DAILY NEWS

Workshop and Conference on
Logic, Algebra, and Arithmetic

5th issue, October 22, 2003

NEWS:

- Today is the last day of the workshop, and this is the last issue of the Daily News. We enjoyed writing these very much, and we hope you enjoyed reading them as well.

- The real success of the workshop has depended greatly on the work done by IPM staff. Organizing the logistics, keeping the web site current, taking pictures, putting together the newsletter, keeping the computers and the network functional, making sure that the foreign visitors feel at home are just a few of what the staff have been doing. Often they work behind the scenes and many have been here at 7:00 am everyday and others have not left till 1:00 or 2:00 am. The ten who have been directly involved with the workshop were Majid Ashtiani, Nushin Barati, Abbas Eslami, Mohammad Hossein-zadeh Giv, Mandana Mashayekhi, Tanya Parsa, Ali Asghari Rad, Mohsen Rahpeyma, and Nayereh Ramezani. Their pictures are featured in today's Daily News. We thank all of them for a successful workshop.

We asked invited speakers for some information about references for their talk and here is the first reply to this request from Prof. F-V Kuhlmann :

There is an extensive survey paper on the valuation theoretic approach to local uniformization and its relations to the model theory of valued fields:

Valuation theoretic and model theoretic aspects of local uniformization, in:
Herwig Hauser, Joseph Lipman, Frans Oort, Adolfo Quiros (eds.):
Resolution of Singularities - A Research Textbook in Tribute to Oscar Zariski, Progress in Mathematics, Vol. 181, Birkhauser.
An earlier version of this paper can be downloaded at:

http://math.usask.ca/~fvk/Asplul.ps

The paper is a little out of date, because of recent developments. See, for example:
Hagen Knaf and Franz-Viktor Kuhlmann:
Abhyankar places admit local uniformization in any characteristic

http://math.usask.ca/~fvk/locubh9.ps

and:
Hagen Knaf and Franz-Viktor Kuhlmann:
Every place admits local uniformization in a finite extension of the function field, in preparation This paper will soon appear on
The Valuation Theory Home Page:

http://math.usask.ca/fvk/Valth.html

There one can download recent papers on valuation theory and find other useful information. For instance, one can also find the following papers:
Franz-Viktor Kuhlmann:
Elementary properties of power series fields over finite fields,
J. Symb. Logic 66 (2001), 771-791

http://math.usask.ca/~fvk/Elpr.ps

Lou van den Dries and Franz-Viktor Kuhlmann:
Images of additive polynomials in Fq((t)) have the optimal approximation property, Can. Math. Bulletin 45 (2002), 71-79

Daily Program

9:00-10:00	10:00-10:30	10:30-11:30	11:30-11:40	11:40-12:40	12:40-14:00
I. Kalantari (III)	**Coffee Break** 	**Y. L. Ershov (II)**	**Break**	On the works of **A. Macintyre (LvdD, AP, YuLE)**	**Ghormeh Sabzi!** 
14:00-15:00	**15:00-15:10**	**15:10-16:10**	**16:10–16:30**	**16:30-17:30**	
A. Pillay (II)	**Break**	**Problem Session** 	**Coffee Break** 	**Panel Discussion and Closing** 	

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Isfahan

The vast province of Isfahan, is located almost in the centre of Iran between Tehran and Fars. Although it is mostly arid, there are several high mountains (Mount. Karkas at 3899m) and rivers such as the Zayandeh *Rud* [1] that dominate its landscape. A large population lives in the numerous oases that mark the old caravan routes, which linked not only the northwest and southwest of Iran, but crossed the mountain cols to the south, towards Shiraz and the ports on the Persian Gulf.

On approaching the city of Isfahan, leaving behind the great deserts bounded by the mountain chains that enclose the Iranian plateau, one comes upon a wide basin at the bottom of which sleeps the historical city. The most striking thing, at first site, is the contrast between the endless expanse of rock and sand behind, and the huge oasis that lies ahead, with its big trees bearing lush, verdant foliage. Only the bulbous domes of the Mosques show above the canopy of vegetation glowing turquoise-green in the sunshine. The cool blue tiles of Isfahan's Islamic buildings, and the cities majestic bridges, contrast perfectly with the hot dry Iranian countryside around it.

