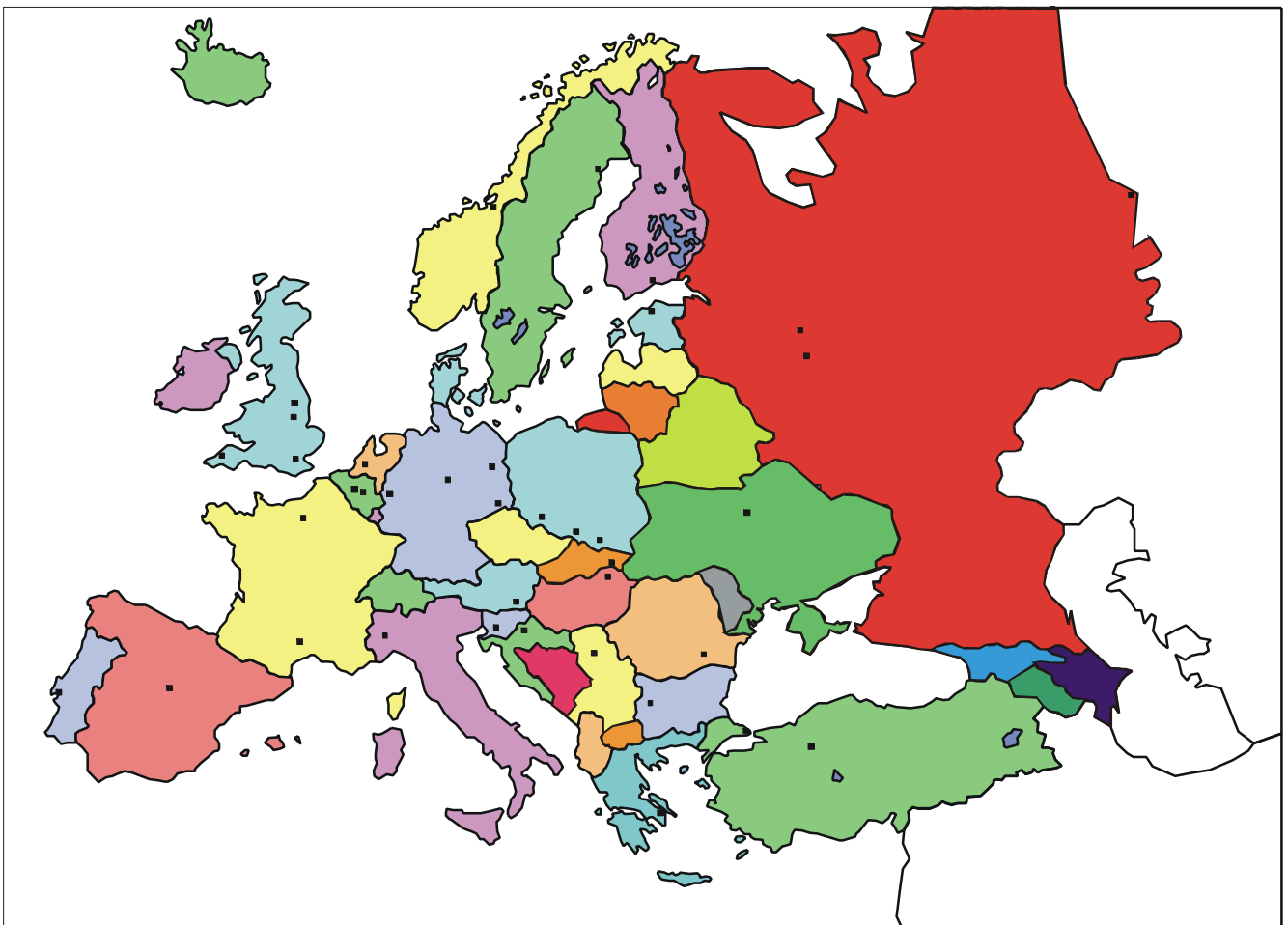


**NEWSLETTER**

**SOCIETY OF MINING PROFESSORS**



**SOCIETÄT DER BERGBAUKUNDE**



**Number 15**

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## Editorial

Another annual general meeting has passed and once again, as was the case with all the past meetings, the arrangements were superb. Those members who did not bother to attend, and only 21 attended this time, or who could not attend for various reasons missed both a good and useful meeting and a very pleasant social event. We all also learned a lot about central Russia in general and the Urals area in particular. It was a very good meeting indeed.

