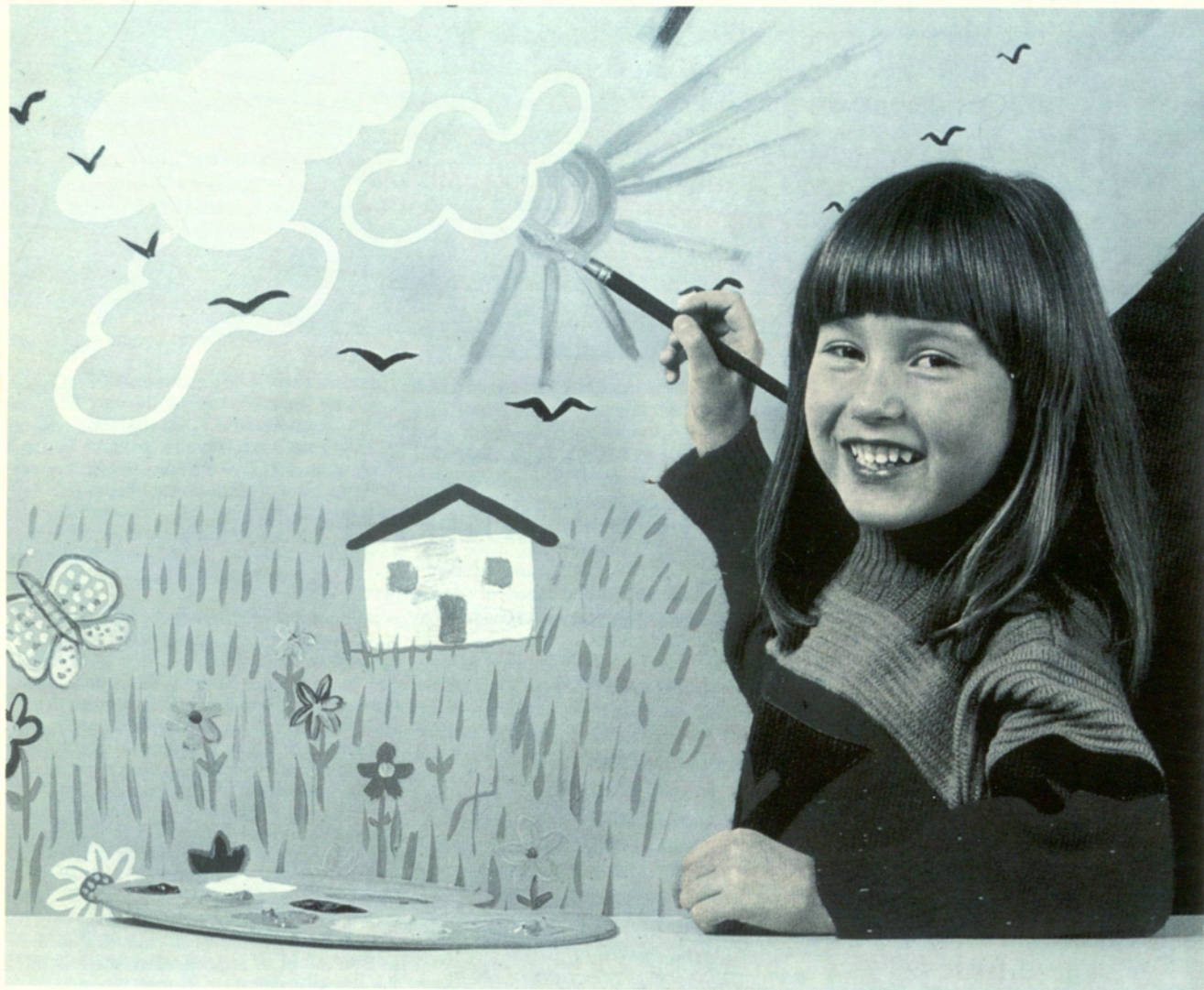




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MEDWAVES

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MEDWAVES IN ARABIC

See p. 2

THE CHILD AND THE MEDITERRANEAN

See pp. 2-5

THE PROBLEM OF MARINE AND COASTAL GARBAGE

See pp. 9-11

E N G L I S H E D I T I O N

MEDWAVES IN ARABIC

With this number, MEDWAVES inaugurates the new role that the Contracting Parties assigned it last October during their 6th Ordinary Meeting: in addition to the versions in English and French, the new version in Arabic will ensure greater dissemination around the Mediterranean Basin; moreover, the fusion, under a special heading, of the old Bulletins of the 4 Activity Centres will strengthen it and promote closer linkage and a smoother flow of information within the Mediterranean Action Plan. MEDWAVES addresses a special greeting to all its new Arabic-speaking readers from the South and East of the Sea which we all share. News coverage from these countries will doubtless be facilitated. This is in any case the task which the editors have set for themselves, i.e. to seize the opportunity of a Bulletin with a more extended public in order to promote the dialogue between the North and the South of the

Mediterranean basin, a dialogue the need for which has been repeatedly stressed at all levels by politicians, scientists and environmentalists. It is in this spirit that we ask our old and new readers (and await with anticipation) for information, suggestions and criticism, all of which will help us respond better to their wishes. Environmental issues are not to be dealt with only within the framework of academic laboratories, or by small groups of experts in a series of meetings, consultations and colloquia or by decision makers in the appropriate government bodies. It is becoming more and more a part of our daily concerns, of our reflections about the future. To provide information on the environment is first and foremost to link among themselves the various levels of reflection and action. And upon this hinges the effectiveness of our effort to combat pollution.

MEDWAVES

5-11 JUNE

THE CHILD AND THE MEDITERRANEAN

The rights of children

"It is not easy to grasp the extent of the changes which will take place in the Mediterranean basin during the next forty years. Perhaps it can be better understood if one considers that 60% of the people who will be living in the Mediterranean in 2025 are not yet born". By ending with these words, the Report of the Blue Plan brings into the picture the future generations by pointing out that the 325 million Mediterranean people of the future will inherit the environment for which we are now responsible and manage for the time being. "It is for the Mediterranean people of today, concludes the Report, to take immediate action to counter adverse trends and to prepare an acceptable future for themselves and their descendants". In other words, the approximately 100 million children living at present around the Mediterranean must be trained to become citizens that are more sensitive to their environment than their parents. This year, on the occasion of both the World Environment Day and the International Week for the Mediterranean (5-11 June 1990), politicians and environmentalists, teachers, local authorities and organizations are called upon to focus their environmental education and awareness cam-

The topic for the World Environment Day on 5 June 1990 which is the beginning of the International Week for the Mediterranean will be the "Child and the Environment". The right of children to live in a healthy environment and the means to raise the awareness of the approximately 100 million Mediterranean children concerning the protection of their sea and the heritage they all share should be the main themes of the awareness campaign to be carried out in the Coastal States.

paigns on children by addressing them directly and involving them in environmental protection. However, this awareness heightening must be carried out in the proper

conditions for children to benefit from it. How can one talk about environmental awareness for children if children are forced to work, see their most fundamental rights violated and if even their survival is at stake? More than one fifth of humanity, or more than 1 billion people still lack sufficient food and clean water, elementary education and public health. For the last 10 years the situation has been worsening for the poorest countries of Africa, Asia and Latin America while their debt is increasing and it is obviously the children that pay the highest price.