The main monuments of Isfahan are essentially the work of one man; Shah Abbas I (more commonly known as Shah Abbas the Great), who made the town his capital in 1598, and had it rebuilt with large avenues, magnificent gardens and a royal palace. Shah Abbas chose Isfahan as his capital, prompted by the fear for the safety of the old capitals, Tabriz and Qazvin, which were considered too close to the Ottoman Empire.

During his reign, Isfahan was opened up to the outside world with the presence of a number of foreigners at the Safavid court - English and Dutch merchants, European artists, and diplomats hoping to secure alliances against the common Ottoman enemy - and became one of the most glorious cities of its time. The famous half rhyme ***"Isfahan nesf-eh jahan"*** (Isfahan is half the world) was coined in 16th century to express the city's grandeur.

However, its period of glory lasted, for little more than 100 years. An invasion by the Afghans in the 18th Century, hastened the decline and the capital was subsequently transferred to Shiraz and then to Tehran.

***

Isfahan's main monuments are centered around the following areas; the Imam Square (or Royal Square), the Friday Mosque, and the bridges on the Zayandeh Rud. The centre of Isfahan during the Seljuk period was the Friday Mosque. Today, the mosque is like a patchwork of history with a winter hall that is probably Timurid; minarets built by the "Black Sheep" tribe and the interior decorated by the Safavids. In 1598, Shah Abbas decided to shift this centre to the present day Imam Square - according to some, in order to annoy a rich merchant who was reluctant to part with his property.

This Square is one of the largest in the world (500m x 160m) and was the symbolic centre of the Safavid Dynasty and its Empire. It was used for holding festivals, markets and games of polo. The original goal posts from Shah Abbas' polo grounds are still in place today at the far ends of the square.
The square is surrounded on all four sides by long walls with the Imam Mosque in the south, the Mosque of Sheikh Lotfollah in the east, the Ali Qapu Palace in the west and the entrance of the great Bazaar in the

north. It is a very popular spot on summer evenings when the Isfahanis settle down on carpets and bring out their picnics and samovars.
Isfahan's majestic buildings and bridges, elegant gardens, attractive bazaars and teahouses, entrance the visitor into wanting to spend as much time as possible in its relaxing atmosphere.

Here is more information about historical sites of the city of Isfahan.

Ali Qapu: The Royal Palace

The royal palace of Ali Qapu dominates the south eastern side of the central square in Isfahan, formerly called the Meidan-e-Shah. Its name means "The High Gate" and its impressive entranceway was no doubt intended to symbolize the strength and authority of the Safavid monarchs who ruled the country, and, as the posters on the verandah show, this significance is retained even in present times when the square has been renamed Meidan-e-Imam.

The talar or verandah formed an ideal place from which to watch the games of polo which took place in the square and is richly decorated with designs painted on the external plaster at the rear and elaborate tracery in the ceiling. The columns, like those of Chehel Sotoon, were originally encased in mirrored glass to give the impression of a roof floating in the air, and like them are cut from single chenar trees (Platanus orientalis). The lower floors are uninteresting and were clearly used as quarters for guards, and the security of the upper apartments was further enhanced by the uncomfortably steep and narrow stairways which lead up and down within the building.

The interior of the building is compulsively decorated with naturalistic scenes, charmingly painted birds and some figures, many of which have sadly been defaced or damaged over time. These are now being repaired. The famous "Musicians Room" contains elaborate cut-out plaster work depicting all manner and shapes of vases, although it is doubtful whether any could ever actually have been stored there.

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Chehel Sotoon: The Palace of Forty Pillars

This great Savavid Palace was one of nearly 300 built in Isfahan when it was the capital of Iran. It was largely completed under Shah Abbas II (1642-1667), although work may have started on the palace as early as 1598, and is said to derive its name from the pillars which dominate the verandah. There are twenty of these laid out in three rows of six with two additional ones on either side of the main entrance. When these are reflected in the water of the pool the number is made up to forty, the Farsi for which is "chehel". However the number forty is also used to signify a large number as in the Minaret of Chehel Dokhtaran.

