cita de las especies componentes del "Huirihue o marea roja." Est. Oceanol. 2: 91-93. B/O-03-00028.
- Rodriguez de Tazán, G. 1965. Estudio Taxonómico-Ecológico de los Tintinnidos del plancton del Golfo de Guayaquil y aguas adyacentes (tesis de grado) Univ. Guay. Fac. de Ciencias Químicas y Naturales. 260 p. + 1 map, 7 tables, 106 figures.
- Rotschi, H. and L. Lemasson. 1966. Variations observed during the two years in the Western Equatorial Pacific. Proc. Vol. 2 Oceanogr. 11th Pac. Sci. Cong., Tokyo. 1966. Sci. Council. Jap. 13-15 p. P/O-02-00022.
- Rowe, G. T., C. H. Clifford, K. L. Smith, Jr. and P. L. Hamilton. 1974. Benthic nutrient regeneration and its coupling to primary productivity in coastal waters. Submitted to Science.
- Rudolph, W. E. 1953. Weather cycles on the South American west coast. Geogr. Rev. **43**(4): 565-566. MET-03-00006.

- Ryther, John H. 1966. Cruise Report. Research Vessel Anton Bruun, Cruise 15. Special Report No. 5. Mar. Lab., Texas A & M Univ. (unpublished). C/O-02-00005, 00006.
- Sadler, J. C. 1959. A study of some recent climatological data of the Line Islands. Proc. Ninth Pacific Sci. Congr., 1957. Vol. 13: 12-16. MET-04-00004.
- _____. 1964. Tropical cyclones of the eastern North Pacific as revealed by TIROS observations. Jour. Appl. Meteor. **3**(4): 347-366. MET-02-00006.
- _____. 1966. TIROS observations of the summer circulation and weather patterns of the eastern North Pacific. Proc. Symposium on Tropical Meteor., Rotorua, New Zealand, Nov. 1963. 553-571. MET-01-00016.
- _____. 1972. The mean winds of the upper troposphere over the central and eastern Pacific. UHMET 72-04. Monterey, Calif. EPRF. 29 p. MET-01-00028.
- Samaylenko, V. S. 1970. The effect of wind and solar radiation upon the ocean. (Nature of the Peru Current). Oceanology Vol. **10**(1): 1-12. Transl. A. G. U. from Oceanology, Academy of Science, USSR. MET-02-00003.
- Sanchez, Jorge G. (no year listed). General aspects of the biology and ecology of the anchovy (*engraulis ringens*). (IMP report) 84-93 p. B/O-04-00040.
- Sawyer, J. S. 1964. Notes on the possible physical causes of long-term weather anomalies. Symposium Long Range Forecasting, Boulder, Colorado. Technical Note No. 66, WMO 162. T. P. 79, 227-248 p. MET-03-00013.
- Schaefer, M. B. 1970. Men, birds and anchovies in the Peru Current—dynamic interaction. In: Transact. of Amer. Fisheries Society. **99**(3): 461-467. B/O-05-00021.
- Schaefer, M. B. and Y. M. Bishop. 1958. Particulate iron in offshore waters of the Panama Bight and in the Gulf of Panama. Limnol. and Oceanogr. **3**(2): 137-149. C/O-01-00003.
- Schaefer, M. B., Y. M. Bishop and G. V. Howard. 1958. Some aspects of upwelling in the Gulf of Panama. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. **3**(2): 79-132. P/O-02-00371.
- Schell, I. I. 1965. The origin and possible prediction of the fluctuations in the Peru Current and Upwelling. Jour. Geophys. Res. **70**(22): 5529-5540. P/O-02-00042.

- Schmidt, J. 1929. Introduction to the oceanographical reports including list of the stations and hydrographical observations. Danish Dana Expeditions, Oceanogr. Rep. **1**(1): 1-87 + VI plates. P/O-02-00386, 00387.
- Schott, G. 1931. Der Peru-Strom und seine nordlichen Nachbargebeite in normaler Ausbildung. Ann. Hydrog. Mar. Meteorol. **59**: 161-169, 200-213, 240-252. P/O-02-00258.
- _____. 1932. The Humboldt Current in relation to land and sea conditions on the Peruvian coast. Geography. **17**(96): 87-98. P/O-01-00012.
- _____. 1935. Geographie des Indischen und Stillen Ozeans. Verlag von C. Boysen, Hamburg. 413 p. P/O-02-00201 thru 00205.
- _____. 1942. Die Grundlagen einer der Meeresströmungen. Ann. Hydrog. Mar. **70**(11): 329-340. P/O-02-00308.
- _____. 1951. Der Peru-Strom. Erdkunde. **5**(4): 316-319. P/O-02-00341.
- _____. 1952. La Corriente Peruana. Soc. Geogr. del Lima Bol. **69**(3-4): 3-10. P/O-02-00208.
- Schott, G. and F. Schu. 1910. Die Warmeverteilung in den Tiefen des Stillen Ozeans. Ann. Hydrog. Mar. Meteorol. **38**: 2-25. P/O-02-00248.
