

CROATIAN SOCIETY OF MECHANICS Ivo Alfirević



THE STORY ABOUT

Germany

Poland

Czesh Republic

Slovakia

Austria

Hungary

Romania

Danube

SĮovenia

Croatia

Serbia

Italy

Norriatic sea

Zagreb, Croatia 2013

THE STORY ABOUT

DANUBIA – ADRIA

1983 - 2013

Ivo Alfirević

Zagreb, Croatia 2013

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PREFACE

As one of the founders of the Danubia-Adria Committee and an active member of the Organizing and Scientific Committee of each and every in the series of thirty Danubia Adria Symposia organised insofar, I have been given an opportunity to speak about the ideas and history of the Danubia Adria Symposia. It was mostly at the opening ceremonies and symposia gala dinners held in Steyr, Parma, Brijuni, etc. However, these were just short reflections within a limited timeframe, so that the need for a more thorough review of the Danubia Adria history has emerged eventually. When 2010 Wroclaw Scientific Committee offered me to write a booklet on Danubia-Adria Committees and Danubia-Adria Symposia, I was very pleased and deeply honoured. I promised to prepare the booklet for the thirtieth jubilee symposium, which will take place in Primošten, Croatia, in 2013. Altogether five Danubia-Adria Symposia have been organized in Croatia. The very first was held in Stubičke Toplice in 1983, while this jubilary one is going to take place in Primošten in 2013. In the interim period, Croatia hosted the symposia held in Pula in 1990, in Poreč in 1997 and on Brijuni Islands in 2004.

While writing this Story about the Danubia-Adria, I tried to be as impartial as possible. However, it was not easy for me to keep it that way, so that - in some aspects, at least - this Story brings my personal view on the events around the Danubia-Adria Symposia. It was inevitable for several reasons, first of all because of the flood of my memories. Furthermore, in writing this "Story about the Danubia-Adria" I have used the archive of the Croatian Society of Mechanics, as well as some letters sent to me by other members of the Danubia-Adria Committee and saved by pure chance. The same can be said for the choice of the displayed photographs.

My colleagues from the Danubia Adria

Committee have been of great assistance. The most important help came from R. Beer, F. Thamm, S. Jecić, D. Semenski, A. Freddi, L. Borbás and some others. Their advice and notes were of great help. An excellent Photo Album prepared by S. Jecić proved itself invaluable and indispensable. He recorded not only a number of events that took place at Spring Meetings and Symposia held over the years, but also carefully labelled the photos with dates and names of the persons who can be seen on them. Many of these data and facts would otherwise be lost. Many thanks to the Research Assistant Frane Pamuković for the preparation of diagrams and graphs displayed in the Appendix. Special thanks to the enthusiastic secretary Ms Jasminka Biondić for careful typing and preparation of this book. Finally, I wish to thank the Croatian Society of Mechanics and Studio Hrg for their support in publishing this book.

Since the actual lists of Symposia participants were not available to me, I have used Extended Summaries as a source of information. This information may not be quite correct, but is not completely wrong either.

This is probably the best place to mention the persons who, although never actually appointed official members of the Danubia-Adria Committees, have been very active in helping the organisation and promotion of the Danubia Adria Symposia and the ideas behind them,. The most important among these individuals are Karl-Hans Laermann, Jan Javornicky, Giovanni Bianchi, Elmar Ficker and Senator Leonardo Melandri.

It is with pleasure and rejoices that I remember some of the attendees of the Danubia Adria Symposia that came from very distant countries, for instance Sameh S. Issa, who came from the College of Engineering and Petroleum Kuwait and attended the first Symposium held in Stubičke Toplice. Kozo

Ikegami from the Tokyo Denki University, Japan, attended the symposium held in Poreč in 1997, as well as all of the symposia held between 2001 and 2009. They had travelled a very long distance to share with us not only scientific knowledge and experience, but also different cultures and friendly feelings.