In the Mediterranean countries the situation is not as serious, since there is on the whole a decrease in mortality and an improvement in the standard of living; there are however great disparities between the North and the South, or even within specific countries. According to infant mortality rate data (up to age 5) that UNICEF and other organizations use to measure the well-being of children, no Mediterranean country is in the group with the highest mortality rate; 4 (Egypt, Libya, Morocco, Algeria) are in the high rate group, 5 (Turkey, Tunisia, Syria, Lebanon, Albania) in the medium rate group and 8 (Yugoslavia, Greece, Israel, Spain, Italy, France, Cyprus, Malta) in the

low group. This is another example of the North-South division which is the greatest challenge for the next several decades and makes the Mediterranean, as Dr. Tolba, Executive Director of UNEP stated, "a microcosm representative of the planet". One should also add the conflicts of the Eastern Mediterranean (where children are the main victims) and the increasing pressures on the environment caused by urbanism (80% of Mediterranean people will live in cities within a generation versus 40%, 50 years ago) and its corollaries: dangers for the soil and forests, inadequate sanitation, noise, multiple other forms of pollution all of which affect more the vulnerable group of children. Thus, for developing societies and for the marginal sectors of industrialized societies, a true vicious circle is created: poverty is a source for environmental deterioration as was aptly noted in the 1987 Brundtland report: "Those famished unfortunates are easily led to destroying their immediate environment in order to survive; they cut down forests; their animals deplete the grassland; they make an excessive use of marginal land; they overrun the cities which are already overpopulated". Thus actions carried out by nations, local authorities and families that break this vicious circle are the prerequisites for putting an end to environmental degradation.

On 30 November 1989, the General Assembly of the United Nations unanimously adopted the Convention on the rights of children. The member states must now individually ratify it and take appropriate and speedy action in the 3 main areas of the Convention, i.e. the survival, development and protection of children all of which imply the right of the child to live a decent life in a healthy environment.

Children and the fragility of the environment

In the industrialized countries of the North of the Mediterranean, it is the wealth of the economic boom which is the source of environmental deterioration. It is mainly these countries which are responsible for piling up household garbage, toxic industrial wastes, exhaust gases and for deforestation so that wood can be used for industrial purposes. The intensive consumption models prevailing in these countries also pose a grave threat for the future. To protect the children really means to prepare them to become responsible Mediterranean citizens. The Blue Plan Report states that "The young public is not always aware of the time needed for a tree to grow, to manage a forest or make the soil fertile and save it from desertification. It is not always aware of the fragility of the world it has inherited. This area could be the subject of fruitful exchange between coastal countries: handbooks for young people, teaching experiences in the field and television programmes. Several international bodies promote

such awareness-heightening efforts. It is the case of the UNESCO - UNEP International Programme of Environmental Education launched in 1975 after the Stockholm Conference. UNEP also co-operates with UNICEF in the drafting of a report on the state of international environment from the children's point of view to be published this year. NGOs also play an important role in

Children, 10 years or under, are the main risk group for ailments of the ear, the eye, the nose (50% of symptoms noted), the skin and the gastrointestinal tract (20%); such ailments are closely linked with the pollution of bathing waters, measured by some scientists in total coliform density and by others in enterococci, and the pollution of the sand in beaches. It is therefore the children that will mostly benefit from the application of standards for the quality of bathing waters adopted by the various Mediterranean countries.

this connection as do local authorities. Several towns around the Mediterranean involve the children in awareness-heightening activities, either outside the school or in collaboration with teachers, such as "open door" activities, natural park visits, beach or forest clean-up drives. However, despite such local actions which prove the enthusiasm which the world "environment" evokes in pupils and teachers, a lot needs to be done to grasp the concrete reality of the Mediterranean environment. Natural science textbooks in most countries remain traditional and deal in generalities without talking to the child about his immediate environment. Furthermore, the role of the mass media in this connection has not always been positive. It is only very recently that begun being evaluated the impact of the development of the audiovisual technology on the image that the child makes of his environment. In the past, children were in contact with things happening in the streets and with the natural environment which could still be found in the towns; nowadays, children living in big Mediterranean cities, if they are fortunate to have regular schooling, divide their time between school and the all-too-familiar TV set. Their space tends to shrink and take on the dimensions of the TV screen; these children see nature portrayed as an abstract category dealt with in specialized programmes: scientists - oceanographers, volcanologists, spelcologists etc. - are somehow delegated by society to see to it that the link between a forgotten nature and a young public deprived of roots and withdrawn within itself is re-established. Intelligent programmes on

environmental issues draw an ever wider public, but their impact is mitigated by the strong topical character, the variety of programmes and advertizing. In such an audiovisual variety and wealth, an important environmental issue, even if treated with skill, runs a great risk of being quickly forgotten. A child cannot easily fit in a programme about nature among his favourite comics and serials; or he is led to perceive nature through the concept of "exploits" accessible to only a few privileged individuals (solitary navigators, missions to the Antarctic).

The increasing importance that the mass media give to environmental protection must therefore be accompanied by field activities and the active involvement of individuals. This is the direction taken now in their environmental education and awareness programmes by most large organizations concerned with various aspects of childhood and children's programmes: UNEP, UNESCO, UNICEF, FAO, WHO, Council of Europe. The International Week for the Mediterranean should be the occasion to give back to the children the sea and its coasts in their natural framework closest to them; it is hoped that the most urgent environmental problems will thus be made clear to the children and that they will grasp the meaning of protecting natural resources, the problem of wastes, water and sanitation, threats to plant and animal species. In all these areas, the imagination and creativity of those responsible for putting together and implementing the programmes must match those of the children themselves.