The working sessions, discussing as they did the future directions of education in mining engineering, were very useful. It is clear that there is a great difference between those countries where the industry is at a low point, such as most of the EU, and those countries where there is a thriving industry such as Russia. This is of course most obvious when student numbers taking mining are discussed. However, the fundamentals of what a mining engineer should know do not vary much between countries.

There was once again some discussion of the hours the student spends in the classroom and the way this varies. The Secretary General has been updating his data base of mining courses and again the huge and obvious differences in reported hours in the classroom was highlighted. This of course, as was made obvious the previous time these matters were discussed relates to a number of things.

The first is the assumed level of knowledge on entry. Clearly the higher the level of knowledge of the engineering sciences (mathematics, physics and chemistry) assumed on entry the less of these needs to be taught at the university, with a large saving in classroom hours. In some systems, such as the English one, a very high level of such knowledge is demanded with the result that the time at university can be shortened.

The second reason is that what is reported as a classroom hour differs greatly between systems. In some systems every hour the students spends studying is in the classroom and is reported as such. In these systems, as much as 40 to 50 classroom hours per week can be claimed.

Then there are universities which report both the actual classroom hours, and the extra hours the student is expected to spend studying the material out of the classroom. This is often done in a way which makes it impossible for the outsider to know which are actually classroom hours and which are study hours, so all show up as classroom.

One other small difference can be attributed to what is reported as an hour. A large number of universities teach in hourly blocks. In this case there is usually break time included so that the hour may actually be 50 minutes or even 45 minutes of actual teaching time. In universities where the block is 1.5 or even 2 hours, the actual time, due to there being fewer breaks can be more than this. However, this again is seldom reported and so the hour as reported is taken as an hour.

Finally, there are the universities which only report the hours when a student is in a classroom with a member of staff, which expect him/her to do a lot of extra work on her/his own time but do not report the latter. These will show up at the short hour end of the spectrum. Most universities working on the American or English systems fall

into this category and so seem to have very few contact hours. In England the process of studying at a university is actually called 'reading for a degree' and this means that the students are expected to spend a lot of time finding out information for themselves. This time is never reported nor is it shown on a timetable.

It has always seemed to me that it is unlikely that people who have lived and worked in a system where all the hours are reported and logged are ever going to understand the hours shown in the systems where only contact hours are reported, and sometimes not all of those. If we, as a Society are to come to terms with this then we need to ignore the time factor. What needs to be established is what content should be in any mining curriculum. Then, provided that each university is prepared and able to attest that its graduates will have an adequate knowledge of that curriculum when they graduate, it becomes irrelevant how long that university took to teach them the material.

In line with this the current study of world wide curricula, being undertaken to establish what the status quo is, is recording the reported syllabuses of each subject as taught at each university. These will then be analysed and a current consensus will be reported. At the next meeting of the Society in Delft then a discussion will be able to be held on what we believe should be included in the curriculum, working from a good knowledge of what is there at present. It is not planned to have long arguments over hours! The objective is to discuss what a graduate mining engineer at Masters level should know, not how long he took to learn it.

Much of the material is being obtained from the internet. Also enclosed with this newsletter is a listing of the web pages of the universities worldwide which have so far been identified as teaching mining. Where they have actually put up the curriculum and syllabuses on the web site this material has been recovered for the study. The Secretary General is able to handle the data only from those sites which report this material in English, French, German, or Spanish. So the material from sites which have not reported in one of these four languages will not be able to be used for the study being done. This will inevitably bias the study towards the English and American concepts of mining studies unless members from those countries where things are not reported in a language I can understand send me the syllabuses for their mining degree courses in a language I can understand.

The rest of this Newsletter is taken up with the minutes and some material presented at the Ekaterinberg meeting. This meeting was I believe an important one in the affairs of our Society and I only wish more members had attended.

There is one final point - I am enclosing the invoice for the year 1999-2000 with this newsletter. I will have included on the invoices of those who have missed payments, the additional amount needed to get you up to date. This money is required for the subscription members receive to Mineral Resources Engineering. For those of you with serious arrears (two years or more), if payment in full is not received reasonably promptly, the subscription will be stopped and membership of the Society will be cancelled.