- Schütte, K. 1967. Cross-correlation of Rainfall and Water Temperatures at the Equatorial Pacific, in Statistical Investigation of the Climatic Anomalies of the Equatorial Pacific. Ed. R. Doberitz, H. Flohn and K. Schütte. Bonn Meteor. Abhandl. **7**: 53-76. Entire Vol. available. MET-03-00005.
- _____. 1968. Untersuchungen zur Meteorologie und Klimatologie des El Niño—Phänomens in Ecuador and nord Peru. Bonner Meteor. Abhandl. **9**: 152. MET-02-00017, 00018.
- Schweigger, E. H. 1931. Observaciones oceanográficas sobre la corriente de Humboldt. Bol. Comp. Admin., Guano. **7**(1): 3-39. P/O-02-00366.
- _____. 1940. Studies of the Peru coastal current with reference to the extraordinary summer of 1939. Proc. Sixth Pacif. Sci. Cong. **3**: 177-195. P/O-02-00393.
- _____. 1942a. La Bahía de Pisco In: Tres Estudios Referentes a la Oceanografía del Perú No. 2: 95 p. P/O-02-00200, 00200A.
- _____. 1942b. Las irregularidades de la Corriente de Humboldt en los años 1925 a 1941, una tentativa explicación. Bol. Soc. Admin. Guano. **18**: 27-42. P/O-02-00252.

- 1942c. Los fenómenos en el mar de 1925 a 1941 en relación con observaciones meteorológicas efectuadas en Puerto Chicama. Soc. Geogr. del Perú, Lima Bol. **59**(3): 247-258. PO-01-00015.
- 1943. Pesquería y Oceanografía del Perú y Proposiciones para su Desarrollo futuro. Comp. Admin. Guano, Lima. 356 p. + 67 charts, 8 graphs, 4 tables in appendix. B/O-05-00033 thru 00037.
- 1945a. La "legítima" corriente del "Niño." Bol. Comp. Admin. Guano. 21(8-9):255-296. P/O-02-00328.
- 1945b. La corriente del "Niño" y las temperaturas estivales de la corriente Peruana. Rev. de Cien. **48**(451): 63-86. P/O-02-00317.
- 1947. El Litoral Peruano. Comp. Admin. Guano, Lima. 356 p.
- 1949a. El Atún frente a la costa peruana. Bol. Comp. Admin., Guano. **25**(8): 219-247. B/O-04-00064.
- 1949b. Der Perustrom nach zwolfjahrigen Beobachtungen. Erdkunde. 3: 121-132, 229-240. P/O-02-00318.
- 1951. Atlas de la Corriente Costanera Peruana. Pt. 1 Comp. Admin. Guano, Lima. 99 p. P/O-02-00265, 00266, 00267.
- 1953a. Situación veraniega en el litoral Peruano en 1953. Bol. Cient. Comp. Admin. Guano. **1**(1): 18 p. + 5 maps. P/O-02-00354.
- 1953b. Abnormal summers in the Peruvian Coastal Current. Proc. Eighth Pac. Sci. Cong. 9: 86-97 plus 12 figures. (Ocean Vol. 3: 801-816). P/O-02-00124.
- 1954a. Una rectificación. Bol. Comp. Admin. Guano. **39**(9): 18-27.
- 1954b. Ensayo sobre las variaciones periódicas de la temperatura de mar y sus ciclos en el norte del litoral peruano. Bol. Cient. Comp. Admin. Guano. 1(2): 5-20 p. + 7 graphs. P/O-02-00355.
- 1955. Estudio comparativo de temperaturas de mar y el régimen de vientos entre los años 1954 y 1939/53. Bol. Cient. Comp. Admin. Guano. 2: 53-64. P/O-01-00010.
- 1958a. Aguajes rojos y sus consecuencias. Bol. Comp. Admin. Guano. **34**(7): 11-17. B/O-02-00062.
- 1958b. Upwelling along the coast of Peru. Jour. Oceanogr. Soc. Japan. **14**(3): 87-91. P/O-02-00228.

- _____. 1958c. Report on Peruvian Oceanography. Proc. Ninth Pac. Sci. Cong. Pac. Sci. Assoc. 1957. Oceanog. 16: p. 39. B/O-05-00022.
- _____. 1959. Die Westküste Südamerikas im Bereich des Peru-Stroms. Keyser'sche Verlagbuch, Heidelberg-München. 513 p. (review by L. H. N. Cooper in J. Mar. Biol.) U. K. **39**(2): 416. P/O-02-00194 thru 00199.
- _____. 1960. Fenómenos hidrográficos y biológicos en el sur del Perú y en el norte de Chile. Rev. Biol. Mar., Valparaiso. **10**(1-3): 51-68. P/O-02-00229.
- _____. 1961. Anomalías térmicas en el océano Pacífico Oriental y su pronóstico. Bol. Soc. Geogr. Lima. **78**(314): 3-50. Translation by J. A. Collins, 1966. CSIRO Trans. No. 7639. 41 p. typescript. [in Spanish, transl. unavailable]. P/O-01-00016.
