

# 全国第三届组合数学 学术会议留念 1987.4 苏州

ON MATHEMATICS AND TREASURES

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### 1. Introduction.

This note is really an extended book review, and has basically been inspired by conversations with Dorothy Miller and Naomi Whiting Towner, both of whom have recently spent time in different parts of mainland China. I hardly expected that I also would travel to China, but unexpected events do happen. In April of 1987, the Third Chinese Conference on Combinatorial Mathematics took place at the University of Suzhou, situated in the city of Suzhou, about sixty miles from Shanghai. Three Canadian mathematicians, of whom I was one, were asked to give invited addresses at the conference (probably because we are acquainted with a very outstanding research mathematician at the University of Suzhou). Despite considerable misgivings, based on the fact that I did not know a single word of Chinese, I accepted the invitation and flew to Shanghai, on a very comfortable Cathay Pacific flight, with a one-night stopover in Hong Kong.

Fortunately, our friends at the University of Suzhou were extremely caring and hospitable, even by Chinese standards, which are abnormally high. We were met at the airport and taken by van to Suzhou over roads that were extremely busy (most of the traffic consisted of thousands of bicycles; in the next few days in Suzhou, we were to

learn all the intricacies of dodging bicycle traffic when crossing streets; there was an almost permanent "rush hour" as far as bicycles were concerned). The Hotel Suzhou (still bearing the title "Hotel Soochow", a relic from the days before the recent spelling reform) was extremely comfortable and quite the equal of any western tourist hotel. We took three meals a day there, and had to be careful to restrict ourselves; the food was excellent, but there was a great temptation to eat too much, so great was the variety available. Pork and chicken were among the commoner dishes served.

I shall not talk about the mathematics conference, other than to comment on one very nice conference feature. Each conference participant was supplied with a covered teacup containing green Chinese tea (not teabags!); at the opening of the day, our cups were filled with hot water and we could sip tea during the lectures. This was a very pleasant facility. Indeed, a container of hot water was also always available in our hotel room. The containers were so well insulated that the water remained extremely hot for ten or twelve hours, and one could always enjoy a cup of tea.

The problem that the Canadian visitors did not speak Chinese was easily solved. Two of the graduate students in Mathematics, who spoke quite good English, were assigned to us and looked after us for the whole week of the conference. They were invaluable to our enjoyment of the trip, and we had become firm friends with them by the end of the week. These students acted both as guides and interpreters for us, and showed us a great deal of the city of Suzhou and its environs. They also took the opportunity to practise their English on us, and they kept asking questions about the meaning of certain expressions, and how things were normally said in English.

## **2. The City of Suzhou.**

Suzhou is a very old city; indeed, it is celebrating its 2500th anniversary in 1987, an anniversary commemorated by a beautiful set of medallions showing famous local buildings and scenes, such as an imperial mausoleum on Tiger Hill and a mediaeval bridge with guarding lions at the outskirts of the city. In size, Suzhou is small by Chinese standards, having a population of about 600,000 (almost

exactly the same size as Winnipeg). The University has an enrolment of about 5,000 students, most of whom are from the surrounding area (one of our students guides came from Wuxi, about fifty miles away; the other lived in a town which was a twelve-hour bus ride away). Competition for places in the University is keen, and the students are very hardworking; normally, a student will get up about 5.30 a.m., will start classes at 7 o'clock, and will continue in classes until 5 o'clock in the afternoon. Classes are held six days a week.

We found all the faculty, students, and officials whom we met to be uniformly friendly, hospitable, and extremely interested in communication with people in North America. I was struck by the eagerness of the students to practise their English, and by the interest that they showed when I gave a supplementary lecture in one of the regular undergraduate mathematics courses. I was glad to be able to help mathematical communication with mainland China in a small way by donating a number of mathematical journals to the University of Suzhou library.

At the hotel, we were regularly given an official English-language daily newspaper, published in Beijing, and I got the feeling that Chinese society was quite open. Of course, it was an article of faith that socialism (of the Chinese variety) was the only perfect system of government. However, the Thirteenth Congress of the Chinese Communist Party took place while we were in China, and the discussions and amendments that were offered during the conference reminded one of a western parliament in many ways. Any individual could be carefully scrutinized as to whether his implementation of socialism was not capable of improvement; the system was considered to be above reproach, but no individual and no individual's performance was exempt from critical evaluation (at times, the evaluation seemed to be very critical indeed).

