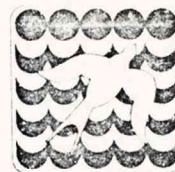


Please Reply to:

Box 4716  
Santa Barbara, California 93103



Pacem in Maribus

August 3, 1978

Dr. Edgardo Macorino  
Edizioni Scientifiche e Techniche  
Mondadori  
Casella postale 1824  
Segrate (Milano)  
20100 Milan  
I T A L Y

Dear Dr. Macorino,

I feel very guilty for not having gotten in touch with you before leaving Europe. The fact is that my time was totally taken by caring for my 95-year-old mother. It was all rather difficult.

Thank goodness, however, the translation of my introduction is quite excellent. I am sure it is already in print now, so it is too late to make any changes -- except, perhaps, for a future edition. The changes I would suggest are very small and unimportant. On galley 1, middle, I think it should have been Gli oceani che occupano rather than occupavano. On galley 5, end of first paragraph, is estrazione the right word here? Should it be attività miniera or something of this sort?

Farther down, on that same galley, I think there has been a small misunderstanding. What I wanted to say is che certi paesi sono ostacolati o auto-ostacolati, that is, they, themselves, stubbornly cling to this form of post-colonial extraction economy.

On galley 6, the name of the German consortium of A.M.R.

On galley 10, finally, I think oceani meridionali is perhaps not correct. In English, the Southern Ocean means the Antarctic, far from the Meridian.

But that is all.

Thank you for your invitation to submit a book to Mondadori. I understand from Harry Abrams that, in the

Dr. Edgardo Macorino

-2-

August 3, 1978

meantime, you are reconsidering the Drama of the Oceans. Of course I would be delighted if something could be done about this in Italian. In the meantime I have finished a second book on sea farming, for Harry Abrams. That, of course, could be considered as well, or instead. And I am now starting on a third one, on sea mining.

My ties with Mondadori, through my father and my husband and the Mondadori family are so old and so dear that I would be delighted to renew them in this way.

With all good wishes,

Yours very cordially,



Elisabeth Mann Borgese

P.S. The money order arrived just the day before I was leaving Switzerland. Thank you very much.

**DALHOUSIE UNIVERSITY ARCHIVES DIGITAL SEPARATION SHEET**

**Separation Date:** June 29, 2015

**Fonds Title:** Elisabeth Mann Borgese

**Fonds #:** MS-2-744

**Box-Folder Number:** Box 49, Folder 19

**Series:** Publications, drafts, and speeches

**Sub-Series:** Correspondence regarding Elisabeth Mann Borgese

**File:** Correspondence with the journal Edizioni Scientifiche e Tecniche Mondadori

**Description of item:**

Partial draft of introduction by Elisabeth Mann Borgese for Ferruccio Mosetti's "Il Volto Degli Oceani." (Italian version)

**Reason for separation:**

Item has been removed from digital copy due to copyright concerns.



SEGRATE (Milano) - Casella postale 1824 - 20100 Milano - Tel. 75421

26 giugno 1978

Gentile signora,

Le allego le bozze del Suo scritto a premessa del volume di Ferruccio Mosetti e Le rinnovo i ringraziamenti per la Sua collaborazione.

L'editing di questo libro è stato particolarmente faticoso e ora cerchiamo di procedere al più presto per avere il volume in libreria fra qualche settimana. Se alla traduzione del Suo testo Lei ritiene di apportare qualche correzione, voglia comunicarmelo nel modo più rapido (il mio telefono corrisponde al n. 75422360).

Se in futuro Lei penserà di dedicare al tema che è oggetto della premessa al Mosetti uno scritto di più largo respiro (e di costo industriale inferiore a quello dello stupendo libro prodotto da Harry Abrams), sappia che noi, editori in Italia dei rapporti al Club di Roma, saremmo lieti e onorati di pubblicare una Sua opera.

Spero di avere presto occasione di conoscerLa personalmente. Con ammirazione, mi abbia

Edgardo Macorino

Gentile signora  
Elisabeth Mann Borgese  
Alte Landstrasse 39  
Kilchberg/Zürich

Il Direttore Editoriale





Arnoldo Mondadori Editore

AREA EDITORIALE

Segrate, 7 giugno 1978

Gentile Signora,

La informiamo che la nostra Contabilità provvederà in questi giorni a trasferirLe, secondo le istruzioni del Dottor Macorini, il compenso dovutoLe per l'introduzione al volume Oceanografia al Suo attuale indirizzo.

Desideriamo avvertirLa che alla luce delle vigenti disposizioni fiscali e valutario italiane non è stato possibile evitare di praticare sulla somma dovuta la ritenuta d'acconto, pari al 14%. Ella riceverà quindi 258 Dollari, in luogo di 300.

Noi presumiamo che Lei sia residente negli Stati Uniti e che paghi le imposte in quel paese. Se è così, La pregheremmo di farci avere quando Le sia possibile una dichiarazione certificata dal fisco americano nella quale si confermi che Lei paga le imposte negli Stati Uniti e che non ha un 'permanent establishment' in Italia. Potremo in quel momento rifonderLe il 14% che ora siamo costretti a trattenere.

Ci spiace molto di queste complicazioni, ma ora le disposizioni sono molto rigide e non ci è possibile eluderle. Siamo naturalmente a Sua disposizione per ulteriori chiarimenti o informazioni.

Con i migliori saluti.