- Scripps Institution of Oceanography. 1974. Data Report—Physical and Chemical data—Pequero Expedition. 16 December 1968-16 April 1969. SIO Ref. 74-27: 59 p. P/O-02-00050.
- Sears, M. 1954a. Notes on the Peruvian coastal current. I. An introduction to the ecology of Pisco Bay. Deep-Sea Res., 1: 141-169. B/O-05-00017.
- _____. 1954b. Notas sobre la corriente costanera del Perú. Bol. Cient. Comp. Admin. Guano. 1: 135-179. P/O-02-00182.
- _____. 1966. AAAS Symposium Vol. 67. Oceanography 1961 (4th printing) 665 p. + 146 illus. P/O-02-00183. (Selected pages.)
- _____. 1967. Progress in Oceanography Vol. 4. The Quaternary History of the Ocean Basins. A Symposium arranged by Bruce C. Heegen for the 7th Cong. of the Inter. Assoc. for Quaternary Research, Boulder, Colorado. Sept. 1965. Pergamon, New York. B/O-03-00013 thru 00016A.
- Semina, H. J. 1971. Distribution of plankton in the South Eastern Pacific. Tr. Inst. Oceanol. URSS. 89: 43-59. (in Russian).
- _____. 1972. The size of Phytoplankton Cells in the Pacific Ocean. Int. Revue ges. Hydrobiol. **57**(2): 177-205. B/O-02-00050.
- Servicio Nacional de Meteorología e Hidrología, República del Ecuador. 1965. Anuario Meteorológico, 1964. 179 p. MET-01-00030, 00031, 00031A.
- _____. 1966. Anuario Meteorológico, 1965. 199 p. MET-01-00032, 00033, 00034.

- _____. 1967. Anuario Meteorologico, 1966. 203 p. MET-01-00035, 00036, 00037.
- Sette, O. E. and J. D. Isaacs. 1960. Ed. summary of the Symposium on "The Changing Pacific Ocean in 1957 and 1958." Rep. Cal. Coop. Fish. Invest. 7 : 13-217 p. P/O-01-00018, 00019, 00019A.
- Sheppard, G. 1914. Notes on the climate and physiography of southwestern Ecuador. Geogr. Rev. 20: 445-453. MET-02-00013.
- _____. 1931. Plankton changes on the coast of Ecuador. Nature. 127: 629-630. B/O-02-00007.
- _____. 1933. The rainy season of 1932 in southwestern Ecuador. Geogr. Rev. 23: 210-216. MET-01-00023.
- Shomura, Richard S. 1966. Cruise Report, Research Vessel Anton Bruun, Cruise 14: Special Report No. 4. Mar. Lab. Texas A & M Univ. (unpublished). B/O-02-00018.
- Sievers, H. A. and N. Silva S. 1973. Variaciones estacionales de temperatura, salinidad y contenido de oxigeno frente a la Bahía de Valparaiso (Mayo de 1968-Abril de 1969). Investigaciones Marinas 4(1): 1-15. C/O-04-00001.
- Sievers, C., H. A. and N. Silva S. 1974. Masas de agua y circulación en el Océano Pacífico Sudoriental. Latitudes 18°S-33°S.—(Operación Oceanográfica "Marchile VIII"). CONA, CHILE, Pub. No. 1: 1-30 + 26 figures. P/O-02-00342, 00343.
- Silva, S., N. 1973. Variaciones estacionales de temperatura, salinidad y contenido de oxígeno en la zona costera de Valparaiso. (Septiembre de 1969-Agosto de 1970). Investigaciones Marinas 4(3): 89-111. C/O-04-00002.
- Silva, S., N. and H. A. Sievers C. 1973. Condiciones Oceanográficas de primavera y otoño de las aguas circundantes a las Islas Robinson Crusoe y Santa Clara. (Crucero Juan Fernández I, Diciembre 1972. Crucero Juan Fernández II, Abril 1973). Investigaciones Marinas, 4(6): 158-179. (English summary). P/O-04-00026.
- _____. 1974. Masas de Agua, velocidad geostrofica y transporte de volumen entre Valparaiso e Isla Robinson Crusoe (Océano Pacífico Sudoriental). Comisión Permanente del Pacífico Sur. Ciencia y Derecho. 103-120 p. P/O-02-00344.
- Simpson, R. H. 1947. Synoptic aspects of the intertropical convergence near Central and South America. Amer. Meteor. Soc. Bull. 28: 335-346. MET-03-00012.

- Smayda, T. J. 1959. Some preliminary results from a quantitative analysis of the phytoplankton in the Gulf of Panama. (preprint) Int. Oceanogr. Cong., New York. 901-903 p. B/O-03-00017.
- _____. 1963. A quantitative analysis of the phytoplankton of the Gulf of Panama. I. Results of the regional phytoplankton surveys during July and November, 1957 and March, 1958. Inter-Amer. Trop. Tuna Comm. Bull. (with Spanish summary). **7**(3): 193-253. B/O-02-00024.