Suzhou has been designated by the government as one of the twelve Chinese cities of especial interest for tourism. One reason for this designation is undoubtedly the fact that Suzhou is famous throughout China for its gardens; two of the four leading gardens in China are located in Suzhou. A Chinese garden is somewhat different from what we think of as a garden in North America. There is less

emphasis on the purely botanical element of shrubs, trees, and flowers. The emphasis is rather on the tasteful synthesis, in a relatively small area, of expanses of water, lawns with tree, shrubs, and flowers; summer houses and pavilions; rock formations; hills and vistas. Of the several gardens that we visited, I probably liked best the Garden of the Humble Administrator (of course, the Administrator, in his own time some three centuries ago, was anything but humble).

Another noteworthy feature of Suzhou is its beautiful Buddhist temples. Tourists from Japan and West Germany, as well as visitors from other parts of China, were much in evidence at the temples. I was particularly impressed by the statuary; one temple had five hundred gilded statues of Arhats on display in a subsidiary building (an Arhat is a personage who displayed great holiness in life and was approaching the sanctity of a reincarnation of the Buddha; I suppose that the closest translation of "Arhat" for a westerner would be "Saint").

However, the most fascinating of the attractions of Suzhou lay in its textiles. The province of Jiang-su, in which Suzhou is situated, has always been famous as a silk-growing area, and the production of fine silks has been a tradition in Suzhou for many centuries. We were taken one morning to a "silk factory outlet" where we could see many of the local products on display. I particularly remember two things about the outlet. One was the fact that there was an unbelievable diversity of extremely beautiful products available: ties, tablecloths, kimonos, jackets, doilies, dresser runners, handkerchiefs, to name only a few. I had to restrain myself by thinking of the limitations of my baggage, since the prices were extremely reasonable. The second thing I recall is that there was a foreign exchange outlet right in the shop so that one could use one's Visa card without any difficulty. Naturally, I succumbed to temptation and ended up purchasing quite a few beautiful silk items; I really would have liked to get one of the elegant lounging jackets, but Chinese sizes tend to be considerably smaller than North American sizes, and the largest size available would have been labelled "small" here. However, even more interesting items turned up during our excursion on the succeeding day.

### 3. The Suzhou Embroidery Research Institute.

When we visited one of the Buddhist temples, we had gone (with our student guides) up some of the busy side streets and seen many of the small local shops (shops tend to be small and to specialize in one kind of merchandise). Suzhou is a very prosperous city and the local shops are very well stocked, be it with toys, foodstuffs, or textiles; consequently, we had already seen some fine examples of local embroidery.

However, we had not been able to form any conception of the skill and expertise that we saw at the Suzhou Embroidery Research Institute. The Embroidery Research Institute, which is situated at 262 Jing De Road in Suzhou, is almost a practical textile university. Here we saw a beautiful museum with displays of some of the great achievements of past masters of the art of embroidery; many of the pieces were finished in such fine detail that one could easily have mistaken them for paintings. We also saw the silk workshop and the embroidery work shop, where skilled masters and students were producing embroideries with painstaking care and effort; the time required for the completion of some of the works in progress might range anywhere from two months upwards to years, depending on the size of the work and the elaborateness of the pattern. And we also saw another shop where we could obtain products from the institute, as well as all sorts of collateral material; it was here that I bought one of my most treasured mementos of my trip to China, a book entitled "Treasures of Suzhou Embroidery".

"Treasures of Suzhou Embroidery" is an absolutely beautiful volume with one hundred outstanding colour illustrations of Suzhou embroidery, along with descriptive text. It was compiled by the Jiangsu Handicraft Art Society, and is published, very inexpensively, by

Foreign Languages Press,  
24 Baiwanzhuang Road,  
Beijing,  
Peoples Republic of China.

I certainly recommend "Treasures of Suzhou Embroidery" in the very highest terms. The next best thing to visiting the Embroidery Research Centre is to obtain a copy of this magnificently produced volume; the coloured plates are absolutely gorgeous, and they display the entire scope of Suzhou embroideries. Besides the coloured plates, there is a brief history of embroidery in Suzhou, as well as thumbnail biographies of a dozen of the most notable of the Suzhou embroidery masters of the past and present.

The pictures in "Treasures" are alone worth more than the cost of the book. But the book also contains a wealth of information about past Suzhou masters of embroidery, as well as information about development of many of the varied Suzhou styles of embroidery. I am afraid that my enthusiasm for the book makes this sound more like an advertisement for the book than an account of it. I can not help that; I do want to share with you a very few of the things that I learned from visiting the Embroidery Research Institute and from browsing through the volume of "Treasures".