Servizio Contratti Editoriali

Gentile Signora  
Elizabeth Mann Borgese  
Alte Landstrasse 39  
Kilchberg  
Zuerich

Sede: Segrate (Milano) - Telef. 75.42 - Telex 34457 Mondedit

Sede legale: Milano - S.p.A. - Capitale L. 7.507.500.000 - Trib. di Milano 19587

Per maggior celerità, indirizzare la corrispondenza a: Casella postale 1824 - 20100 Milano



Arnoldo Mondadori Editore

AREA EDITORIALE

Segrate, 26 giugno 1978

Gentile Signora,

La ringraziamo della Sua lettera del  
15 giugno al Dottor Macorini.

Ci spiace che ogni pagamento diventi sempre più complicato e soggetto a deduzioni. Per il pagamento in questione temiamo che non sia più possibile far nulla, ma in vista di eventuali futuri pagamenti in Suo favore, La pregheremmo di precisarci la Sua residenza fiscale. Se la residenza fiscale è in Italia, Ella dovrebbe comunicarci il Suo domicilio fiscale e il numero di codice fiscale, se Le è stato attribuito, anche in via provvisoria. Potremo così evitare complicazioni o ulteriori e per Lei seccanti richieste di informazioni.

Con i migliori saluti.

Servizio Contratti Editoriali

Gentile Signora  
Elizabeth Mann Borgese  
Alte Landstrasse 39  
Kilchberg/Zuerich



Arnoldo Mondadori Editore

Area Editoriale

Milano, 16 marzo 1978

Gentile Signora,

facendo seguito alle intese intercorse, siamo lieti di confermarLe che per la cessione dei di ritti di utilizzazione della Sua introduzione al volume Oceanografia del prof. Ferruccio Mosetti la nostra Ca sa Le riconoscerà, alla consegna del materiale completo e definitivo, un compenso a forfait di 300 US\$ (trecento dollari).

Le ricordiamo che la consegna dovrà avvenire entro e non oltre il 2 maggio 1978.

Resta inteso che contro il versamento del corrispettivo pattuito Lei cede alla nostra Casa ogni diritto di utilizzazione economica, nessuno escluso, del lavoro da Lei svolto, senza limiti di lingua, tempo e/o territorio.

PregandoLa di volerci restituire sottoscritta per accettazione l'allegata copia della presente Le inviamo i nostri più cordiali saluti.

Servizio Contratti Editoriali

Elisabeth Mann Borgese  
Box 4716, Santa Barbara  
California 93103 - USA



# Telegram

BAA041(1026)(1-100120G136)PD 05/16/78 1023

ICS IPMIIHA IISS

IISS FM WUI 16 1023

PMS SANTA BARBARA CA

UWE6300 RWU078 MPC834 100

UWNX CO ITMI 028

MILANO TLX 28/24 16 1241

ELISABETH MANN-G BORGESE BOX 4716

SANTA/BARBARA/CALIFORNIA

WE DID NOT YET RECEIVE THE FOREWORD PLEASE LET US KNOW

IF YOU ALREADY MAILED IT REGARDS

MARCORINI/MONDADORI

COL 4716

NNN

NNNN





# Telegram

BAA046(1051)(1-109953G122)PD 05/02/78 1050

ICS IPMIIHA IISS

IISS FM WUI 02 1050

PMS SANTA BARBARA CA

UWA2421 RNW973 MPD996 83

UWNX CO ITMI 028

MILANO TLX 28/26 2 1352

ELISABETH MANN-BORGESE

BOX 4716

SANTA BARBARA CALIFORNIA USA

PLEASE LET US KNOW IF YOU ALREADY MAILED US THE FOREWORD TO  
MOSETTI'S BOOK THANKS REGARDS

EDGARDO MACORINI

COL 4716

NNN

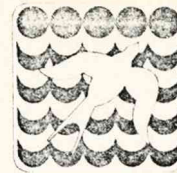
NNNN



Please Reply to:

Box 4716

Santa Barbara, California 93103



Pacem in Maribus

February 22, 1978

Mr. Edgardo Macorini  
Edizioni Scientifiche e Tecniche Mondadori  
Casella postale 1824  
20100 Milan  
I T A L Y

Dear Mr. Macorini,

Thank you for your letter of January 26. As you point out, Professor Mosetti's book appears to be extremely scientific and specialized. But if you think that a general introduction dealing with the importance of the oceans in our time would be useful, I would be glad to write it.

However, this is a question of time. You do not mention, in your letter, how soon you need the manuscript. At the moment I am hopelessly overcommitted, and I could not deliver 20 to 30 pages until, let us say, May 1. Also, I should write it in English.

Looking forward to hearing from you,

Cordially yours,

A handwritten signature in cursive script, appearing to read 'Elisabeth Mann Borgese'.

Elisabeth Mann Borgese  
Chairman, Planning Council



SEGRATE (Milano) - Casella postale 1824 - 20100 Milano - Tel. 75421

26 gennaio 1978

Gentile signora,

nel quadro di una collana di monografie di informazione scientifica pubblicata dalle edizioni scientifiche e tecniche Mondadori stiamo preparando un volume di oceanografia del professor Ferruccio Masetti dell'Università di Trieste.

L'opera ha caratteristiche severe e la trattazione della materia è svolta in chiave tecnicistica: noi, d'accordo con l'autore, pensiamo sia opportuno premettervi un più ampio panorama sui temi da tempo dibattuti e illustrati da 'Pacem in maribus' e dalle sessioni delle Nazioni Unite sul diritto del mare e vorremmo invitarLa a dettare questo testo quale premessa al volume del professor Masetti di cui Le invio le bozze assieme a un catalogo delle opere finora pubblicate da noi.

Spero che Lei voglia considerare con benevolenza il nostro invito e suggerirci i termini di tempo e le modalità per la consegna del dattiloscritto che potrebbe avere un'ampiezza di 20-30 cartelle dattiloscritte.

