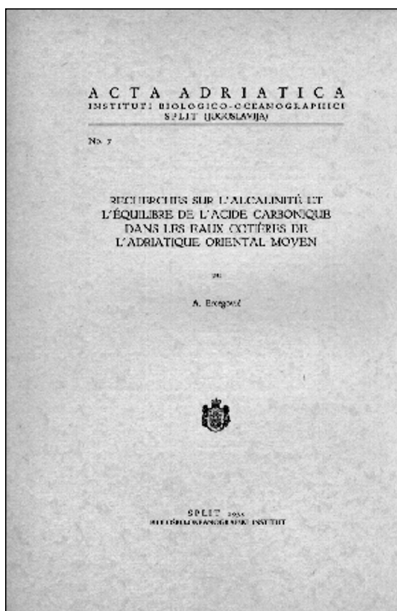


**Mira Zore-Armanda, Ph. D.**  
Institut za oceanografiju i ribarstvo  
Ivana Meštrovića 63, 21000 Split

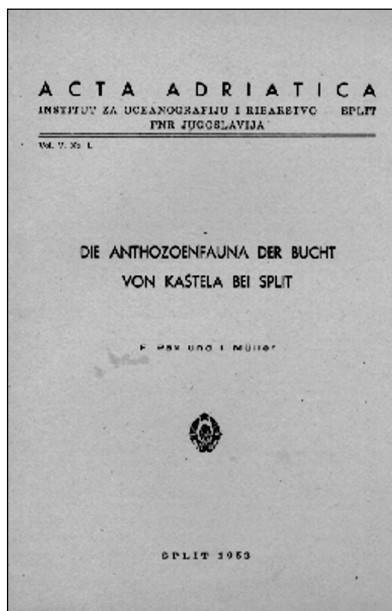
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## SEVENTY YEARS OF ACTA ADRIATICA

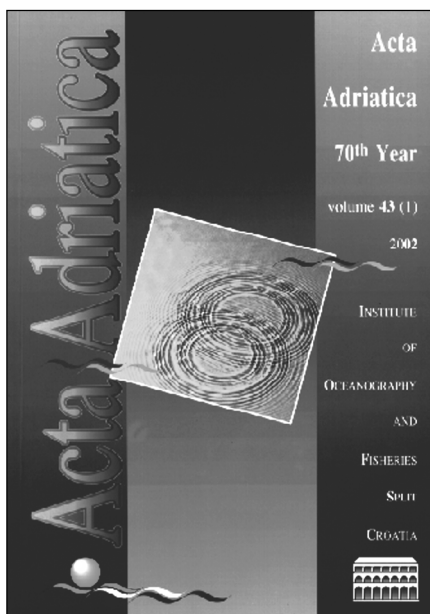
The anniversary of the journal Acta Adriatica was the reason to write this article with the overview of the history and content of 43 volumes and more than 600 articles published so far.



*Fig. 1.: Cover page in the period 1933-1941*



*Fig. 2.: Cover page in the period 1953-1979*



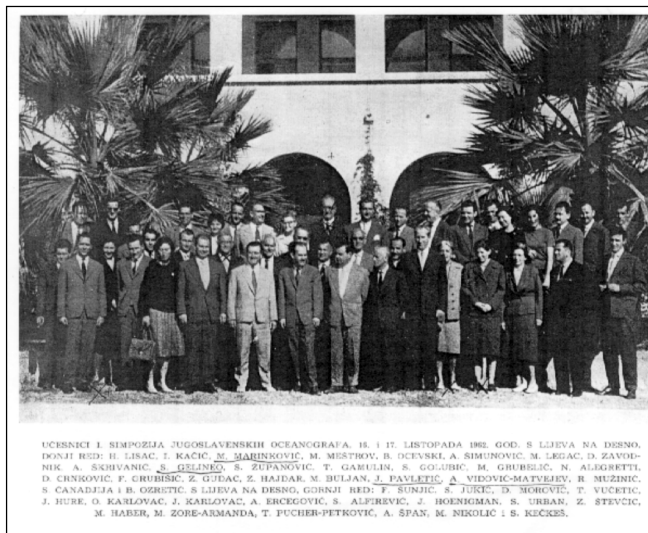
*Fig. 3.: Cover page in the period 1953-1979*

In 1932 the first issue of the journal *Acta Adriatica* appeared. Publisher was Institute of Oceanography and Fisheries, Split, which kept its publishing for the past 70 years. Political and administrative circumstances have changed many times during that period (the Journal has existed through three wars and five changes in statehood), and so has its appearance (Figs 1 – 3). But the main goal of publishing *Acta Adriatica* has remained unchanged: to publish scientific papers of many disciplines that aid in our understanding of the Adriatic Sea, as well as of the Mediterranean, of which the Adriatic is, of course, a part. Oceanographic institute also used the journal for publications exchange and so enriched its library.

