

No. 11

September 1999

CONTENTS

EDITORIAL.....	1
ARTICLES	
Origin of the Name <i>Agulhas</i>	1
Polar Sea of Discord and Collaboration.....	2
Information from the SIO Archives.....	3
Research on the History of Chinese Oceanography.....	5
<hr/>	
THE NEXT CONGRESS OF HISTORY OF OCEANOGRAPHY.....	6
REPORTS FROM NATIONAL & REGIONAL REPRESENTATIVES.....	6
QUERY - 19TH CENTURY TIDE CORRESPONDENCE.....	8
COMPLETION OF A CATALOGUE - OCEANOGRAPHIC INSTRUMENTS.....	9
NEWS AND EVENTS.....	9
MEETINGS AND CONFERENCES.....	10
BIBLIOGRAPHY AND BIOGRAPHIES.....	12

INTERNATIONAL UNION OF THE HISTORY AND PHILOSOPHY OF SCIENCE
DIVISION OF THE HISTORY OF SCIENCE
COMMISSION OF OCEANOGRAPHY

President Emeritus

Professor Jean Théodoridès
16 Square Port Royal
F-75013 Paris FRANCE

President

Eric L. Mills
Department of Oceanography
Dalhousie University
Halifax, Nova Scotia B3H 4J1 CANADA

Vice Presidents

Jacqueline Carpine-Lancre
La Verveine
7, Square Kraemer
06240 Beausoleil, FRANCE

Margaret B. Deacon
Department of Oceanography
The University
Southampton SO14 3ZH, UNITED KINGDOM

Walter Lenz
Institut für Klima-und Meeresforschung
Universität Hamburg
D-20146 Hamburg, GERMANY

P.F. Rehbock
Department of History
University of Hawaii
Honolulu, Hawaii 96822, USA

Secretary

Deborah Cozort Day
Archives
Scripps Institution of Oceanography
UCSD Mail Code 0219
La Jolla, California 92093-0219, USA

Editor of Newsletter

Eric L. Mills
Department of Oceanography
Dalhousie University
Halifax, Nova Scotia B3H 4J1, CANADA
Phone (902)494-3437 Fax (902)494-3877

E-mail: E.Mills@Dal.Ca

Text preparation: Pamela Larivee, Dept. of Oceanography, Dalhousie University

EDITORIAL - Rediscovering the Prince of Monaco

An outline of the life and accomplishments of Albert 1er, Prince of Monaco is well established. Born in Paris in 1848, Albert showed an early interest in science and the sea. He entered the Spanish navy as an ensign in 1866, left it for the French navy with which he fought in the Franco-Prussian War of 1870, and shortly thereafter began a series of cruises in his yacht, best known under its second name *Hirondelle*. Albert's cruises became scientific no later than the early 1880s, and he began to plan the establishment of a biological station in Monaco. His succession to the throne of Monaco and the very successful display of the results of his scientific work in the Paris *Exposition universale* in 1889 provided the means and sufficient encouragement to expand his work at sea and to present it to the public. The magnificent yachts that followed, *Princesse Alice* (1891-1898), *Princesse Alice II* (1898-1910) and *Hirondelle II* (1911-1915) allowed Albert and scientific colleagues from several nations to carry out advanced and comprehensive work on the oceans until the beginning of the Great War. Although the early idea of a marine station at Monaco was not realized, Albert's vision expanded beyond such a simple plan to the conception and organization of a great oceanographic museum, the Musée océanographique de Monaco, begun in 1899 and inaugurated in 1910. While construction was underway, his promotion of the teaching of oceanography in Paris was formalized in the Institut océanographique that opened in 1906. By his death in 1922 Albert's wide-ranging interests had extended also to prehistoric anthropology, the social and political evolution of Monaco, and world peace in the wake of the war.

Such an outline misses many nuances, as became clear to me recently when I saw a new, brilliantly-produced commemorative volume, *Albert 1er. Des oeuvres de science, de lumière et de paix* (1998, Monaco: Palais de S.A.S le Prince), printed for the 150th anniversary of Albert's birth, November 13, 1848. Biographical at the beginning, then devoted to the Princes's interests and obsessions, lavishly illustrated with paintings, drawings, engravings and photographs, many never printed before, it outlines Albert 1er's life and personality in quotations from his published and unpublished writings in local journals, the reports of his cruises, and the archives of the Musée océanographique and the Palais princier in Monaco. The tapestry of a turn of the century life emerges in new detail, but with significant new questions to consider.

In 1902, Albert viewed Monaco as "...this little country that war has not touched for centuries; where one can effortlessly and fearlessly, under all the forms of science and art, cultivate the fruits of progress." Just over a decade later, as Europe stumbled into war, he was less sanguine about the ability of the arts to promote human welfare alone. The assistance and the guidance of science were needed to provide equilibrium in human affairs, to overcome the propensity of the arts to lack definition and balance, thereby adversely affecting human character and morality.

What lay behind this pessimism and the humanistic sentiments of a man whose musical life centered around Massenet and Saint-Saëns, and who gave his name, time and money to the pre-war mutualist movement and to the search for principles of international agreement through arbitration and mutually-beneficial treaties? It may be too facile to see science alone as providing Albert 1er's beacon of international collaboration and social stability, for he passionately and unpopularly supported Captain Dreyfus, and called for a the rapprochement of Germany and a France seething with resentment after the debacle of the Franco-Prussian War. Whom did he talk to about these ideas and positions? What did he read? What can his private correspondence tell us about the involvement of this passionate moralist with the ideas, the movements, and the personages of his age? Oceanography mattered - it was at center stage for much of Albert's life - but his life had other facets and corners that begin to emerge in this new book, giving us a glimpse of his works of science, but most notably of his involvement with the light of reason, and with peace. It is time to look again at Albert 1er, and at the ways his life illustrates how science, society and morality were interrelated in the decades before the Great War.

Eric L. Mills

ORIGIN OF THE NAME AGULHAS

As with many place names that have an ancient derivation, there is also uncertainty about the exact origin of the

name *Agulhas Current*.

Bartholomew Dias, the first European explorer to round the Cape of Good Hope, gave up his attempt to reach India at the Great Fish River on the south-eastern coast of South Africa and shortly after reached the southern tip of Africa for the first time, on his return journey. This probably occurred on 16 May 1488, the name-day of the Irish monk St. Brendan, since he called this promontory *Ponto de S. Brandão*.

This name for the southernmost cape of the African continent soon fell into disuse although it was employed to denote the present Quoin Point for some time. A map of 1502 shows a *Golfo das Agulhas* (Bay of Needles) directly to the east of the cape currently called Cape Agulhas¹, and cartographers subsequently started using variations on the name *Cape Agulhas* with increasing frequency. So, for instance, Hen Hondio in 1631 designated this headland as *C. d' Angulas*, I. Covens and C. Mortier (1660 - 1730) as *Cap des Aiguilles*, Gerardo and Leonardo Valk (1650 - 1720) as *C. das Agulhas* and D'Anville in 1763 as *Kaap des Aiguilles*.

Two possible origins for this concept of “needles” have been put forward: one, the resemblance of the jagged reefs opposite the cape; two, the observation that the needles of compasses showed no magnetic declination at this point, i.e. magnetic north and true north were identical at this time. The latter origin is more likely, since, for example, authors such as Jan Huijgens van Linschoten in his book *Itinerario* (1595) have called this cape the *Cape of Compasses* or *Needles of the Compass*. Particularly notable in this regard is the inscription on a map of Mathia Hasio (probably redrawn from one by Batiste Homan) of about 1750 describing the cape as *Prom. Accularum declinatione magnet carentium* (Cape Needle, i.e. without magnetic declination). This exciting discovery I made while rummaging about in the stock of maps held by a dealer of antique prints on the Oude Gracht in Utrecht, Netherlands, in September of this year.

The Agulhas Bank, Agulhas Current and the Agulhas Plateau all take their names from the cape. Cartographers I. Covens and C. Mortier (1660 - 1730) called the continental shelf south of Africa *Banc du Cap*, by 1746 M. Belin designated it as *Banc des Equilles*. When the name of the cape was first transferred to the current is not entirely clear. Kerhallet (1852)² has still indicated a *Courant de Cap*, while Zimmermann (1865)³ has shown a *Cap Lagullass Strömung*, suggesting the gradual equating of the name of the cape and the current. Rennell in his 1778⁴ map has indicated the *Bank of Lagullas*, but has not named the current; but fifty years later (1832)⁵ he clearly denoted it *Lagullas Current*, as did Maury⁶ in 1855. By 1866 Findlay⁷ called it, unequivocally, *Agulhas Current*, as did Krümmel (1882)⁸. Krümmel (1911, p.672)⁹ has in fact stated that south of 30° S latitude the current along the south-eastern coast of Africa is to be called the Agulhas Current, and so it has remained since.

References

1. Anonymous (1970). Agulhas, In *Standard Encyclopaedia of Southern Africa*, editors D. J. Potgieter and P. C. du Plessis, Vol. 1, Nasou, Cape Town, p.254.
2. Kerhallet, M. C. P. de (1852). *Considérations générales sur l'océan Atlantique. Annales Hydrographiques*, 1er Sem. pp. 33-143.
3. Zimmermann, W. F. A. (1865). *Der Erdball und Seine Naturwunder*. Gustav Hempel, Berlin, 544 pp. (As shown in Peterson *et al.*, 1993¹⁰).
4. Rennell, J. (1778). *Chart of the Bank of Lagullus and southern Coast of Africa*, London.
5. Rennell, J. (1832). *An investigation of the currents of the Atlantic Ocean and of those which prevail between the Indian Ocean and the Atlantic*. J. G. and F. Rivington, London, 3xx pp.
6. Maury, M. F. (1855). *The Physical Geography of the Sea*. Harper & Brothers, New York, 274 pp., 12 plates.
7. Findlay, A. G. (1866). *A directory for the navigation of the Indian Ocean*. Richard Holmes Laurie, London, 113 pp.
8. Krümmel, O. (1882). *Bermerkungen über die Meeresströmungen und Temperaturen in der Falklandsee. Aus den Archiv der Deutschen Seewarte*, V, 2, 25 pp. (As shown by Peterson *et al.*, 1993¹⁰).
9. Krümmel, O. (1911). *Handbuch der Ozeanographie. Band II. Die Bewegungsformen des*

- Meeres. von J. Engelhorn's Nachf.*, Stuttgart, 766 pp.
10. Peterson, R. G., L. Stramma and G. Kortum (1996). Early concepts and charts of ocean circulation. *Progress in Oceanography*, 37(1): 1-115.

Johann Lutjeharms, Oceanography, University of Cape Town, Rondebosch 7701, South Africa.
E-mail: johann@physicist.uct.ac.za.

POLAR SEA OF DISCORD AND COLLABORATION.
Science and Politics in Oceanography and Arctic Exploration
St. Petersburg, Russia, 27-30 January 1999

The conference was organized by the St. Petersburg Branch of the Institute of the History of Science and Technology, Russian Academy of Sciences. The meeting format was a workshop with a series of sessions and round-table discussions with brief presentations on the results and perspectives of research in different national and disciplinary perspectives. Some materials for discussions were pre-distributed via email including recent information on various associations and networks in the area of maritime history, history of oceanography and polar research etc. It was most helpful to receive also "News and Views" from the participants outlining their personal visions of trends, problems, and perspectives in their field.

The aim of the conference was not to present focused academic papers but to talk more about recent achievements and to identify new trends and important, but yet understudied, historic issues and problems. This was admirably achieved during the meeting, with the participants coming from Alaska and other states of the US, from Scandinavia, Germany and Russia.

The sessions covered 'Research efforts in the history of polar science and in oceanography'; reflections on 'Social and cultural history'; and 'History of oceanography and fisheries'. Another leading theme was 'Studies of international collaboration in polar research'. A session on 'Navy, oceanography and polar research' was held in the famous Russian Geographical Society. Extended discussions on 'Perspectives of oral history' and 'Science and the navy' followed. A summing-up on an agenda for future collaboration, requested by the participants, completed the conference.

In addition to the meeting and associated receptions, there was a tour of the very interesting Arctic and Antarctic Museum. On the last day we had time to visit the wonderful State Hermitage Museum at the Winter Palace. St. Petersburg in wintertime gave a very clear sense of what polar history was all about.

First published in the International Commission on the History of Geological Sciences INHIGEO Newsletter NO. 31 for 1998, page 14.

Cornelia Lüdecke, Valleystasse 40, D-81317 München, Germany.

INFORMATION FROM THE SCRIPPS INSTITUTION OF OCEANOGRAPHY ARCHIVES

RECENT ACQUISITIONS:

Scripps Institution of Oceanography Archives has acquired the following collections in subject areas of interest to oceanographers since our last report:

Nancy Amanda Bray Papers, 1976-1997

27 cubic feet. Accession 97-11. Manuscript Collection 34

Physical oceanographer, born May 5, 1952; University of California, Berkeley BS, 1975, Woods Hole/MIT Ph.D. (physical oceanography) 1980. Postdoc, WHOI, 1980-1981; Desalination Systems, Inc, 1981-1982; Scripps Institution of Oceanography, UCSD: assistant to associate; research oceanographer, 1982-1996: Director, Physical Oceanography; Research Division, 1992-1996; CSIRO, Hobart, Tasmania, Australia; visiting scholar, 1996-1997, Chief of Division Marine Research, 1997-present.