In writing the names of the Symposia venues and the names of other geographical locations, I have used their original names in local spelling. The exceptions have been made

with large cities like Vienna (Wien), Prague (Praha), Warsaw (Warszawa), Tokyo, Kuwait etc, whose original names are often replaced by their well-known and widely accepted English counterparts,

Zagreb, December 13th, 2012 Ivo Alfirević

INTRODUCTION

Foundation of the Danubia-Adria Committee in 1983

Danubia Adria Committee and Danubia-Adria Symposia were founded by a group of scientists and professors established in the Middle Europe and disappointed with the political, economic, cultural and, above all, scientific division of Europe, enforced at the time. Professors and scientists established in eastern countries had been put in a particularly awkward position. Namely, in these countries international scientific cooperation between the East and the West had been heavily hindered. There were numerous obstacles to travelling from east to west, both of political (passport and visa regulations) and economic (foreign currency availability) nature. Scientists from eastern countries could easily travel across the East, but when it came to western countries, the story was quite different. The first scientists that started to promote Danubia-Adria ideas were as follows:

Ivo Alfirević, Zagreb, Stjepan Jecić, Zagreb, Rudolf Beer, Vienna, Hans - Peter Rossmanith, Vienna, Istvan Huszár, Budapest, Fryges Thamm, Budapest.

The idea to organize such symposia across the Middle-European countries situated both on the eastern and on the western side of the Iron Curtain, had been contemplated for a longer period of time, but it first came to life at Plitivice Lakes, where Ivo Alfirević and Rudolf Beer met for the first time ever.

Namely, Ivo Alfirević was two time-elected





Plitvice Lakes' waterfalls

However, scientists from eastern countries could travel to Yugoslavia more easily than to the western countries. At the time Yugoslavia was officially a socialist republic, but its citizens could easily travel both to the West and to the East. Given these facts, Yugoslavia seemed like a very convenient host of the first symposium.

president of the Croatian Society of Mechanics (1980-1982 and 1982-1984). Together with Džemal Kalajdžisalihović and Osman Muftić, his colleagues from the Croatian Society of Mechanics, he had organized seven Yugoslav symposia on the plasticity theory. The first three symposia took place in Jezero Hotel at

Plitvice Lakes National Park in 1981, 1982, and 1983, respectively. Andrija Mulc from the Faculty of Mechanical Engineering and Naval Architecture in Zagreb invited his friend Rudolf Beer from the Technical University of Vienna to attend the third symposium, held on Thursday, June 2, and Friday, June 3, 1983, at Plitvice Lakes.



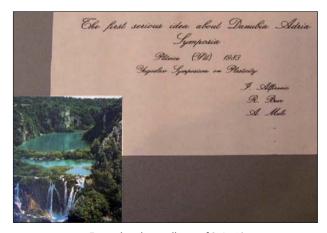


I. Alfirević, Dž. Kalajdžisalihović, O. Muftić

Several very interesting papers using experimental methods - particularly photoelasticity and birefringent coatings - were presented at the third Yugoslav Symposium on Plasticity. On the Symposium day 2, R. Beer and I. Alfirević walked around the Lakes having a cosy chat.. They were discussing the papers presented at the Symposium dealing with experimental methods. The beauty of the 16 lakes, with their numerous waterfalls and cascades and their water constantly changing colour from emerald green to azure blue, was very inspiring. It certainly helped creating a good mood and high spirits. When walking around the largest and the deepest of the Lakes, the Kozjak Lake, Beer and Alfirević started talking about the possibility of organizing a symposium on experimental methods in Mechanics. Such a symposium was supposed to be as inexpensive as possible and easily accessible for scientists from Eastern and Western European countries. At that moment, the idea of organizing a series of symposia on experimental methods in Mechanics was born. R. Beer suggested that such a symposium should be organized by the three neighbouring countries, that is to say, Austria, Hungary and Yugoslavia (Croatia). R. Beer and I. Alfirević decided to meet again in Zagreb in early September, right after the summer holidays.



Jezero Hotel



From the photo album of S. Jecić

However, R. Beer phoned I. Alfirević from Vienna as soon as on Monday, June 6, and proposed the meeting on the very next day, saying: Let's strike while the iron is still hot. Alfirević accepted, so that Rudolf Beer and Hans-Peter Rossmanith, a scientist also affiliated with the Technical University Vienna, appeared in Zagreb on the very next day. This was the first semi-official meeting of the Organizing Committee of the future Danubia Adria Symposia. This meeting was held in the Library of the Institute of Engineering Mechanics, situated on the second floor of the south building of the Faculty of Mechanical Engineering and Naval Architecture.





Current appearance of the Library and the south building of the Faculty of Mechanical Engineering and Naval Architecture in Zagreb

At the meeting held in Zagreb in June 1983, the following was agreed:

- 1. The symposium shall run under the title Danubius-Adria Symposium on Experimental Methods in Solid Mechanics.
- 2. The symposium shall be co-organized by three scientific societies:
 - Yugoslav (Croatian) Society of Mechanics,
 - Austrian Society of Experimental Strain Analysis (ASESA), and
 - Hungarian Scientific Society of Mechanical Engineers.