- _____. 1965. A quantitative analysis of the phytoplankton of the Gulf of Panama. II. On the relationship between C^{14} assimilation and the standing crop. Inter-Amer. Trop. Tuna Comm. Bull. (with Spanish summary). **9**(7): 465-531. B/O-02-00063.
- _____. 1966. A quantitative analysis of the phytoplankton of the Gulf of Panama. III. General ecological conditions, and the phytoplankton dynamics at $8^{\circ}45'N$, $79^{\circ}23'W$ from November 1954 to May 1957. Inter-Amer. Trop. Tuna Comm. Bull. (with Spanish summary). **11**(5): 353-612. B/O-02-00025, 00026, 00027.
- Smith, K. L., Jr., G. T. Rowe and C. H. Clifford. 1974. Sediment oxygen demand in an outwelling and upwelling area. *Téthys*. **6**(1-2): 223-230. C/O-01-00006.
- Smith, R. L. 1967. Note on Yoshida's (1955) Theory of Coastal Upwelling. *Jour. Geophys. Res.* **72**(4): 1396-1397. P/O-02-00232.
- _____. 1968. Upwelling. *Oceanogr. Mar. Biol. Ann. Rev.* **6**: 11-46. Harold Barnes, Ed. Publ. George Allen and Unwin Ltd., London. P/O-02-00230.
- _____. 1974. A description of current wind and sea level variations during coastal upwelling off the Oregon Coast. July-August 1972. *Jour. Geophys. Res.* **79**(3): 435-443. P/O-02-00376.
- Smith, R. L., J. G. Pattullo and R. K. Lane. 1966. An investigation of the Early Stage of Upwelling along the Oregon Coast. *Jour. Geophys. Res.* **71**(4): 1135-1140. P/O-02-00233.
- Smith, R. L., C. N. K. Mooers and D. B. Enfield. 1971. Mesoscale studies of the physical Oceanography in two coastal upwelling regions: Oregon and Peru. In: *Fertility of the Sea Vol. 2*: 513-535. MET-02-00010.
- Smith, R. L., D. B. Enfield, T. S. Hopkins and R. D. Pillsbury. 1971. The circulation in an upwelling ecosystem: The Pisco Cruise. *Investigation Pesquera* **35**(1): 9-24. P/O-02-00231.
- Stevenson, Merritt. 1970. Circulation in the Panama Bight. *Jour. Geophys. Res.* **75**(3): 659-672. P/O-03-00005.

- Stevenson, Merritt and José Santoro. 1967. Preliminary Results and Data Report from EASTROPAC-1 Cruise. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm., La Jolla. 83 p. P/O-02-00356, 00357.
-
- _____. 1968a. Preliminary Results and Data Report from EASTROPAC-2 Cruise. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm., La Jolla. 77 p. P/O-02-00358, 00359.
-
- _____. 1968b. Preliminary Results and Data Report from EASTROPAC-3 Cruise. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm., La Jolla. 85 p. P/O-02-00360, 00361.
- Stevenson, Merritt, Oscar Guillén and José Santoro. 1970. Marine Atlas of the Pacific Coastal water of South America. Univ. of Calif. Press, Berkeley and Los Angeles. 23 p. plus 99 charts [in English and Spanish]. P/O-02-00239 thru 00241A.
- Stevenson, Merritt and Bruce Taft. 1971. New evidence of the Equatorial undercurrent east of the Galapagos Islands. *Jour. Mar. Res.* **29**(2): 103-115. P/O-02-00023.
- Stevenson, Merritt, Francisco Pesántes and José Santoro. 1973. Resultados del Crucero de Reconocimiento de las Mediciones de la Corriente, Julio 18-23, 1970. *INPE Bol. Cient. y Tec.* **2**(3): 1-75. P/O-02-00362, 00363.
- Stevenson, Merritt R., R. Garvine and B. Wyatt. 1974. Lagrangian measurements in a coastal upwelling zone off Oregon. *Jour. Phys. Oceanogr.* **4**(3): 321-336. P/O-02-00181.
- Stiglich, G. 1925. El fenómeno marítimo del Aguaje. *Rev. Mar. Perú* **10**(1): 25-40. P/O-02-00369.
- _____. 1931. El fenómeno marítimo del Aguaje. *Bol. Comp. Admin. Guano.* **7**(8): 345-358. Filmed with citation above. P/O-02-00369.
- Strickland, J. D. H., R. W. Eppley and B. R. de Mendiola. 1969. Poblaciones de fitoplancton, nutrientes y fotosíntesis en aguas costeras peruanas. *Inst. Mar. Perú.* **2**(1): 4-12. B/O-02-00022.
- Strickland, J. D. H., J. R. Beers, Elaine Brooks, R. W. Eppley, Elisabeth Fuglister, P. W. Hacker, J. B. Jordan, R. J. Linn, J. J. McCarthy, Lucia Solórzano, C. R. Stearns, M. Stevenson, G. L. Stewart, J. L. Abbott and M. C. Elston. July, 1969-June 1970. Research on the Marine Food Chain, Progress Report. Univ. of Calif. (unpublished). SIO Ref. 70-5: 20 p. + 130 charts and graphs. P/O-04-00039 thru 00042.