The Bray Papers document Bray's education especially at Woods Hole Oceanographic Institution and her research at the Scripps Institution of Oceanography. The papers include correspondence, reports, scientific papers,

research notes, and data. The papers include documentation of major ocean circulations studies in the Strait of Gibraltar, the Gulf of California, the Gulf of Mexico, the Indonesian Archipelago and other areas. The papers include documentation of the Northern California Coastal Circulation Study (NCCCS).

George G. Shor, Jr. Papers, 1954-1992

15 cubic feet. Accession 95-6. Manuscript Collection MC 33

Marine geophysicist, born New York June 13, 1923; California Institute of Technology BS 1944, MS 1948, Ph.D. (seismology) 1954. Seismological party chief, Seismic Explor, Inc, 1948-1951; research assistant, California Institute of Technology, 1951-1953; Scripps Institution of Oceanography, UCSD: research geophysicist 1953-1969; professor of marine geophysics, 1969-73; Associate Director, SIO, 1968-1990.

The Shor Papers include correspondence, teaching files, committee files, project and proposal files documenting geophysics research undertaken by Shor largely at Scripps Institution of Oceanography, UCSD. The papers include material documenting expeditions, instruments, oceanographic vessels and major research projects including ocean drilling and the International Decade of Ocean Exploration (IDOE). The papers include material documenting geophysics refraction and reflection work undertaken by Shor 1954-1977.

Fred Noel Spiess Papers, 1971-1990
7 cubic feet. Manuscript Collection MC 36

Marine physicist, born Oakland, CA December 25, 1919; University of California, Berkeley AB 1941, Ph.D. (physics) 1951; Harvard University, MS, 1946. Submariner, U.S. Navy, 1941-1956; Deputy Oceanographer of the Navy, 1969-1974; Nuclear Engineer, Knolls Atomic Power Lab, Schenectady, NY, 1951-1952; Scripps Institution of Oceanography, UCSD: Associate Research Physicist to Research Geophysicist University of California Marine Physical Laboratory (MPL), 1952-1961; Director, MPL 1958-1980; Professor of Oceanography, 1961-present; Chairman, Department of Oceanography, 1963-1964; Acting Director to Director, SIO, 1961-1965; Associate Director, SIO, 1965-1980, Director, UC Institute of marine Resources, 1980-1985; Liaison Scientist, Office of Naval Research, London, 1974-1975.

The Spiess Papers include correspondence, research proposals, calendars, subject files and other material documenting his scientific research and academic career. The papers include files documenting the Foundation for Ocean Research, Marine Technology Society and other scientific societies and organizations. A substantial series within these papers document the effort spearheaded by Spiess to preserve and restore the oldest marine laboratory in North America, the George H. Scripps Memorial Marine Laboratory at the Scripps Institution of Oceanography, constructed in 1910 and designated a National Landmark in 1977.

Scripps Institution of Oceanography. Office of the Director (Frieman). Records, 1983-1998.
51 cubic feet. Archival Collection AC 30

These records were generated by the office of the director during the administration of Edward A. Frieman and document all aspects of the administration of the Scripps Institution of Oceanography during that period. The records are arranged in numerically coded subject files.

Scripps Institution of Oceanography. Scripps Industrial Associates. Records, 1969-1991.
11.25 linear feet. Archival Collection AC 8

SIA was organized in 1969 and became inactive in 1991. Membership was by subscription and consisted of companies with an interest in geophysics and oceanography, including many petroleum companies. Member organizations were entitled to attend seminars at SIO which described the latest research findings in marine geology, geophysics and oceanography. Membership fees were used to support graduate students and research in the SIO Geological Research Division. The records include correspondence, records of program manager John E. Bennett and administrator George Shor, records of member organizations, contributions and seminars. The records also include research proposals, membership files, and tape recordings of meetings and seminars.

FINDING AIDS:

Finding aids to collections at the Archives of the Scripps Institution of Oceanography are published as numbers in the SIO Reference Series and are available in electronic form to the Online Archives of California <<http://sunsite2.berkeley.edu/oac/>>. The following finding aids for SIO collections have been issued this year:

Alaoen, Josephine. Guide to the Fred B. Phleger (1909-1993) Papers, 1955-1986, Manuscript Collection MC 26. (San Diego: UCSD/SIO Reference Series Number 87-13, April 1998), 39p.

Alaoen, Josephine. Guide to the S.I.O. Scripps Industrial Associates Records, 1969-1991, Archival Collection AC 8. (San Diego: UCSD/SIO Reference Series Number 98-14, May 1998), 35p.

Owens, Kimberly M. A Guide to the S.I.O. Contracts and Grants Office Records, 1959-1996, Archival Accession AC 25. (San Diego: UCSD/SIO Reference Series Number 98-72, January 1997), 2 volumes, 502p.

Smith, Rebecca Sherwood. A Guide to the S.I.O. Office of the Director (Nierenberg) Records, 1904-1992. (San Diego: UCSD/SIO Reference Number 98-1, January 1998), 186p.

Scholars can gain access the guides at no charge on the web and/or can purchase hard copies at cost by writing: Carolyn Rainey, SIO Archives, UCSD, La Jolla, CA 92093-0219, or email <crainey@ucsd.edu>.

ORAL HISTORY:

In preparation for the celebration of the centennial of the Scripps Institution of Oceanography in 2003, SIO Archives has made a special effort to undertake oral history interviews with selected scientists and others long associated with the institution. SIO Archives partnered with American Institute of Physics Center for the History of

Physics to do an oral history with geophysicist Walter Munk. The transcript of this interview will be available to researchers at SIO Archives and at the AIP Center.

In 1988, UC Berkeley oral historian Sarah Sharp undertook four thematic oral history interviews with oceanographer Roger Revelle collectively titled, "Oceanography, Population Resources and the World." Transcripts for three of the interviews were issued and are available to scholars. Roger Revelle died while editing the transcript of the fourth interview, entitled "Roger Randall Dougan Revelle: The International Scientist." Sarah Sharp completed the editing of this final Revelle oral history interview, and it has been issued as an SIO Reference Series Number 98-18, 97 pages.

Roger Revelle's widow, Ellen Revelle Eckis, a grandniece of Scripps Institution of Oceanography founder Ellen Browning Scripps, was interviewed in 1998 by Judith Morgan. A transcript of this interview is in the editing stages and will be issued by July 1999.

SIO Archives has enlisted graduate students Christopher Henke and Joellen Russel to do a series of short (3-4 hour) oral history interviews with senior scientists associated with the Scripps Institution of Oceanography. The transcript for the first of these, an interview with Dr. Easter Ellen Cupp (1904-), the first American woman to receive a doctorate in oceanography, is in the editing stage now.

Deborah Day, Scripps Institution of Oceanography Archives, UCSD Mail Code 0219, La Jolla, California 92093-0219, U.S.A. E-mail: Deborah_Day@UCSDLIBRARY.ucsd.edu

RESEARCH ON THE HISTORY OF CHINESE OCEANOGRAPHY

There are many treatises and books on the subject of Chinese ancient nautical technology and fisheries. The most representative works are: Sun Guangqi's *The History of Chinese Ancient Navigation* (Marine Press, 1989), Zhang Xun's *The History of Chinese Nautical Science and Technology* (Marine Press, 1991), Li Shihao et al. *History of Chinese Fishery* (Shangwu Press, 1937) and Zhang Zhendong et al. *General History on Chinese Fishery* (Marine Press, 1983) etc.. Representative works on the history of marine disciplines are: Song Zhenghai et al. *The History of Chinese Ancient Oceanography* (Marine Press, 1989) and *Oriental Blue Culture — The Tradition of Chinese Marine Culture* (Guangdong Education Press, 1995).

Because of warfare, modern Chinese marine science developed very slowly from the second half of the 19th century to the first half of the 20th century. During this period, most of the scholars in the study of marine science were geographers. Therefore, oceanography was a branch of earth science. In 1935, Zhang Qiyun published the *Development of Chinese Geography in Recent 20 years* in the well known Chinese magazine *Science*, which summarized the development of Chinese earth science from 1911 to 1935. The sixth chapter summarized the achievements of Chinese oceanography. There is seldom research on the oceanographic history of this period nowadays. In section 3 of chapter 6 in Ju Jiwu's book, *The History of Chinese Geography* (Jiangsu Education Press, 1987), there was a section on modern Chinese oceanography. In 1998, Zhang Jiuchen published *Chinese Oceanography in the First Half of 20th Century* (*China Historical Materials of Science and Technology*). This paper summarized the achievements of Chinese modern oceanography from 1910-1949. The establishment of oceanographic departments in Chinese universities was a sign of the independence of oceanography from earth science in the 1940's. From then on, the Chinese oceanography developed into a new era.

In connection with national construction, Chinese marine science developed after the establishment of the People's Republic of China in 1949. Ten years later, the Science Press published the series *Chinese Sciences in 10 years*, which includes more than twenty books. Among them, the book *Synthetic Survey* summarized the achievements of Chinese marine science from 1949 to 1959. In 1982, Niu Yinyi published the paper "Marine Science More Than 30-years in Our Country" (*China Historical Materials of Technology*). This paper summarized the achievements of marine science from 1949 to 1980. In 1985, the Chinese Social Science Press Published the series *Contemporary China*, which includes 200 books. One of them was *Contemporary Marine Undertaking in China*, which summarized the achievements of marine science in 35 years of the People's Republic of China. In 1994, Wang Ying published the paper – "Contemporary Development of Oceanography" (*Geography Journal*). This paper summarized the achievements of marine science in 45 years of the People's Republic of China.

Zhang Jiuchen, Institute for History of Natural Sciences, Chinese Academy of Sciences, No. 137 Chao Nei Street, Beijing

THE NEXT CONGRESS OF HISTORY OF OCEANOGRAPHY

The Museum of the World Ocean, Kaliningrad, Russia, has been selected as the site of the Seventh International Congress of History of Oceanography (ICHO VII). Scheduled for 2003, the organizers have suggested the general theme *International Aspects of the Development of the Marine Sciences*, especially connected with their museum ship, the famous research vessel "Vitiaz." Further information will be available in future editions of this newsletter and from the Congress organizers, who may be contacted at the Museum of the World Ocean, Naberezhnaya Petra Velikogo 1, Kaliningrad 236006, Russia (e-mail: postmaster@vitiaz.koenig.su).

REPORTS FROM NATIONAL AND REGIONAL REPRESENTATIVES

GREECE

The most recent issue of the newsletter of the Society of Greek Oceanographers, *Mesopelaga*, presents the oceanography of the Mediterranean as a special theme.

The Sixth National Congress of Oceanography, organized by the National Centre for Marine Research, will be held on the island of Chios in the eastern Aegean Sea from 23-26 May 2000.

My book of about 200 pages concerning the history of oceanography in Greece from the early nineteenth century to the 1960s will be published in September 1999 [please see the bibliography section for a recent paper by Dr Vlahakis on this subject - Ed.]

George Vlahakis, National Hellenic Research Foundation, Centre for Neohellenic Research, Vas. Constantinou 48, 11635 Athens, Greece.

ITALY

In Naples from November 27-28, 1998 "*The Stazione Zoologica 'Anton Dohrn': A Symposium to Honour the Memory of Prof. Gaetano Salvatore*" featured a very distinguished roster of participants from the sciences and history of science, including Howard Schachman, Bernardo Fantini, Richard Keynes, L. Cavalli Sforza, François Jacob, Renato Dulbecco, Emile Zuckerkandl, Francisco Ayala, Victor Smetacek and Benno Müller-Hill.

Christiane Groeben, Stazione Zoologica 'Anton Dohrn', Villa Comunale I, 80121 Napoli, Italy.

NORWAY

THE SEA, THE FISH AND THE MARINE SCIENCES. The Norwegian fishery investigations and the Institute of Marine Research 1860-1990

This is the title of a work in progress analysing the history of the Institute of Marine Research (IMR) (Havforskningsinstituttet) in Bergen, Norway. The Institute will be celebrating its century in 2000 and I have been commissioned by the Institute to write its history also including the prehistory. The book will be published in Norwegian, but presumably with an English summary. I focus on the main areas that have defined and redefined the IMR throughout its existence.

Norwegian fishery-investigations were founded in 1860 as the very first scientific studies of commercial fish stocks in the Western Hemisphere. Probably the initiator was the marine zoologist Michael Sars, and it is likely that the commission was modelled after the Norwegian Geological Investigations. Forty years later a national administration for the saltwater fisheries was established in Bergen, including scientific investigations as a core of the activity. The Institute for Marine Research was placed under the Directorate of Fisheries (Fiskeristyrelsen/Fiskeridirektoratet) until 1989 when it became affiliated with the Ministry of Fisheries. With its 500 employees and six research vessels the IMR today is one of

the major marine research Institutes in Europe and at home in Norway the IMR has dominated the field of marine sciences.

One special feature of Norwegian marine research seems to be the close link between science and the public administration of the Fisheries and the intersection of science and policy. An important task therefore is to analyse the art of balancing science and management i.e. the role of the marine scientists in the public management of the saltwater fisheries. I also discuss the intersection of science and policy, more precisely the trilateral relationship between the fishing industry, marine scientists and the manifold governmental initiatives for developing the industry.

Four components are important in the marine sciences: the *choice of topics, theories, studies in the field* and the *elaboration of instruments*. What has been the significance of the IMR in international marine research? In the years between 1900 and the outbreak of World War I the Institute represented a centre for the emerging marine research. In 1914 the Director of the Fisheries and marine zoologist Johan Hjort and his assistants published the now classical: "Fluctuations in the great Fisheries of northern Europe viewed in the light of biological research". In the report they formulated a theory of fundamental importance for the field and especially for the newly established International Council for the Exploration of the Sea (ICES). After World War II the IMR became noted for the supreme quality of its field studies and the success with developing hydroacoustic instruments and methods for estimating the quantities of commercial fish stocks. In the 1970s the Institute came in a forefront thorough the introduction of a new subject, aquaculture, which has turned out to be a story of success for the IMR.