The photograph on page one is taken from a brochure put out by the Commune of Salerno in Italy, which like many other towns around the Mediterranean spares no effort to promote environmental awareness among its citizens and especially the children.

THE ADRIATIC INITIATIVE: BASED ON THE RESULTS OF THE MEDITERRANEAN ACTION PLAN

The "Adriatic Initiative" was launched on September 17, 1989 on the occasion of a meeting of the Prime Ministers of Italy and Yugoslavia at Umag. It followed a summer which was particularly trying for the Adriatic and its environment, when the "red tide" phenomenon (i.e. plancton bloom) had reached very large proportions, unprecedented until then. The public of both countries was alarmed, the politicians concerned by the social and economic impact due to the sudden losses of the tourist industry along the Adriatic coasts. In our issue No. 15 (April 1988) we dealt extensively with eutrophication and plancton blooms, with special emphasis on the conditions prevailing in the Adriatic mainly in the Po delta; developments since then have unfortunately made the situation worse. In a declaration of intent issued at the end of their meeting, the Italian and Yugoslav governments agreed to "undertake a diversified and dynamic co-operation project, to be known as "The Adriatic Initiative", open, from the outset, to all the Coastal States of that sea or interested because of their proximity to the Adriatic basin, being located either to the north or to the south of this sea".

This Declaration contains the drawing up of a joint programme for the protection of the Adriatic "by taking advantage of the 10 years experience offered by the Mediterranean Action Plan, which will continue to play a useful role of scientific support and coordination". The Italian and Yugoslav governments recognize from the beginning that the development of their bilateral co-operation should come within the MAP context already established and it is in this perspective that they asked the other States directly concerned (Albania and Greece) to join this Initiative.

At the 6th Ordinary Meeting of the Contracting Parties in October 1989 or barely three weeks after the Umag Declaration, the Italian Delegation informed the representatives of the other Mediterranean Governments of the launching of the Initiative. The

Yugoslav delegation confirmed the agreement, while the Greek delegation expressed its support and the will to take an active part. Thus at the conclusion of the meeting, the Mediterranean States unanimously adopted a recommendation bearing the title "Special Action for the Adriatic Sea" in which the specificity of that sea was recognized and in which the Mediterranean States expressed their satisfaction concerning the intention of the Italian and Yugoslav governments to set up a common sub-regional programme. At the same time they recommended the reinforcement of the mutual co-operation between all the MAP components and especially MED POL, PAP and the Blue Plan and the Adriatic coastal States; they further asked the Co-ordinating Unit to continue providing scientific and technical support and they encouraged Greece and the EEC to participate in the activities for the protection of the Adriatic.

These recommendations started being implemented rapidly, since a first unofficial consultation meeting took place in Athens, December 18-20, 1989 and since in the intervening period, the Secretariat had formulated an implementation plan for the Adriatic Initiative based on the objectives of the Genoa Declaration of 1985 and the main MAP components. This meeting was attended by the representatives of the 4 coastal states and the EEC and was chaired by Mr. Manos, MAP Co-ordinator. The representative of Italy briefed the meeting on the first set of measures taken by his government. Spectacular measures, since they included for the summer 1989 the allocation of funds totalling 50 billion lira to cope with the plancton bloom phenomenon along the Adriatic coast of Italy; furthermore, for 1990 and 1991 400 billion lira and 464 billion lira respectively were allocated for preventive actions. On the other hand, the representative of Yugoslavia briefed the meeting on activities undertaken on its coast and the launching of bilateral co-operation through the joint Commission for the Adriatic. The representative of Greece reconfirmed the sup-

port of her country and briefed the meeting on the activities carried out in the Ionian Sea, to the South of the Adriatic especially at Kerkyra (Corfu) where a pilot project for the integrated planning of the island is being considered within the MAP framework. The representative of Albania welcomed the Declaration of Intent and pointed out that his government had officially informed Yugoslavia and Italy of the interest of Albania in participating in this initiative along with Greece and within the Mediterranean Action Plan framework.

Finally, Mr. Mandl, EEC, Vice-President of the Bureau who also participated in the Consultation meeting, stated that various EEC Directives apply to the Adriatic and that Community programmes concerning the Mediterranean (like MEDSPA) were instruments for technical and financial support which were not exclusively reserved to EEC member States, since a country such a Yugoslavia was already carrying out environmental protection programmes which were supported by the EEC.

The MAP experience

The rapid developments around the Adriatic Initiative show very clearly how bilateral or multilateral co-operation among Mediterranean coastal states can work more effectively on the basis of mechanisms and structures already set up within MAP. It is not just a traditional type of consultation procedure between two or more countries sharing interests in a specific area, but a form of co-operation which is immediately integrated in a general regional context on a solid basis, i.e the results already obtained in the various MAP components or in the implementation of the objectives included in the Genoa Declaration. As far as the Adriatic is concerned, the work accomplished is considerable, as can be seen from the following examples:

- The national monitoring programmes of Italy and Yugoslavia through which there has been for the last 7 years pollution control in several

areas in the Adriatic;

- The 147 research projects carried out by scientific institutes of these two countries with MAP support;
- The medusae programme, the results of which mostly from the Adriatic were discussed during the 1986 and 1987 meetings held at Trieste;
- The study of plancton blooms, one of the most serious problems of the Adriatic, both for its environmental and social impact;
- Fellowships and training courses of more of US\$100,000 granted to Italian and Yugoslav scientists since 1982;
- The activities of the Split Centre for Priority Actions and the pilot projects concerning countries (one on Kastela Bay, on the Adriatic coast of Yugoslavia);
- The setting up of reception facilities (especially at Rijeka, where a float-

ing installation was put in operation with EEC support).

The programme submitted by the MAP Secretariat focuses on these main activity sectors and contains the following: continuation of the port reception facilities programme, of the waste treatment plant programme for all cities of over 100,000 on the Adriatic coast (7 in Italy and 2 in Yugoslavia), also outfalls or other treatment systems for all cities of over 10,000 (78 in the Adriatic, 4 in Albania, 1 in Greece, 63 in Italy and 10 in Yugoslavia), the reduction of industrial pollution and elimination of solid waste, the reduction of air pollution and river pollution, the effective management of eutrophication and associated plancton blooms and a more thorough monitoring programme of marine pollution.

