

Accession No.: 81-87

PROCESSING RECORD  
SCRIPPS INSTITUTION OF OCEANOGRAPHY ARCHIVES

---

International Council of Scientific Unions. Scientific Committee on Oceanic Research. Working Group 15: Photosynthetic Radiant Energy. Office of the Chairman (Tyler)

International Council of Scientific Unions. Scientific Committee on Oceanic Research. Working Group 15: Photosynthetic Radiant Energy. Office of the Chairman (Tyler) Records, 1963-1977

BULK DATES: 1964-1970

PHYSICAL DESCRIPTION: 2 mss

DESCRIPTION: The collection consists of the records maintained by John E. Tyler, Chairman of Working Group 15: Photosynthetic Radiant Energy, of International Council of Scientific Unions. Scientific Committee on Oceanic Research. They include correspondence about the working group sent to Tyler by Warren Wooster, president of SCOR and a log of the Discoverer voyage sent to Tyler by Harris B. Stewart. The collection does not include the original manuscripts and data sent to Tyler by the scientific participants and later published in the Data Report. Since these manuscripts exactly duplicate what was published, they were not transferred to the Archives. The collection consists mainly of correspondence between Tyler and others interested in the Working Group. The collection also includes some budgetary material and papers concerning the publication of the Data Report. There are also two folders documenting Tyler's intercalibration work. Since the working group met only twice, much of its activity is reflected in the correspondence. Major correspondents include Warren Wooster, Harris B. Stewart, Yulen E. Ochakovsky, Kjell Nygard, Nils Hojerslev, Andre Morel, James Alberts, Yatsuka Saijo, Harry Jitts, Alan Baird, John Thronsen, and E. Steemann Nielsen .

Historical Note: At its executive meeting in November 1963, the Scientific Committee on Oceanic Research, a committee of the International Council of Scientific Unions, decided to establish a working group on Photosynthetic Radiant Energy in cooperation with the International Association for Physical Sciences of the Ocean and the United Nations Educational, Scientific and Cultural Organization. The group was designated S.C.O.R. Working Group 15. Dr. John E. Tyler was asked to chair the Scientific Committee in November, 1963. By 1970, when the Data Report was published, the three original sponsoring groups were joined by four more sponsors: the U.S. National Science Foundation, the Royal Society London, the U.S. Office of Naval Research and the Environmental Science Services Administration.

The working group was charged to: 1. identify exactly what measurement of irradiance is required by biological oceanographers and 2. recommend apparatus and procedures for measuring the variable defined in 1.

The working group was originally composed of four biologists and four physicists: Alexander A. Ivanoff of the Laboratoire d'Océanographie Physique, Paris; Nils Jerlov of the University of Copenhagen in Denmark, H.R. Jitts, of the Commonwealth Scientific and Industrial Research Organization in Australia; Yulen E. Ochakovsky of the Institute of Oceanology in the Soviet Union; Yatsuka Saijo of Nagoya University, Japan; John H. Steele of the Department of Agriculture and Fisheries for Scotland; E. Steemann Nielsen of the University of Copenhagen in Denmark, and John E. Tyler of the Scripps Institution of Oceanography. Steele resigned in 1968 and was replaced by Ian Baird.

The first meeting of the Working Group took place in Moscow in October 1964. The working group decided to deal with the problem of measuring the amount of radiant energy (flux) available at any depth in the range of wavelengths, approximately 350 to 700 mu, inside which radiant energy can be utilized by plants for photosynthesis. It was also decided that radiant energy flux measurements should be expressed in energy or quantum units rather than in photometric units. The Working Group also recommended that individual members of the group undertake specific preliminary research tasks such as the development of a quanta meter and spectroradiometric instrumentation for underwater measurements, and the sea trials should be undertaken to test and intercalibrate the new radiometric instrumentation and take preliminary data. (See Tyler, John E., "Technical Report of Sea Trials Conducted by SCOR/IAPSO/UNESCO Working Group 15 on Photosynthetic Radiant Energy in The Gulf of California, May, 1968," UNESCO Technical Papers in Marine Science, No. 13, [1969].)