Vera Schwach, The Norwegian Institute for Studies in Research and Higher Education (NIFU), Hegdehaugsveien 31, 0352 Oslo, Norway. Vera.Schwach@nifu.no

ROMANIA

At the annual meeting of the Subcommittee Constanta of the Romanian Committee of History and Philosophy of Science and Technology (CRIFST) on May 29, Dr N.C. Papadopol gave a short paper on the Romanian expeditionary fishing fleet after 1990.

After some delay the proceedings of the scientific session "The Black Sea in Danger" (October 1996) has been published. This special volume was dedicated to the 70th anniversary of the Professor Dr. Ioan Borcea Marine Biological Station, Agigea and the 60th commemoration of its founder. Five articles dealt with the history of Romanian oceanography: on Ioan Borcea (G. Mustata et. al.); Constantin Motas (G. Mustata); Ioan Gheorghe Botez (G. Mustata and M. Mustata); Prof. Dr. Sergiu Carausu (G. Mustata et. al.) and Leon Cosmovici (I. Neacsu).

In 1999 I was a member of the Biographical Institute/ Board of Advisors.

Alexandru Bologa, Romanian Marine Research Institute, Mamaia 300, RO-8700 Constanta 3 Romania. E-mail: abologa@alpha.rmri.ro

SWEDEN

In August 1998 I was the only Swede to attend ICHO VI in Qingdao, China. I presented a lecture of my own on "Otto Pettersson. Extracts from a biography in preparation", as well as two contributions by the absent Jens Smed.

The Department of Economic History of Gothenburg University is, among other things, active in the framework of NAFHA, the North Atlantic Fisheries History Association. NAFHA's annual meeting is being planned for September 1999 in this Department. A mini conference on Swedish and International Fisheries was hosted on 20-22 November 1998 with invited lecturers from Canada, Spain, UK-Scotland, Norway, and Sweden. Two of the lectures dealt with (fisheries) oceanography, i.e. 1) pelagic fish resources - not easy to predict, examples from herring and sprat fisheries of Bohuslån by A. Lindquist, Sweden, and 2) herring and hydrography, Otto Pettersson and his ideas of the behaviour of the period herring by myself. All the contributions of the meeting have already been published in Reports of the Department of Economic history, no. 13 this year.

From Lindquist I learned that the connection between fisheries science and NAO, i.e. North Atlantic Oscillation, has come into fashion in fisheries biologists' circles. Studying Walker 1924, I have found out that he is the father of "all" Oscillations e.g. also the Southern often paired with El Niño to ENSO. Moreover, concerning NAO, there are bridges from Otto Pettersson to Meinardus to Walker, where Meinardus seems to be the one who introduced atmospheric pressure to be a better parameter than Pettersson's air temperature to be correlated with ocean variations.

Fredrik Nornvall and I attended the meeting in St. Petersburg, 27-30 January 1999 on "Polar Sea of Discord and

Collaboration: Science and Politics in Oceanography and Arctic Exploration.” Asked for short comments to be included into a Conference Report I sent the following lines: “Tim Smith, in his lecture on the coming centenary of ICES [Stockholm September 1999, Helsinki August 2000, Oslo 1901 and Copenhagen 1902], regretted that its first programmes contain very little about the relation between biotic and abiotic oceanography except for the practical plankton investigations. I myself informed that this fact was quite contrary to the visions of Otto Pettersson, the initiator of ICES. The influence of salinity on the herring wintering in the coastal areas of Sweden during the last Herring Period, had been an important incentive to his initiative. His ideas were well expressed in the Draft Programme annexed to the Stockholm Meeting invitation. Apparently, however, it did not arouse the interest of the participants.”

Augusta Palmquist is considered to be “the first woman in Swedish oceanography”. She worked simultaneously as schoolteacher of natural sciences also as assistant to and co-author with Otto Pettersson. From St. Petersburg I have received copies of letters highlighting her visit to Professor Knipovitsch in Murmansk about 1901 to teach him and his team the determination of salinity and other chemical parameters.

To commemorate the 100th anniversary of the birth of Professor Carl-Gustaf Rossby an international symposium was held 8-12 June 1998 in Stockholm. A joint special issue of “Tellus” A and B comprising 10 invited papers presented in plenary sessions appeared in 1999. Only the article “Carl-Gustaf Rossby. The Stockholm period 1947-1957” by Bert Bolin is of historical character. One of Bolin’s references, i.e. “Phillips, N. 1998. Carl-Gustaf Rossby: his times, personality, and actions. Bull. Am. Meteorol. Soc. 79, 1097-1112” seems to be appropriate to include into your list of publications, if it has not appeared there already [see this year’s bibliography - Ed.].

Artur Svansson, Dept of Oceanography, Institute of Geosciences, P.O. Box 460, S-405 30 Gothenburg, Sweden. E-mail: arsv@oce.gu.se

UNITED STATES OF AMERICA

In late October 1998, the National Academy of Sciences sponsored a conference, *FIFTY YEARS OF OCEAN DISCOVERY*, to celebrate fifty years of National Science Foundation (NSF) funding of oceanography. This event preceded the actual anniversary in 2000 and served as a forum for considering the future as much as assessing the past.

Organizers brought together senior scientists and NSF program managers as well as the next generation of oceanographers represented by the large number of graduate students in the audience. No historians were included on the program or in the planning; instead retrospective analysis was carried out by both retired and active scientists.

The program was not so much historical as devoted to reviewing and assessing methods, programs, funding, trends and intellectual accomplishments. John Knauss (Scripps Institution of Oceanography and University of Rhode Island) opened the meeting with a keynote address describing the emergence of NSF as an important patron of American ocean science. Several sessions divided up the field by discipline, considering in parallel the important intellectual advances of the past half century and the current challenges in physical, chemical, geological and biological oceanography. Ships, sensing technology, institutions, and major national and international programs all appeared on the agenda. John Byrne (past president, Oregon State University), for example, spoke about the development of the academic fleet, a uniquely American phenomenon compared with the governmental research fleets found in most other countries that support ocean science. Throughout the meeting, presenters concentrated on academic science, particularly though not exclusively that sponsored by NSF and its predecessor as oceanography patron, the Office of Naval Research. Due to this focus, areas not covered included fisheries, marine biology, public interest in marine science, industry contributions, ocean engineering and government science.

Only a handful of historians attended the symposium, probably because efforts to notify the history of science community were belated and unsystematic. Many historians of science working on oceanographic topics never heard about the symposium. Until very recently, oceanography’s past was described almost exclusively by practitioners. At the International Congresses of the History of Oceanography (ICHO), scientists and historians meet together to present and discuss ocean science history. Unfortunately, the opportunity was missed to do the same on the important subject of NSF funding of American oceanography.

Helen Rozwadowski, bei Ulrich Wegenroth, Munich Centre for History of Science and Technology, Museuminsel 1, D-80306, Munich, Germany. E-mail: helenroz@compuserve.com

QUERY - 19TH CENTURY TIDE CORRESPONDENCE

I am transcribing nineteenth century tide correspondence on tides, and would like to hear of any letters on the subject anywhere in the world.

The archives of the major workers (Lubbock, Whewell, Beaufort, Airy, Adams, Thomson and Darwin) have been consulted and from them emerged the names of a number of field workers and computers. I seek the papers of:

Thomas Gamlen Bunt, fl. 1837-1867, a surveyor of Bristol

Joseph Dessiou, 1797-1842, Hydrographic Office

Edward Roberts, FRAS, 1845-1933, Nautical Almanac Office
Andrew Wilson Baird, FRS, FRGS, 1842-1908, Royal Engineers

Any other stray letters would be welcome. Please send to my address below.

Capt. Paul Hughes, 106 High Street, Airmyn, Yorkshire DN14 8LB, United Kingdom. E-mail: airmyn@email.msn.com.

COMPLETION OF A CATALOGUE - OCEANOGRAPHIC INSTRUMENTS

Christian Carpine's masterful catalogues of oceanographic instruments and equipment are now complete with the publication of the last volume, dated 1999, *Catalogue des appareils d'océanographie en collection au Musée océanographique de Monaco 8. Suppléments, matériel de démonstration, météorologie. Additions et index cumulatifs* (Bulletin de l'Institut océanographique, Monaco, vol. 76, no.1444, 183p.). The previous volumes, published between 1987 and 1998 include detailed descriptions, photographs and historical notes on photometers, current meters, biological samplers, water bottles, sounding devices, thermometers, ships' equipment, laboratory instruments and a miscellany of other less easily characterized items. They are essential resources for any historian needing information on the development of oceanographic instruments, and with the wealth of information on their use and on instrument makers, deserve to be studied carefully by historians of technology as well as by historians of science.

Prices may be obtained from and orders placed with: Musée océanographique (Service de publications), Avenue Saint-Martin, MC 98000, Monaco (e-mail: mcmobiblio@meditnet.com).

Eric L. Mills

NEWS AND EVENTS

JOURNAL OF THE HISTORY OF BIOLOGY. The new co-editors of the *Journal of the History of Biology* are Garland Allen of Washington University, St. Louis, and Jane Maienschein of Arizona State University, Tempe. The editorial office is at Arizona State University, from which editorial information can be obtained by e-mail (jhb@asu.edu). The journal welcomes articles on a wide range of topics as long as there is a central biological component.

SECOND MAURY CONFERENCE ON HISTORY OF AMERICAN OCEANOGRAPHY. Following the inaugural Maury Conference in June 1997, the second conference, held 16-18 June 1999 at Woods Hole Oceanographic Institution, with support of the Institution, the Office of Naval Research, the Naval Research Laboratory, the Naval Historical Center, and the Commission of Oceanography, concentrated on themes identified during the first conference in the form of precirculated papers and commentary. The topics included private and public patronage of ocean sciences, international cooperation in marine science, history of science and marine policy, and oceanography as a new interdisciplinary field. The scholars participating were Dean Allard, Keith Benson, Deborah Day, Ron Doel, Jim Fleming, Margot Garritt, Bruce Hevly, Poul Holm, Julia Lajus, Mellissa Lamont, Tanya Levin, Cornelia Lüdecke, Jane Maienschein, Eric Mills, Naomi Oreskes, Ron Rainger, Helen Rozwadowski, Tim Smith, Andrew Solow, John Steele, Jack Stillwell, David van Keuren, Zuoyue Wang, Gary Weir and Warren Wooster. Plans are underway, but not complete, for publication of the papers, and a third Maury Conference is being planned for 2001.

GERMAN SOCIETY FOR THE HISTORY AND THEORY OF BIOLOGY. The society held its 8th annual meeting in Rostock 24-27 June 1999, with special emphasis on the history of marine biology on the occasion of the centenary of the return of the German Deep Sea Expedition under Carl Chun on "Valdivia." On the programme were H.-J. Brosin (Rostock) on the history of marine research in Rostock, Julia Lajus (St. Petersburg) on the early relation between science and fisheries in Russia, E. Tammiksaar (Tartu, Estonia) on K.E. von Baer as marine biologist, Christiane Groeben (Naples) on baroque sea monsters, and H. Landsberg (Berlin) on the "Valdivia" Expedition. During the conference our colleague Christiane Groeben, archivist of the Stazione Zoologica "Anton Dohrn" was elected Second Vice-President.

HISTORY OF NATIONAL OCEANOGRAPHY. The second international conference, sponsored by the Museum of the World Ocean, the P.P. Shirshov Institute of Oceanology, the Russian National Oceanographic Data Centre and the Russian Geographic Society was held in Kaliningrad from 20-24 September 1999. It was timed to celebrate dates significant to the museum ship "Vityaz" and to set its work in national and international contexts. Information on this conference is available from the Chairman of the Organizing Committee, Dr Victor Stryuk, Museum of the World Ocean, Naberezhnaya

Petra Velikogo 1, 23006 Kaliningrad, Russia (e-mail: postmaster@vitiaz.koenig.su).

XXIst INTERNATIONAL CONGRESS OF HISTORY OF SCIENCE. This major congress, following Liège in 1997, will be held in Mexico City from July 8-14, 2001. International Commissions, like the Commission of Oceanography, are expected to organize a symposium or scientific session during the Congress. Anyone who plans on attending and who would be interested in organizing a symposium or session representing the Commission should contact Eric Mills as soon as possible (E.Mills@Dal.Ca). For information on the Congress, see the following websites: <http://weber.u.washington.edu/~hssexec/meetings.ICHS2001.html> and <http://www.cilea.it/history/DHS/>

AMS GRADUATE FELLOWSHIPS. The American Meteorological Society has already awarded a graduate fellowship in the history of science for 1999/2000, but information on awards in upcoming years can be obtained from Stephanie Armstrong, Manager of Fellowship & Scholarship Programs, AMS Headquarters, 45 Beacon Street, Boston, MA 02108-3693, U.S.A. Fellowships, which carry a US \$15,000 stipend, will be awarded to students wishing to prepare a dissertation on the history of the atmospheric or related oceanic or hydrologic sciences.