Resto in attesa di un Suo cenno e sono a Sua disposizione per ogni ulteriore chiarimento.

Cordiali saluti.

Edgardo Macorini

Gentile signora  
Elisabeth Mann Borgese  
Senior Fellow  
Center for the study of democratic  
institutions  
Box 4068  
Santa Barbara, Calif. 93103

Il Direttore Editoriale

Premessa

I Morfologia e costituzione degli oceani

Oceani e mari

Morfologia del fondo

La crosta oceanica

I sedimenti

II Caratteri fisici dell'acqua degli oceani

Densità e proprietà meccaniche

Proprietà termiche

Energia e bilancio termico degli oceani

Congelamento e ghiacci

Diffusione e mescolamento delle acque

Acustica marina

Fenomeni elettrici nell'oceano

Ottica oceanografica

Radioattività

III Caratteri chimici dell'acqua degli oceani

Composizione dell'acqua degli oceani

Salinità: gli elementi della serie principale

I nutrienti

I gas disciolti

I microcomponenti

Sostanze organiche

Relazioni tra proprietà chimiche e fisiche

Distribuzione della salinità

IV I movimenti dell'acqua degli oceani

Le correnti

Oscillazioni del livello del mare

Il moto ondoso

Velocità di propagazione dell'onda e onda di Airy

Onde di ampiezza finita

Energia potenziale ed energia cinetica di una singola onda

Energia di onde composte

Distribuzione dell'energia dell'onda di profondità

V Applicazioni oceanografiche

Previsione del moto ondoso

Previsione degli effetti meteorologici

Esplorazione con metodi geofisici

Misura dell'inquinamento



# Telegram

BAA015(0911)(1-096897G065)PD 03/06/78 0910

ICS IPMIIHA IISS

IISS FM ITT 06 0910

PMS SANTA BARBARA CA

AWC328 VIA ITT ROB903 MPC021 101

UNIX CO ITMI 033

MILANO TLX 33/32 6 1146

ELISABETH MANN BORGESE

BOX 4716 SANTA BARBARA CALIFORNIA

USA

THANKS YOUR LETTER FEBRUARY 22 I WAIT ENGLISH TEXT OF INTRODUCTION  
TO PROFESSOR MOSETTI TEXT WITHIN MAY 1 LETTER FOLLOWS REGARDS

EDGARDO MACORINI

COL 4716 22 1

NNN

NNNN



# IL SAGGIATORE

Società per Azioni  
Capitale sociale L. 450.000.000  
20122 Milano - Via San Senatore, 10  
Tel. 875.119-875.892  
Iscritta a Milano al N. 101643

Milano, 17 Maggio 1973

Cara Elisabeth,

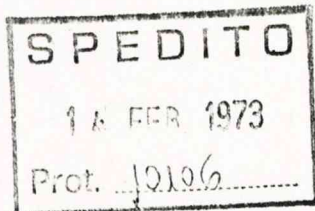
non avendo ricevuto risposta  
alla mia del 14 febbraio mi permetto di in  
viarti una fotocopia della stessa.

Resto in attesa di una tua ri  
sposta e ti saluto molto caramente.

tuo Alberto

Alberto Mondadori

Signora  
Elisabeth Mann Borgese  
Via Vecchia Fiesolana  
SAN DOMENICO (Firenze)



Milano, 14 Febbraio 1973

Cara Elizabeth,

mi fa piacere avere un buon motivo per scriverti dopo tanto tempo. Il motivo sta in un progetto che ho in mente da anni, e che vorrei ora riuscire a realizzare. Si tratta di due volumi con una scelta degli scritti critici di G.A. Borgese. La scelta era già stata studiata da Giacomo Debenedetti e da me, ed è ora completata da Enzo Siciliano, che farebbe anche la prefazione. Ti unisco l'elenco dei titoli scelti, e resto in attesa di avere la tua approvazione. Quando mi avrai confermato il tuo accordo, ti farò pervenire il contratto.

Per quanto riguarda la disponibilità dei diritti, se non ricordo male, Borgese li aveva già riscattati da tutti gli editori, per stipulare il contratto con Mondadori per l'Opera Omnia. Ti prego comunque di volermelo confermare.

Aspetto una tua risposta, e ti sarò grato della sollecitudine con cui mi scriverai.

Con i più cordiali saluti.

Alberto Mondadori

Signora  
Elisabeth Mann Borgese  
Via Vecchia Fiesolana  
SAN DOMENICO (Firenze)

Scelta di opere critiche di Giuseppe Antonio Borgese  
a cura di Enzo Siciliano  
volume primo

Parte I. - Gli italiani

- "Gabriele D'Annunzio (da Primo Vere a Fedra)", riproduzione integrale con prefazione della II edizione riveduta, Bompiani, Milano, 1932
- Da "La vita e il libro", I voll., Bocca, Torino 1910:
  - Gabriele D'Annunzio: Forse che sì forse che no (pp. 130-150)
  - De Amicis postumo (pp. 79-87)
  - Carlo Dossi (pp. 88-96)
  - Pascoli [ ] (pp. 201-230)
  - Trilussa (pp. 256-264)
  - Enrico Nencioni (pp. 303-310)
  - Alfredo Oriani (pp. 452-460)
  - Vincenzo Gioberti (pp. 396-405)
- [ Il primo dei critici e l'ultimo dei critici (pp. 1-10)
- Da "La vita e il libro", II voll., Bocca, Torino 1911:
  - Antonio Fogazzaro (pp. 1-25 e 387-399)
  - Luigi Pirandello (pp. 116-124)
  - Poesia crepuscolare (pp. 149-160)
  - Memorie di Francesco De Sanctis [ ] (pp. 367-376)
  - La poesia di Guido Gozzano (pp. 400-412)
  - Cultura e letteratura (pp. 425-471)
- Da "La vita e il libro", III voll., Bocca, Torino 1913:
  - Croce e Vico, Croce e i "giovani" (pp. 325-402)
  - D'Annunzio coronato e velato (pp. 427-447)
  - Idee e forme di Giovanni Pascoli (pp. 102-116 e 448-508)
- Da "La città assoluta", Mondadori, Milano 1962:
  - Le seconde Faville (pp. 180-187)
  - Gli indifferenti (pp. 214-220)