**MINUTES OF THE 10TH ANNUAL GENERAL  
MEETING OF**

**THE SOCIETY OF MINING  
PROFESSORS/SOCIETÄT DER BERGBAUKUNDE**

**AT THE**

**URALS STATE MINING AND GEOLOGICAL  
ACADEMY  
EKATERINBERG**

**July 9 to 12, 1999**

The 10<sup>th</sup> meeting of the Society took place in Ekaterinberg in the Urals in Russia from the 9<sup>th</sup> to the 14<sup>th</sup> July 1999.

**Day 1 - Morning**

Most of the registrants arrived in Ekaterinberg on the evening of Thursday 8<sup>th</sup> July, and were all accommodated in the hotel Iset in downtown Ekaterinberg. There was a welcoming cocktail party held in the hotel bar on the 8<sup>th</sup> for those who arrived in time, and registration also started then. On Friday 9<sup>th</sup> July the delegates were collected at their hotel and taken by bus to the main building of the Academy. There there was to be the opening ceremonies held in the main hall of the Academy.

The turn out was regrettably the lowest the Society has seen for some years. Only 21 members actually attended the meeting. The members attending the meeting were:

Professors Y.G. Agafonov, V. Badino, U. Bajzelj, I.V. Dementiev, B. Drzezla, G.B. Fettweis, M. Georgescu, H. Gerhardt, M. Hardygora, N. Ilias, V.A. Kharchenko, Y. Kuzmin, W. Lucas, R. Matikainen, L. Puchkov, J.J. de Ruiten, P. Särkkä, C.T. Shaw, R.D. Stoll, H. Wagner, and F.L. Wilke.

Present by invitation were Prof. E. Lapin, vice-Rector of the Urals State Mining and Geological Academy, Prof. V. Kozin, Dean of the Faculty of Mining and Prof. Khokriakov, vice-Rector for international affairs. (Prof. Khokriakov had been very active in the organisation of the meeting of the Society, for which we thank him.)

(10 countries only were represented - Austria, Finland, Germany, Italy, Netherlands, Poland, Romania, Russia, Slovenia, United Kingdom.)

Since most of the delegates had been registered the night before, the meeting got started a little early. The accompanying persons were in the meeting for the greeting from the Secretary General of the Society who pointed out that this was the 10<sup>th</sup> meeting of the Society and congratulated the members on the fact. He then handed over to the Rector of the Academy, Professor Dementiev, for him to give the official welcoming address. After this welcome the accompanying persons then left and went on their tour while the members of the Society got the meeting under way.

Professor Dementiev started off the business of the meeting with a very clear description of the mining industry and mining educational provisions in the catchment area of the Urals Mining and Geological Academy. This paper is

planned to be published in Mineral Resources Engineering and it will also be put on the Society's net site. After the paper there was some discussion.

There turned out to be a difference between what is called "mining engineering" in Russia by which they refer to mining mechanical and mining electrical engineering and even mineral processing, and what they refer to as "mining technological engineering", by which they mean what most western mining teaching staff would call a mining engineer. This clarification enabled some of the tables to be read with more clarity.

Secondly, the length of studies and degree levels were discussed. They have a four year 'bachelors' a five year 'engineer' and a six year 'masters' degree sequence. It would appear that most students reach the Engineer level, a very small proportion stopping at bachelors, and only about 5% going on to masters level.

Other items discussed arising from this paper included the effects of privatisation, the average and declining grades of the ores in the Urals area (some material with as little as 16% iron appears to be classified as ore) and the potential for and the amount realised of foreign investment in mining in the Urals. In the latter case, for various reasons the answer was that to date investment has been low..

Finally on this paper the question was asked about the participation by the Academy in mining companies, whether or not they actually hold shares. It appears that in many cases they do have a small holding of shares but that this is useful only in that it keeps them in touch with the mining companies and enables them to work with them more easily.

After a break for coffee/tea and for the taking of the annual photograph of the participants, Professor Shaw handed out a listing of the addresses and the web addresses of all the mining universities he had been able to find. The list it must be noted, is incomplete as it only included those universities in which mining education could be positively identified. This meant that it left out universities where he was unable to read the material due to its being in writing which he could not read or a language which he had no knowledge of. This list could prove useful to members and is included with this Newsletter. (Most of the sites found can be reached by going to )

The next item on the agenda was a paper by Prof Khokriakov on the environmental issues facing mining in the Urals. This was a very good paper and it is published in full with this Newsletter. This paper generated some lively discussion.