HISTORISCH-MEERESKUNDLICHES JAHRBUCH. Volume 5 of this publication contains papers from the symposium "History of Marine Science: Science and Technology at Sea," held during the XXth International Congress of History of Science, Liège, Belgium in July 1997. Subjects of the papers include dynamic oceanography at the time of the "Meteor" Expedition (Eric Mills), artificial hatching of cod and marine research (Vera Schwach), the U.S. deep sound surveillance system (Gary Weir), English Sea Fisheries Committees and waterborne pollution 1888-1914 (Gillian Parsons), J.S. von Waitz's 1755 paper on the water budget of the Mediterranean (Margaret Deacon), and the German Committee of Marine Research and Technology (Walter Lenz). The *Jahrbuch* is available from Deutsches Meeresmuseum, Katherinenberg 14-20, D-18439 Stralsund, Germany.

PACIFIC CIRCLE NEWSLETTER. The new editor of the newsletter of our sister DHS Commission is Dr Jane Samson, Dept. of History and Classics, University of Alberta, Edmonton, Alberta T6G 3H4, Canada (jane.samson@ualberta.ca). Dr Samson is a historian of exploration, with interests overlapping those of many of our other members.

STILLMAN DRAKE LECTURE. The annual Stillman Drake Lecture of the Canadian Society for History and Philosophy of Science under the title "*De Motu Marium; Understanding Ocean Currents Before the Second Scientific Revolution*" was delivered by Eric Mills at the Society's annual meeting during the Conference of the Social Sciences and Humanities in Sherbrooke, Québec in June 1999. The text will be available on the Society's website, <http://www.uwo.ca/philosophy/cshpsinf.html>, or by request to E.Mills@Dal.Ca.

ROZWADOWSKI IN GERMANY. Helen Rozwadowski, who is writing a history of the International Council for the Exploration of the Sea for its centenary in 2002, is spending 1999/2000 associated with the Munich Centre for History of Science. Address: Dr Helen Rozwadowski, bei Ulrich Wegenroth, Munich Center for History of Science and Technology, D-80306 Munich, Germany. Her e-mail address is unchanged.

GRANTS FOR RESEARCH IN PHYSICS. The Center for the History of Physics of the American Institute of Physics offers grants in aid of up to US \$2500 for graduate students or scholars with a record of publication for research in the history of physics and allied sciences (e.g. astronomy, geophysics, optics) and their social interactions. Direct expenses only are covered. Deadlines are June 1 and December 31 annually. See the Institute's Web site: <http://www.aip.org/history> or write Dr Spencer Weart, Center for History of Physics, AIP, One Physics Ellipse, College Park, MD 20740, U.S.A. (E-mail: sweart@aip.org).

MEETINGS AND CONFERENCES

(See also News and Events section)

19-21 FEBRUARY 2000. The twelfth annual SYMPOSIUM ON THE MARITIME ARCHAEOLOGY AND HISTORY OF HAWAII AND THE PACIFIC, at the Hawaii Maritime Center, Honolulu on a wide variety of topics from naval history to archaeology and environmental history. Abstracts by 15 November 1999 to Marine Option Program, University of Hawaii

at Manoa, 2525 Correa Road, HIG 215A, Honolulu, Hawaii 96822, U.S.A. (mop@hawaii.edu).

16-19 MARCH 2000. INTO THE NEXT MILLENNIUM. THE PAST AND PROMISE OF ENVIRONMENTAL HISTORY, a meeting of the American Society for Environmental History. Paper and session proposals invited examining any aspect of human interaction with the physical environment over time. Information: Mark Stewart, Dept. of History, Western Washington University, Bellingham, WA 98225-9506, U.S.A.

MARCH 2000. HISTORY OF GEOPHYSICS AND SPACE PHYSICS. A one day session during the annual meeting of the German Geophysical Society in Munich, including development of geophysics, biographical notes, international research programmes, and historical and philosophical problems of geophysics. Information: Dr Wilfried Schröder, Hechelstrasse 8, D-28777 Bremen-Roenebeck, Germany.

3-4 APRIL 2000. ROYAL METEOROLOGICAL SOCIETY HISTORY GROUP. Meeting to celebrate the Society's 150th anniversary, at the Royal Society, London. To cover the history of the society, its contemporaries, and the societies with which it shared interests and members. Information: the History Group Hon. Sec., Royal Meteorological Society, 104 Oxford Road, Reading RG1 7LL, U.K.

10-12 APRIL 2000. SCIENCE IN THE 19th CENTURY PERIODICAL: AN INTERDISCIPLINARY CONFERENCE, organized by the SciPer Project, at the University of Leeds, U.K. To identify and analyse representations of science, technology and medicine in the general periodical literature of 19th century Britain. Individual papers or sessions of 2 or 3 papers are welcome. Abstracts to Dr J.R. Topham, School of Philosophy, University of Leeds, Leeds LS2 9JT, U.K. (j.r.topham@leeds.ac.uk).

1-3 AUGUST 2000. ICES HISTORY SYMPOSIUM: 100 YEARS OF SCIENCE UNDER ICES, in Helsinki, Finland. Celebrating the centenary of the International Council for the Exploration of the Sea (ICES) in 2002, this symposium is open to those with an interest in the historical development of marine science, particularly that involving ICES. Abstracts to the convenor by 31 August 1999. Information: Dr Emory Anderson, NOAA/NMFS Northeast Fisheries Science Center, Woods Hole, MA 02543, U.S.A. (E-mail: emory.anderson@noaa.gov).

3-6 AUGUST 2000. WHAT IS TO BE DONE? HISTORY OF SCIENCE IN THE NEW MILLENNIUM, the 4th British-North American Joint Meeting of the British Society for History of Science, the Canadian Society for History & Philosophy of Science, and the History of Science Society, in St Louis, Missouri. Proposals due 15 December 1999. Information: agar@fs4.ma.man.ac.uk; lightman@yorku.ca; or, paul_theerman@nlm.nih.gov.

6-13 AUGUST 2000. INTERNATIONAL CONGRESS OF HISTORICAL SCIENCES, in Oslo. The largest regular meeting of international professional historians, occurring every five years. The aim is comprehensive surveys of new trends and developments within historical disciplines and critical debate about themes of scholarship and pioneer fronts of historical research. Information: The 19th International Congress of Historical Sciences, Dept. of History, University of Oslo, P.O. Box 1008, Blindern, N-0315 Oslo, Norway.

4-8 SEPTEMBER 2000. THE XIXth SCIENTIFIC INSTRUMENT SYMPOSIUM, in Oxford, England. Organized by a sister Commission, the Scientific Instrument Commission of the IUHPS. Information: Dr J.A. Bennett, Museum of the History of Science, Broad Street, Oxford OX1 3AZ, England.

1-5 NOVEMBER 2000. ANNUAL MEETING OF THE HISTORY OF SCIENCE SOCIETY for 2000, in Vancouver, Canada. Information: <http://weber.u.washington.edu/~hssexec/>

7-11 NOVEMBER 2001. ANNUAL MEETING OF THE HISTORY OF SCIENCE SOCIETY for 2001, in Denver, Colorado, U.S.A. Information: <http://weber.u.washington.edu/~hssexec/>.

**CURRENT BIBLIOGRAPHY OF THE HISTORY OF OCEANOGRAPHY
(1998-1999, with additions from earlier years)**

Deborah Day

Åhlander, Erik, Sven O. Kullander and Bo Fernholm. "Ichthyological Collection Building at the Swedish Museum of Natural History, Stockholm," in: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 13-25.

Aldrich, F.A. "Moses and the Living Waters: Victorian Science in Newfoundland." in: *Early Science in Newfoundland and Labrador*, edited by D.H. Steele. St. John's, Newfoundland: Sigma Xi, 1987, 86-120.

Alexander, C. *The "Endurance": Shackleton's Legendary Antarctic Expedition*. London: Bloomsbury, 1998, 211.

Alexander, C. "Epic of Survival - Shackleton." *National Geographic* 194, no. 5 (1998): 82-101

Annales Hydrographique, 5e serie, 22, no. 769 (1998): 35-90. [In French; This special issue of *Annales Hydrographique* is entitled, "150 Ans d'Annales Hydrographique," and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service Central Hydrographique into the Service Hydrographique et Océanographique de la Marine.]

Balaban, Alexandru T. "Introduction à l'anniversaire du Centenaire de l'Expédition Belgica." *Noesis, Travaux du Comité roumain d'histoire de Philosophie des Sciences* 23 (1998), 11-79. [Paper presented during International Centennial Symposium-Belgica, Palace of the Academies, Belgium, 5 November 1997.]

B_n_rescu, Petru M. and Nalbant, Teodor T. "Résultats Ichthyologiques de l'Expédition Antarctique de la Belgica (1897-1899)." *Noesis, Travaux du Comité Roumain d'Histoire et de Philosophie des Sciences* 23 (1998), 47-52.

Bauchot, Marie-Louise, Jacques Daget and Roland Bauchot. "Ichthyology in France at the Beginning of the 19th Century: The Histoire Naturelle des Poisson of Cuvier (1769-1832) and Valenciennes (1794-1865)." in: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson.. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 27-80.

Birkenmajer, Krysztof. "Polar legacy of H. Arctowski and A.B. Dobrowolski. Centennial of the "Belgica" Antarctic Expedition." *Noesis, Travaux du Comité Roumain d'Histoire et de philosophie des Sciences* 23 (1998), 29-31.

Bjorklund, Kjell R., Chernova, Natalia V., Lajus, Julia A., Smirnov, Igor S., Stepanjants, Sofia D. "Ekspedisjonen om Vitenskapelige Fiskeriundersokelser nær Murmansk-kysten: Damperen "Andrei Perwoswannyi," et Hundreårsjubileum." *Årbok for Bergen Museum* 1998, 69-75. [In Norwegian: The Expedition for Scientific Fishery Investigations Close to the Coast of Murmansk: the Steamer "Andrei Perwoswannyi," a Centenary.]

Boesman, M. "Collectors and Fish Collections of the Rijksmuseum van Natuurlijke Historie in Leiden, Netherlands (1820-1980)," in: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3., 1997, 81-100.

Bortone, Stephen A., Ronald N. Besser, and Charles R. McNeil. "The Importance of Silas Stearns (1859-1888) and the Pensacola Red Snapper Fishery to North American Ichthyology." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, 1997, ASIH Special Publication No. 3, 459-467.

Bourget, M.-N. "Voyage, Mer et Science au XVIIIe Siècle." *Bulletin de la Société d'Histoire Moderne et Contemporaine* (1997): 39-56.

Bourgoin, Jean. "Retrospective de l'Hydrographie Française." *Annales Hydrographique*, 5e serie, 22, no. 769 (1998): 5-29. [In French; This special issue of *Annales Hydrographique* is entitled, "150 Ans d'Annales Hydrographique," and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service central Hydrographique into the Service Hydrographique et Océanographique de la Marine. Annexe 1: Chronologie d'Événements ou Inventions Intéressant Directement ou Indirectement l'Hydrographie Française: pp. 23-29; Annexe 2: Chronologie des Travaux Hydrographiques Française de 1800 a 1997," pp. 29-34.]

Bourgoin, Jean. "Les Annales Hydrographique." *Annales Hydrographique*, 5e serie, 22, no. 769 (1998): 35-90. [In French; This special issue of *Annales Hydrographique* is entitled, "150 Ans d'Annales Hydrographique," and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service central Hydrographique into the Service Hydrographique et Océanographique de la Marine. This article includes "Morçeaux Choisis des Annales Hydrographiques avant 1900": pp. 52-90.]

Bradford-Grieve, J.M., K.B. Lewis and B.R. Stanton. "Advances in New Zealand Oceanography, 1967-91." *New Zealand Journal of Marine and Freshwater Research* 25, no. 4 (1992): 429-441.

Branagan, David F., ed. *Science in a Sea of Commerce: The Journal of a South Seas Trading Venture (1825-1827) by Samuel Stutchbury*. Northbridge, New South Wales, Australia: privately printed by the author, 1996, x, 246.

Brittan, Martin R. "The Stanford School of Ichthyology: Eighty Years (1891-1970) from Jordan (1851-1931) to Myers (1905-1985)." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 233-263.

Brown, A.C. "John D.F. Gilchrist and the Early Years of Marine Science in South Africa." in: *A Century of Marine Science in South Africa*, edited by A.I.L. Payne and J.R.E. Lutjeharms. Cape Town: Sea Fisheries Research Institute/Royal Society of South Africa, 1997, 2-16.

Burt, Louise. *Oceanography at Oregon State University: the First Two Decades, 1954-1974*. Corvallis, Oregon: Oregon State University College of Oceanic and Atmospheric Sciences, 1998, xiv, 225.

Carlisle, Rodney P. *Management of the U.S. Navy Research and Development Centers during the Cold War Era : A Survey Guide to Reports*. Washington: Navy Laboratory/Center Coordinating Group and the Naval Historical Center, Department of the Navy, 1996. [Microform.]

Carpine, Christian. "Catalogue des Appareils d'Océanographie en Collection au Musée Océanographique de Monaco. 7: Instruments Divers, Matériel de Pont, Instruments de Laboratoire." *Bulletin de l'Institut Océanographique* 1443 (1998), 207.

Carpine, Christian. "Catalogue des Appareils d'Océanographie en Collection au Musée Océanographique de Monaco. 8. Suppléments, Matériel de Démonstration, Météorologie. Additions et Index Cumulatifs." *Bulletin de l'Institut Océanographique* 76, no. 1444 (1999): 183 pages.