When the preliminary research was completed, Warren Wooster, President of SCOR, made arrangements with Harris B. Stewart, Director of the Atlantic Oceanographic and Meteorological Laboratories, for the Working Group to use the USC and GSS Discoverer for expeditionary research.

The experimental program planned for the Discoverer expedition had two principal objectives. The first objective was to obtain a complete and accurate documentation of the available radiant energy flux as a function of time and depth at every station. The second objective was to determine photosynthesis at several depths by three methods, the in-situ method, the simulated in-situ (S.I.S.) method using a deck incubator, and a laboratory method using controlled artificial light for incubation. Seventeen scientists participated in the expeditionary research for Working Group 15 on the Discoverer, May 2-22, 1970. They represented the United States, Scotland, England, France, Australia, Denmark, Japan, the Soviet Union, and Norway.

Financial support for the work of Working Group 15 was received from many sources including S.C.O.R., UNESCO and IAPSO, the U.S. National Science Foundation, the Royal Society, London, and the U.S. Office of Naval Research.

The scientific work of the committee is described in Data Report: S.C.O.R. Discoverer Expedition, May 1970: Measurements of Photosynthesis Available Radiant Flux and Supporting Oceanographic Data by John E. Tyler (La Jolla: University of California, Scripps Institution of Oceanography, June 1973), 2 volumes, SIO Reference 73-16. The introduction and forward to this report includes the history of the working group.

**International Council of Scientific Unions. Scientific Committee on Oceanic Research.  
Working Group 15: Photosynthetic Radiant Energy. Office of the Chairman (Tyler)  
Records, 1963-1977**

**Accession Number 81-87**

<b>BOX</b>	<b>FOLDER TITLE</b>
1	502A-15 Photosynthetic Radiant Energy (Correspondence, 1963)  Jan. - May, 1964  June - October, 1964  October 1964-1965  1966  Working Group 15, Correspondence, 1963-1964  Warren Wooster Correspondence, 1967 - Feb. 1968  March 1968 - December 1968  Correspondence, 1973  Working Group 15: Photosynthetic Radiant Energy (Correspondence re Equipment & Expenses, Jan. - June, 1969)  July - Dec.1969  Jan. - March 1970  April - May 1970  June - November 1970  Working Group 15 - General (Correspondence 1970-1972)  Correspondence with Harris B. Stewart, 1972-1977  S.C.O.R. Working Group 15: (Correspondence, 1973-1974)  Yulen E. Ochakovsky (Correspondence 1972-76)  Kjell Nygard (Correspondence 1970-1973)

<b>BOX</b>	<b>FOLDER TITLE</b>
1	Hojerslev (Correspondence, 1970-1973)
2	Morel (Correspondence 1970-1971)
	1972
	1973-74
	James Alberts (Correspondence 1970-72)
	Yatsuka Saijo (Correspondence 1970-1973)
	Harry Jitts (Correspondence 1971-1974)
	Ian Baird (Correspondence 1971-1976)
	John Thronsen (Correspondence 1970-1973)
	Report of Meeting of SCOR Working Group 15, Miami, Nov. 1969
	Participants, SCOR Working Group 15, Discoverer Cruise, April - May 1970
	Budget, 1970
	John E. Tyler, Notes, 1970
	H.B. Stewart, Log of the SCOR/IAMAP Discoverer, May 1970
	Recommendations, 1972
	Intercalibration
	Intercalibration
	SCOR 1973: Terms of Reference (SCOR, I. Baird, J. Saijo, H. Jitts, E. Steemann Nielsen)
	N. Jerlov, Y. Ochakovsky, I. Ivanoff
	SCOR 1973: Terms of Reference
	Specifications for the Publication of the Data Report, 1970
	Introduction to the Data Report, 1970
	Discoverer Data Report, Requests and Mailing List