The implementation of such a programme, accompanied by a specific timetable, depends mostly on the will of the governments concerned. After the unofficial consultation meeting of December 1989, the Joint Commis-

sion for the Adriatic met at Split, Yugoslavia in February, 1990. It discussed the general plan for the protection of the Adriatic, the restoration of the areas damaged by pollution and the role that the EEC, the EIB and the World Bank play in financing common projects within the initiative framework. For its part, Albania reiterated that it intended to participate in the programme and proposed that a four-party agreement (to include Greece) be negotiated, thereby asking for a strengthening of MAP's role.

These latest developments were announced at the meeting of the Bureau of the Contracting Parties at Cairo; the Bureau asked UNEP to continue in its role of support at technical, scientific, organizational and financial levels. A mechanism is being set up to protect one of the most sensitive areas of the Mediterranean. The serious events in the Adriatic in the summers of 1988 and 1989 will at least have had a positive effect, i.e. to accelerate the awareness of the problem on the part of both the public and the authorities.

BUREAU MEETING IN CAIRO

The Bureau elected by the 6th Ordinary Meeting last October met in Cairo, Egypt on February 19 and 20, 1990.

It was chaired by Mr. A. Ebeid, member of the Egyptian government responsible for Ministerial Affairs and the Environment; the Bureau took note of the activities carried out since the 6th Meeting of the Contracting Parties and presented by Mr. Manos, MAP Co-ordinator. Participants dealt mainly with two issues: the Adriatic Initiative and co-operation perspectives for the Baltic Sea. Since the former is the object of the previous article, we will simply state that the Bureau was informed on the latest developments by the Italian Vice-president Mr. I. Butini and the Co-ordinator, Mr. Manos. Mr. Butini also reported on the perspectives concerning the suggestion of Italy to extend to the Black Sea the co-ordination of MAP activities. In this connection, the Bureau asked the Secretariat to provide upon request information on legal and methodological aspects which would put into focus a possible participation in the Mediterranean Action Plan of the Black Sea Coastal States (U.S.S.R., Rumania and Bulgaria, in addition to Turkey which is already a party to the Barcelona Convention because of its

Mediterranean coastline). Furthermore, the problem of upgrading the communications mechanisms of the Malta Centre was examined. On a proposal by the Secretariat, the President of the Bureau was invited to contact the Islamic Development Bank and the African Development Bank for possible financing of environment protection projects in the Mediterranean States, members of the above institutions, along the lines of the fruitful co-operation already launched among MAP, the World Bank and the European Investment Bank.

The members of the Bureau and other participants were invited by the Egyptian authorities to visit Ismailia. It is a port on the Suez Canal, half-way between Port Said and Suez and a sensitive area because of heavy tanker traffic. It has facilities to combat oil pollution and reception facilities for ballast waters, the effectiveness of which the visitors could see for themselves during this field trip.

On a proposal by the Italian Vice-President, the Bureau decided to hold its next meeting in Rome, on 6 and 7 September, 1990; it also accepted the invitation of the other Vice-President, Mr. Mandl (EEC) to hold the meeting after that in Brussels in the Spring of 1991.

BLUE PLAN ACTIVITY CENTRE (Sophia Antipolis, France)

Following the decisions of the 6th Meeting of the Contracting Parties the prospective activities of the Blue Plan are at an ever faster pace focusing on integrated development of the Mediterranean coasts.

Mr. Bernard Glass took office as director of RAC/BP in January 1990. Mr. Michel Batisse and Mr. Bernard Glass participated in the Meeting of RAC directors convened January 17-19, 1990 in Athens.

The results of the Blue Plan scenarios continue to elicit a growing interest and their dissemination is progressing.

Mr. Michel Grenon has made a number of presentations at Brussels and Luxembourg during meetings organized by the Commission of the European Communities, as well as at Toulon and Lyon to regional authorities.

Within the framework of prospective work on integrated development of Mediterranean coastal areas, Mr. Glass and Mr. Grenon following an invitation of the Turkish authorities visited the area of Iskenderun at the end of February 1990. Discussions were extremely positive and the principles of co-operation on the Iskenderun project were discussed with Mr. Dincerler, Minister in charge of the Environment and Prof. Hamamci, project director.

At Sophia Antipolis, discussions continued with Blue Plan experts (economics, water, forests) and representatives of RAC/PAP (Mr. Simunovic in September, 1989 and Mr. Philipic, 20-21 February, 1990) on the methodology involving the development/environment scenarios for coastal areas.

After revision and updating of additional procedures, the Blue Plan data base was transferred to the Co-ordinating Unit in mid-March 1990 (diskettes, description and user's manual).

REGIONAL ACTIVITIES CENTRE FOR SPECIALLY PROTECTED AREAS (Salambo, Tunisia)

Assistance to the countries is the highest priority for the Centre for 1990-91. It is carried out directly upon request from a particular country or in conjunction with the other MAP programmes.

Visits and missions by experts: in 1990, direct actions have been earmarked with Algeria and Libya. In co-operation with RAC/PAP studies will be carried out in Rhodes (Greece) and Sfax (Tunisia).

Following the adoption of an Action Plan on the protection of the Mediterranean sea turtle by the 6th Ordinary Meeting, the first steps towards its implementation will soon be taken: assessment missions in Libya and a training course to be organized in Cyprus, similar to that organized in 1989.

For the conservation of *Monachus monachus*, the Action Plan adopted in 1987 was presented at the Madeira meeting (Council of Europe, Sept. 1989). The need to implement it in all countries where this species is found was fully recognized. Finally it was proposed that the co-ordination of all the *Monachus* protection programmes be carried out by RAC/SPA within the framework of MAP/UNEP.

The analysis and synthesis of international and national legislations on the environment in the Mediterranean coastal States were completed (200 documents). An analysis document on legislation concerning the Mediterranean Specially Protected Areas finalized in 1989 will be the basis for work and meetings scheduled for 1990. The above documents will be published in 1990, along with the list of laws concerning underwater archeology.

The SPA Centre brings to the attention of interested persons the fact that it can cover participation costs for certain candidates in training courses. Application dossiers should be sent to it through the National Focal Points. In 1990, the following topics will be covered in training courses: 1. Marine turtles, Cyprus (July-August 1990), 2. Marine plants, Tunisia (June 1990, provisional) and 3. Park management personnel, Port-Cros, France (provisional).