I novaresi (pp. 221-227)

'La vedova allegra' (pp. 228-231)

Parte II. - Gli stranieri

- Da "La vita e il libro", I vol., Bocca, Torino 1910:
  - Anatole France: Le sette mogli di Barbablù (pp. 13-29)
  - Selma Lagerloef (pp. 58-69)
  - André Gide: Storie d'altri tempi (pp. 105-111)
  - Giorgio Sorel e il sindacalismo (pp. 335-343)
- Da "La vita e il libro", II vol., Bocca, Torino 1911:
  - Leone Tolstoj (pp. 26-49)
  - Il breviario del Romanticismo (pp. 191-200)
  - Schopenhauer, corruttore (pp. 201-210)
  - Don Giovanni in Danimarca (pp. 231-241)
- Da "La vita e il libro", III vol., Bocca, Torino 1913:
  - Hebbel e la 'Giuditta' (pp. 291-304)
- Da "La guerra delle idee", Treves, Milano 1916:
  - Le profezie di Heine (pp. 46-59)
  - Guerra e letteratura (pp. 200-210)
- Da "Ottocento europeo", Treves, Milano 1927:
  - Sainte-Beuve e il suo secolo (pp. 9-17)
  - Ritratti di Pascal (pp. 18-26)
  - Don Carlos (pp. 42-52)
  - Il lirismo di Shelley (pp. 59-68)
  - Il 'Cappotto' di Gogol' (pp. 106-113)
  - Il testamento di Heine (pp. 194-200)
- Da "La città assoluta", Mondadori, Milano 1962:
  - I duecent'anni di Manon (pp. 55-71)
  - Wagner fuori dell'orchestra  (pp. 108-114)
  - Con Nietzsche, dopo trent'anni (pp. 115-121)
  - Rimbaud parla (pp. 122-127)
  - Freud il vecchio (pp. 135-141)

Scelta di opere critiche di Giuseppe Antonio Borgese  
a cura di Enzo Siciliano  
volume secondo

- "Tempo di edificare", Treves, Milano 1923
- "Escursione in terre nuove", ~~\_\_\_\_\_~~ Ceschina, Milano 1931
- "Poetica dell'unità", Treves, Milano 1934



(first page missing)

e.g., that of the production of energy resources, this shift is well advanced. One fourth of the world's total oil production today comes from offshore, and over the next decades this proportion may increase to over 50 percent, for there is more oil under the oceans than on land. Marine oil production, and the transport of oil over the oceans have become a vital part of the world economy, involving hundreds of billions of dollars -- as well as great dangers to the ocean environment and the other uses of the seas.

In other areas, such as food production and the extraction of ores and minerals from the oceans, the "marine revolution" is still in an early phase, but it is clear enough to see where it is going.

Ocean fishery has never constituted more than a small percentage of the world's food supply. It had been a stable activity, however, in balance with nature. The supply of fish in the sea, therefore, was deemed to be inexhaustible. During the twentieth century, fishing has undergone a rapid transformation from the hunting stage to industrialization. The mechanization of fishing gear, including the most sophisticated electronic gear to localize schools of fish, to catch whatever can be caught at any depth, and to process the haul in large factory ships at sea, first led to spectacular increases in fish production. In the hundred years from 1850 to 1950, the world fish catch increased tenfold, at an average rate of about 25% per decade. It doubled between 1950 and 1960 and almost doubled again between 1960 and 1970. Then, however, the first signs of exhaustion began to appear. One after the other, the most successful commercial fisheries stagnated and collapsed: the whale fishery, the anchoveta, the Northsea herring, the North-Atlantic fisheries. The industrialization of hunting proved to be a wrong formula. Water pollution and the destruction of breeding grounds through the industrialization of shore areas magnified the damage. Then came the fuel crisis, raising the cost of distant-water fishing while, on the other hand, coastal States vainly attempted to protect their dwindling stocks by the extension of national jurisdiction over ever larger "fishing zones" or "economic zones." The industry is in disarray, with agreements to be renegotiated, huge

idle fleets to be redeployed, and new methods of conservation, management, distribution and use to be developed.

Another, big transformation is in course. If the industrialization of hunting was a dead-end road, the passage from capture to culture, or the emergence of aquaculture in our age is an event which, in anthropological terms may be as important as the emergence of agriculture ten thousand years ago. That is, it may have a profound~~s~~ culturally transformatory effect on the evolution of homo sapiens.

Just like agriculture ten thousand years ago, aquaculture is not coming upon us all of a sudden. In some parts of the world, particularly in India, China and Southeast Asia, aquaculture or the farming of seaweeds, molluscs, crustaceans and fin-fish in fresh water, brackishwater and in the oceans, has a very long history, reaching back thousands of years. In these countries, also, aquaculture has a deep and broad social and economic infrastructure. It is part of life. It is not surprising that, still today, Southeast Asia furnishes an enormously high percentage -- 85 % -- of the world's aquaculture product; but aquaculture is spreading and growing in other parts of the world, at an unprecedented rate.