Carter, H.B. “Note on the Drawings by an Unknown Artist from the Voyage of HMS “Endeavour”,” in: *Science and Exploration in the Pacific: European Voyages to the Southern Oceans in the Eighteenth Century*, edited by M. Lincoln. Woodbridge, Suffolk : Boydell Press/National Maritime Museum. 1998, 132-134.

Cartwright, David E. “Robert Paul de Lamanon: An Unlucky Naturalist.” *Annals of Science* 54 (1997): 585-596.

Cartwright, David E. *Tides: A Scientific History*. Cambridge: Cambridge University Press, 1999, 292.

Chimot, Jean-Marc, Pierre Mouscardes, Herve Bisquay, Patrick Grenard, Yves Guillam. “Leves Hydrographique et Campagnes Océanographiques: Évolution, État de l’Art et Perspectives.” *Annales Hydrographique*, 5e serie, 22, no. 769 (1998): 133-90. [In French; This special issue of *Annales Hydrographique* is entitled, “150 Ans d’Annales Hydrographique,” and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service central Hydrographique into the Service Hydrographique et Océanographique de la Marine.]

Guo Jia Zi Ran Ke Xue Ji Jin Wei = The Committee of National Nature Science Foundation. *Zi Ran Ke Xue Xue Ke Fa Zhan Diao Yan Bao Gao = Findings Report on the Development of Natural Sciences: Marine Science*. Hai Yang Ke Xue, Ke Xue Chu Ban She = Science Press, 1995.

Comolet-Tirman, Andre. “Quelques Figures Marquantes du Corps des Ingénieurs Hydrographes.” *Annales Hydrographique*, 5e serie, 22, no. 769 (1998): 113-132. [In French; This special issue of *Annales Hydrographique* is entitled, “150 Ans d’Annales Hydrographique,” and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service central Hydrographique into the Service Hydrographique et Océanographique de la Marine. This article includes “Liste des Ingenieurs Hydrographes depuis la Création du Corps jusqu’a sa Fusion au Sein du Corps des Ingénieurs de l’armement,” pp. 129-132.]

Cook, Alan. *Edmond Halley: Charting the Heavens and the Seas*. Oxford: Clarendon Press, 1998, xvi, 542.

Cormack, A. “The History of Marine Meteorology.” *Ocean Challenge* 8, no. 2 (1998): 21-22.

Cormack, Lesley B. *Charting an Empire: Geography at the English Universities, 1580-1620*. Chicago/London: University of Chicago Press, 1997, xvi, 288p.

Crease, R.P. *Making Physics: A Biography of Brookhaven National Laboratory*. Chicago: University of Chicago Press, 1999, xii, 434.

Crossman, E.J. “Fishes from a ‘Provincial’ Perspective: The Collection at the Royal Ontario Museum.” In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 543-552.

Davis, Peter. “Ichthyologists in Northumberland, England: Their Work and Collections.” In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 115-120.

Deacon, Margaret. “From Salt Manufacture to the Circulation of the Ocean: J.S. von Waitz and his 1755 Paper on the Water Budget of the Mediterranean Sea.” *Historische-Meerskundliches Jahrbuch* 5 (1998): 75-91.

Declair, Hugo. “The Discoveries of the “Belgica” Expedition.” *Noesis, Travaux du Comité Roumain d’Histoire et de Philosophie des Sciences* 23 (1998), 34-46.

Dragesund, Olav. “Bergens Museums Biologiske Stasjon 100 år - Utviklingstrekk og Utfordringer i Norsk

Havforskning =The Biological Station at Bergen Museum 100 year – Growth and Challenges in the Norwegian Marine Research .” *Naturen* 1 (1993): 19-27. [In Norwegian.]

Draper, L. “Wave Recorder,” in: *Instruments of Science*, edited by R.Bud and D.J.Walker. London: Garland Publishing, 1998, 660-663.

Draper, L. “Wave Studies,” in: *Sciences of the Earth, Vol. 2*, edited by Gregory A.Good. London: Garland Publishing, 1998, 836-843.

Dunbar, Kurt and Chris Friday. “Salmon, Seals and Science: The Albatross and Conservation in Alaska, 1888-1914.” *Journal of the West* 33 (October 1994), 6-13.

Dunn, J. Richard. “Charles Henry Gilbert (1859-1928): Pioneer Ichthyologist of the American West.” In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 265-278.

Eisler, William. *The Furthest Shore: Images of Terra Australis from the Middle Ages to Captain Cook*. Cambridge; New York: Cambridge University Press, 1995, xii, 180.

Ellis, Richard. *Deep Atlantic: Life, Death and Exploration in the Abyss*. New York: Knopf, 1996, ix, 395.

Estes, J. Worth. *Naval Surgeon: Life and Death at Sea in the Age of Sail*. Canton, MA: Science History Publications, 1998, xii, 266p.

Flatte, Stanley M. “Random-Media Effects in Ocean Acoustics: An introduction.” in *Wave Propagation in Random Media (Scintillation)*, edited by V.I. Tatarskii, A. Ishimaru, and V.U. Zavorotny. Bellingham, Washington; Bristol, England: SPIE--The International Society for Optical Engineering, 1993, 84-97.

Flatte, Stanley M. “Sound Transmission Through Internal Waves, Including Internal Wave Tomography.” In *A Celebration of Geophysics and Oceanography*. La Jolla: Scripps Institution of Oceanography, SIO Reference Series 84-5, March 1984, 104-112.

Flatte, Stanley M. “Principles of Acoustic Tomography of Internal Waves.” *Proceedings, Oceans '83*, 29(Aug. 1983): 372-377.

Flatte, Stanley M. “Wave Propagation through Random Media: Contributions from Ocean Acoustics.” *Proceedings of the IEEE* 71 (Nov. 1983): 1267-1294.

Flatte, Stanley M., et. al. *Sound Transmission Through a Fluctuating Ocean*. Cambridge: Cambridge University Press, June 1979, xix, 229.

Fleming, James Rodger. *Historical Perspectives on Climate Change*. Oxford; New York: Oxford University Press, 1998, xiv, 194.

Fleming, James Rodger. “Arrhenius and Current Climate Concerns: Continuity or a 100-year Gap?” *EOS, Transactions of the American Geophysical Union* 79, no. 31 (August 25, 1998), 405, 409.

Foster, Michael S., Gayle I. Hansen and Yost U.L. Amrein. “History of the Western Society of Naturalists.” Santa Barbara, California: Santa Barbara Museum of Natural History Contributions in Science 2, 1999, 42 pages. [Appendix A: Bibliographies of Selected Officers of the Western Society of Naturalists: pp. 16-27; Appendix B: Constitution and By-Laws of the Western Society of Naturalists in 1916 and 1993.]

Frieman, Edward A. "A Policy for Science vs. Science for Policy." *Marine Technology Society Journal* 23 (September 1989): 39-42.

Frieman, Edward A. "Scripps Institution of Oceanography: Present and Future." In: *New Directions of Oceanographic Research and Development*, edited by Noiyuki Nasu and S. Honjo. Tokyo: Springer-Verlag, 1993, 122-137.

Garb, Y. "Change and Continuity in Environmental World-View: The Politics of Nature in Rachel Carson's Silent Spring," in: *Minding Nature: The Philosophers of Ecology*, edited by David Macauley. New York: Guilford Publications, 1996.

Gascoigne, J. "Joseph Banks and the Expansion of Empire," in: *Science and Exploration in the Pacific: European Voyages to the Southern Oceans in the Eighteenth Century*, edited by M. Lincoln. Woodbridge, Suffolk : Boydell Press/National Maritime Museum. 1998, 39-51.

Gerlache, Bernard de. 1897-1997. *Les Belges en Antarctique après l'expédition de la Belgica*. *Noesis, Travaux du Comité Roumain d'Histoire et de Philosophie des Sciences* 23 (1998), 21-27.

Gerlache, Gaston de. "Emile Racovitza et le centenaire de l'expédition de la *Belgica*." *Noesis, Travaux du Comité Roumain d'Histoire et de Philosophie des Sciences* 23 (1998), 19

Gerlache de Gomery, Adrien de. *Victorie asupra nop_ii Polare*. Translated by Maria Florea. Bucuresti: Tehnica, 1998, 268. [Romanian translation of Gerlache's *Quinze Mois dans l'Arctique*. Paris, Bruxelles: Hachette/Lebegue, 1902.]

Gon, O. And P.H. Skelton. "A History of the Fish Collections of South Africa." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 133- 168.

Good, Gregory A. *Sciences of the Earth: An Encyclopedia of Events, People, Phenomena*, 2 volumes. New York and London: Garland Publishing, Garland Encyclopedias in the History of Science, 1998, xlv, 901.

Greenaway, Frank. *Science International: A History of the International Council of Scientific Unions*. Cambridge: Cambridge University Press, 1996, 279.

Grinstein, Louise S., Carol A. Biermann and Rose K. Rose, editors. *Women in the Biological Sciences: A Bibliographic Sourcebook*. Westport, Connecticut; London: Greenwood Press, 1997, xix, 609.

Guyon, Jean-Claude. "Le Personnel du SHOM en 1998." *Annales Hydrographique*, 5e serie, 22, no. 769 (1998): 107-111. [In French; This special issue of *Annales Hydrographique* is entitled, "150 Ans d'Annales Hydrographique," and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service Central Hydrographique into the Service Hydrographique et Océanographique de la Marine (SHOM).]

Hattendorf, John B., ed. *Maritime History: Volume 1: The Age of Discovery*. Malabar, FL: Krieger Publishing Company, Open Forum Series, 1996, xvi, 331.

Herzig-Straschil, Barbara. "Franz Steindachner (1834-1919) and other Prime Contributors to the Ichthyological Collection of the Naturhistorisches Museum Wien." in: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 101-108.

Hawkins, T. "Scotia: A Distinguished Line of Scottish Research Ships." *Ocean Challenge* 8, no. 3 (1998):.39-46.

Hersart de la Villemarqué, J. “La Pêche Morutière Française de 1500 a 1950: Statistiques, Climat et Société.” *IFREMER Repères Océan*, No. 11 (1995): 134.

Hu Dunzin, et al. “Zhong Guo Wu Li Hai Yang Xue Jin Zhan Gai Shu = The Development of Chinese Physical Oceanography.” Zhao Jiuzhang Ji Nian Wen Ji = Commemorative Book on Zhao Jiuzhang. (Ke Xue Chu Ban She = Science Press, 1997). [In Chinese.]

“In Focus - Institute of Marine Research (IMR), Bergen, Norway.” *ICES/CIEM Information*, No. 27 (1996): 14-15.

“In Focus - The Narragansett Laboratory, Rhode Island (USA).” *ICES/CIEM Information*, No. 28 (1996): 12-13.

Instituto Español de Oceanografía (IEO). “El Instituto Español de Oceanografía (IEO), 75 Años de Investigación.” Madrid: Ministerio de Agricultura, Pesca y Alimentación, 1989, 136. [In Spanish.]

Kawai, H. “A Brief History of Recognition of the Kuroshio.” *Progress in Oceanography* 41, no. 4 (1998): 505-578.

Kendall, Lauren, Barbara Mathe and Thomas Ross. *Drawing Shadows to Stone: The Photography of the Jessup North Pacific Expedition, 1897-1902*. Seattle: University of Washington Press, 1997, 112.

Klyver, R.P. “Fateful Passage: The New World Voyage of Jens Munk.” *Compass* 67, no. 1 (1997): 24-28.

Kortum, G. “Old Oceanographic General Descriptions and Statements about the Sea Floor Contained in the Library of the Institute of Oceanography at the University of Kiel, Germany.” *Berichte der Geologischen Bundesanstalt* 35 (1996), 221-228.

Kury, L. “Les Instructions de Voyage dans les Expéditions Scientifiques Françaises (1750-1830).” *Revue d'Histoire des Sciences et de leurs Applications* 51 (1998), 65-91.

Lahsen, Myanna Hvid. *Climate Rhetoric: Construction of Climate Science in the Age of Environmentalism (Global Warming)*. Ph.D. diss., Rice University, 1998, 433.

Lambert, A.D. “Pen Portraits of Presidents - Professor Sir John Knox Laughton, RN.” *Weather* 54, no. 1 (1999): 27-30.

Le Gouic, Michel. “Évolutions Scientifiques et Techniques du Service Hydrographique.” *Annales Hydrographique*, 5^e série, 22, no. 769 (1998): 179-212. [In French; This special issue of *Annales Hydrographique* is entitled, “150 Ans d’Annales Hydrographique,” and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service Central Hydrographique into the Service Hydrographique et Océanographique de la Marine.]

Leary, William .M. *Under Ice: Waldo Lyon and the Development of the Arctic Submarine*. College Station, Texas: Texas A&M University Press, 1999, xxviii, 303.

Lenz, Walter. “German Committee of Marine Research and Technology - Origin, Objectives and Problems.” *Historisch-Meereskundliches Jahrbuch* 5 (1998): 92-101.

Li Shihao et. al. *Zhong Guo Yu Ye Shi = The History of Chinese Fishery*. Shangwu Yin Shu Guan = Shangwu Press, 2nd ed., 1998. [In Chinese.]

Lincoln, Margarette, ed. *Science and Exploration: European Voyages to the Southern Oceans in the 18th Century*. Woodbridge, Suffolk: Boydell Press/National Maritime Museum, 1998, 228.

Liu, Miao. *Ming Ching Yen Hai Tang Ti Kai Fa Yen Chiu* =A Study on the Economic Open-up of Coastal Marshland of China in the Ming-Qing Dynasties. Shan-tou shih: Shan-Tou University Press, 1996, 348. [In Chinese.]