REGIONAL MARINE POLLUTION EMERGENCY CENTRE (Malta)

ROCC has changed name and acronym; it has become REMPEC for Regional Marine Pollution Emergency Centre. These changes reflect the decision taken at the 6th Meeting of the Contracting Parties to extend the field of activities of the Malta Centre to cover accidental pollution of the marine environment by harmful substances other than hydrocarbons. Thus by becoming REMPEC, ROCC has now a wider field of action and begins a new phase, even though its status remains unchanged and it continues to come under the jurisdiction of the IMO, its resources coming from the Mediterranean Trust Fund.

REMPEC must therefore adapt and extend to pollution by harmful substances its previous objectives and functions.

This would mean:

- developing and maintaining a regional information system and a regional communications system
- setting up and maintaining updated operational procedures

AL A C T I V I T Y C E N T R E S

to facilitate co-operation among coastal Mediterranean States in case of emergency.

The regional information system has 4 parts:

1. Lists and directories, e.g. the list of national authorities competent in the matter, a directory of firms offering relevant services in the Mediterranean, a catalogue of equipment and products to combat pollution;
2. operation manuals and technical documents such as a clean-up manual following accidental marine pollution and a list of priority substances based on spill probability;
3. a data base, forecasting models and a system to help in decision taking; this part is still being developed;
4. arrangements and operation procedures adopted by the Contracting Parties (standard alert message, guidelines on the co-operation in combating marine pollution from hydrocarbon spillage).

And naturally the Centre will continue to provide assistance to those countries that request it in order to formulate their contingency plans and especially in order to adapt an already existing plan to combating pollution by harmful substances. It will also continue to play its essential role in training, by enlarging its field of activities to cover these substances (more than 300 trainees have followed such training courses since 1976; from 1986 onwards, the courses have been organized in close collaboration with the Commission of the European Communities which shares proportionally in the cost of the participants from EEC member States.

The recent accident involving the ship Kharg-5 pointed out the difficulties that the Centre faces in communicating with certain countries in the region. Its communications means should be upgraded; possible solutions are currently studied.

If a major catastrophe should occur, regional co-operation is of the essence. In order that such co-operation be effective it must have been organized along the following lines: dissemination of relevant information, contacts among national authorities competent in the matter, facilitation of the process of collaboration among national authorities and determining in advance the conditions under which such co-operation can take place. It is the main role of the Malta Centre to work in this direction and it is crucial that the Mediterranean States participate fully in its activities, take advantage of the experience gained over the last 14 years and contribute, through both their requests for services and the data that they will transmit, to the Centre's recent expansion of its scope and field of activities.

REGIONAL ACTIVITIES CENTRE / PRIORITY ACTIONS PROGRAMME (Split, Yugoslavia)

*PRIORITY ACTION REHABILITATION AND
RECONSTRUCTION OF MEDITERRANEAN HISTORIC
SITES"*

This is a Priority Action carried out by the Split Centre

since 1984 with the participation of 15 Mediterranean countries and certain international organizations, such as UNESCO, ICCROM and ICOMOS.

In the first phase, the countries submitted national reports on the state of their relevant heritage (towns, sites etc.), the problems that historic towns face and their experience in the protection of such heritage.

On the basis of these national reports, many historic towns were identified; they then became the object of case studies carried out during the second phase (1985-1986): Genoa and Split, two European cities with important town centres; Panier, at Marseille, example of a historic neighbourhood in a large European city; Fes, example of Islamic architecture; Hafsia at Tunis, historic neighbourhood of an Islamic city; Nicosia, example of cultural blend, of Islamic Christian character and the historic neighbourhood of Trinidad-Perchel at Malaga. Turkey and Egypt presented their respective experiences in revitalizing two small historic towns: Safranbolu and El-Rashid. Israel presented a case study on the protection of Cesarea, an archeological site located near a power station.

The above mentioned studies clearly showed the need for a common methodological approach to the protection of historic cities, regardless of the different socio-political, geographic, economic and cultural conditions of the countries in which the cities are located.

Various factors cause the problems which the historic towns share among them, deliberate, or even not deliberate actions by man (wars, lack of care, inappropriate use) and natural catastrophes, mostly earthquakes. Nearly all historic cities, even those included in the World Heritage List have bad living conditions and inadequate infrastructure. At times, concentration of services and a dense and chaotic traffic are the main cause of degradation.

As to physical degradation it is most often due to illegal construction and to urban and architectural plans which do not take into consideration the special character of historic towns. The Mediterranean countries have decided to tackle the problem they share through a common approach, by rejecting the notion "conservation" and adopting an active protection of this heritage through the appropriate urban and land-development plans and on the basis of a unified methodological approach.

The third phase of this Priority Action was devoted to the elaboration of this methodological approach. It began with the organization in 1987 at Marseille of a workshop on architectural data and analyses of the current state of the architectural heritage of the Mediterranean, the elaboration of which is the first step in the process of integrated work in historic sites.

BOOKS - MAGAZINES

Carcinogenic, mutagenic and teratogenic marine pollutants: impact on human health and the environment (English only). This is a compendium of studies carried out at world level and presented at a WHO/UNEP meeting organized in Rome in November 1987 in collaboration with La Sapienza University. 54 scientists from 4 Mediterranean countries and 5 non-Mediterranean countries participated. It is a commercial edition, published under the auspices of the WHO Regional Office for Europe and UNEP. The topics dealt with in the papers fall under MED-POL Phase II, launched in 1982. The various articles have a practical interest for researchers and those responsible for combating marine pollution and they deal with genotoxicity, biotransformation and the interactions of marine pollutants with genetic and carcinogenic risks; there are also *inter alia* studies on DNA changes due to pollution, the priorities to be taken into consideration in controlling marine mutagenic pollutants and the impact of arsenic on man. The introduction includes information on MED POL and a summary of the discussions that took place during the meeting at Rome along with the recommendations adopted. (Portfolio Publishing Company, The Woodlands, Texas, Advances in Applied Biotechnology Series, USA).

"Hygiène et sécurité dans les stations d'épuration des collectivités locales" ("Hygiene and safety in municipal waste treatment stations" - French only-) is an illustrated brochure published by the French Ministry of the Environment. It gives an overview of the main risks: risks run by the personnel during operation and maintenance, pathological and toxicological risks. In part two there are general recommendations and some specific ones on prevention of those risks. Thus it is a publication useful to those planning, implementing and running treatment stations. It was put together by CETE (Centre d'études techniques de l'équipement) - Méditerranée on the basis of advice and recommendations by several administrations as well as professional groups and labour unions; it is a useful addition to the documents already elaborated within the framework of PAP/RAC Split for the training course on management and maintenance of treatment stations in the Mediterranean countries (in collaboration with CEFIGRE) and on the environmental approach to the design and planning of treatment stations for the large cities around the Mediterranean (in collaboration with the town of Marseille). To obtain the brochure write to: **Secretariat d'Etat chargé de l'Environnement, 14 Bd du Général Leclerc, 92524 Neuilly Cedex, France, 150FF**.