- Sund, P. N. 1959. A key to the Chaetognatha of the tropical Eastern Pacific Ocean. *Pac. Sci.*, **13**(3): 269-285. B/O-04-00033.

- _____. 1961. Two new species of Chaetognatha from the waters off Peru. *Pac. Sci.*, **15**(1): 105-111. B/O-04-00032.
- _____. 1963. A temperature atlas of the Gulf of Panama, 1955-1959. Inter-Amer, Trop. Tuna Comm. Mimeo Rep. 58 p. P/O-02-00383, 00383A.
- _____. 1964. The Chaetognatha of the waters off Peru. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. **9**(3): 115-216. B/O-04-00035, 00036.
- Sund, P. N. and J. A. Renner. 1969. The Chaetognatha of the Eastropic expedition, with notes as to their possible value as indicators of hydrographic conditions. [in English and Spanish]. Inter-Amer. Trop. Tuna Comm. Bull. **3**(9): 395-436. B/O-04-00034.
- Sverdrup, H. U. 1930. Some oceanographic results of the "Carnegie's" work in the Pacific. The Peruvian Current. Trans. Amer. Geophys. Un. 10th and 11th Annual Meeting. 257-264. P/O-02-00207.
- _____. 1941. The Pacific Ocean. *Science*. 94(2439): 287-293. P/O-02-00222.
- _____. 1947. Wind-driven currents in a baroclinic ocean; with application to the Equatorial Currents in the Eastern Pacific. *Proc. Nat. Acad. Sci. Wash.* 33:318-326. P/O-01-00004.
- Sverdrup, H. U., J. A. Fleming, F. M. Soule and C. C. Ennis. 1944. Observations and results in physical oceanography. Oceanography 1-A. In: Scientific Results of Cruise VII of the Carnegie during 1928-29 under command of Capt. J. P. Ault. Carneg. Inst. Pub. No. 545: 156 p. P/O-02-00311, 00312.
- Taft, B. A. 1964. The distribution of salinity and dissolved oxygen on surfaces of uniform potential specific-volume in the South Atlantic, South Pacific, and Indian Oceans. *Jour. Mar. Res.* **21**(2): 129-146. P/O-02-00126.
- Taft, B. A., B. M. Hickey, C. Wunsch and D. J. Baker, Jr. 1974. Equatorial Undercurrent and deeper flows in the central Pacific. *Deep-Sea Res.* **21**(6): 403-430. P/O-02-00024.
- Takano, Kenzo. 1967. Non-linear computation of the equatorial upwelling. *Ocean. Res. Inst. Univ. Tokyo.* **23**(1): 39-41. P/O-03-00006.
- Taylor, R. C. 1973. An atlas of Pacific Islands rainfall. HIG-73-9. Honolulu, Univ. of Hawaii, 5 p. + figures and tables. MET-02-00007, 00008, 00009.

- Thompson, J. D., Jr. 1974. The Coastal Upwelling Cycle on a Beta Plane: Hydrodynamic and Thermodynamics. Mesoscale Air-Sea Interaction Group, Tec. Rep. ONR Contract NONR-N00014-67-A-0235-002, and NSF Grant GA-29734: 148 p. P/O-03-00016, 00017.
- Thompson, J. D., Jr. and J. J. O'Brien. 1973. Time dependent coastal upwelling. *Jour. Phys. Oceanogr.* **3**(1): 33-46. P/O-02-00184.
- Thornwaite, C. W. and Associates. 1964. Average climatic water balance data of the continents. Part VIII. South America. *Climatology* **18**(2): 295-433.
- Torres-Brousset, L. 1961. Observaciones sobre la temperatura del mar en la costa del Perú del Puerto Chicama. Instituto de Investigación de los Recursos Marinos, ORS No. 5/1961, 12 p.
- Troup, A. J. 1965. The "Southern Oscillation." *Qtr. Jour. Roy. Meteor. Soc.* **91**: 490-506. P/O-03-00030.
- Tsuchiya, Mizuki. 1970. Equatorial Circulation of the South Pacific. In: Scientific Exploration of the South Pacific, *Stnd. Bk. No.* 309-01755-6: 69-74. P/O-02-00020.
- _____. 1972. A subsurface North Equatorial countercurrent in the Eastern Pacific Ocean. *Jour. Geophys. Res.* **77**(30): 5981-5986. P/O-02-00013.
- _____. 1974. Variation of the Surface Geostrophic flow in the Eastern Intertropical Pacific Ocean. *Fish. Bull.* **72**(4): 1075-1086. P/O-02-00180.
- U. S. Naval Oceanographic Office. 1964. Chart 823, South Pacific Ocean. Wash., D. C.
- Valdivia, P. J. 1955a. Situación climática del año de 1954. *Bol. Cient. Comp. Admin., Guano.* **2**: 65-71. MET-02-00005.