Each society should appoint two representatives as the members of the Organizing Committee. The country in which the symposium shall be held may appoint as many as three representatives.

- 3. The first symposium shall take place in Croatia, while the second shall probably be organised in Austria. The symposia shall be organized in late September or early October, and shall last two days.
- 4. The symposium-related costs, including the registration fee and the travelling costs, should be kept as low as possible. Thus, future symposia should take place in the triborder area. As for the first Danubia Adria Symposium, the registration fee was set at 4,000 Yugoslav Dinars for the participants coming from Yugoslavia and Eastern European countries, i.e.1,000 Austrian Shillings for the participants coming from Western Europe and overseas.
- 5. Each symposium shall be preceded by the preparatory **Spring Meeting**. The first Spring Meeting shall be organized in Hungary.
- 6. The working language of the symposia shall preferably be English, but German and the official language of the host country shall be allowed for use as well.

Regarding the name of the Symposia, several propositions like Central European Symposium, Symposium of South-Eastern Europe, etc., had been made. However I. Alfirević suggested that some poetic name should be used. Since the Danube River makes the connection between all of the three organizing countries, as well

as potential future member countries, he felt that the word "Danube" should appear in the name of these symposia. On the other hand, Adriatic Sea connects Italy – as a potential future member country – and Croatia, so that he proposed the name **Danube-Adriatic Symposium**. However, the name was to be expressed in local languages, so that the name: **Danubius-Adria Symposium** was accepted. *Danubius* or *Danuvius* is the Latin name for the Danube River, while *Adria* is the German name for the Adriatic Sea.

After the meeting, the three organizing societies accepted the appointed members of the Danubia Adria Committee, which were as follows:

Ivo Alfirević, Zagreb, Stjepan Jecić, Zagreb, Hans - Peter Rossmanith, Vienna, Rudolf Beer, Vienna, Fryges Thamm, Budapest. Istvan Huszar, Budapest Vlatko Brčić, Belgrade, Rudolf Beer initially proposed Andrija Mulc as the third Croatian representative, but the Croatian Society of Mechanics delegated Vlatko Brčić to liaise with the central Yugoslav Society of Mechanics. Although Vlatko Brčić was appointed as a member of the Scientific Committee, he has never taken any part in its activities and shall therefore not be mentioned as such any further.

After the meeting, R. Beer and H. P. Rosmanith returned to Vienna and soon sent the **First Announcement** draft. Although the letter Beer wrote is dated *July* 12, it was most probably written on *June* 12. I. Alfirević had the First Announcement printed immediately by the Publishing Company **Vjesnik** in Zagreb. Vjesnik was a daily newspaper; in Croatian, the word *Vjesnik* means *the messenger* or *the courier*.

The First Announcement was type-set by Tomislav Čić and printed out. It was circulated among the potential participants prior to the summer holidays, as originally planned. Unfortunately, in preparing the text of the first

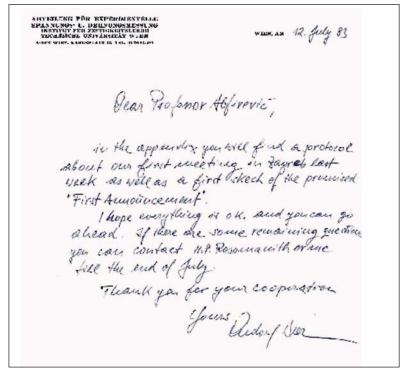
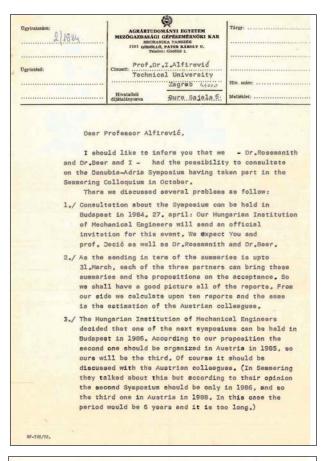


Fig. 5: Letter sent to I. Alfirević by R. Beer after the Zagreb Meeting

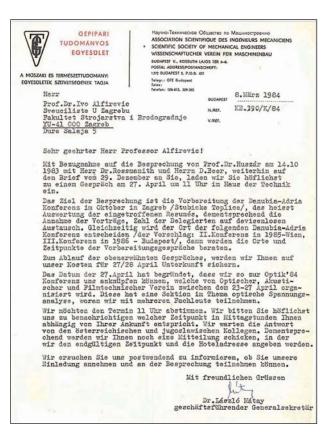
Announcement, a mistake had been made - instead of the **Danubius-Adria**, the words **Danubia – Adria** had been written.