In 1970, estimated total fish production through aquaculture amounted to 2.6 million tons; by 1976, it had risen to over 6 million tons, of which 66 percent consisted of freshwater, brackish-water and marine fish, about 16.2 percent of mollusks, 17.5 percent of seaweeds, and 0.3 percent of crustaceans. The most conservative estimates -- relying on existing simple technologies and systems of culture -- project a doubling of world production in ten years and at least a fivefold increase by the end of this century. According to more optimistic forecasts, the increase may be tenfold in this period.

The reasons for this development are complex.

First of all, food production has to increase by at least 3.5 percent to keep up with rising populations and rising expectations. But the possibilities of expanding agriculture are very limited, and these limits are shrinking. For the more people there are, the more food is needed yet the less land is available for food production. The possibilities of expanding aquaculture, on the other hand, are for all practical purposes unlimited.



It may be enough to <sup>indicate</sup> mention that Asia which, as already mentioned is the main producer, presently utilizes just over 2 million hectares for this purpose. It has been estimated that over twenty million hectares more are available for aquaculture developments in that area. It should also be noted that this expansion does not conflict with the expansion of human habitat. The soil in such areas is too saline for agricultural uses, too unstable for construction. Conflicts might arise between natural ecology and the development of aquaculture in the estuaries and mangrove swamps that are the natural spawning and rearing grounds for many fish of the sea. Great care must be taken not to upset the ecology on which natural marine life depends. But aquaculture can be planned in such a way that it not only conserves but even enhances the natural production of the open sea.

There is no limit, furthermore, to aquaculture in bays, coves, and inland seas where fish and prawn and squid can be farmed in walled-off or fenced fields or in floating cages, and mussels and oysters and abalone can be grown on rafts and stakes.

Beyond bays, coves, and inland seas, the open ocean offers unlimited pasture to free-ranching sea "cattle" reared in land-based hatcheries and nurseries. For example, tuna and salmon can be reared to the stage where they can successfully cope with predators and with the inclemencies of nature, and their chance of survival increases a hundredfold. They can be "transplanted" to where the pasture is greenest. Salmon from the North American and Japanese shores can be moved to the Soviet Arctic; Antarctic krill, underused since the depletion of the great whales, could nourish vast numbers of salmon, whose route of migration could be modified by selective breeding and postnatal "imprinting."

Agriculture is two-dimensional. A field is surface and top-soil. The farmer plants and harvests one crop at a time. Aquaculture, instead, is three-dimensional, occupying surface, water column, and bottom. Each dimension has its "ecological niches," offering nourishment to different species of fauna and flora. Many fish prefer the sunlit surface of the water; there are mid-water dwellers and bottom dwellers. Some aquatic creatures feed on tiny phytoplankton, the lowest link in the food chain; others prefer zooplankton, the tiny animals, protozoa or brine shrimp;

some are <sup>herbivores</sup> ~~heribores~~, others carnivores; still others feed on the wastes of other animals or plants. Utilizing all the niches of three-dimensional aquatic space, the aquaculturist can raise six or seven species of fish and crustaceans in a limited area, relying on nature's multi-use linkage systems rather than on his own efforts.

The world ocean is one vast polyculture. To learn to understand and wisely to manage the interaction of its multiple uses is the almost superhuman task of the new science of ocean management.

Agriculture utilizes long food chains to provide protein to people. The primary product is starchy staples. Aquaculture yields protein crop<sup>s</sup>, and aquatic organisms often are more efficient converters of primary foods than are farm animals. The protein content of many kinds of fish is higher than that of beef. At the same time, the assimilability of fish protein is higher than that of other animal protein. Furthermore, the cost of producing animal protein from fish is significantly lower than the cost from land animals. On a worldwide basis it costs half as much to produce a ton of protein from fish as from beef, a third as much as from pork. In labor expended, fish requires a third as many man hours to process as pork.

we do not know what is happening to the world's climate during this final quarter of our century. Meteorologists are divided in their opinions. Many of them adhere to the thesis that the interglacial period that has lasted for about ten thousand years and has given rise to our present civilizations is coming to an end and that the world's climate is cooling. An expanding snow cover may reflect an increasing proportion of sun heat back into space and thus decrease temperatures and this, in turn, will further expand the snow cover. The process may be escalating. Other meteorologists hold the opposite view: the planet may be warming up, due to an interaction of natural and man-made <sup>causes</sup> ~~quases~~: among the latter, the emission of too much carbon dioxide from our heedless energy-intensive industrialized society. All meteorologists agree, however, that no matter in which direction the change may go, it will be characterized by a transitional period of climatic instability, excessive heat alternating with excessive cold,



accompanied by droughts, floods, other natural catastrophes and, regionally, by a shortening of the agricultural growing season.

It may appear paradoxical at first sight, but aquaculture is less severely and less immediately affected by such irregularities --especially droughts -- than is agriculture. The level of ponds may drop but still <sup>suffice</sup> suffice for aquaculture when irrigation systems collapse; brackish water may be abundant but unusable for agriculture; ocean spaces may remain unaffected or be more abundantly fertilized by upwellings caused by the cooling of surface waters, while agriculture languishes or dies altogether. Statistics in Southeast Asia during the 1972-74 drought clearly indicate this fact.

As climatic change and the receding of glaciers gave impetus to agriculture ten thousand years ago, it may be that climatic change and the advance of glaciers may give impetus to the expansion of aquaculture.

