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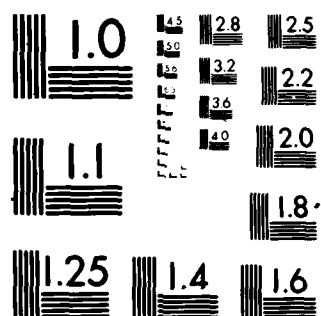
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5TH INTERNATIONAL CONFERENCE ON MARINE CORROSION
AND FOULING

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31 December 1980

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17. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is a brief account of the Fifth International Congress on Marine Corrosion and Fouling held in Barcelona in May 1980. A list of the papers presented is included, however, no abstracts are given for the preprints of all papers have been published and distributed.		

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5TH INTERNATIONAL CONGRESS ON MARINE
CORROSION AND FOULING

The 5th International Congress on Marine Corrosion and Fouling met in Barcelona, Spain, from 19-23 May, 1980. The first of these quadrennial congresses was held in Cannes, France, in 1964, the second in Athens, Greece, in 1968, the third in Washington, D.C., in 1972, and the fourth in Antibes-Juan-les-Pins (France) in 1976. The convening of these congresses has been one of the activities of the Permanent International Committee for Research on the Preservation of Materials in the Marine Environment (COIPM) which was established in 1966. Since 1968, this committee has been sponsored by the Organization for Economic Cooperation and Development (OECD). From the beginning, one of the driving forces of the committee and the International Congresses has been Dr. V. Romanovsky who, until recently, was Directeur General, Centre de Recherches et d'Etudes Oceanographiques (CREO) at Boulogne-sur-Seine, France.

The 5th Congress was organized by the publishers of *Revista Iberoamericana de Corrosion y Protection* (Spanish-American Review of Corrosion and Protection) with the assistance of the Polytechnic University of Barcelona, and was held at the Palace of Congresses in Barcelona. Like previous congresses, this meeting was well attended, with 214 registered delegates representing 24 countries, including Saudi Arabia and Yemen. The People's Republic of China sent five delegates who were most eager participants. The delegation demonstrated strong interest in broadening contacts with western investigators. While the Chinese had not previously submitted papers for presentation, they brought along final manuscripts which were circulated for informal discussion. One of these manuscripts will appear in the final publication of the Congress. They were most vocal about the impact of past isolation from the western scientific community and expressed their determination to re-establish international contacts as quickly as possible. In contrast to the response of this representation, although two papers from scientists in the Soviet Union were included in the pre-prints, as far as can be determined no Soviet delegates actually attended the Congress.

Eighty-seven papers were listed in the scientific program of the Congress. Papers on marine corrosion were presented concurrently with those on marine biological aspects of fouling. While it was impossible to fully cover both sessions, it appeared that attendance at both was substantial throughout the conference. The session on marine fouling was ably chaired by John DePalma of the United States (Naval Oceanographic Office) while the session on corrosion was chaired by Dr. Emmanuel Mor, director of the Laboratorio per la Corrosione, Marine di Metalli, Genoa, Italy. Plenary addresses, remarks of session chairman, and questions and answers which followed the technical presentations were recorded. Excellent simultaneous translation in English, French and Spanish was provided throughout the meeting. Two volumes of pre-prints, one consisting of 46 papers on corrosion, the other of 29 papers on biology, were available at the beginning of the conference. The preprints were typographically excellent. It was a pleasure to have these available

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throughout the conference. Additional papers which were presented, and the discussions relating to the technical papers, will ultimately be brought together as a third volume.

Little attempt had been made in advance to organize the presentations into topic-related sessions. As a result, the technical sessions tended to "jump around" in content and the absence of several authors produced some noticeable gaps in the program. Despite this minor flaw, there were trends which emerged as the technical program was presented. In general, the work coming from the more developed countries tended to emphasize process-oriented research. In the biological papers from these countries, there was considerable discussion of microfouling and the use of biochemical techniques in controlling this process. The impact of new equipment and technologies, especially in microscopy and biochemistry, was evident. In contrast, the biological studies being conducted in the developing nations tended to be more descriptive in nature and focused on specific fouling problems or habitats. This spread in type or focus of research was not as evident in the technical papers related to marine corrosion. The marine corrosion program included many more papers presented by representatives of the industrial and engineering communities.

The overall level of scientific interaction engendered by the Congress was substantial, but it was somewhat tempered by the physical separation of the meeting site from major living and dining facilities. The dispersed lodging of the delegates coupled with prolonged midday breaks tended to reduce the level of informal contact to below that normally encountered at an international meeting. In all other respects, the Palace of Congresses was an excellent location for a large meeting and would even be suitable for a major industrial trade fair.

Many delegates, including the chairman of the Congress, Dr. Romanovsky, noted the difficulties and the increased cost of organizing and conducting such a major international meeting. Several alternative formats were discussed for future consideration including the possibility of regional meetings. Sponsorship of meetings with interdisciplinary topics such as marine fouling and corrosion often falls outside the purview of any one professional or scientific organization. This makes the search for long-term support even more difficult. While no location or host was announced for the 6th Congress, interest has been expressed by delegates from the United Kingdom for a 1984 meeting. Perhaps Orwell will give the plenary address?