However, the mistake turned into tradition, so that the symposium is still running under this title.





The letter sent to Ivo Alfirević by Istvan Husz**á**r



Letter of Invitation to 1984 Spring Meeting sent by László Matay, Secretary General of the Hungarian Scientific Society of Mechanical Engineers

THE FIRST DANUBIA-ADRIA SYMPOSIUM

Stubičke Toplice, Croatia, 1984



The preparations for the first Spring Meeting and the First Danubia-Adria Symposium started at the beginning of 1984. Letters were exchanged between the members of the

Organizing Committee. The members of the Committee were active in inviting their friends to the first Danubia-Adria Symposium. On the Croatian side, S. Jecić was particularly active. He had planned to organize a symposium in 1983 to celebrate the 80th birthday of Professor Davorin Bazjanac, an honorary

were exchanged between the members of the ittee. The members of the ctive in inviting their friends a-Adria Symposium. On the ctić was particularly active.

Symposium. The Spring Meeting precedent to the first Danubia Adria Symposium was held on April 27, 1984, in Budapest. The meeting were as follows:

The second Danubia Adria Symposium should.

The second Danubia Adria Symposium should be held in Austria, while the third should take place in Hungary.

member and the former president of both

Croatian and Yugoslav Society of Mechanics.

Since this symposium was not held after all, S.

Jecić channelled the invited scientists - mostly from Germany - to the first Danubia-Adria

The second Spring Meeting shall be held in Croatia in 1985, the third in Austria, and so on, cyclically.





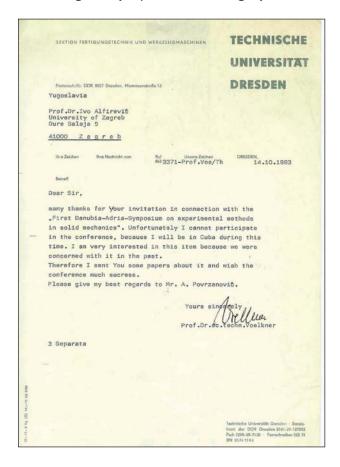
Oršić Castle in Stubičke Toplice

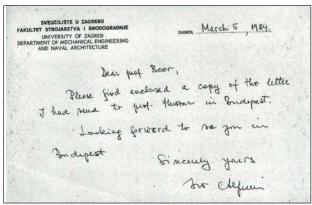




Photos taken immediately after the Spring Meeting in Budapest

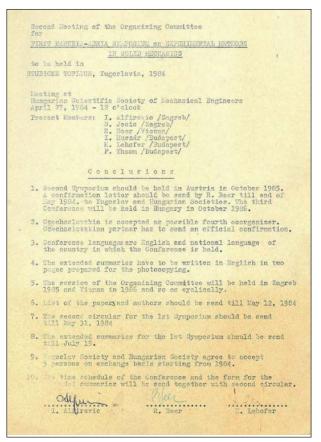
The Croatian Society shall cover the expenses of five Hungarian participants attending the symposium at Stubičke Toplice in Croatia; in turn, the Hungarian society shall cover the expenses of five Croatian participants attending the symposium in Hungary.





Correspondence relative of the Spring Meeting

The first Danubia-Adria Symposium took place from October 15 to October 17, 1984, at Matija



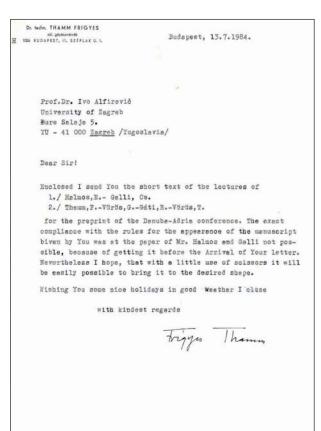
The minutes of the Spring Meeting held in Budapest in April 1984

Gubec Hotel in Stubičke Toplice, situated northwestern of Zagreb, It was attended by roughly 40 participants that submitted a total of 36 papers. Most of the papers were in English, but German and official Yugoslav languages i.e. Croato-Serbian, Slovenian and Macedonian, were allowed as well. As I remember, only 8 papers were submitted in German and only 2 in Croatian.