Aquaculture is an example of the basic transformation of a traditional use of the oceans -- fishing -- through modern science and technology, in response to the exigencies, man-made and natural, of our time. Aquaculture will have to be carefully managed and harmonized with the other uses of ocean space. The mining of minerals and metals from the oceans constitutes a new use, at the very beginning of its evolution. Certainly, there are precedents here too. The extraction of sea-salt has very long tradition; the tunnelling for coal, the mining of diamonds, of sand and gravel, and the mining of the continental shelves for calcium carbonate, titanium and gold placers, phosphorites, iron, and zink has been going on throughout the twentieth century or even before. But this type of production was rather marginal within world production as a whole. Mining has always been a most earthy industry.

In recent years, however, there have been signs that this is going to change. Experts, like John Mero in the United States, have predicted that deep sea mining will revolutionize the industry in the course of the twenty-first century and that, in the long run, it may replace land mining altogether.



The consequences for mankind would be far reaching. In economic terms, ocean mining will be, according to Mero and others, far cheaper once certain technological barriers are overcome. Science Magazine calculated that, compared with mining on land, where \$9 capital may produce \$1 a year, \$1 of capital will produce at least \$3 from ocean mining. There are, furthermore, quantitatively far more minerals in the sea than on land where many of them are nearing exhaustion.

In political terms, ocean mining will be largely an international venture -- since the oceans are the common heritage of mankind. After a perhaps convulsive transitional period, internationalized ocean mining may contribute enormously to the development and true emancipation of developing countries, many of which are held back -- and are holding themselves back -- in the bonds of a post-colonial extraction economy: which, as post-world-war II history clearly shows, is not conducive to development. Internationalized ocean mining, while creating large funds for international development, will free these countries, encouraging them to diversify and industrialize.

In ecological terms ocean mining will be far less polluting than land mining. It will contribute to re-forming the cyclicity of productive systems which characterized primitive agricultural society but was destroyed with the industrial revolution. The oceans are an essential link of a huge system where inexhaustible resources can be extracted and recycled -- resources that keep welling up from the interior of the earth at the center of the oceans, and keep returning to the sea through rivers and the atmosphere.

Over the last decade, two spectacular developments have come to the fore. In 1965 a sensational discovery was made in the middle of the Red Sea, along the prolongation of the line of the mid-ocean ridge which runs through the Indian Ocean. There are pools filled with very hot, very salty water along that line, and at the bottom of these pools rich deposits of metal have accumulated, especially iron, manganese, zinc and copper. Some of these deposits are 300 feet thick. American oceanographers, working from Woods Hole's research ships Atlantis II and Chain, estimated that in one pool alone, the so-called Atlantis II Deep,

there were sediments containing \$1.5 billion in copper, zinc, silver, and gold. A subsequent analysis, also conducted by Woods Hole scientists, led to even more optimistic conclusions. Exploration is continuing under leases granted by the government of the Sudan to a joint venture based on Saudi Arabia capital and the technology and management provided by the German A.M.R. consortium.

The second development is the exploration, and beginning exploitation, of the polymetallic nodules, rich in nickel, copper, cobalt, manganese and a number of other metals in smaller proportion, that pebble the abyssal plains in the middle of the Pacific, Indian, and Atlantic oceans. The nodules, somewhat potato-like in appearance, were first discovered by the Challenger expedition in 1872, between Honolulu and Tahiti. A hundred years later, scientists still are speculating about the nodules' genesis. But they know where they are located: they have been mapped and charted. And, furthermore, technologies have been developed to raise them from a depth of about 5,000 to 12,000 feet, and to process the metals they contain. There are trillions of tons scattered on the seabed -- 1.5 trillion tons in the Pacific alone.

The process of lifting them resembles an attempt to harvest potatoes from a field near lake Geneva from a plane flying at the height of the Mont Blanc. Not an easy operation, obviously. Two methods have been developed: One is the so-called continuous line bucket. It consists of a long loop of cable to which buckets are attached at intervals. A traction drive moves the cable so that the buckets dive into the deep, drag across the seabed to scoop up nodules and come up again to empty their load. Such a loop can be attached to any ship, and sometimes two ships are used, to <sup>keep</sup> ~~keep~~ very long cables from tangling. The operation has been recorded on video tape: it is weird to see the bucket, on a kind of sledge, slide over the ooze, delicately balanced. The slightest irregularity can get it out of balance, and then it drowns in the ooze.

The second method is hydraulic. The nodules are sucked up through a long, flexible steel pipe, resembling a huge vacuum cleaner

There are now half a dozen big international consortia



including American, German, Japanese, British, Canadian and French companies, ready to go into action. The investments, already made, are huge, and bigger ones yet are to come if the industry is to pass successfully from the stage of research and development to full-scale commercial production, at the rate of raising and processing perhaps ten million tons of nodules annually.

In cultural terms ocean mining -- as all uses of the oceans -- points the way to fascinating new syntheses and integrations, apt to transform the style of life of the next century.

The twentieth century has seen the integration between agriculture and industry: the large-scale industrialization of agriculture, leading, potentially, to an integration of rural and urban life styles. The twenty-first century may see the integration between aquaculture and ocean mining: for some, and in the end perhaps the most important, methods of ocean mining are biological. The oceans are a liquid mine containing at least ten million tons of gold, 20 billion tons of uranium, and at least 60 other valuable minerals and metals in unbelievable quantities. As is well known, Adolf Hitler was dreaming of extracting the gold from the oceans to pay off the sanctions imposed by the Treaty of Versailles. But this has remained a dream. For the gold, and the other metals and minerals are so diffused in huge quantities of water that no amount of conventional energy would be sufficient to concentrate and extract them. Now, however, it has been discovered that marine animals and plants can be used to extract these minerals for human use. Thus certain sea worms concentrate vanadium into themselves; lobsters extract copper from sea water. As T.F. Gaskell pointed out, "Research into this problem may soon lead to the devising of man-made equipment for performing the extraction under controlled conditions..." ~~A~~ Certain algae concentrate uranium -- and they can be genetically "improved" so that the concentrations are even higher than in nature. Algologists are presently working on experimental "uranium farms" where uranium is concentrated by algae and extracted from them, with a secondary production of methane and fertilizer.