- _____. 1955b. Estudio climatológico de Puerto Chicama. *Bol. Cient. Comp. Admin., Guano.* **2**: 5-23. MET-02-00012.
- _____. 1958. Situación Climática del Litoral Peruano en 1956. *Bol. de la Comp. Admin. del Guano.* **34**(6): 3-9. MET-04-00001.
- _____. 1959a. Situación Climática del Litoral Peruano en 1957. *Bol. de la Comp. Admin. del Guano.* **35**(1): 3-9. MET-04-00003.
- _____. 1959b. Situación Climática del Litoral Peruano en 1958. *Bol. de la Comp. Admin. del Guano.* **35**(9): 13-23. MET-04-00002.
- Valdivia, Julio and Oscar Guillén. 1966. Informe Preliminar del Crucero de Primavera, 1965 (Cabo Blanco-Morro Sama). *Inst. del Mar del Perú. Inform. No.* **11**: 37-70. P/O-04-00033.

- Vallaux, C. 1931. El problema de la corriente de Humboldt. Bol. Comp. Admin. Guano. 7(4): 147-158. P/O-02-00370.
- Van Loon, H., J. J. Taljaard, T. Sasamori, J. London, D. V. Hoyt, K. Labitzke, and C. W. Newton. 1972. Meteorology of the Southern Hemisphere. Meteorological Monographs. 13(35): 263 p. MET-01-00050, 00051, 00052.
- Vaughan, T. W. 1937. International Aspects of Oceanography. Nat. Acad. Sci. Wash., 225 p. P/O-02-00190 thru 00193.
- Vegas Velez, Manuel. 1974. Bibliografia Oceanografica Peruana. Bull. 17. Universidad Nacional Agraria, La Molina, Lima. 44 p. B/O-04-00059.
- Veronis, G. 1960. An approximate theoretical analysis of the equatorial undercurrent. Deep-Sea Res. 6(4): 318-327. P/O-02-00189.
- Villareal, F. 1927. Corriente Peruana o de Humboldt. Rev. Mar. Perú. 12(2) : 159-195. P/O-02-00374.
- Villón, Gilberto, Hermes León and Wilson Espinosa. 1970. Estadísticas de la Actividad Pesquera en el Ecuador. INPE Bol. Inform. 5(1): 1-120. B/O-04-00047, 00048.
- Virgin, C. A. 1858. Voyage autour du monde sur la frégate suédoise "L'Eugénie" exécuté pendant les années 1851-1853. Physique. Stockholm, I. P. A. Norstedt. 155 p.
- Vogt, W. 1940. Una depresión ecológica en la costa peruana. Bol. Comp. Admin., Guano. 16(10): 307-329. B/O-04-00061.
- _____. 1941. Aves guaneras. Bol. Comp. Admin., Guano. 17(4): 127-168. B/O-04-00065.
- _____. 1942. Informe elevado a la Compañía Administradora del Guano. Bol. Comp. Admin., Guano. 18(3): 1-132. B/O-04-00066, 00067.
- _____. 1964a. Informe sobre las aves guaneras. Bol. Corp. Nac. Fertiliz. Lima, Peru. 2(8): 9-28.
- _____. 1964b. Informe sobre las aves guaneras. Bol. Corp. Nac. Fertiliz. Lima, Peru. 2(9): 6-48.
- _____. 1964c. Informe sobre las aves guaneras (conclusión). Bol. Corp. Nac. Fertiliz. Lima, Peru. 2(10): 5-40.
- Walsh, J. J. 1974. A simulation model of the nitrogen flow in the Peruvian upwelling system. In: *Cycles of Essential Elements*, L. R. Pomeroy, Ed., Dowden, Hutchinson and Ross, Inc., Stroudsburg, Pa. (In press).

- _____. 1975. A spatial simulation model of the Peru upwelling ecosystem. *Deep-Sea Res.* **22**(4): 201-236. B/O-01-00002.
- Walsh, J. J. and S. O. Howe. 1974. Protein from the sea: a comparison of the simulated nitrogen and carbon productivity in the Peru upwelling ecosystem. *Systems Analysis and Simulation in Ecology*, Vol. IV. B. C. Patten, Ed. Academic Press, New York.
- Wang, Dong-Ping. 1975. Coastal trapped waves in a baroclinic ocean. *Jour. Phys. Oceanogr.* **5**(2): 326-333. P/O-03-00033.
- White, W. B. 1969. The equatorial undercurrent, the South Equatorial Countercurrent, and their extensions in the South Pacific Ocean east of the Galapagos Islands during February-March, 1967. *Texas A & M Univ. Ref.* 69-4T. 74 p. P/O-02-00135.
- _____. 1971. The Westward Extension of the Low-Oxyty Distribution in the Pacific Ocean off the West Coast of South America. *Jour. Geophys. Res.* **76**(24): 5842-5851. C/O-02-00001.
- White, W. B. and J. P. McCreary. 1974. Eastern Intensification of Ocean Spin-Down: Application to El Niño. *Jour. Phys. Oceanogr.* **4**(3): 295-303. P/O-03-00015.