Initially each issue featured a single article. Since the 20<sup>th</sup> volume (1979), the Journal has published two issues annually, with multiple articles in each. So far a total of 601 articles (over 14000 pages) written by 425 authors has been published, including some reviews, notes, and introductory articles. In addition, the Journal published papers presented at some national and international meetings. Those meetings are as follows:

International Symposium of Algologists, Split, July 1957;

Symposium of Yugoslav Oceanographers, Split, 16 and 17 October 1962;



*Fig. 4.: Symposium of Yugoslav oceanographers, Split, 16 and 17 October 1962. A.A. Vol. 11, 1964*

3<sup>rd</sup> Symposium of Yugoslav Oceanographers Split, 5 to 8 December 1972,

Symposium on the Eastern Mediterranean Sea IBP/PM-UNESCO, Malta, 11 to 15 September 1973;

25<sup>th</sup> Congress of the International Commission for the Scientific Exploration of the Mediterranean Sea (home papers only), Split, 22 to 30 October 1976;

4<sup>th</sup> Symposium of Yugoslav Oceanographers, Split, 17 to 19 November 1980;

Symposium “Ecological Problems in the Adriatic Sea”, Split, 7 to 9 November 1990;

50<sup>th</sup> Anniversary Conference “Fishery-Biological Expedition HVAR in the Adriatic Sea”, Split, 28 January 1999.

International Workshop “Problems Related to Fishing and Biodiversity”, Split, 11 to 13 February 1999.

Here is some general information about the Journal: Fifty six percent of the published articles deal predominantly with biology, 18 % with issues of importance to commercial fishing, 14 % with physics and 12 % with chemistry and pollution.

It would be rather difficult to present content of all 600 articles. So it will be very generally reviewed only the main subjects of published articles with indication of some important results.

Biological articles embrace very large range of titles: systematic and ecology at all niches. From the very beginning the papers had rather modern concept being multidisciplinary. One volume was dedicated to the long-term experiment at Mljet lakes. By this experiment the physical, chemical, geological and biological properties of the lakes were explored in the first phase. The lakes were then fertilized. The results of fertilization were repeatedly observed in due time. Later on the experimental results served in giving expertises of possible damages due pollution in different basins.

In Series Monographs four issues appeared so far: Ecology of plankton stages of the anchovy in the central Adriatic, Ecological study of Prosobranchiata in the eastern part of the Adriatic Sea, The taxonomy, distribution and ecology of Adriatic Foraminifera, Biology, population dynamics and fisheries case study of anchovy.

Floristic and faunal investigation was subject of many papers. It included the inventorying, cataloguing, revisions, and keys for determination of different taxa of the Adriatic flora and fauna. Some new or poorly known species of benthic algae were investigated with revision of some families and description of entirely new genera, species and lower systematic categories. On the basis of floristic, vegetal and ecological investigations the Adriatic littoral has been divided in few specific bionomic steps (Fig. 5).

The composition and distribution of benthic flora and vegetation in the Adriatic was related to ecological factors. The data of the flora of benthic algae and seagrasses at number of areas in the Adriatic and some areas in the Mediterranean could be find in different papers. In the neighbourhood of some towns, changes in the composition and distribution of benthic algae due to pollution have been investigated. The data on flora and fauna of epiphytic algae on the seagrass *Posidonia oceanica* in some parts of the Adriatic have been published as well as the food and feeding habits of the herbivore fish *Salpa salpa* and the impact of fish cage farm on macrobenthic communities. Biochemical composition of some Adriatic algae and seagrasses was also among published items.

Rather large number of papers is dedicated to phytoplankton. They concern relation among different species and groups, biomass and primary production. Results are based on the long-term permanent observations along with environmental factors at few control stations in the Middle Adriatic followed by series of studies concerning natural time and space variations of plankton community. The results of size structure of phytoplankton related to the density, biomass and primary production with the aim of better understanding of food chains are published as well. It served to estimate the rate of annual primary and secondary production of the Adriatic. The changes in density, biomass and production of phytoplankton, its seasonal rhythm and appearing of characteristic species due to advanced eutrophic conditions of the coastal waters were observed. Later on some of this phenomena was observed in the open waters as well.

A. Ercegović: Wellengang und Litophytenzone.

Taf. I.



Abb. 1. Die Litophytenzone in der Umgebung von Split (bei Lora).  
Die Höhe eca 118 cm.



Abb. 2. Die Litophytenzone bei Rogač an der Insel Šolta

*Fig. 5.: A.Ercegović, A.A. Vol 3, 1934.*

The impact of the Suez channel on the phytoplankton of the Egyptian waters was observed as well as the corresponding influence of the Black Sea on the coastal waters of Greece.