Sea Farming and sea mining are two dramatic examples for the changes at sea. The uses of ocean space and resources are undergoing an intensification and diversification unprecedented in history. These functional changes, furthermore, must be seen in their interaction with historical and political changes.

In the past, the users of the seas were a few coastal States or maritime powers. With the end of the colonial era, the number of States with an active interest in ocean space and resources was multiplied. Today even the landlocked States -- about 29 of them in all parts of the world -- want their share and call for access and participation in resource exploitation. The oceans thus are bound to become either a focus of growing abuse, pollution, depletion, and conflict, or the occasion for the establishment of a new international order, based on cooperation and the participation of all countries.

On November 1, 1967, the Delegate of Malta, Ambassador Arvid Pardo, rose in the First Committee of the General Assembly of the United Nations to introduce an item on the Agenda: "Examination of the question of the reservation exclusively for peaceful purposes of the seabed and the ocean floor, and the subsoil thereof, underlying the high sea beyond the limits of present national jurisdiction and the use of their resources in the interest of mankind." He drew the attention of the Assembly to the vast riches hidden on the deep floor of the world ocean which the technological revolution was rapidly making accessible to exploration and exploitation, and which did not belong to any nation. He pointed to the dangers of a military competition to dominate the deep seas. He saw a race developing to carve up the no-man's land of the ocean floor in a manner that would give rise to acute conflict and pollution, and recalled the history of the African continent, which had been carved up by the colonial powers in a similar way.

Ambassador Pardo explained how the old law of the sea, based on the sovereignty of coastal states over a narrow belt of ocean along the coasts and on freedom of the seas beyond this, was being eroded, and suggested that a new concept, the common heritage of mankind, take its place. He stressed the ecological unity of



ocean space and the interactions between all areas and all uses of ocean space. In conclusion, he suggested that the United Nations General Assembly declare the seabed and its resources beyond the present limits of national jurisdiction a common heritage of mankind, elaborate a set of principles to govern activities relating to the seabed, and then proceed to negotiate a treaty which would both clearly define the limits of the international seabed and create a new type of international organization to administer and manage its wealth for the benefit of all mankind. The common heritage of mankind would be used for peaceful purposes only, thus excluding the arms race from an area that comprises over three-fourths of the surface of the globe.

Few speeches heard at the United Nations have triggered as much activity as Arvid Pardo's address which took three hours. A committee of thirty-five nations was formed to study the question and make recommendations to the General Assembly. A year later, this committee was enlarged and became the permanent Committee on the Peaceful Uses of the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction. In 1969, a resolution prohibiting the exploitation of the international area prior to the establishment of the new regime and a resolution declaring the 1970s the First Decade of Ocean Exploration were adopted.

The United States and the Soviet Union submitted proposals for the demilitarization of the seabed, which eventually resulted in the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction in the Seabed and Ocean Floor and the Subsoil Thereof.

In the autumn of 1970, the XXVth General Assembly of the United Nations adopted a Declaration of Principles governing the Seabed Beyond the Limits of National Jurisdiction, which elevated the principle of the seabed as a common heritage of mankind to a norm of international law.

The General Assembly also took another important step in 1970: it decided to convene in 1973 a Conference on the Law of the Sea. This turned out to be the greatest conference ever held in the history of international relations. The great issues before the Conference were summarized by Luis Echeverria, President of Mexico, during the first substantial Session, in Caracas in July 1974:

Man's entire attitude with regard to the sea must change. The dramatic growth of the world's population, and the consequent increase in demand for food from the sea; the expanding industrialization on all continents; the congestion of populations in coastal areas; the intensification of navigation and the ever more frequent deployment of super-tankers, containers of liquid gas, and nuclear-powered vessels; the increasing use of chemical substances which eventually end up in the seas -- all these are factors which impose the necessity to regulate globally, to administer internationally, the uses of the oceans. Every day there will arise new and greater conflicts between different competitive uses of the oceans, conflicts which no nation will be able to resolve alone.

There is furthermore a constant interaction between the multiple uses of the oceans. The exploitation of seabed resources may affect the utilization of the superjacent waters and vice versa; activities in international areas and in national coastal zones affect one another mutually; and the sea in its totality, and the atmosphere above it, form one ecological system. All these interactions demand a global and integrated vision and treatment of the marine environment.

The Conference has just completed its seventh session, and although one or two more sessions may be necessary before the Treaty will finally be signed in Caracas in 1979 or 1980; and although conflicting claims and interests, the assertion of contradictory ~~ix~~ trends, and the daily frustrations of negotiation cloud the picture, the broad outlines of the new order for the oceans are already clearly perceptible.

In quite simple terms: the regime of laissez-faire or of "freedom of the seas" is being replaced by a system of management of ocean space and resources. The system consists of two components: a national and an international component. The national component is divided into a number of overlapping subcomponents, the most important of which is the so-called "exclusive economic zone," --that is, an area, extending 200 miles or more from the coast, over which the coastal State exercises jurisdiction and management prerogatives, and an international area, to be managed by the international community. The international area, again, is subdivided into two <sup>sub</sup> components, the international seabed area, to be managed by the International Seabed Authority, and the High Sea above it, where a system for the management of the living resources, the environment, scientific research, technological cooperation, and navigation is postulated (the Draft Treaty often



refers to "the competent international organizations") but is really not yet embodied in an institutional framework. The entire system is held together by a complex machinery for the peaceful settlement of disputes.