The magnificent talar or verandah, is the dominant feature of the palace and the slender columns, over 40m tall, which support it are cut from single chenar trees (platanus orientalis). The roof is also made from chenar tree beams and inset with complex decoration. The surface of much of the throne room is still covered with mirrored glass and this probably also was used on the pillars, as it was in the palace of Ali Qapu, so as to give the appearance of a roof floating in the air.

Looking out over the pool from the Verandah, one is able to appreciate the importance attached historically by Persians to the concept of "talar" which fulfilled their love of sitting in the garden while they were protected from the light and heat.

Behind the verandah there is a small raised throne room which leads into a spacious audience chamber. This is richly decorated with paintings celebrating the heyday of the Safavid dynasty, including a particularly celbrated one of Shah Tahmasb receiving the Mughul Emperor Homayun at a banquet. There are also some paintings of a more secular nature, depicting ladies lying in gardens and hunting scenes, although these have been badly defaced. On the outside of the building there are some particularly interesting pictures of european figures, presumably based on the ambassadors and their retinue who would have stayed in the palace from time to time.

Si-o-Seh Pol: The Bridge of 33 Arches

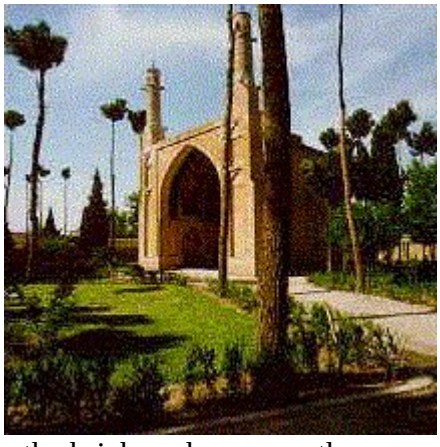
This is probably one of the most famous of Isfahan's bridges. It is made up of a series of 33 arches and was commissioned in 1602 by Shah Abbas I from one of his Generals. The name - Si-o-Seh Pol is derived from the Farsi for 33 (Si-o-Seh). The bridge is built on a series of pontoons of great width and there is a famous tea-house amongst them which is accessible from the southern bank.

The bridge was originally known as the Bridge of Allahverdi Khan who was responsible for its construction. The lower level of 33 arches is surmounted by a second layer, with one arch above each of the pontoons and two arches above the lower single arch, giving it its name and rhythmic appearance. The road along the top is sandwiched between high walls which give some shelter from the wind as well as protection for travellers who can walk along the footpaths on either side to avoid the crush of the traffic.
Originally there were frescoes on the walls which Sir William Ousely, who saw them in 1823, felt to be dangerous for the morals of passers by.

The bridge itself is 295m long and 13.75m wide. The thirty four piers on which it is constructed are 3.49m thick and the arches are 5.57m wide. The southern side of the bridge, where the waters of the Zayandeh run more swiftly has supplementary arches, and it is this that makles them suitable as a tea house. The bridge acted as a springboard for the development of the Khajou Bridge some 50 years later.

Menare Jonban: The Shaking Minarets

The eivan and porch were probably erected shortly after 1316 to cover the grave of Amu Abdollah Soqla, a hermit, who was buried here. The minarets are of later, possibly Safavid, origin, and are largely responsible for the fame of the shrine. Because of the ratio between the height and width of the minarets and the width of the eivan, if you climb into one minaret and shake it, the other will shake in unison. This constant shaking has been responsible for considerable structural damage, although this is locally blamed on British interference!



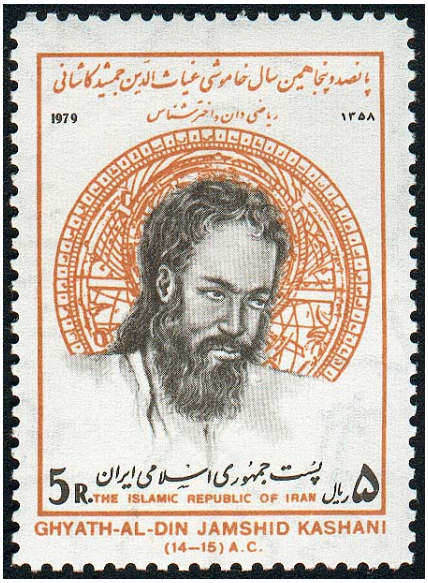
There is another pair of shaking minarets built during the time of Oljeitu, at Oshtorjan, although these have lost the upper two thirds.