Marinescu, Alexandru. "Correspondence des Membres de l'État-Major de l'Expédition *Belgica*: son Importance pour l'histoire des sciences." *Noesis, Travaux du Comité Roumain d'Histoire et de Philosophie des Sciences* 23(1998), 61-77.

Marinescu, Alexandru. "Emil Racivi__: Din locuri unde Nimeni nu mai Fusesse Vreodat_." *Magazin Istoric* 5(1998), 69-71. [In Roumanian.]

Matsuura, Keiichi “Fish Collection Building in Japan, With Comments on Major Japanese Ichthyologists.” In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3., 1997, 171-182.

Menezes, Naércio A., José L. De Figueiredo, and Heraldo A. Britski. “Ichthyological Collection Building at the Museu de Zoologia de São Paulo, Brazil.” In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, 1997, ASIH Special Publication No. 3, 561-565.

Milard, Francois. “Aperçu sur le Personnel du Service Hydrographique et Océanographique de la Marine. Ses Fonctions, son Recrutement, sa Formation.” *Annales Hydrographique*, 5e serie, 22, no. 769 (1998): 91-105. [In French; This special issue of *Annales Hydrographique* is entitled, “150 Ans d’Annales Hydrographique,” and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service Central Hydrographique into the Service Hydrographique et Océanographique de la Marine.]

Mills, E.L. “Oceanography, Physical: Disciplinary History.” in: *Sciences of the Earth: An Encyclopedia of Events, People, and Phenomena*, vol.2, edited by Gregory A. Good. New York: Garland Publishing, 1998: 630-636.

Mills, E.L. “Socializing Solenoids: The Acceptance of Dynamic Oceanography in Germany Around the Time of the “Meteor” Expedition.” *Historisch-Meereskundliches Jahrbuch* 5 (1998): 11-26.

Nilsen, Yngve Skjærseth. “Havforskningsinstituttets Rolle for Ressursforvaltningen innen Norsk Fiskeri 1948-1973 = The Institute for Marine Research and its Significance for the Management of the Norwegian fisheries 1948-1973.” *Arbeidsnotat* 12 (April 1996) Handelshøyskolen BI. [In Norwegian.]

Nilsen, Yngve Skjærseth (1997): “Havforskernes Rolle i Fiskeriforvaltningens Historie = The Marine Researchers and their Importance in the Management of the Fisheries.” *Tidsskrift for et Bærekraftig Samfunn* 4 (1997): 17-27. [In Norwegian.]

Nornvall, F. And A. Svansson. “Bornö Oceanographic Station: The Foundation of a Marine Station in Sweden.” *History of Oceanography Newsletter*, no.10 (September 1998): 5-8

Notter, Annick, coordination éditoriale. *La Découverte du Paradise. Océanie: Curieux, Navigateurs et Savants*. Paris: Somogy, 1997, 252.

O’Leary, Wayne M. *Maine Sea Fisheries: The Rise and Fall of a Native Industry, 1830-1890*. Boston: Northeastern University Press, 1996, xii, 391.

Oreskes, Naomi. *The Rejection of Continental Drift: Theory and Method in American Earth Science*. New York; Oxford: Oxford University Press, 1999, ix, 420.

Orlic M. and M. Pasarić. “ Sedam desetljeća Mareografskih mjerenja u Bakru = Seven Decades of Tide-Gauge Measurements at Bakar,” in: *Prirodoslovna istraživanja rijeckog područja = Natural History Researches of the Rijeka Region*, edited by M. Arko-Pijevac, M. Kovacic and D. Crnković. Rijeka: Prirodoslovni muzej = Natural History Museum, 1998: 201-211. [in Croatian, English abstract.]

Parsons, G. “Scientific Laboratories’ Investigation of Waterborne Pollution: English Sea Fisheries District Committees’ Efforts 1888-1914. *Historisch-Meereskundliches Jahrbuch* 5 (1998): 58-74.

Pasquay, Jean-Nicolas. "Le Service Hydrographique Français et la Coopération Internationale en Hydrographie." *Annales Hydrographique*, 5e série, 22, no. 769 (1998): 223-238. [In French; This special issue of *Annales Hydrographique* is entitled, "150 Ans d'Annales Hydrographique," and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service Central Hydrographique into the Service Hydrographique et Océanographique de la Marine.]

Patai, Raphael. *The Children of Noah: Jewish Seafaring in Ancient Times*. Princeton: Princeton University Press, 1998, xx, 228p.

Paxton, John R. And Mark A. McGrouther. "A History of the Fish Collection at the Australian Museum (1860-1968), With a Summary of Current Australian Fish Collections." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3., 1997, 183-205.

Payne, A.I.L. and J.R.E. Lutjeharms. *A Century of Marine Science in South Africa*. Cape Town: Sea Fisheries Research Institute/Royal Society of South Africa, 1997, 252.

Pérez-Rubin, J. And E. Arriaga. "Las Expediciones Científicas Españolas en Ultramar (Siglos XVI-XX). Aspectos Científicos, Náuticos y Artísticos." Malaga, Spain: Real Academia de Bellas Artes de San Telmo, 1995, 102 pages. [In Spanish.]

Pietsch, Theodore W. "Early Ichthyology in Puget Sound: Edwin Chapin Starts (1867-1932) and the Young Naturalist' Society of Seattle." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, 1997, ASIH Special Publication No. 3, 311-322.

Pietsch, Theodore W. And J. Richard Dunn. "Early Collection Building in Puget Sound and Adjacent Waters: The 1880 Expedition of David Starr Jordan (1851-1931) and Charles Henry Gilbert (1859-1928)." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, 1997, ASIH Special Publication No. 3, 279-290.

Pietsch, Theodore W. And William D. Anderson, eds. *Collection Building: In Ichthyology and Herpetology*. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, xiv, 594p.

Raby, Peter. *Bright Paradise: Victorian Scientific Travelers*. Princeton: Princeton University Press, 1997, x, 310p.

Racovitza, Emil. "Lettres, Journal Antarctique, Conférences -Belgica, 1897-1899." *Fondation Culturelle Roumaine, Coll. le Rameau d'Or* 2, no. 7 (1998), 208. [Letters of Racovitza to Adriene de Gerlache de Gomery 18 July 1897-21 May 1898 and other documents edited by Alexandru Marinescu, Anca B_n_rescu and Alexandru Iftimie.]

Racovitza, Gheorge. "L'épopée Antarctique d'Emile Racovitza." *Noesis, Travaux du Comité Roumain d'Histoire et de Philosophie des Sciences* 23 (1998), 53-59.

Rice, Tony. *Voyages of Discovery: Three Centuries of Natural History Exploration*. London: Scriptum Editions in association with the the Natural History Museum, 1999, 336 pages.

Roberts, Clive D. And Chris D. Paulin. "Fish Collections and Collecting in New Zealand." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 207-229.

Roden, Gunnar I and H. Thomas Rossby. "Early Swedish Contributions to Oceanography: Nils Gissler (1715-1771) and the Inverted Barometer Effect." *Bulletin of the American Meteorological Society* 80, no. 4 (April 1999): 675-682.

Roger, Jacques. *Buffon: A Life in Natural History*. Edited by L. Pearce Williams, translated by Sarah Lucille Bonnefoi. Ithaca, NY; London: Cornell University Press, Cornell History of Science, 1997, xviii, 492p.

Rothenberg, Marc. "In Behalf of the Science of the Country": the Smithsonian and the US Navy in the North Pacific in the 1850s." *Pacific Science* 52, no. 4 (1998): 301-307

Sakshaug, Egil and Hakon Mosby. *A Review of Norwegian Marine Biology and Oceanography until the Second World War*. Trondhjem: Museum of Archaeology and Natural History Norwegian University of Science and Technology, Trondhjem Biological Station, 1996, 38. [This is an English translation and minor revision of "En Oversikt over Norsk Oseanographis Historie fram til den 2. Verdenskrig," in *Norsk Oseanographi Status og Perspektiver*, edited by Egil Sakshaug, Finn-Erik Dahl and Nils-Petter Wedege. Oslo: Norwegian Research Council for Science and Humanities, Norsk Oseanografisk Komite, 1996, 209-232.]

Samson, J. "That Extensive Enterprise": HMS "Herald's" North Pacific Survey, 1845-1851." *Pacific Science* 52, no. 4 (1998): 287-293

Schoell, Mark. "The Marine Mammal Protection Act and its Role in the Decline of San Diego's Tuna Fishing Industry." *Journal of San Diego History* 45 (Winter 1999), no. 1: 33-52.

Schwach, V. "The Impact of Artificial Hatching of Cod on Marine Research." *Historisch-Meereskundliches Jahrbuch* 5 (1998): 27-47.

Schwach, Vera. "Skandinaviske Naturforskere i Selskap =The Society of Scandinavian Natural Researchers, 1945-1918." *Forskningsspolitikk* 2 (1997): 8-9. [In Norwegian.]

Serebryakov, Valery and Per Solemdal. "Russland og Norge i Samarbeid om Utforskningen av Nordområdene =Joint Russian and Norwegian Efforts in Exploring the Barents Sea." *Fiskets Gang* 7/8 (1993) and 9 (1993). Sjekke Sidetall.

Smed, Jens. "Controversies in Germany in connection with the Foundation of ICES." *Deutsche Gesellschaft für Meeresforschung-Mitteilungen* 1 (1999): 26-29. [Published in German and English with an abstract in English.]

Smed, Jens. "International Council for the Exploration of the Sea (ICES)." in: *Sciences of the Earth: An Encyclopedia of Events, People, and Phenomena*, Vol. 2, edited by Gregory A. Good. New York and London: Garland, 1998, 475-477. [Includes a brief bibliography.]

Smed, Jens. "International Organizations in Oceanography." in: *Sciences of the Earth: An Encyclopedia of Events, People, and Phenomena*, Vol. 2, edited by Gregory A. Good. New York and London: Garland, 1998, 475-477. [Includes a brief bibliography.]

Smed, Jens. "J.G. Forchhammers Indsats Inden for Verdenshavens Kemi." *Naturens Verden* (1998): 312-319.

Smed, Jens. "On the Foundation of ICES: A Look Behind the Scenes at the Events in Britain." in: *British Marine Science and Meteorology: The History of their Development and Application to Marine Fishing Problems*. Buckland Occasional Papers, no. 2, 1996, 143-154. [Bibliography pp. 152-154.]

Smith-Vaniz, William F. And Robert McCracken Peck. "Contributions of Henry Weed Fowler 1878-1965), with a Brief Early History of Ichthyology at the Academy of Natural Sciences in Philadelphia." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 377-389.

Sogner, Knut. *God på Bunnen. SIMRAD-Virksomheten 1947-1997 = Brave at Bottom: The Simrad-Enterprise*

1947-1997. Oslo: Novus Forlag, 1997. [In Norwegian.]

Solemdal, Per. *Ei sild og ei til = One Herring and Another One*. Part I, "Krigsoppfinnelse og Havforskning - Sildas verste Fiender? =Military Invention and Marine Research – the Worst Enemies of the Herring?" *Fiskets Gang*, vol.4 (1995): 37-42; Part III, "Årsklassevariasjon - en Forklaring og et Problem =The Fluctuation in the Year Classes: One Explanation and a Problem. " *Fiskets Gang* 10 (1995): 17-25; Part IV, "Vår Store, østlige Nabo: Sildeforsker og Sildefisker =Our Mighty Eastern Neighbor: Herring Researcher and Herring Fisher." *Fiskets Gang* 11/12 (1995): 39-48; Part VI "60-årene - En Tragedie for den Atlanto-Skandiske Silden =The Sixties: A Tragedy for the Atlanto-Scandic Herring. " *Fiskets Gang* 11/12 (1995): 53-63. [In Norwegian.]

Souquière, Patrick. "Le Service Hydrographique Français et La Coopération Nationale." *Annales Hydrographique*, 5e série, 22, no. 769 (1998): 213-222. [In French; This special issue of *Annales Hydrographique* is entitled, "150 Ans d'Annales Hydrographique," and commemorates both the 150th anniversary of the publication of the first issues, and also the 25th anniversary of the transformation of the Service Central Hydrographique into the Service Hydrographique et Océanographique de la Marine.]

Stehmann, Matthias F.W. "Gerhard Krefft (1912-1993) and Post-World War II Collection Building in Ichthyology at the Institut für Seefischerei, Hamburg: A Melding of Applied and Basic Research." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 121-132.

Su Jilan. *Shi Ji zhi Jiao de Hai Yang Ke Xue, Ke Ji Jin Bu yu Xue Ke Fa Zhan, Zhou Guangzhao Zhu Bian = The Marine Science on the Joint of the Two Centuries, The Development of Science and Technology*, Vol.I. Zhong Guo Ke Xue Ji Shu Chu Ban She = Chinese Science and Technology Press, 1999. [In Chinese.]

Sun Guanlong and Sun Yong. "Zhong Guo: Shi Jie Hai Yang Nong Mu Wen Hua de Xian Qu = China: A Pioneer of Sea Farming and Sea Animal Husbandry in the World." *Zi Ran Ke Xue Shi Yan Jiu = Studies in the History of Natural Sciences* 18, No.1 (January 1999): 78-86. [In Chinese.]

Svansson, Artur. "Havforskningshistoria, Illustrerad med Otto Petterssons Fotografiskt Registreranda Strømmätare = The History of Marine Research, illustrated by Otto Pettersson's Photographically Recording Current Meter." *Vik-arvets Årsbok 1994-1995*: 106-114.