At the present stage there is a certain, ill-foreboding imbalance. The national component -- comprising at least 85 percent of presently exploitable living and nonliving resources -- is too heavy, and unbalanced and unstable within itself. A few rich coastal States will get still richer, and most nations get nothing or very little. Besides, the boundaries are unclear, inviting conflict. The international component, on the other hand, is underdeveloped: The International Seabed Authority, a pioneering undertaking, as the first international public institution to be charged with the responsibilities of resource management, is being born under great conceptual, ~~and~~ political and economic uncertainties and difficulties. It may turn out not to be viable, and this would undoubtedly slow down the evolution of the rest of the system. If there exists a vacuum in the international area, national claims are bound to extend still further, leading eventually to a carving up to the oceans and inevitable large-scale conflict.

It is more likely, however, that, in response to ecological and technological imperatives, the international component will more fully develop to balance the whole system.

Regional organization, especially in relation to the management of living resources, the protection of the environment, and scientific research, is likely to play a major role as an integrating and balancing factor.

All this will take time. The Conference can do no more than initiate the process: by providing a legal framework in which it can develop.

There have been a number of constructive developments during the Seventh Session of the Conference which have gone almost unnoticed, yet they may be important pointers in the direction of creating an integrated, balanced and equitable system of ocean management from which all states and all peoples may benefit.

Having to deal with food as well as metals and minerals; with science policy and the transfer of technology; with environmental problems and regional organization; with the arms race, development, and the closing of the gap between poor nations; with the regulation of multinational corporations; with navigation, international sea-borne trade and communications, the Law of the Sea is, in fact, far more complex than the Law of the Sea Conference. It is even far greater than the oceans themselves. It is world law, world law in the making. The Conference has a unique opportunity: it may be the point of break-through. There is no other place that brings together so many world issues, no other instrument that can redirect and accelerate them as effectively.

The motor force that engendered the Law of the Sea Conference and keeps it moving is the new and revolutionary concept of the Common Heritage of Mankind, the concept, that is, of space and resources which cannot be appropriated by any one; which must be managed for the benefit of mankind as a whole with special consideration for the needs of developing people; which can be used for peaceful purposes only, and which must be transmitted to future generations. Applicable first to the international seabed and its mineral resources, the concept must, perforce, be expanded to ocean space as a whole and to its living resources; for ocean space is an indivisible system and it is impossible radically to transform one part of this system without affecting all other parts. The concept of the Common Heritage of Mankind transcends the traditional principles of sovereignty over territorial waters and freedom of the high sea. It transcends the concepts of sovereignty and ownership. It transforms the structure of international relations: there will no longer be "owners" and "non-owners" among nations, nor "donors" or "recipient" States; but rather people who will share what is commonly owned or owned by none, such as resources in science and technology and in means of production. The concept of the Common Heritage of Mankind is already being extended from marine spaces and resources to outer space and celestial bodies, with consequences for international law and the structure of international relations



which are only beginning to be explored. From ocean space and outer space it is being reflected on the ice of Antarctica, the minerals in its shelves, the abundant living resources of the Southern Ocean. Finally, it is inevitable that the concept of the Common Heritage of Mankind be extended to the resources of the earth, within States; for the structure of internal social relations and the structure of international relations are inseparably and intimately linked, and one cannot change one without changing the other. The concept of the Common Heritage of Mankind, or social ownership as it is called in some countries, thus will become the basis of the New International Economic Order, and there can be no New International Economic Order without this concept.

The replacement of the old regime based on ownership and sovereignty by the new one based on the principle of the Common Heritage of Mankind may be spasmodic at some times and places: but it is not violence that displaces the old concepts. It is science and technology, the growing impact of human activities on the natural environment, the shrinkage of space, that impose on our generation a new awareness of unity and solidarity, beyond the distinctions between what used to be seen as "internal" and "external", "ownership" and "non-ownership", "man" and "nature."

The New International Order, including the New International Economic Order, is the institutional or constitutional embodiment of this new awareness. The oceans are our great laboratory, and the new order emerging for the oceans is not only a vital part, but a model and forerunner of that general new international order we are all seeking.



Arnoldo Mondadori Editore

DIREZIONE DI TESORERIA

Contabilità Autori  
NG/ms

Segrate, 7/5/1975

Gentili Sigg.  
ANGELICA BORGESE  
DOMENICA BORGESE  
ELISABETH MANN BORGESE

Gentili Signore,

rispondiamo alle Vs/ ultime lettere relative alla spartizione dei diritti d'Autore "RUBE".

La nostra casa editrice è in possesso soltanto dell'Atto Notorio datato 23.12.1974 redatto dal Notaio Enzo Enriques Agnoletti.

Si rileva comunque dalla Vs/ corrispondenza l'e sistenza di pareri contrastanti sulle quote da attribuire a ciascuno di Voi.

Vi saremo pertanto grati se vorrete comunicarci congiuntamente e in via definitiva la chiave di ripartizione da usare sulla liquidazione delle royalties.

Senza un diretto accordo tra le parti la nostra società si trova impossibilitata a procedere tempestivamente al pagamento di quanto dovuto.

Con i migliori saluti.

Uff. Contabilità Autori

Gentile Signora  
ANGELICA BORGESE  
Via Vecchia Fiesolana, 48  
50015 S. DOMENICO (Firenze)