Matija Gubec Hotel, Stubičke Toplice





Letters sent by R. Beer and F. Thamm to the Croatian Society of Mechanics

The purpose of this international Symposium is to provide a forum for engineers, scientists, and industrial managers of neighbouring countries of the Danubian-Adrialic region to present and discuss the current status and the impact of modern technology and development in the field of experimental methods in solid mechanics.

The increasing need for joint industrial development and technology transfer calls for an intensive scientific cooperation.

SCOPE

The Conference will be concerned with recent research and development to the study of all aspects of experimental methods in solid mechanics. Primary attention will be given to industrial application of new methods and techniques. There will be four main sessions each oppened with a state-of-the-art review lecture by a representative of the organizing countries.

CALL FOR PAPERS

Offers of papers describing current work in all areas of experimental research in solid mechanics are welcome. Particular topics of interest include:

- a) Classical and advanced optical methods
- b) Electronics in experimental mechanics
- Data acquisition and microprocessing
 Nonclassical problems and biomechanics
- e) Statistical and probabilistical aspects of reliability assessment
- f) Similarity laws for nonlinear problems.

The Executive Committee invites authors of all nationalities to submit poeprs for presentation in the conference languages: English (preferred.) German, Hungarian, and all Yugoslav languagess. Authors are requested to present an extended summary in English of no more than two type-written pages including tables and figures. The obstracts will be subjected to reviewing by an international paper review committee. The deadline for the submission of extended summaries is March 31, 1984. They should be send to one of the following addresses:

Prof. Dr. Ivo Alfirević University of Zagreb Dure Sajala 5 41000 Zagreb, Yugoslavia

or

Doz. Dr. H. P. Rossmanith Technical University Vienna Karlsplatz 13 A-1040 Vienna, Austria

Authors will be notified by May 31, 1984 about acceptance of contributions. Preprints of all extended summaries will be available at the conference. Rapers will be published in a proceedings valume.

REGISTRATION FEE

The registration fee is estimated at Dinars 4000.— for participants coming from Yugoslavia or Eastern European countries, and AUSchillings 1000.— for participants from Western Europe and Overseos.

Part of the First Announcement of the first Danubia-Adria Symposium



The Organizing Committee standing in front of Matija Gubec Hotel, Stubičke Toplice: I. Huszar, R. Beer, H. P. Rossmanith, S. Jecić, I. Alfirević, F. Thamm

Outof36submittedpapers,18dealtwithoptical methods, 5 with tensometric methods and 4 with hybrid methods. In the field of vibrations and fatigue, 5 papers were submitted, two dealing with fracture mechanics, one dealing

with image processing and two dealing with industrial applications. Regarding optical methods, most of the papers were concerned with the field of photoelasticity, but some dealt with holography and birefringent coating as well.

All of the members of the first Danubia Adria Committee had witnessed or experienced the misery of the people and atrocities brought by the World War II, as well as the poverty and lack of freedom in eastern countries engaged in the Cold War. From the very first Danubia Adria Symposium on, people coming from these countries have tried not only to present their recent research and developments in

experimental methods used in the field of Solid Mechanics, but also to promote friendship and mutual understanding between the neighbouring countries. Visits to historical and cultural sites, museums and natural beauty spots have been established as the common symposium practice. On the occasion of the first Symposium, the participants visited the Museum of Peasants' Revolt located in Gornja Stubica Castle, as well as the monument to Matija Gubec. Matija Gubec was the leader of the Peasants' Revolt that spread in eastern Slovenia and north-western Croatia in the years 1572 and 1573.

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TENTATIVE LIST OF PAPERS
ALFIREVIĆ, I.
Reduced Stress Concetration Factors
ALFIREVIC, I., PUSTAIC, D.
An Experimental Method of the Identification of Plastic Regions
ANGERER, S., HUTMANN, P.
Methoden der experimentellen Spannungsanalyse
bei BMW
BAEBLER, M., STOK, E., ZVOKELJ, J., KOSEL, F.
Tensometry at Low Values and Large Changes
of Temperature
BAJONS, P., PICHL, W.
Statical Analysis of Fatigue Data of Brittle
BAKIC, A.
Practical Realization of Photoviscoelastic
Experiments
BREUCKMANN, B.
     Neue Entwicklungen holografischer Messverfahren
CSIZMADIA, B.
Dynamical Investigations of Bar Structures
DAFFNER, E., THIEL, E.
Hybride Festigkeitsanalyse autofrettierler
Hochdruckarmaturen
ERDELYI, L., FAGAN, W. F.
New Development in the Application of Image
-Derotation to Engineering Measurements. With
    Exhibition
FEKETE, T.
    Colour-Analysis of Photoelastic Fringe-Patterns in the Colour-Tringle.
FICKER, E., ZYADA, D.
Variation der Eigenschaften eines Epoxidharz-Systems
beim spannungsoptischen Einfrierversuch
GYIMESI, F., FÜZESSY, Z.
Difference Holographic Interferometry:
     A New Possibility
HALMOS, E., GALLI, Cs.
The Function of an Industrial Big-Scale
Stress Analysis in Economical Design
HAMPL, N., FISCHER, D.
Ermitlung der Dämpfungscharakteristik
mittels Schwingungsmessung
HARMATI, K., SZILASSY, I.
Comparative Stress Investigation Using the Stress
Analysis of Three-Dimensional Models
HERMAN, K., HERCEG, LJ.