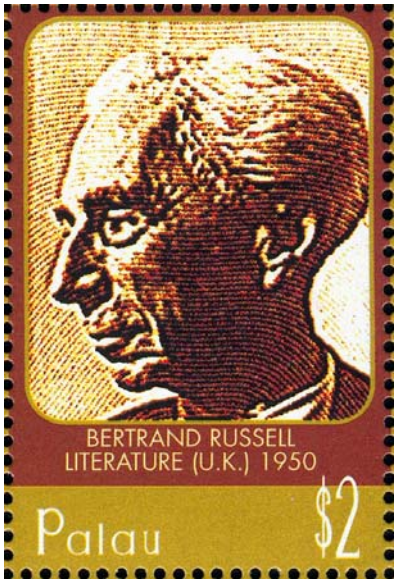
The wooden beams on the upper part of the minarets have been placed there to facilitate the shaking of the minarets, but the presence of wood in the brickwork causes other complications. Shaking is in theory restricted to once every twenty minutes, however, particularly during holidays, there is a constant stream of visitors who experiment with the phenomenon, and the visitor will have ample chance to observe it from ground level, without running the risk of being blamed for any further dereliction.

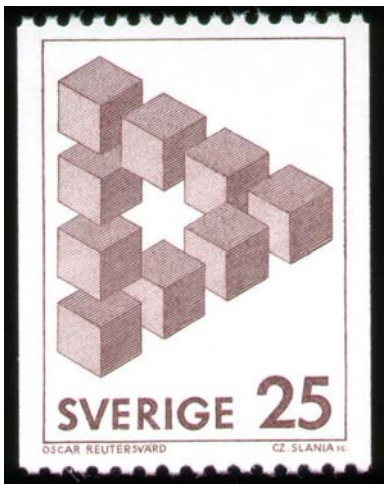
According to Honarfar, the porch is 10 metres high and 10 metres in width, the minarets are 7 metres taller and are 4 metres in circumference.

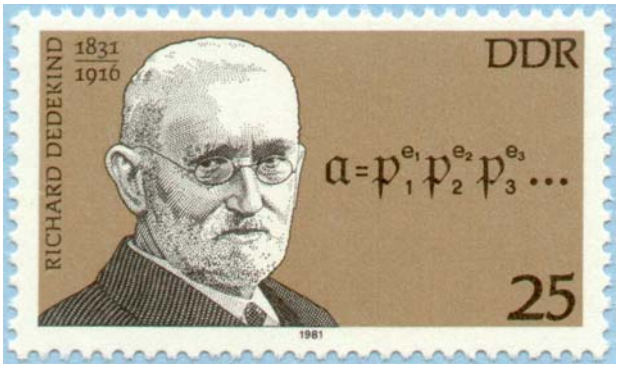

Consequences
classical logic

Images of Mathematicians on Postage Stamps







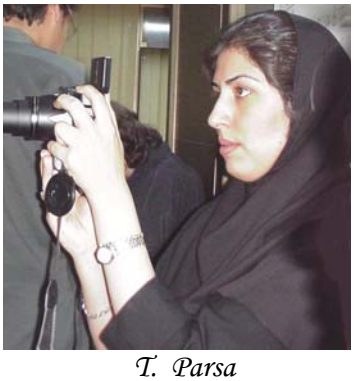


M. Rahpeyma

M. Hossein-zadeh giv

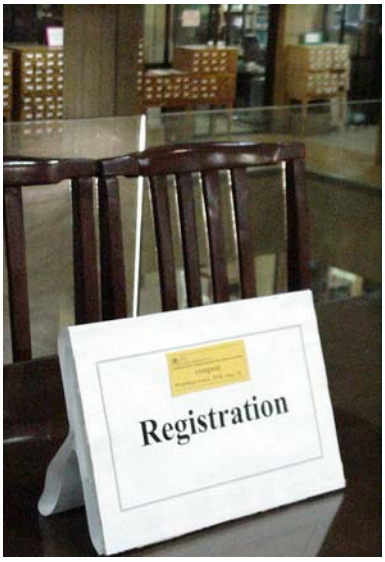
A. Rad

N. Ramezani



T. Parsa

A. Eslami



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