- Williams, F. 1970. Sea Surface Temperature and the Distribution and Apparent Abundance of Skipjack (*Katsuwonus pelamis*) in the Eastern Pacific Ocean, 1951-1968. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.* **15**(2): 231-281. B/O-04-00042.
- Wilson-Barker, D. 1931. Plankton changes on the coast of Ecuador. *Nature.* **127**: p. 975. B/O-03-00018.
- Wilson, W. S. 1942. The copepods of the plankton gathered during the last cruise of the Carnegie. *Pub. Carneg. Inst. No. 536*: 257 p. B/O-02-00040, 00041, 00042.
- Wisner, R. L. 1966. Cruise Report, Research Vessel Anton Bruun, Cruise 12. *Spec. Rep. No. 2.* Mar. Lab. Texas A & M Univ. (unpublished). C/O-02-00002.
- Wooster, W. S. 1952a. Exploración Oceanográfica del Pacífico Equatorial-Oriental. *Bull. Soc. Geogr. Lima.* **69**(3-4): 79-82. P/O-04-00007.
- _____. 1952b. Data report, SHELLBACK expedition, 17 May to 27 August 1952. *Univ. Calif., Scripps Inst. Oceanogr.*, (unpublished) Rep., SIO Ref. 52-63. P/O-02-00026.
- _____. 1959. Oceanographic observations in Panama Bight. Askoy Expedition, 1941. *Bull. Amer. Mus. Nat. Hist.* **118**(3): 117-151. P/O-04-00008.

- _____. 1960a. Introduction—Investigation of Equatorial Undercurrents. *Deep-Sea Res.* 6(4): 263-264. P/O-02-00186.
- _____. 1960b. El Niño. *Calif. Coop. Ocean. Fish. Invest. Rep.* 7: 43-45. P/O-02-00001.
- _____. 1961a. Oceanic observations of the Pacific: Pre-1949. *Univ. Calif. Scripps Inst. Oceanogr. Pub.* 350 p. P/O-02-00211 thru 00214.
- _____. 1961b. Yearly changes in the Peru Current. *Limnol. and Oceanogr.* 6(2): 222-226. P/O-02-00014.
- _____. 1961c. Further evidence of a Pacific south equatorial countercurrent. *Deep-Sea Res.* 8(3-4): 294-297. P/O-02-00058.
- _____. 1967. Further observations on the secondary nitrite maximum in the Northern Equatorial Pacific. *Jour. Mar. Res.* 25(2): 154-161. C/O-01-00005.
- _____. 1969. Equatorial front between Peru and Galapagos. *Deep-Sea Res.* 16: 407-419. P/O-02-00015.
- Wooster, W. S., Ed. 1970. Scientific exploration of the South Pacific. *Nat. Acad. Sci. Washington, D. C.* 257 p. P/O-04-00036, 00037, 00038.
- Wooster, W. S. and F. Jennings. 1955. Exploratory oceanographic observations in the eastern tropical Pacific January to March 1953. *Calif. Fish. Game.* 41(1): 79-90. P/O-02-00018.
- Wooster, W. S. and Z. Popovici. 1958. Investigaciones oceanográficas en el norte del Perú: El crucero del B. A. P. "Bondy" realizado del 24 de Febrero al 9 de Marzo de 1958. *Rev. Mar. Perú, Lima.* 43(3): 412-420. P/O-02-00372.
- Wooster, W. S. and T. Cromwell. 1958. An oceanographic description of the eastern tropical Pacific. *Scripps Inst. Oceanogr. Bull.* 7(3): 169-282. P/O-02-00016, 00017.
- Wooster, W. S. and Associates. 1961. Preliminary report Part I. Physical and Chemical Data. STEP-I Expedition 15 September-1 December 1960. *SIO Ref.* 61-9: 48 p. P/O-02-00052.
- Wooster, W. S. and Malvern Gilmartin. 1961. The Peru-Chile Undercurrent. *Jour. Mar. Res.* 19(3): 97-122. P/O-02-00019.
- Wooster, W. S. and J. L. Reid, Jr. 1963. Eastern Boundary Currents. In: *The Sea*, M. N. Hill, Ed. Vol. 2 (III) Currents, Intersci. pub., New York and London. 253-280. P/O-02-00009.

- Wooster, W. S., T. J. Chow and I. Barrett. 1965. Nitrite distribution in Peru Current Waters. *Jour. Mar. Res.* **23**(3): 210-221. C/O-01-00001.
- Wooster, W. S. and H. A. Sievers. 1970. Seasonal variations of temperature, drift and heat exchange in surface waters off the west coast of South America. *Limnol. and Oceanogr.* **15**(4): 595-605. MET-01-00019, 00020.
- Wooster, W. S. and O. Guillén. 1974. Characteristics of El Niño in 1972. *Jour. Mar. Res.* **32**(33): 387-404. P/O-02-00176.
- Wroblewski, J. S., J. J. O'Brien and T. Platt. 1974. On the physical and biological scales of phytoplankton patchiness in the ocean. Submitted to *Memoirs de la Societe Royale des Sciences de Liege*.