Measuring of the Relative Damping Change of the
Screw Connected Shell Structure with the Impulse
     Excitation
 HEURE, R.
    Dynamische Effekte eines Schwimmbeckens
auf dem Dach
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HUSZÁR, I.
   Determination of Stresses in Rocks by Strain
   Measurement
ISSA, S. S., MARIE, I.
  Characteristic Angle, Light Intensity and their
Correlation to the Wavelength in Three-Dimensional
Photoelastic Medium
JECIC, S., GOJA, Z.

Some Aspects of Gamma-Irradiation Applied on Photoelastic Models
JOVANOVIC, M., CIROVIC, M.

Determination of Temperature-Field and Termal
Stresses in Welded Steel Structures
KOPPANY, I.
   Stress Analysis of the Model of Wall Beams with
Non-Uniform Thickness and Openings
KRPAN, M.
   Experimental Measurement of the Approaching of the
   Real Contact Surface
LAERMANN, K. H.
   On the Reconstruction of the Internal Strain and Stress
   State in Solids from Experimentally given boundary
LINSBAUER, H. N., ROSSMANITH, H. P.
Direction of Slow Stable Crack Growth.
A Photoelastic/ FE-Analysis
NIKOLIC, S., ĐURAČIC, Ž.
   The Experimental Research of Ship Structural
Behaviour due to Wave Loads
PERZBORN, V.
Application of Digital Image Processing for the 
Evaluation of Interference Fringes in Photoelasticity 
PURINGER, P., SCHUCH, F.
   Experimentelle und numerische Affimierung eines Getriebegehäuses
SCHNEEWEISZ, G.
   Bruchlagerdichte und Spannungsverteilung
STEINBICHLER, H., ENGELSBERGER, J.
   Einige neuere Anwendungen der holografischen
Interferometrie
STOHREL, H. P.
   Determining the Shape of the Mirror of a Large Scale Solar Concentrator
STOHREL, H. P.
   Deformation Analysis by Digital Image Processing
THAMM, F., VOROS, G., GATI, R.,
VOROS, T.
   Hybrid Method of the Evaluation of Residual Stresses around Welded Joints
ZSARY, A., BORBÁS, L.
   Investigation of Parts with Rotational Symmetry
by Photoelastic Coating
```

The Symposium dinner was served at the lovely and well-known restaurant Slamnati Krovovi (Straw Roofs) arranged in a rustic style. The Cottage is covered with straw.





The Monument dedicated to the Peasant's Revolt and Slamnati Krovovi Restaurant.
Photographs illustrating the atmosphere at the Symposium dinner



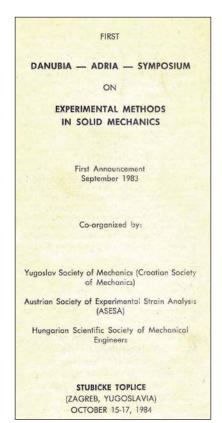














The First Announcement and the letter by Sameh Issa

Country	Number of papers
Austria	9
Croatia*	6
Hungary	10
Germany	9
Kuwait	1
Serbia*	2
Slovenia*	1
Total	36

^{*} Parts of the former Yugoslavia.

Participants from seven countries submitted a total of 36 papers, as shown in the Table. At that time, three countries (Croatia, Serbia and Slovenia) were parts of the former Yugoslavia.

Austria:	H. P. Rossmanith (Vienna)
	R. Beer (Vienna)
Hungary:	I. Huszár (Budapest)
	F. Thamm (Budapest)
Yugoslavia:	!. Alfirević (Zagreb)
	S. Jecić (Zagreb)
	V. Brčić (Belgrade)