Thackray, John C. *A Guide to the Official Archives of The Natural History Museum, London*. London; Society for the History of Natural History, 1998, xx, 174p.

Thor, J.T. "The North Atlantic Fisheries History Association (NAFHA)." *History of Oceanography Newsletter*, No.10 (September 1998): 9-10.

Tseng, C.K. "Preface," in: *Oceanology of China Seas*, Vol. 1, edited by Zhou Di, Liang Yuan-Bo, Zeng Cheng-Kui (C.K. Tseng). Dordrecht, Boston; London: Kluwer Academic Publishers, 1994, xiii-xvi.

Turner, Gerard L'E. *Scientific Instruments 1500-1900: An Introduction*. Berkeley: University of California Press, 1998, 144p.

Van Dover, C.L. *Deep-Ocean Journeys: Discovering New Life at the Bottom of the Sea*. Reading, Mass.: Addison-Wesley, 1996: 183.

Vlahakis, G. "Oceanography, but not as a Profession: Its Status in Greece during the Late 19th and the Early 20th Centuries." *Earth Sciences History* 17, no. 1 (1998): 32-40.

Wang Tiemin and Xu Guoqiang. *Zhong Guo Hai Yang Xue Shi Yan Jiu yu Jiao Yu zhi Wo Jian, Hai Yang Xin X, =Marine Information 2* (1999). [In Chinese.]

Wang Ying. "Zhong Guo De Hai Yang Ke Xue Yu Hai Yang Di Li Xue de Xin Jin Zhan = Chinese Coastal Science and the New Development of Oceanography." In: *Mian Ziang 21 Shi Ji De Zhong Guo Di Li Ke Xue = Chinese Geo-Science Facing the 21st Century*. Shanghai: Shanghai Jiao Yu Cho Ban She = Shanghai Education Press, 1997. [In Chinese.]

Weir, G.E. "Listening: Jezebel, Michael, and the Origins of SOSUS 1937-1961." *Historisch-Meereskundliches Jahrbuch* 5 (1998): 48-57.

Williams, Glyndwr. "The 'Endeavor' Voyage: A Coincidence of Motives," in: *Science and Exploration in the Pacific: European Voyages to the Southern Oceans in the Eighteenth Century*, edited by Margarette Lincoln. Woodbridge, Suffolk: Boydell Press/National Maritime Museum, 1998, 3-18.

Wilson, Leonard G. *Lyell in America: Transatlantic Geology, 1841-1853*. Baltimore: Johns Hopkins Press, 1998, 444p.

Wolff, Torben. "Scientific Results of the Danish Expedition to 'Arabia Felix' 1761-1767." in, *Yemen - Present and Past*, edited by B. Knutson, V. Mattson and M. Persson. Lund: Lund University Press, Lund Middle Eastern and North African Studies 1, 1994: 69-85.

Wolff, T. "The History of the Zoological Museum, University of Copenhagen." *Steenstrupia* 24, no. 2 (1999), 157-176.
Woodworth, P. "William Hutchinson, Local Hero." *Ocean Challenge* 8, no. 3 (1998): 47-51.

Wråkberg, Urban. "Om Djuphavets gåtor och ett Fiskeri på Vetenskaplig Grund: Historiska Perspektiv på Oceanografi i Sverige = The Enigma of the Deep Sea and a Fishing Industry Based on Science: A Historical Perspective on Oceanography in Sweden." *Ymer* (1991): 84-105.

Yu Zhengjiang. *Wo Guo Hai Yang Shi Ye De Si Kao, Zou Xiang Hai Yang De Zhong Guo Ren = Thinking about Chinese Marine Undertaking, Chinese People Moving Towards the World*. Hai Chao Chu Ban She = Haichao Press, 1996. [In Chinese.]

Zavodnik, D. "Znacenje Rijeke u istrazivanju Jadranskog mora = The Significance of Rijeka in the Adriatic Sea Research," in: *Prirodoslovna istrazivanja rijekog podruca = Natural History Researches of the Rijeka Region*, edited by M. Arko-Pijevac, M. Kovacic and D. Crnkovic. Rijeka: Prirodoslovni muzej = Natural History Museum, 1998: 53-75. [In Croatian, English abstract.]

Zeng Chengkui. "Zhan Wang Hai Yang Sheng Wu Xue = Prospecting Marine Biology." In: *Zhong Guo Ke Xue Yuan Yuan Shi Tan 21 Shi Ji Ke Xue Ji Shu = Discussing Science and Technology in the 21 Century by the Members of Chinese Academy of Sciences*. Shanghai: Shang Hai San Lian Shu Dian = Shaingai Sanlian Bookstore, 1997. [In Chinese.]

Zhang Jiuchen. "20 Shi Ji Shang Ban Ye Zhong Guo De Hai Yang Di Li Xue = Chinese Oceanography in the First Half of the Twentieth Century" *Zhong Guo Ke Ji Shi Liao = China Historical Materials of Science and Technology* 19, no.3 (1998), 31-40. [In Chinese.]

Zhong Guo Hai Yang Di Li Xue = Chinese Marine Geography. Ke Xue Chu Ban She = Science Press, 1996 Nian. [In Chinese.]

BIOGRAPHIES

General Sources:

Sterling, Keir B. *Biographical Dictionary of American and Canadian Naturalists and Environmentalists*. Westport, Connecticut: Greenwood Press, 1997, 937.

Biographies of Individuals:

Aguilar, Jaume Rucabado I (1946-6.I.1999)

Lloris, Domingo. "Jaume Rucabado I Aguilar (1946-1999)." *Cybium* 23, no. 1 (1999): 3. [In French.]

Albert I, Prince of Monaco (13. XI. 1848, Paris - 26.VI. 1922, Paris)

Carpine-Lancre, Jacqueline, editor. *Albert Ier Prince de Monaco: Des Oeuvres de Science, de Lumière et de Paix*. Monaco: Palais de S.A.S. Le Prince, 1998:205. [In French.]

Carpine-Lancre, Jacqueline. *Albert Ier, Prince of Monaco (1848-1922)*. Monaco: Éditions EGC, 1998, 32 pages.

Andriyashev, Anatolii Petrovich (19.VIII.1910, Montpellier, France-)

Zhirmunskii, A.V., O.G. Kusakin, V.L.Kas'yanov and D.L. Pitruk. "Anatolii Petrovich Andriyashev." *Russian Journal of Marine Biology* 25, no. 1 (1999): 75-84. [Major scientific publications of Andriyashev pp. 79-84.]

Arnoult, Jacques (26.II.1914, Nancy, France-10.VIII.1995)

Daget, Jacques. "Jacques Arnoult (1914-1995)." *Cybium* 19, no. 4 (1995): 323-324.

Baker, Kathleen M. Drew (6.XI.1901,Leigh, England - 14.VIII.1957)

Michanek, G. "Kathleen M. Drew Baker (1901-1957)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J.Wynne . Hantsport, N.S.: Lancelot Press (1996): 234-243.

Belyaev, Georgii Miheilovich (1913-1995)

Gebbruk, A. "Georgii Miheilovich Belyaev (1913-1995)." *Deep-Sea Newsletter* no. 23 (1995), 30.

Berthelsen, Erik (1912 - 1993)

Nielsen, J. "Erik Berthelsen (1912-1993)." *Deep-Sea Newsletter* no. 21 (1993), 20.

Böhlke, James Erwin (1930-1982)

Böhlke, Eugenia B. "James Erwin Böhlke (1930-1982) and The Academy of Natural Sciences of Philadelphia. In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 391-405.

Børgesen, Frederik (1.I.1866, Copenhagen, Denmark - 26.III.1956, Copenhagen)

Kristiansen, A. "Frederick Børgesen (1866-1956)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne . Hantsport, N.S.: Lancelot Press (1996): 122-130.

Braarud, Trygve (1903, Verdal, Norway - 1985)

Hasle, G.R. "Trygve Braarud (1903-1985)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996: 208-216.

Busk, George C. (1807-1886)

Cook, G.C. "George Busk F.R.S. (1807-1886), Nineteenth Century Polymath: Surgeon, Parasitologist, Zoologist and Palaeontologist." *Journal of Medical Biography* 197 (1999), 88-101.

Charnock, Henry (1920-1997)

“Henry Charnock.” *Quarterly Journal of the Royal Meteorological Society* 124, no. 549 (July 1998): 1775-1776.

Mills, R. “Obituary Professor Henry Charnock.” *NERC News* (Spring 1998): 28.

Mills, R. H. Bryden. “Henry Charnock (Obituary): The Science of a Life on the Ocean Wave.” *The Guardian* (January 8, 1998): 16.

Gross, E. “Professor Henry Charnock, 1920-1997: An Appreciation of an Oceanographer and a Friend.” *Science International*, No. 68 (August 1998): 24.

Cheng, Lanna (27.IV.41 , Singapore-)

Howard, Janet. “Skaters on the Sea: Scripps Biologist Pursues Elusive Marine Insect.” *Scripps Institution of Oceanography Explorations* 5, no. 4 (Spring 1999): 5-11.

Crowell, John Chambers (1917, State College, Pennsylvania-)

“Citation for Presentation of 1995 Penrose Medal to John C. Crowell by Leigh H. Royden.” *GSA Today* (March 1996): 130.

Stout, Dorothy L. “John C. Crowell.” *Geotimes* (June 1999): 18-24.

Dawson, Elmer Yale (31.III. 1918, Creston, Iowa - 1966, Red Sea)

Hawkes, M. “E. Yale Dawson (1918-1966): Naturalist on Desert Shores.” in: *Prominent Phycologists of the 20th Century*, edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S., Lancelot Press, 1996, 164-174.

Dixon, Peter S. (29.XI.1928, Redcar, England - 30.VI.1993)

Murray, S.N. “Peter S. Dixon (1928-1993).” in: *Prominent Phycologists of the 20th Century*, edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 262-270.

Eckis, Ellen Virginia Clark Revelle (La Jolla, California, 1910-)

Morgan, Judith. *Ellen Revelle Eckis: A Scripps Legacy, Interviews Conducted by Judith Morgan*. La Jolla: Scripps Institution of Oceanography, SIO Reference Number 99-12, August 1999, 175. [Transcript of six oral history interviews conducted with Eckis, a member of the Scripps family and widow of Roger Revelle, about her long association with the Scripps Institution of Oceanography.]

Evermann, Barton Warren (1853-1932)

Jennings, Mark R. “Barton Warren Evermann (1853-1932) and His Contributions to North American Ichthyology.” In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, ASIH Special Publication No. 3, 1997, 291-310.

Feldmann, Jean (25.VI.1905, Paris, France - 1978)

Magne, F. “Jean Feldman (1905-1978).” in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 244-253.

Fox, Denis Llewellyn, (22.XII.1901, Udimore, Sussex, England-4. IX.1983. La Jolla, California)

“Denis Llewellyn [sic] Fox (1901-1983),” in. *History of the Western Society of Naturalists*, edited by Foster, Michael S., Gayle I. Hansen and Yost U.L. Amrein. Santa Barbara, California: Santa Barbara Museum of Natural History Contributions in Science 2, 1999, 18-20.

Gardner, Nathaniel Lyon (Keokuk, Iowa, 26.II.1864 - 1937)

Moe, R.L. and D.Browne. “W.A. Setchel (1864-1943) & N.L. Gardner.” in: *Prominent Phycologists of the Twentieth*

Century, edited by D.J. Garbary and M.J. Wynne . Hantsport, N.S.: Lancelot Press, 1996: 102-114.

Gaskin, David Edward (21.VI.1939, Croyden, England-13.IX.1998, Guelph, Ontario, Canada)

Read, Andrew J., Heather N. Koopman, and Andrew J. Westgate. "Memories: David Edward Gaskin 1939-1998." *Marine Mammal Science* 15, no. 2 (April 1999): 616-6128.

Gilbert, J. Freeman (9.VIII.1931, Vincennes, Indiana-)

"Gilbert Receives 1999 William Bowie Medal." *EOS, Transactions of the American Geophysical Society* 80, no. 25 (June 22, 1999): 281-282 and "Response."

Hämmerling, Joachim (Berlin, Germany, 9.III.1901 - Wilhelmshaven, 5.VIII.1980)

Berger, S. "Joachim Hämmerling (1901-1980)." In: D.J. Garbary and M.J. Wynne (eds.), *Prominent Phycologists of the 20th Century*. Hantsport, N.S.: Lancelot Press (1996): 281-291.

Hernandez, Antonia Osvaldo Gomez (1928-1996)

"Obituary: Antonia Osvaldo Gomez Hernandez (1928-1996)." *Journal of Crustacean Biology* 18, no. 3 (1998): 616-618.

Herre, Albert William Christian Theodore (1868-1962)

Herre, Albert W.C.T. "Albert William Christian Theodore Herre (1868-1962): A Brief Autobiography and a Bibliography of his Ichthyological and Fishery Science Publications with a foreword by George S. Myers (1905-1985)." in: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, 1997, ASIH Special Publication No. 3, 351-366.

Hodgkin, Sir Alan (5.II.1914, Banbury, Oxfordshire, England-20.XII.1998, Cambridge)

Denton, Sir Eric. "Obituary: Professor Sir Alan Hodgkin OM, FRS (1914-1998)." *Journal of the Marine Biological Association of the United Kingdom* 79 (1999): 187-189.