QUERCUS is a Spanish monthly published in Madrid on the observation and study of nature

and environmental protection; it presents very interesting overviews on the big environmental issues of the Iberian Peninsula and the Mediterranean. For example, the December 1989 issue gave a complete overview of the "Tragedy of the Mediterranean seal *Monachus monachus*" with several colour photographs and a map of the geographical distribution of this threatened species. The magazine also publishes studies on plant species threatened with extinction and a summary review of environmental news from Spain and other countries. (**QUERCUS, La Pedriza 1, 28002 Madrid, Spain**).

IRPTC Newsletter is a new bulletin, the first issue of which appeared last December and which is scheduled to appear twice yearly. It is published by UNEP's International Register of potentially toxic chemicals with headquarters in Geneva. IRPTC was founded in 1976 and has set up an international network of exchange of information on chemical substances; it covers 112 countries and has its own data base. The bulletin gives news on the extension of the role of IRPTC, the main persons in charge and the impressive increase of the number of queries addressed to its answering service (from several hundred in 1976-1983 it topped 2500 in 1989). (**IRPTC Newsletter, IRPTC/UNEP, Palais des Nations, 1211, Geneva 10, Switzerland**).

Piano di gestione integrata delle risorse naturali dell'isola dell'Asinara ("Integrated management plan of the natural resources of the Asinara island" - in Italian only). This album, illustrated with landscape water-colours, was published by MEDMARAVIS (Mediterranean Organization for the protection of marine birds and the study of their natural habitats), under the auspices of the Commission of the European Communities and the town of Porto Torres, Sardinia, to which the island of Asinara belongs. According to this plan there will be a national park on the island and a Mediterranean Centre for the Environment (CEMEDAN) which will act as a meeting point for scientists and politicians for the co-ordination and exchange of information on natural reserves around the Mediterranean. However the Asinara project has something unique: the island which is still virgin houses a penitentiary the inmates of which will be associated with various activities of professional rehabilitation (tour guides, wardens), reforestation projects and restoration of the traditional island houses. Therefore, this is an original experiment, combining social aspects and environmental protection; the Italian Ministry of justice has shown interest in this project in which other Mediterranean countries and the EEC will also participate.

ECHOES OF MEDITERRANEAN COUNTRIES

Seminar on the development of water resources, Tripoli, Libyan Arab Jamahiriya, 12-14 March 1990

This seminar was organized by the Libyan authorities with the participation of several scientists mainly from the Arab countries and dealt with the various aspects of the water resources problem in Libya and the other Southern Mediterranean States: international criteria on water quality, aquifers, future needs and demographic forecasts.

On June 6, 1989, Libya ratified the Land Based Sources Protocol which means that out of the 18 Mediterranean Contracting Parties, 14 have now ratified it.

Monaco ratified the Specially Protected Areas Protocol on May, 29, 1989; so did Libya on June 6, 1989; this brings the number of countries which have ratified this protocol to 15.

Greece: stamps and the environment

The Greek Post Office (ELTA) issued, in March 1990, a series of 4 stamps depicting Greek animals threatened with extinction: brown bear, *Caretta caretta* turtle, monk seal and lynx. The initiative belongs to the Hellenic Society for the Protection of Nature; the series will continue to include other animal and plant species. It illustrates the role of stamps in the protection of the environment due to their wide circulation and the message they bring to people both inside and outside a country. Other Mediterranean countries have already issued similar series or are preparing to do so. In the press conference given on the day of issue of these stamps, the Greek organizers stated that marine turtles, for instance, have already been depicted on 284 different stamps issued by 78 countries, three of them Mediterranean (Italy, Malta, Yugoslavia) and that the first such series goes back to 1932 and was issued by the Cayman Islands (Caribbean).



MEDITERRANEAN: GARBAGE IN THE WATER AND ON THE BEACHES

«53 plastic bags, 36 cups, spoons and forks, 4 toys and 62 bottles all plastic, 1 pair of rubber gloves and 3 rubber balls, 31 empty cosmetics tubes, 195 bottle caps, 14 newspapers, 65 wrappers, 27 rags, 1 flashlight, 1 torn fishnet, 57 metal cans, 1 truck tire, various wood and glass pieces of garbage». This is not a list drawn up by a surrealist writer, or things seen side by side in a flea market stall: it is sad but true that this mundane list was drawn up by a team of youngsters in the summer of 1989 when cleaning up a 100-metre stretch of beach in the Eastern Mediterranean. Hundreds of such lists containing the most heterogeneous articles exist as the result of clean-up campaigns organized on the beaches of the Mediterranean countries: the Southern coast of Turkey, all the beaches of Israel and on the initiative of the Hellenic Marine Environment Protection Association (HELMPEPA), the Attica beaches near Athens. It is a paradox that this aspect of pollution which is so obvious is one of the least studied and most difficult to understand, whereas other aspects of pollution - industrial and urban wastes, hydrocarbons, pesticides etc. - have for years been studied in depth and relevant prevention and abatement measures have been taken. Because garbage which pollutes the marine and coastal environments is of such diverse origin, so geographically dispersed and so complex, the pollution it creates cannot be easily quantified, but must be studied in depth over a period of several years. Evaluations and studies were launched in 1987 after an ad hoc meeting on the subject within the MAP framework. Preliminary data clearly show how urgent it is that all Mediterranean countries undertake a concerted effort to solve the problem and an awareness campaign to include all concerned: seamen, tourists, fishermen, municipal authorities, industrialists.

A floating garbage dump

In order to get an idea, even if approximate, of the figures involved, let us refer to a world study on the problem carried out by the U.S. National Academy of Sciences. The sub-total of the data for the Mediterranean is 525,000 tons of garbage per year thrown overboard by ships and this excludes food wastes. It should be pointed out that this number, extrapolated from 1964 maritime traffic data, should be strongly revised upwards to account for the current situation.