- Wust, G. 1935. Humboldt-Strom, nicht Peru-Strom. *Petermanns Geogr. Mitt.* 1935, **81**(12): 439-441. P/O-02-00337.
- Wyatt, Bruce. 1974. An improved parachute drogue system for monitoring currents in the deep ocean. *Ocean Eng.* **2**(6): 259-263. MET-03-00004.
- Wyrski, K. 1963. The horizontal and vertical field of motion in the Peru Current. *Scripps Inst. Oceanogr. Bull.* **8**(4): 313-346. P/O-03-00002.
- _____. 1964. The thermal structure of the eastern Pacific Ocean. *Dtsch. Hydrog. Z. Ergö. A*(8°), No. 6: 84 p. P/O-02-00027.
- _____. 1965a. Surface Currents of the Eastern Tropical Pacific Ocean. [in English and Spanish]. *Inter-Amer. Trop. Tuna Comm. Bull.* **9**(5): 270-304. P/O-02-00129.
- _____. 1965b. Summary of the physical oceanography of the Eastern Equatorial Pacific Ocean. *Univ. Calif. San Diego. IMR Ref.* 65-10. 69 p. P/O-02-00134.
- _____. 1966a. Seasonal variation of heat exchange and surface temperature in the North Pacific Ocean. *Univ. Hawaii, Ref. HIG-66-3, NSF Grant GP-5534.* 8 p. + 72 figures. MET-03-00008, 00009.
- _____. 1966b. Oceanography of the Eastern Equatorial Pacific Ocean. *Oceanogr. Mar. Biol. Ann. Rev.* **4**: 33-68. P/O-02-00128.
- _____. 1967. Circulation and water masses in the eastern Equatorial Pacific Ocean. *Int. Jour. Oceanol. and Limnol.* **1**(2): 117-147. P/O-03-00023.
- _____. 1973. Teleconnections in the Equatorial Pacific Ocean. *Science*, **180**: 66-68. P/O-03-00024.

- _____. 1974a. Sea Level and the Seasonal Fluctuations of the Equatorial Currents in the Western Pacific Ocean. *Jour. Phys. Oceanogr.* **4**(1): 91-103. P/O-02-00313.
- _____. 1974b. Equatorial Currents in the Pacific 1950 to 1970 and their Relations to the Trade Winds. *Jour. Phys. Oceanogr.* **4**(3): 372-380. P/O-02-00319.
- _____. 1974c. The Dynamic Topography of the Pacific Ocean and its Fluctuations. Univ. Hawaii, Ref. HIG-74-4: 61 p. P/O-02-00347.
- Wyrtki, K. and E. B. Bennett. 1963. Vertical eddy viscosity in the Pacific Equatorial Undercurrent. *Deep-Sea Res.* **10**(4): 449-455. P/O-02-00057.
- Wyrtki, K. and Robert Kendall. 1967. Transports of the Pacific Equatorial Countercurrent. *Jour. Geophys. Res.* **72**(8): 2073-2076. P/O-03-00021.
- Yañez A., P. 1948. Información preliminar sobre el ciclo anual del plancton superficial en la Bahía de Valparaíso. *Rev. Biol. mar. Valparaíso.* **1**(1): 57-59. B/O-02-00028.
- Yoshida, Kozo. 1967. Circulation in the Eastern Tropical Oceans with Special References to Upwelling and Undercurrents. *Jap. Jour. Geophys.* **4**(2): 1-75. P/O-03-00004.
- Yoshida, Kozo and Han-Lee Mao. 1959. A theory of Upwelling of a large Horizontal Extent. *Jour. Mar. Res.* **16**(1): 40-54. P/O-03-00003.
- Zacharias, O. 1906. Über Periodizität. Variation and Verbreitung verschiedener Planktonwesen in südlichen Meeren. *Arch. Hydrobiol. und Planktonkunde, I.* B/O-02-00048.
- Zaneveld, J. R. V., Hasong Pak and William S. Plank. 1973. Optical and Hydrographic Observations of the Cromwell Current between 92°00'W and the Galapagos Islands. *Jour. Geophys. Res.* **78**(15): 2708-2714. P/O-02-00043.
- Zipser, E. J. and R. C. Taylor. 1968. A catalogue of meteorological data obtained during the Line Islands Experiment February-April 1967. NCAR-TN-35. Boulder, Colo. National Center for Atmospheric Research. MET-01-00046 thru 00049.
- Zorell, F. 1928. Der "El Niño"-Strom im Jahre 1925. *Ann. Hydr. Mar. Meteor.* **56**: 166-175. P/O-02-00324.
- Zuta, S. and O. Guillén. 1970. On the Oceanography of the Peru Coastal Waters. *Inst. Mar. Peru. Bol. No. 5.* P/O-02-00131, 00132.
- Zuta, S. and W. Urquizo. 1972. Temperatura Promedio de la Superficie del Mar Frente A la Costa Peruana, Periodo 1928-1969. *Inst. Mar. Peru.* **2**(8): 462-519. MET-02-00004.