Discussion then followed on this paper. Professor Wagner pointed out that mining engineers need to be environmentally responsible, but that we also need to ensure that when talking about the environment we present both sides. We need to stress the value to humanity of the products being produced and compare that with the cost environmentally, to demonstrate that it is not all loss and that in most cases of mining the balance is actually in favour of the mine. He suggested there needs to be international accounting standards to ensure that environmental costs are included in the costing of mining operations always. He emphasised that the human cost should not be excluded – and the responsibility of others – to see that there was not a



social desert left behind when the mine closed as it eventually must.

Prof. Khokriakov said he agreed with what Prof. Wagner said and pointed out that 40% of the GNP on a regional level (Sverdlovsk) was attributable to mining.

Prof. Wilke pointed out that in the case of the EU the environmental costing mentioned by Prof. Wagner was a requirement of European law. But he also pointed out that this could not take care of cleaning up the past. Prof. Stoll added to this that when mining closes the governments need to reclaim the land. However this could also be done privately and there was now a company in Turkey for example set up for this specific purpose.

Some discussion then followed as to when overburden could be classified as waste. In Austria for example it is not so classified, but in the Urals it appears that it is. However, as Prof. Badino pointed out, it is really necessary to know what potential it has for polluting before it is classified one way or the other. Prof. Khokriakov replied that he was working from official figures, and as such felt he should use the classification used in those figures.

The participants then went to the Café of the Palace of Youth, (the student society building), for lunch, and had a look around the building after lunch.

#### Day 1 - Afternoon

In the afternoon, Prof. Wagner gave a very interesting paper, which is also available on the web site and which will also be published in Mineral Resources Engineering. It was a discussion paper on the problems of mining engineering education, in western Europe in particular, and what might be done to alleviate these problems. As one of the solutions mentioned was the EMC course, Prof. de Ruiters then gave an update on the development of that course.

He indicated that in 1999 – 2000 it was planned that on the EMC there would be 15 - 18 students from London, Aachen, Freiberg, Helsinki, Delft, Canada, Australia, USA, Russia ? (industry sponsored) and on the EMEC there would be 12 students from Helsinki, Delft, Aachen, USA, Chile, Argentina. It was also planned to form FEMP (The Federation of Minerals Engineering Programmes) and for this it was planned to get commitments from industry (Euromines) to support the programs.

As to future expansion the options were:

- to take students in from outside the universities,
- to form additional clusters (overlapping the current cluster),
- to include special subjects by: having guest lectures; using distance learning techniques and by offering special elective courses

The actions planned for 1999 to 2000 were to an extent dependent on EC funding, which, if it was forthcoming would lead to the team holding discussions with various universities like:

- Eastern Europe: Future E.U. members
- Southern Europe: Greece / Italy / Spain

- Central Europe: France / Austria

There were a few outstanding problems and these were:

- There is a limit on exchange numbers that can operate through Socrates
- There is a limit on funds from Socrates
- Additional funding will therefore be needed from other sources such as industry.

Prof Shaw then, to get the discussion going mentioned the Acadia University in Nova Scotia in Canada, which had completely wired its campus for the Ethernet and, for an additional annual fee of \$1000, gave each student a brand new IBM laptop computer each year, on which they would do all their studying and learning. Even the lectures made use of these rather than blackboards or overheads.

There was some discussion on networking of universities before this part of the meeting was closed for a coffee/tea break and the remaining discussions held over for the following day.

After coffee the formal AGM of the Society was held.

Apologies for absence had been received from Professors: B. Brady, M. Duchene, W. Helms, M.J. Karmis, W. Knissel, F. Kovacs, P.N. Martens, P.F.X. Mousset-Jones, F. Pla Ortiz de Urbina, P. Ramirez Oyanguren, E.-U. Reuther, P. Sitz, B.G.D. Smart, C.E. Tsoutrelis, W. Vogt, S. Vujec, U. Yamaguchi, J. Yamatomi

The minutes of the last meeting had been circulated in Newsletter 12 and it was agreed that they were a correct record of the meeting.