Hubbs, Carl Leavitt (1894-1979)

Miller, Robert Rush and Elizabeth N. Shor. "Carl L. Hubbs (1894-1979): Collection Builder Extraordinaire." In: *Collection Building: In Ichthyology and Herpetology* edited by Theodore W. Pietsch and William D. Anderson. Lawrence, Kansas: American Society of Ichthyologists and Herpetologists, 1997, ASIH Special Publication No. 3, 367-376.

Humboldt, Friedrich Wilhelm Heinrich Alexander von (14.IX.1769, Berlin-6.V.1859, Berlin)

Minguet, Charles. *Alexandre de Humboldt: Historien et Géographe de l'Amérique Espagnole, 1799-1804*. Paris: L'Harmattan, Nouvelle édition, Recherches et Document, Amériques Latines, 1997, 552. [In French.]

Illg, Paul Louis (23.IX.1914-10.V.1998)

"Obituary: Paul Louis Illg (September 23, 1914-May 10, 1998)," *Journal of Crustacean Biology* 18, no. 4 (November 1998): 839-841.

Inman, Douglas Lamar (7.VII.1921, Guam-)

Colgan, Chuck. "Dedication-Doug Inman." *Scripps Institution of Oceanography Explorations* 5, no. 4 (Spring 1999): 39.

Joly, Aylthon Brandão (1924, Itibaba, Brazil, - 29.VIII.1975)

Oliveira, E.C. "Aylthon Brandão Joly (1924-1975)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne . Hantsport, N.S.: Lancelot Press, 1996, 158-163.

Keeling, Charles David (20.IV.1928, Scranton, Pennsylvania, USA-)

"Profile: Dr. Charles David Keeling." in: *A Better Future for the Planet Earth: Lectures by the Winners of the Blue Planet Prize*. [Tokyo]:The Asahi Glass Foundation, 1997, 65-83.

Keeling, Charles D. "Rewards and Penalties of Monitoring the Earth." *Annual Review of Energy and the Environment* 23 (1998): 25-82.

Kornmann, Peter (23.X.1907, Frankfurt am Main - 20.VIII.1992, Helgoland)

Lüning, K. "Peter Kornmann (1907-1993). A Life for Algal Natural Histories." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996: 254-261.

Kylin, Harald (nr Gothenburg, Sweden, 5.II.1879 - Lund, 16.XII.1949)

Guiry, M.D. and H. Nyberg. "Harald Kylin (1879-1949)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996: 139-148.

Lyon, Waldo Kampmeier (Los Angeles, California, 19.V.1914 - San Diego, California, 5.V.1998)

Leary, W.M. *Under Ice: Waldo Lyon and the Development of the Arctic Submarine*. College Station, Texas: Texas A&M University Press, 1999, xxviii, 303.

McLaren, A.S. "Waldo K. Lyon (1914-1998)." *Arctic* 51, no. 4 (1998): 398.

Madsen, Fritz Jensenius (1916-IV.1993)

Wolff, Torben. "Fritz Jensenius Madsen (1916-1993)." *Deep-Sea Newsletter* no. 21 (1993): 19.

Magnum, Charlotte Preston (19.V.1938-19.II.1998)

Terwilliger, Nora. "Charlotte Preston Magnum 19 May 1938-19 February 1998. *Journal of Crustacean Biology* 19, no. 1 (1999): 206-208.

Manton, Irene (1904 - 1988)

Moestrup, Ø. "Irene Manton (1904-1988)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 345-353.

Marshall, Norman Bertram (1915-II.1996)

Merrett, N.R. "Norman Bertram Marshall, 1915-1996." *Copeia*, no. 1 (1998): 263-268. [Selected bibliography pp. 267-268.]

Marsigli, Luigi Ferdinando (20.VII.1658, Bologna-30.XI.1730, Bologna)

McConnell, Anita. "A Profitable Visit: Luigi Ferdinando Marsigli's Studies, Commerce and Friendships in Holland, 1722-23," in: *Italian Scientists in the Low Countries in the XVIIth and XVIIIth Centuries*, edited by Cesare S. Maffioli and L.C. Palm. Amsterdam; Atlanta: Rodopi, 1989, 189-206.

Moberg, Erik Gustaf (22.IV.1891, Grolanda, Sweden-15.VII, 1963 San Diego, California)

"Eric Gustaf Moberg (1891-1963)," in: *History of the Western Society of Naturalists* edited by Michael S. Foster, Gayle I. Hansen and Yost U.L. Amrein. Santa Barbara, California: Santa Barbara Museum of Natural History Contributions in Science 2, 1999, 17-18.

Müller, Otto Fridrich (1730, Copenhagen - 1784)

Wolff, Torben. "En Naturhistorisk Pioner. Om O. F. Müllers jagt på 'Havets Frembringelser' og hans *Zoologica Danica*." *Naturens Verden* 12 (1994), 442-458.

Nansen, Fridtjof (10.X.1861, Store-Frøen, near Oslo - 13.V.1930, Lysaker, near Oslo)

Huntsford, Roland. *Nansen: The Explorer as Hero*. London: Duckworth, 1997, xiv, 610.

Edwards, John S. And Roland Huntsford. "Fridtjof Nansen: From the Neuron to the North Polar Sea," *Endeavour* 22, no. 2 (June 1998), 76.

Huntsford, Roland. “Hero of the Arctic,” *Geographical Magazine* 70, no. 4 (April 1998), 63.

Neushul, Michael, Jr. (27.XII.1933, Shanghai, China - 18.II.1993, Santa Barbara, California, USA)

Lewis, Raymond J. “Michael Neushul (1933-1993).” in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 217-225.

Lewis, Raymond J., James N. Norris, and James W. Markham. “In Memoriam, Michael Neushul, Jr. (1933-1993).” *Phycologia* 33, no. 3 (1994): 219-224. [List of students and List of Publications, 221-224.]

Reed, Daniel C., James N. Norris and Michael S. Foster. “Obituary: Dr. Michael Neushul, Jr., 1933-1993.” *Botanica Marina* 37 (1994): 287-292. [List of publications: 289-292.]

Okamura, Kintaro (1867, Tokyo, Japan - 1935)

Chihara, M. “Kintaro Okamura (1867-1935).” in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 115-121.

Okubo, Akira (5.II.1925-1.II.1996)

Pritchard, Donald W. And Jerry R. Schubel. “Akira Okubo: A Man for All Seasons and Many Disciplines.” *Oceanography* 12, no. 1 (1999): 5-7. [This special issue of *Oceanography* is a tribute to Akira Okubo by his colleagues and students.]

Orvig, Svenn (4.VIII.1920, Bergen, Norway-V.1998, Kingston, Ontario, Canada)

Hattersley-Smith, Geoffrey. “Professor Svenn Orvig.” *Polar Record* 35, no. 193 (April 1999): 166-167.

O’Sullivan, Thomas Patrick (Beckenham, Kent, England-8.IX.1998, Beckenham)

Rodhouse, Paul G. And Kenneth F. Rodhouse. “Thomas Patrick O’Sullivan.” *Polar Record* 35, no. 193 (April 1999): 166-167.

Pappenfuss, George Frederik (4.XI.1903, nr Harrismith, South Africa, - 8.XII.1981, Berkeley, California, USA)

West, J.A. “George Frederik Pappenfuss (1903-1981).” in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 149-157.

Parke, Mary (1908, Liverpool, England - 1989, Plymouth)

Boalch, G. “Mary Parke 1908-1989.” in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 85-94.

Provasoli, Luigi (1908, Italy - 30.X. 1992, Comerio, Italy)

Lehman, J. and D.A. Lehmann. “Luigi Provasoli (1908-1992).” in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 327-336.

Revelle, Roger Randall Dougan (7.III.1909, Seattle, Washington-15.VII.1991, San Diego, California)

Revelle, Roger. *The International Scientist*. La Jolla, California: Regional Oral History Office, Bancroft Library/Scripps Institution of Oceanography, Scripps Institution of Oceanography Reference Series No. 98-18, 1998, iii, 97. [Oral history interview with Roger Revelle focusing on his international activities.]

Malone, Thomas F., Edward D. Goldberg and Walter H. Munk. “Roger Randall Dougan Revelle, 1909-1991.” *Biographical Memoirs of the National Academy of Sciences* 75 (1998): 3-23.

Rojas-Beltran, Ricardo (17.X.1943, Bogata-1997)

Meunier, François. “Ricardo Rojas-Beltran (1943-1997).” *Cybiurn* 22, no. 1 (1998): 3-4.

Rosby, Carl-Gustaf Arvid (28.XII.1898, Stockholm-19.VIII.1957)

Bolin, Bert. "Carl-Gustaf Rossby: The Stockholm Period 1947-1957." *Tellus* 51A-B, no. 1 (January-February 1999): 4-12. [This special issue of *Tellus* includes papers presented at an international symposium held 8-12 June 1998 in Stockholm to commemorate the 100th anniversary of the birth of Professor Carl-Gustaf Rossby.]

Phillips, N. "Carl-Gustaf Rossby: His Times, Personality and Actions." *Bulletin of the American Meteorological Society* 79 (1998): 1097-1112.

Sætersdal, Gunnar (20.IV.1922, Bergen, Norway – 10.VII. 1997)

Bakken, Erling. "Minneord om Gunnar Sætersdal." *Fiskets Gang* 6/7 (1997): 43.

Østvedt, Ole Johan. "Gunnar Sætersdal 20 April 1922 -10 July 1997" *ICES Journal of Marine Science* 56 (1999): 126-127.

Saldanha, Luiz Vieira Caldas (1937-16.XI.1997)

Bauchot, Marie Louise and Alfonso Marques. "Luiz Vieira Caldas Saldanha (1937-1997)." *Cybium* 22, no. 1 (1998): 5-6. [In French.]

Saville,-Kent, William (1845-1908)

Harrison, Anthony J. *Savant of the Australian Seas: William Saville-Kent (1845-1908) and Australian Fisheries*. Hobart, Tasmania: Tasmanian Historical Research Association, 1997, vi, 173.

Schiller, Josef (16.VI.1877, Wölmsdorf, Czechoslovakia - 10.VII.1960, Vienna, Austria,)

Schiller, O. "Josef Schiller (1877-1960)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 200-207.

Setchell, William Albert (15.IV.1864, Norwich, Connecticut - 1943)

R.L. Moe and D. Browne. "W.A. Setchell (1864-1943) and N.L. Gardner (1864-1937)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 102-114.

Stosch, Hans A. von (4.VI.1908 Berlin, Germany - 8.I.1987)

Wehrmeyer, W. "Hans A. von Stosch (1908-1987)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 302-310.

Sweeney, Beatrice Marcy (11.VIII.1914 Boston, Massachusetts, USA - 17.VII.1989, Falmouth, Massachusetts)

Herman, E.M. "Beatrice Marcy Sweeney (1914-1989)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 337-344.

Taylor, William Randolph (21.XII. 1895, Philadelphia, U.S.A - 11.XI.1990)

Wynne, M.J. "William Randolph Taylor ((1895-1990)." In: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press (1996), 175-183.

Thornton, Edward B.

"Profile in Science: Edward B. Thornton." *Naval Research Reviews* 50, no. 2 (1998):19.

Tilden, Josephine Elizabeth (1869,Davenport, Iowa - 1957)

Hansen, G.I. "Josephine Elizabeth Tilden (1869-1957)." in: *Prominent Phycologists of the 20th Century* edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 184-193.

Torrey, Harry Beal (1873-1970)

"Harry Beal Torrey (1873-1970)," in: *History of the Western Society of Naturalists* edited by **Michael S. Foster, Gayle I. Hansen and Yost U.L. Amrein**. Santa Barbara, California: Santa Barbara Museum of Natural History Contributions in Science 2, 1999, 16-17.

Vinogradova, Nina Georgevna (30.V. 1928 - 10.III. 1997)

Sokolova, M. "Nina Georgevna Vinogradova 30 May 1928 - 10 March 1997." *Deep-Sea Newsletter* no. 26 (1997), 17-18.

Von Herzen, Richard P.

"Von Herzen Receives 1998 Maurice Ewing Medal." *EOS: Transactions of the American Geophysical Union* 80, no. 1 (January 5, 1999): 2, and "Response" by Richard P. Von Herzen.

von Schilling, Nikolai, Baron (1828-1910)

Schilling, H.v. and E. Tammiksaar. "Nikolai Baron von Schilling (1828-1910) - Seeoffizier und Wissenschaftler." *Jahrbuch des Baltischen Deutschtums* 1999. Luenberg, Muenchen: Carl-Schirren-Gessellschaft, 1998, 102-118.

Wegener, Alfred (1880-1930)

Hellman, Hal. *Great Feuds in Science: Ten of the Liveliest Disputes Ever*. New York; Chichester: John Wiley and Sons, 1998, 240. [Chapter 8, "Wegener versus Everybody: Continental Drift."]

Yamanouchi, Shigeo (1876-1973)

Chihara, M. And J.A. West. "Shigeo Yamanouchi (1876-1973): A Noted Japanese Phycologist." *Phycology Research* 46, No. 1 (1998): 81-84.

Willemoes-Suhm, Rudolph von

Kortum, G. "The German Challenger of Neptune: The Short Life and Tragic Death of Rudolph von Willemoes-Suhm." *Ocean Challenge* 8, no. 2 (1998), 21-22.

Yamada, Yukio (14.VIII.1900,Kyoto, Japan -6.VII. 1975, Kyoto)

Tatewaki, M. "Yukio Yamada (1900-1975)." in: *Prominent Phycologists of the 20th Century*, edited by D.J. Garbary and M.J. Wynne. Hantsport, N.S.: Lancelot Press, 1996, 131-138.