Readers of this report will probably be interested in the titles of the papers accepted for publication. The appendix contains a listing of the papers in the first two preprinted volumes. No attempt is made here to give an abstract of each. Copies of the proceedings are available from the secretary of the Congress, TILE, S.A. Londres 41, Madrid 28, Spain.

APPENDIX

Marine Corrosion

W.E. Maasberg et al. (FRG): "Cleaning of fouled ship hulls by high speed water."

A. Karageorgos (Greece): "Influence of the pure electrochemical dissolution on stress corrosion cracking in aluminum alloys in saline water."

T. Skoulikidis et al. (Greece): "Contribution to the interpretation of the formation of active path in stress corrosion cracking of aluminum alloys in NaCl solutions; electrolytically notched specimens, colorimetric indicators, laser interferometry."

T. Skoulikidis et al. (Greece): "Methode de protection des alliages d'aluminium dans une solution de NaCl contre la corrosion sans contrainte à l'aide des oxydes électrolytiquement préparés; optimisation de la méthode par variation des paramètres suivants: orientation appropriée des oxydes, densité du courant et température du bain d'anodisation épaisseur du film."

A.F. Conn (US): "Field trials of a cavitating-jet fouling removal device."

T. Skoulikidis et al. (Greece): "Corrosion and protection studies in sea water of the reinforcements of concrete using normalized specimens."

M.E. El-Dahshan (Saudi Arabia): "Some aspects of hot corrosion of Co-Cr-Al alloys in marine environments."

I.L. Rozenfeld et al. (USSR): "Special features of electrochemical and corrosion behavior of metals in sea water."

O. de Rincón et al. (Venezuela): "Estudio del mecanismo de formación de incrustaciones en enfriadores por el uso de agua de mar."

S.M. Coelho de Souza Medeiros Bastos and L.R. Martins de Miranda (Brazil): "Beta-FeOOH compound and determination of thermodynamic constants."

J. Weber (Switzerland): "La sélection des matériaux pour pompes à eau de mer. Influence de la vitesse de circulation et de la qualité de l'eau de mer."

F.P. Ijsseling et al. (The Netherlands): "The corrosion behavior of the system CuNi/Fe/seawater. The protective layer of corrosion products."

B.M. Rosales de Meybaum and E.S. Ayllón (Argentina): "Corrosión marina de aceros patinables."

P.A. Lush et al. (Great Britain): "Mechanisms controlling impingement corrosion."

P.T. Gilbert (Great Britain): "Considerations arising from the use of dissimilar metals in sea water piping systems."

J.M. Krougman and F.P. Ijesseling (The Netherlands): "Crevice corrosion of stainless steels and nickel alloys in sea water."

H. Shimada et al. (Japan): "The electrochemical study on the corrosion resistance of the Cu-W bearing steel bars embedded exposed to chloride ion attack."

G.A. Gehring (US): "Corrosion of aluminum alloys in high velocity sea water."

T.S. Lee et al. (US): "The effect of velocity on sulfide-induced sea water corrosion of copper-base condenser alloys in aerated sea water."

R.M. Kain and T.S. Lee (US): "Crevice corrosion of stainless steels in ambient and elevated temperature sea water."

B.E. Liebert et al. (US): "Corrosion effects in OTEC heat exchanger materials."

M. Confente et al. (France): "Corrosion d'aciers faiblement alliés en environnement marin. Résultats après cinq ans d'essais."

P.J. Hidalgo (Spain): "Influjo de detergentes e inhibidores sobre la corrosión de aceros inoxidables en agua marina y soluciones cloruradas."

M. Leclercq (Belgium) and E. Sauchiz (Spain): "Protection de longue durée par métallisation au pistolet avec l'alliage de zinc à 15% d'aluminium."

A. Raman and G. Nnaike (US): "Plasma sprayed TiN-Al and TiO₂-Al cermet composite coatings on steels for marine applications."

L.A. Kik (The Netherlands): "New possibilities of off-shore maintenance."

M. Makita et al. (Japan): "The corrosion and protection of steel pipe piles in natural sea water."

L. Abramson and C.S. Potosnak (US): "Corrosion control design for strategic oil tanker terminal Mississippi river."

J.L. Castellano Miranda (Spain): "Revisión y juicio de las condiciones de aplicación de las pinturas."

C.P. De et al. (India): "Performance of chlorinated rubber based ship bottom anticorrosive and antifouling composition in Indian waters."

M. Morcillo et al. (Spain): "Effects of a 50 c/s alternating current on the behavior of painted steel in sea water."

S.S. Mikhailova et al. (USSR): "Physico-chemical fundamentals of the manufacturing of polymeric varnish and paint coatings designed to protect metallic surfaces from corrosion by periodic wetting with sea water."

J.J. Capari (Argentina), M. Moreillo, and S. Felin (Spain): "Efecto del ensayo de inmersión alternada sobre los sistemas anti corrosivos marinos de alta resistencia."