On matters arising from the minutes it was reported that the press conference held jointly with Euromines and Eurominerals had been held in conjunction with Minetime 99 in Düsseldorf. There was as yet no possibility of commenting on the outcome. The turn out of press representatives at the meeting had been somewhat fewer than one would have liked, and the majority of those who did come came from the mining press and were therefore in no need of being shown the importance of mining. But on the other hand the information pack prepared for the meeting had gone to over 200 journalists and this might still bring benefits.

Discussing this it was agreed that it was a beginning and that we should continue with the effort. We should **plan another such conference for the future, in conjunction with Euromines, and in the not too distant future at that. This was agreed.**

Membership was discussed next and it was agreed that **all retired members should be asked to send in the names of their successors** (if the latter are not already also members) so that they could be asked to join. It was also agreed that the suggestion of Professor Mousset-Jones that membership should be open to all professors in the world should be discussed again at the next meeting, because it was felt that the stage was now being reached where the problems in Europe were merging with those of the rest of the world.

The next item on the agenda was future meetings. It had been agreed in Carrara that the next meeting would be held



in Seville in Spain. However, in the period since the Carrara meeting there had been no indication from Spain of any planning. E-mails from the Secretary General to Professors Manana and Pla had not been answered about the meeting and there was no representative from Spain at the Ekaterinberg meeting to give the delegates any information.

This posed several problems. The Professor organising the next meeting is elected president of the Society. Since it could not be known in their absence, which professor would be responsible for the meeting in Spain, the Society could not elect its president. Secondly it was considered too risky to assume that all would be well with the next years meeting without at least some indication that planning was under way, none of which was available from Spain.

**It was therefore agreed that it was compulsory for any member university hoping to host a conference to be represented at the meeting preceding their proposed one.** It is not possible to plan in a vacuum.

In the light of the above it was decided that the next meeting will not be held in Spain. The alternative of Istanbul was considered as Professor Eskikaya had made a strong case at Carrara to be allowed to host a meeting. Unfortunately, they too were not represented in Ekaterinberg and therefore it was not possible to consider them.

In the light of the above and offer from Prof. de Ruiter of Delft University was accepted. The **Next Meeting** of the Society will therefore be held in **Delft in the Netherlands. It will from 3<sup>rd</sup> to 5<sup>th</sup> July, 2000. However, delegates are expected to arrive on the 1<sup>st</sup> and there will be the usual cultural opportunities on the 2<sup>nd</sup>.**

The meeting for the year 2001 is planned to coincide with the celebrations of the 150<sup>th</sup> anniversary of the Royal School of Mines in London, England. This will be held as follows:

The Celebration of the actual 150 year achievement will take place on Friday and Saturday, 12<sup>th</sup> and 13<sup>th</sup> May 2001. This will be a large celebration involving all departments in the Royal School of Mines and the Mining Professors Society will be just one of the groups attending.

There will be a one-day scientific conference on Friday, 12<sup>th</sup> May, 2001. It is hoped that the mining professors will be present at this event and will attend the reception in the evening.

On Saturday 13<sup>th</sup> May, 2001 there will be a Celebration Event, celebrating 150 years of the Royal School of Mines and ending with a banquet in the evening, probably held in the Dinosaur Hall of the Natural History Museum.

On Sunday, 14<sup>th</sup> May 2001, the Mining Professor's Society meeting will start and as usual will have a social day with organised tours to interesting sites in London.

Monday 15<sup>th</sup> and Tuesday 16<sup>th</sup> will be the days devoted to the actual meeting of the Society.

Finally on Wednesday the 17<sup>th</sup> there is hoped to be an interesting tour, probably by boat down the river Thames to see the Thames Barrier. There is no mining in the immediate vicinity of London, but it is possible that some other technical tour might be planned.

Having selected a site for the next meeting, the new President of the Society was elected and it will be Prof. J.J. de Ruiter. So the **committee of the Society for the next year will consist of Prof de Ruiter, President, Prof Shaw, Secretary General, Prof Dementiev, immediate Past President, Prof. Badino, past president, and Profs Fettweis and Karmis, elected members.**

Under any other business, Prof. Fettweis raised the issue of the scientific work of the Society and Prof. Shaw replied that an updated version of the analysis of existing curricula etc. would be available soon. He explained that this time he had collected wherever he could, the actual content of all the courses and he hoped in the near future, when he has completed the analysis of hours on the same basis as was done previously but with many more universities included, to analyse these syllabuses to establish the actual topics that were, by consensus, the curriculum of the modern mining engineer. With this analysis as background it would then be possible for the Society to start to move things forward and discuss what should be the curriculum in the future.