Thousands of pieces of garbage floating in the sea, taking over the beaches, collecting on the seabed - with plastic accounting for an ever greater part of the total - pose a threat through ingestion or entanglement for many species of fish, cetaceans and birds; pollution from inadequately controlled land and marine sources: the problem of garbage in the sea and on the beaches is there for all to see but is still insufficiently known. However, studies are being carried out within the framework of MAP which will lead to the formulation of proposals so that adequate measures can be taken.

However, it is not just waste from ships that is involved here. We should add garbage left on the beach by tourists, items which fishermen deliberately or not leave behind (nets, lines etc.) and «leaks» from illegal or semi-legal sanitation systems inconsiderately installed near the sea. The Mediterranean is all the more vulnerable to this type of pollution since it is an almost closed sea, sub-divided into basins with many islands in it. An estimate given by a group of researchers in 1989 holds that each 100 metres of Mediterranean coast receive annually 100 items dumped there from either a land-based or a marine source. The fact that the sources are so varied and that the dumping is clandestine makes it impossible at this point to have a global quantification of this form of pollution.

Concerning floating objects, the most systematic study was undertaken in 1986; it lasted for 22 days and was carried out deliberately in an «unpolluted» area of the high seas far from land and away from the sea lanes usually taken by maritime traffic, 350 km SW of Crete. At the same time visual observations were carried out once a day from a platform in a 360° field: 20 floating items of megalitter class were registered: their length in certain cases reached 1 m. Another study carried out 64 km from Malta concluded that there was a concentration of 2000 large-size items per km² of sea (total surface of the Mediterranean: 3 million km²). Furthermore, if we take into account that 70% of the items was non-biodegradable (plastic) and that a large

part either collects on the sea bed or remains suspended in the water mass, we can easily fathom the seriousness of the threat for the Mediterranean ecosystem.

The beaches

Studies concerning beaches were launched in 1988 as part of the activities carried out within the framework of the technical implementation of the LBS Protocol of the Barcelona Convention. Several representative areas were chosen in Cyprus, Spain, Israel, Turkey and Sicily (Italy). A joint IOC(UNESCO)/FAO/UNEP meeting held in June 1989 at Haifa, Israel discussed the results and drew the first conclusions. It was confirmed that the greatest culprit (in weight/surface) is plastic (from 65 to 75% of all items listed). It also became apparent that most litter came from land sources rather than marine sources as was the case, according to the relevant studies, on the East Coast of the Atlantic Ocean. Considerable seasonal variation was also observed, the peaks of pollution corresponding to peaks in tourist season. The number of items dumped per metre of beach varied from 7.55 in Israel to 102 in Sicily: this can be accounted for by differences in local conditions such as how popular the beach is with tourists, distance from dumping sites and anthropogenic activities. The study of the «container» part of litter is promising and a precious source of information on litter origin, since it often has a label indicating both the nature of the product contained and the date of production.

Plastics: the great culprit

All the studies carried out to date confirm that plastic is becoming an ever greater part of garbage both floating in the water and that on beaches; the same goes for the plastic caught in the trawls (which is another important source of information). This development is not surprising given the tremendous boom of the plastics industry which has seen its production increase 10-fold in the last 20 years: today, at world level, it has topped 45 million tons. These items are easily identifiable: containers dumped by ships, fishing equipment, plastic bags and containers of urban litter and, a more astonishing find, pellets or granules which are the raw material of the plastics industry dumped by ships either when sailing or when unloading. A study of floating

WHEN SCIENTISTS SPEAK OUT

«The considerable flow of tourists makes for high densities of vacationers on the beaches. I believe that tourists may feel concerned by the garbage they see on the beaches, but let me add that it is the tourists that often create litter problems in the first place, since they bring with them when they visit the Mediterranean their litter-throwing habit».

«I can tell you that most of the countries where there is illegal dumping don't have it because they don't know the disadvantages of such dumping or because there are no experts to design sanitary landfills, but simply for economic reasons... In the less developed countries, people don't know where garbage goes; however they do know that garbage is collected at their doorstep. And given that in these countries resources are limited, local authorities prefer spending the funds available on workers rather than on things whose fate is unknown».

«After the Common Market started imposing restrictions and declared that it would prohibit the use of disposable wrappers, the latter started appearing in the less developed Mediterranean countries as a result of organized propaganda. What is the position of the international organizations on this matter? For commercial reasons, the big wealthy countries aggravate the problems of the less developed ones; action should be taken in this area...»

«The Mediterranean has two shores: the North and the South. The per capita volume of garbage varies from one shore to the other; the same goes for the volume of garbage on the South shore since here we find tourists who come from the North and bear part of the responsibility for polluting the South. Thus there is some sort of moral responsibility to know who pollutes what and we can't forget it. The quantities of garbage are what they are because they come from a certain lifestyle. When you have 20% of humanity using 80% of the natural resources, this percentage is responsible for approximately 90% of the garbage».

(Excerpts from 4 interventions made at the HELMEPA Workshop on the elimination of garbage in the Mediterranean, June 1989).

MEDITERRANEAN: GARBAGE IN THE

garbage carried out in Spain in July 1988 gave an average of 2086 pieces of litter made of plastic per km² of sea! Since these are non-biodegradable products, they collect at an alarming rate. They also pose a very serious threat to several animal species which either swallow them or become entangled in them and die in these floating traps. 9 to 15% of the turtles *Caretta Caretta* of Malta and the leatherback turtles of France caught inadvertently have remains of plastic items in their digestive tract. A British scientist reports that 30% of the fish taken in the Atlantic and the Mediterranean has ingested plastic. Naturally, marine birds are also threatened. Persistent matter can go from the sea to the coast or vice-versa, but whichever way it goes it can then head in the opposite direction when storms occur. Moreover, very little is known about the conditions under which such matter accumulates on the sea bed and the various physical factors involved. Furthermore, the fact that garbage is «solid» should not make us forget another danger: through leaching certain solvents, paints and other substances contained in litter are released into the marine environment and thus increase chemical pollution.

Legal instruments

To counter this increasing threat, there is general agreement as to the high priority to be given to the enactment of dissuasive legislation. The international and regional conventions in force constitute an adequate legal framework, provided there is strict enforcement and full mobilization of both the mass media and the public.