J.J. Caprari (Argentina): "Sistemas vinílicos de alto espesor para la protección anticorrosiva de carcasas de barcos."

J.J. Podestá et al. (Argentina): "Estudio cinético de la disolución de acero naval con cubierta de pinturas en agua de mar sintética."

T. Skoulikidis and P. Vassiliou (Greece): "Kinetic data on the leaching of TBTF-antifouling paint."

F.H. de la Court (Netherlands): "Measuring the erosion and friction of anti-fouling coatings in the laboratory and the significance of the results in practice."

C.P. De et al. (India): "Effect of pollution in harbors on dissolution behavior of galvanic anodes used for cathodic protection of ships."

T. Skoulikidis et al. (Greece): "Lightning conductor automatic method of cathodic protection in NaCl solutions; influence of type and number of lightning conductors and needles-diodes."

B. Linder (Sweden): "Internal cathodic protection of crude oil/ballast water pipes on oil tankers."

A.M. Toro de Daboin (Venezuela): "La computación, una herramienta para el control la corrosión: producción automática de mapas de tuberías."

G. Philippenneau et al. (France): "Formation de depots calco-magnesiens sur un acier protégé cathodiquement."

D.E. Davies and K.G. Watkins (Great Britain): "The cathodic protection of an aluminium alloy in sea water in the unanodised and anodised conditions."

M.C. Reboul et al. (France): "Hydral 2: une anode en aluminium coulée en semi-continu."

J.F. Tatum and L.B. Tatum (US): "Replaceable deep ground bed anode materials."

Marine Biology

E.R. de Schiapparelli and B.R. de Meybaum (Argentina): "Mechanism of microbiological corrosion."

R.C. Salvarezza and H.A. Videla (Argentina): "The influence of sulfate reducing bacteria on the electrochemical behavior of steel in sea water."

A. Habal (Syria): "The identification of some marine fouling organisms and their breeding season at Lattakia Port."

A. Habal (Syria): "Fouling prevention of local Pinus brutia by shipworms, "limnoridii," and other marine fouling organisms."

T. Rasmussen (Denmark): "Notes on the biology of the shipfouling gooseneck barnacle Conchoderma auritum Linnaeus, 1776 (Cirripedia: Lepadomorpha)."

G. Relini et al. (Italy): "Macrofouling at a lagoon in the Po River delta."

T. Zunini Serturio (Italy): "Larvas meroplantónicas en aguas de puertos italianos."

C.A. Viviani and L.H. Disalvo (Chile): "Biofouling in a north-central Chilean coastal bay."

A.F.A. Ghobashy and A.K. Hassan (Egypt): "Notes on the wood boring in the Suez Canal."

H.G.J. Overmars et al. (Netherlands): "Synthesis and application of polymer-bound biocides with antifouling properties."

R. Bastida and G. Brankevich (Argentina): "Estudios ecologicos preliminares sobre las comunidades incrustantes de Puerto Quequen (Argentina)."

L.R. Berger and B. Little (US): "Effect of microfouling on heat transfer efficiency."

W.J. Cooke et al. (US): "A survey of marine borer activity in Hawaiian near-shore waters: effects of environmental conditions and epifauna."

C.P. Ehrler and E.B. Lyke (US): "Settlement and growth of fouling organisms at Alameda marina, San Francisco Bay, California."

E. Lindner (US): "Experiments in synthesis of barnacle adhesive."

A. Schoener and C.H. Green (US): "Variability among identical fouling panels in Puget Sound, Washington, USA."

A. Thorhang and J. Marcus (US): "Macrofouling problems associated with ocean thermal energy conversion (OTEC) units."

E.C. Haderlie (US): "Stone boring marine bivalves as related to the geology of Monterey Bay, California."

J.G. Grovhoug and E.B. Rastetter (US): "Marine fouling dynamics in Hawaiian nearshore ecosystems: a suggested technique for comparison and evaluation."

B.B. Moreton and T.J. Glover (Great Britain): "New marine industry applications for corrosion and biofouling resistant copper-nickel alloys."

G. Relini et al. (Italy): "Macrofouling in the conduits of a middle tyrrhenian power station."

P.V. Murphy (Switzerland), P. Michel et al. (France): "Piezoelectric polymer hull vibrators for fouling prevention."

R. Bastida et al. (Argentina): "Ecological aspects of marine fouling at the port of Mar Del Plata (Argentina)."

V. Rascio et al. (Argentina): "Preliminary ships' trials of chlorinated rubber antifouling paints."

R.L. Fletcher (Great Britain): "Marine algal fouling communities of floating structures in the Solent (South coast of England)."

V. Lichtschen de Bastida and R. Bastida (Argentina): "Los briozoos de las comunidades increstantes de tuertos argentinos."

D.C. White et al. (US): "Biochemical analysis of the response of the marine microfouling community structure to cleaning procedures to increase heat transfer efficiency."

D.W. Goupil et al. (US): "Physical/chemical characteristics of the macro-molecular conditioning film in biological fouling."