Prof Fettweis suggested that it might be an idea to set the analysis of the collected data as a thesis topic and have a graduate student perform the work. Prof Shaw said he would be glad to be a co-supervisor and supply the data collected so far to any such student.

That closed the proceedings of the first day and the delegates then went to dinner at the Café U Fontana.

#### Day 2 – Morning

In the morning of the second day the members continued to discuss the problems of mining education. Prof. Wagner started off with a brief resume of what he had said the previous afternoon.

Prof. Shaw pointed out that the British experience was that closing down some mining schools in an attempt to concentrate the students doing mining into the remaining schools did not work as in fact the closure merely convinced students that mining was dying and the overall numbers just dropped.

Prof. de Ruiter suggested that in fact a number of the solutions to the problems highlighted by Prof. Wagner could all be used, in parallel and in conjunction with each other. For example the networking could be between individual universities or between clusters such as the EMC cluster.

The problem of what the actual demand for mining students was in Europe was then highlighted by Prof. Wilke. Discussion followed and it was agreed that industry is loath to give any indication of the numbers it believes it will need in the future. However, with advancing technology and reducing mining activity in the EU in general (with some obvious exception countries) there was no doubt that the number of new mining engineers actually needed each year was dropping steadily. In addition,



industry had always topped up their need for mining engineers with graduates of other disciplines and this would probably continue. This was a factor that would have to be considered in any planning for the future.

Prof Badino reminded us of the changes that had taken place in Italy, which had resulted in the Italian departments getting more students. By changing the name and broadening the field of mining they seemed to have found a solution that worked for them. This could be another approach to add to those suggested by Prof. Wagner.

Prof Matikainen reported that his experience since moving to the Geological Survey was that Industry was reporting to him very favourably on the graduates of the European Mining Course, whom they considered to be better than previous graduates. This seems to indicate that that solution is one which offers great promise.

The broadening of the field to include the environment and rock engineering, tunneling and waste management were being perused in Slovenia in a similar manner to many of the universities in the EU. In Russia on the other hand, things were different as they of course still have a large mining industry. Prof. Puchkov reported that they were introducing new specialities, more attractive to the students, such as environmental and specialisation in gem diamond mining.

Prof. Wilke pointed out that this would not work in the majority of EU universities where the production of a well grounded generalist was generally the norm. This session of the meeting ended with Profs Dementiev and Kozin giving the delegates a much greater insight into conditions in Russia.

At this point the meeting was formally ended.

The members then went to the residence of the Governor of the Sverdlovsk Region, Mr. E. Rossel, where they were given a greeting by the governor and then a lunch reception. After lunch the delegates went to join the meeting of UNESCO being held in Ekaterinberg at the same time. Prof. Dementiev was taking part in the session on Ecology and the delegates all attended that session. It was

very interesting to hear the ecological discussions, and particularly to find that they were successfully getting ecological content into the primary schools around the world. It would be nice if the primary school children could also be taught something of where their materials come from!

This meeting session was followed by an excellent concert given by local Ekaterinberg school children.

From there, together with the delegates to the ecology section of the UNESCO meeting the members went to the Museum of Fine Arts which has a superb collection of cast iron art objects. Finally that day there was a dinner, again jointly with the UNESCO people, which turned into an excellent party.

On Sunday there was a tour of Ekaterinberg followed by a drive to the point where Europe and Asia meet. An interesting trip. In the evening there was a dinner at the House of Actors, hosted by Madame Tupikova. The actors gave the delegates a very good dinner and great entertainment along with it.

On Monday the delegates went on a technical visit to Nizhny Tagil, a mining and metallurgical centre, where, after being greeted by the mayor Mr. N. Didenko, they were taken to see a tailings disposal area, one of the closed open pits now also being used for tailings disposal and the local mining and metallurgical museum. All in all a very interesting day.

On Tuesday, many of the delegates left, but those that remained were taken to the Geological museum.

This was an excellent meeting. Prof. Dementiev and all his team clearly worked very hard on the arrangements and are to be congratulated on a well run meeting at which the Society got a lot of work done and also Packed in a lot of learning of the culture and technology of the Urals region of Russia. Those members of the Society who did not attend missed a very good and worthwhile meeting.