Zooplankton, fish eggs and larval stages are frequent theme. Seasonal and long-term biomass variation and taxonomic composition of zooplankton under the influence of environmental factors and of man activities is prevalent subject. The most important plankton group, the copepods, appears in many papers. Most of the papers treat the Adriatic, but data from the waters of the eastern Mediterranean and Aegean Sea are not neglecting.

Different aspects of microbiological research are present in more than twenty papers. Daily, seasonal, horizontal and vertical distribution of heterotrophic bacteria and their activity in sulphur and nitrogen cycles in the Middle and South Adriatic were studied. The relation of heterotrophic bacteria with phytoplankton and zooplankton as well as the impact of some phytoplankton species on the growth of bacterial strains was examined. Red tide phenomenon in the upper layers of the sea lakes on the Mljet Island was explained by presence of bacterial strains *Rhodospseudomonas* sp., which has red pigment of carotenoid nature. Recently the flow of the bacterial carbon through the microbe food net was examined and also the bacterial quality of sea water and shells as well as the impact of different factors on dispersion and lasting of the fecal pollution indicators.

Numerous papers deal with biology and ecology of pelagic and benthal fish in the Adriatic and also in the waters of Israel, Egypt, North Africa, Aegean Sea, and Senegal coast.

Some fishes like mackerel, red mullets, sardine, anchovy and some cartilaginous species as well as nephrops from crustacea have been examined in details. Sardine was tagged in 50-ties of the last century already with the aim to examine its migrations. Along with sardine the other species of pelagic fish (sprat, anchovy, Atlantic and Spanish mackerel) are frequent subject. Later on the quantity of small pelagic fish was detected by echo sounding, following from the beginning of seventieth of the last century by the first estimations of quantity using the pelagic trawl net for one ship and ultrasonic detection. Each commercially important fish species in the Adriatic was examined in detail, but some other species also. Fish feeding was discussed in 16 papers embracing Adriatic and waters from the Eastern Mediterranean. Benthal organisms like fishes, crustacea and cephalopods were treated in the channels and the open sea. Few papers deal with selectivity of the deep trawl net and its construction improvements with the aim of reducing the damage. Some papers furnish the data on stock estimation using direct and indirect methods. Lagoon fishery and shelf cultivation were treated from the beginning and from seventies the fish aquaculture as well. One complete volume was dedicated to examination of the fish parasites along the Monte Negro coast, but the subject appears also in some other papers concerning waters of the Middle Adriatic and Black Sea waters of Turkey.

Not only the fish, but also the other benthic organisms have been considered like crustaceans, shells, gastropods, different echinoderms and polychets. Composition and distribution of benthic fauna and life communities in some areas of the Adriatic were examined. Few papers give data on different organisms from the Egyptian waters.

Benthic communities are frequent topic. Communities of different substrata like rocky, sandy, detritus etc. of coastal, canal and open waters of the Adriatic were observed. Their specific behaviour compared to the Mediterranean like appearance of endemic and some boreal species as well as differences between North, Middle and South Adriatic were emphasized.

One volume gave the interdisciplinary study in the region of gas fields IVANA and IKA in the North Adriatic. The results of some other ecological projects like those from Vir Sea and coastal zone between Vir and Konavle were also published.

Different aspects of fishery improvements play a part also. Few papers discuss the efficiency of different fishing gear, but emphasis was paid to the permanent observation of fish communities and to the efforts of avoiding the damages of overfishing. Use of statistical data processing served in that direction.