Generally speaking, 3/4 of the garbage in the sea and on the coasts consist, as we have seen, of plastics and persistent synthetic materials included in the «black list» of substances of Annex I of the Land Based Sources Protocol and the Dumping Protocol of the Barcelona Convention. In the framework of the LBS Protocol, the Mediterranean countries signatories to the Convention have undertaken the commitment to eliminate pollution from such persistent substances and within the framework of the Dumping Protocol, to prohibit any dumping of such substances. As was already done for hydrocarbons, used lubricating oils, cadmium, organotin and organohalogen compounds, «persistent synthetic materials which may float, sink or remain in suspension and which may interfere with any legitimate use of the sea» are currently being evaluated throughout the Mediterranean by integrating the various pilot studies carried out in the framework of MAP under the auspices of the International Oceanographic Commission of UNESCO, of FAO and of UNEP. This assessment which will be accompanied by the relevant recommendations will be submitted to the next joint meeting of the Committees of the Contracting Parties. Thus the body of work carried out on the main marine pollutants will be continued and completed with work in this area.

Now turning to garbage from ships, Art. 6 of the Barcelona Convention stipulates that the Parties ensure the implementation in the Mediterranean of «the rules which are generally recognized at the international level». The fact is that at world

TIME THAT SOLID WAST

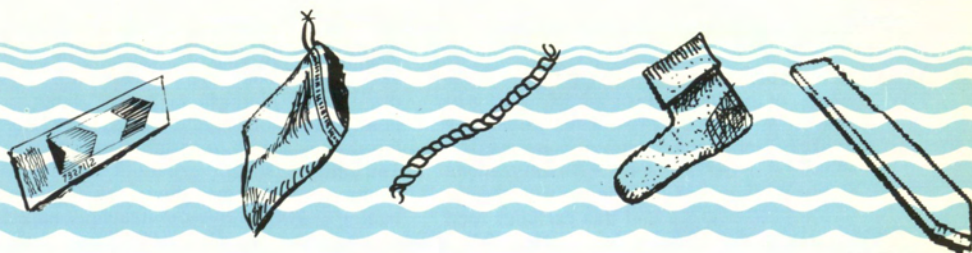
Bus ticket
2-4 weeks

Cotton material
1-5 months

Rope
3-14 months

Wool sock
1 year

Painted piece
of wood
13 years



WATER AND ON THE BEACHES

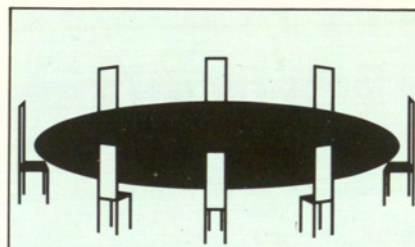
level, pollution from ships comes under the MARPOL 73/78 Convention: its Annex V specifically deals with the garbage of ships but it is optional; in other words, a State may adopt the Convention but not the Annex. 12 out of 18 Mediterranean States have ratified MARPOL and of those 8 have also ratified this Annex. Thus all efforts have to be directed towards obtaining a ratification of the Convention and its Annex V by all Mediterranean States; action must also be taken in order to provide adequate reception facilities for garbage in all the main ports; this would allow for the characterization of the Mediterranean as a «special area» (particularly vulnerable) where the strictest regulations apply: prohibition for all ships to dump garbage overboard (except for food wastes allowed beyond the 12-mile limit from the nearest coast). This is why the Contracting Parties at their last meeting in October 1989 have asked the Mediterranean Coastal States to set up garbage reception facilities in conformity with Annex V of MARPOL 73/78.

Reduction at the source

Without prejudice to the measures to be proposed within the framework of the Mediterranean Action Plan, it is certain, as was also shown in the HELMEPA Workshop on the elimination of garbage in the Mediterranean (June 1989), that the most radical solution to pollution from garbage still is to reduce both the total volume and the part that persistent matter has in it; this is to be achieved through selective garbage collection (i.e. to collect separately plastics, glass, metal), recycling and re-use of

energy. The appropriate technology has been developed, but funds and adequate infrastructure are needed, as well as appropriate incentives policies for the industries concerned, all of which is currently available in developed countries only. For the developing countries, technical and financial assistance should at least aim at eliminating the many cases of illegal dumping to be replaced by sanitary landfills on the coasts. Moreover, the industrialized countries, when they adopt biodegradable packaging should not take this as an opportunity to pass on their stocks of old, non-biodegradable packaging to their less developed partners. (See box).

However, all these measures, even if adopted by decision makers at the political and economic levels, would remain inoperative without the support of the public which should be informed and mobilized and which is the primary force behind all anti-pollution drives. In this connection, beach cleaning campaigns launched around the Mediterranean, or the «Blue Flag» contest for the bathing resorts most active in environmental protection are a *sine qua non* complement to the action taken by public authorities. In conclusion, let us cite this story reported in the HELMEPA Workshop: The crew of a cargo ship conscientiously hands over its garbage to the port authorities when the ship comes to dock. Astonished the seamen look at the workers entrusted with collecting the garbage as the latter dump the garbage into the water right in the harbour! This small example clearly illustrates how ineffective all regulations are when not supported by awareness on the part of the public.



MAP TIMETABLE

Consultation on NGOs	2-3 May Athens, Greece
Expert meeting on offshore protocol	7-11 May Athens, Greece
Training course on environmental approach to the design and planning of sewage treatment plants in the large coastal Mediterranean towns	9-17 May Marseille, France
Joint meeting of the Scientific and Technical Committee and of the Socio-economic Committee	28 May - 1 June Athens, Greece
Workshop on guidelines for the recycling of sewage in the Mediterranean region	10-13 June Split, Yugoslavia
Workshop on load capacity of tourist complexes	7-8 June Paris, France
Consultation meeting on the assessment of pollution by chemical elements and their compounds listed under heading 1 of Annex II of LBS Protocol	12-14 June Athens, Greece

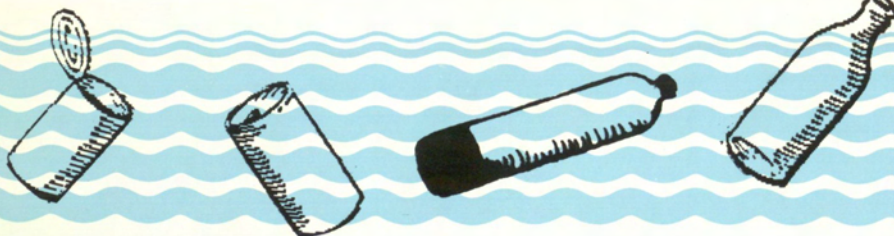
WHAT REMAINS IN THE SEA

Tin can
100 years

Aluminium can
200-500 years

Plastic bottle
450 years

Glass bottle
undetermined



(source: HELMEPA)

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