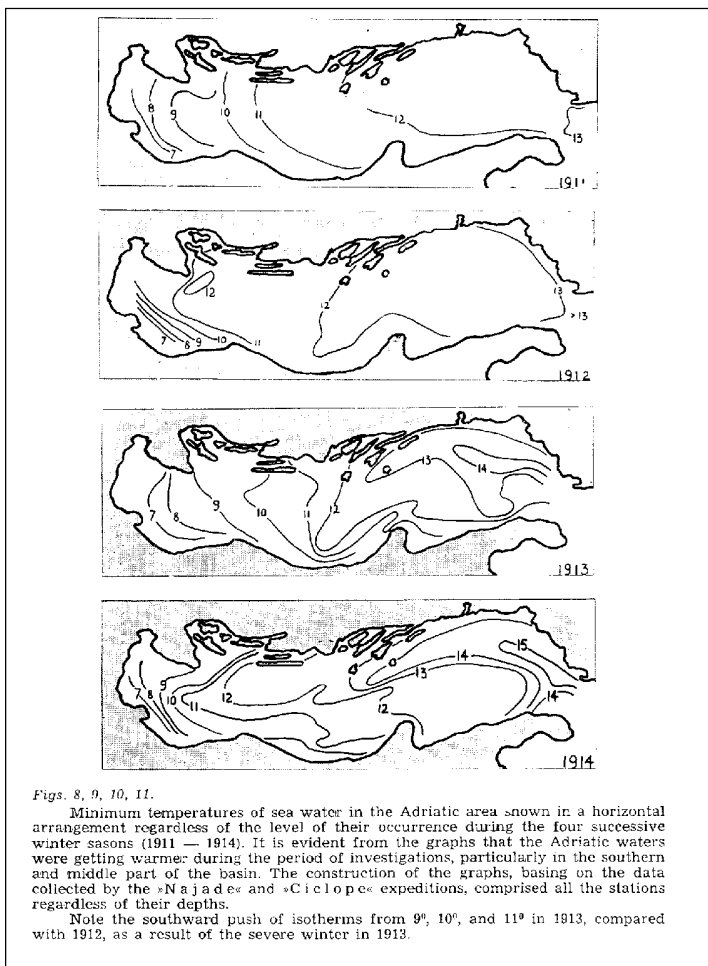
In few volumes the results of systematic and random data collection of all kinds like hydrographic, current meters, chemical, ecological and biological were published. In series of papers appear the data of the sea water temperature, salinity and density as well as their seasonal and long-term variation. Coastal zone from Istria to Monte Negro is described in detail. Along with the Adriatic some other regions of the Eastern Mediterranean like coastal zone of Egypt, Turkey and Greece are covered.

Strongly marked continental aspect of the Adriatic and especially of its northern part was observed. Therefore the pronounced seasonal variation of the basic hydrographic properties is obvious. Long-term variation has also been considered and the temperature increase due to the Adriatic incursions described (Fig. 6)

Series of multidisciplinary papers deal with trends and long-term fluctuations of salinity, transparency and chlorophyll related to Adriatic incursions. Optical types of the waters of the Middle and South Adriatic are considered as well as their variation in time.

Definition of water masses, their space distribution and time changes were released. Water masses of the Eastern Mediterranean and Aegean Sea were also considered and especially the formation of the Eastern Intermediary Water in the Levantine Sea. The processes of the heat exchange between the sea and atmosphere were also considered.

Dynamic conditions were demonstrated in more than 25 issues. They cover the whole Adriatic and number of its small basins (Trieste Bay, Kvarner, Coastal zone of Dalmatia like Vir Sea, Brač Channel, Kaštela Bay and Otranto Strait), as well as the East Mediterranean. For the first time the calculation of geostrophic currents appeared for the Adriatic and the East Mediterranean. Differences between the coastal and open sea were emphasized with the appearance of the frontal zone along the East



*Fig. 6.: M. Buljan, A.A. Vol. 8, 1956*

Adriatic coastal region. Simple and more sophisticated models were used to solve different dynamical problems. The impact of the Aswan High Dam construction on the oceanographic and fishery conditions in the waters of Nile delta and also the much larger area was shown.

Chemical papers embrace primarily discussions on quantity and distribution of nutrients, their entries and farther role in the biological cycles. Observations of chemical parameters in the last two decades indicate the eutrophication of some areas of the coastal region, primary close to bigger cities. Different biochemical subjects have



also been considered in that respect. In the same period the process of pollution of the Adriatic ecosystems was marked and examined. Some studies of content of heavy metals in sea water, sediments and organisms have been published as well as the content of other pollutants like oils, detergents and pesticides. The growing impact of man and its activities on the sea ecosystem was emphasized. Few papers concerning similar subjects from Egyptian waters were issued.

Sea geology is present in papers concerning sedimentation (Lakes on the Mljet island, canal region of the eastern Adriatic coast and primary the Kaštela Bay), hydro-geology (freshwater springs), and papers on Foraminifera in the Adriatic and waters of Lebanon and Yemen.

The language policy has changed over time. At the beginning the papers were published in the languages, which were considered the main international languages of the time: French, English and German. In the sixties and seventies the government preferred the use of the Croatian language, with summaries in an international language. From the eighties on the use of English was the rule with only a few exceptions in French. At present it is the only publishing language. In all, more than 60% of the articles have been published in English.

The greater diversity of authors' nationalities over time also shows the progress of the scope of the Journal, from local to international. Though foreign authors had been published from the very beginning, in the last decade they have written almost 50% of the papers. The foreign authors come mostly from the Mediterranean (Egypt, Italy, Turkey, France, Malta, Lebanon, Israel and Spain), but there are also authors from non-Mediterranean countries (UK, Sweden, Norway, Poland, Romania, ex Czechoslovakia, Hungary, USA, Argentina, India, Senegal, Japan, Jordan, United Arabian Emirate).

*Acta Adriatica* is successful scientific journal with long tradition that helped to safekeeping of the knowledge of the Adriatic and the Mediterranean.