#### **4. Treasures of Suzhou Embroidery.**

In the last years of the nineteenth century, China had a succession of emperors, but was really ruled (from 1862 until her death in 1908) by the famous Dowager Empress Tze Hsi (whose name is now written Ci Xi); Tze Hsi is familiar to many North American readers, since she has appeared in various historical novels set in the late nineteenth century. In 1904, the Dowager Empress celebrated her seventieth birthday; on this occasion, the distinguished Suzhou embroidery master Shen Yunzhi (1874-1921) embroidered eight pieces as a gift for the ruler. The Empress was delighted with the gift, and wrote the character *shou* (longevity) as a blessing on the master; the latter thereupon changed her name to Shen Shou. Shen Shou later became general embroidery instructor at the imperial court. Many of the works of Shen Shou are shown in "Treasures". Two of her most famous later works were an embroidery portrait entitled "The Queen of Italy", which was given as a state gift from the Chinese Empire to the Italian Kingdom (it won first prize in the embroidery exhibition in Turin), and her embroidery "Portrait of Christ",

showing Christ crowned with thorns, which won first prize in the Panama-Pacific Exhibition of 1913 held in the United States.

Another famous Suzhou master was Yang Shouyu (1896-1981), who created a new style of embroidery called "random stitch embroidery" that employs stitches of varying lengths and directions. The creation of apparently random overlapping areas tends to give a dreamy lifelike effect to the resulting "embroidery painting". There are a number of random stitch embroideries depicted in "Treasures", including Yang Shouyu's own masterpiece "Leda and the Swan", where she goes to Greek mythology for her theme. My own two favourites among the random-stitch embroideries shown in the book are "Riding in an Autumn Forest" and "Autumn in a Birch Forest". Both of these works appear almost like impressionist paintings; indeed, the use of random stitches can perhaps be considered as somewhat of an embroidery analogue of impressionistic painting methods. Random stitch embroidery is particularly effective in producing extremely lifelike portraits; the portraits of the painters Zhang Daqian and Qi Baishi that are reproduced in "Treasures" look every bit as realistic as if they had been done in oils (indeed, several famous oil paintings have been reproduced in embroidery).

One of the most attractive of the many Suzhou embroidery styles is called "double-sided embroidery". In this style, the embroiderer, without leaving any visible knots, creates exactly the same image (in the same colours) on both sides of a piece of silk; the silk is then usually mounted in a glass frame for display. I bought a beautiful silk image of a kitten that was mounted in a circular frame about three inches in diameter; it had taken the embroidery artist about two months to produce the work.

A further refinement of technique occurs in "double-sided embroidery with three differences". This is an advanced style of embroidery in which the artist proceeds just as in double-sided embroidery, except that the images produced on the two sides of the silk are different; one side of the silk may display a kitten, while the other side shows a dog. Obviously, it takes artistry of an extremely high order to produce such an effect. My favourite illustration of "embroidery with three differences" in "Treasures" is a beautiful embroidery

entitled "Parrot and Eagle". Viewed from the one side, you see a parrot; if you rotate the mounting so as to see the other side of the silk, you see an eagle.

Still another type of embroidery illustrated in "Treasures" is "hair embroidery". In this style, the embroidery master uses hairs of different colours (usually black and silver, grey and brown) and uses different stitches; favourite themes are buildings, flora and fauna, and exquisite examples of Chinese calligraphy. Tail and mane hairs from horses are often used for special effects.

"Knot embroidery" is another style, in which a knot is tied after each stitch; the result is to create a picture that appears to be in raised relief. It is particularly effective in producing pictures of flowers; one illustration in "Treasures" shows peonies and crabapples, and one can almost see the raised effect on the page.

"Brocade-like embroidery" is a style in which many colours are used; the resulting picture appears as a highly formalized pattern with strikingly clear and bright colours. A "brocade-style" work such as "After the Fishermen Return", with its highly stylized birds, urns, and fishes, is meant as a formal decoration; it appears almost like a tapestry, and is not meant to be lifelike. Indeed, the power of the picture resides precisely in its strict formalism. The style reminds one a little of the formalism that one sees in some Egyptian tomb paintings.

"Fine embroidery" is now usually called "micro-embroidery", probably because of the twentieth-century proliferation of so many "micro" items such as microcomputers, microchips, microwaves, microsurgery, et cetera. "Micro-embroidery" is reminiscent of fine engraving, fine carving, or fine calligraphy in which the detail is so exquisitely crafted in miniature that one normally requires a magnifying glass to study the fine features of the work. One of the tiny masterpieces reproduced in "Treasures" is a portrait of "The God of Longevity". As we recall from Shen Shou's name, the word for "longevity" is *shou*; in this portrait, the figure of the god is made up of one hundred and seven different renderings of the Chinese char-



acters for *shou*. Of course, this fact is only evident when the portrait is examined under magnification.

Confucius is reported to have said that "A picture is worth ten thousand words", and this maxim is certainly true about a book like "Treasures of Suzhou". A single colour illustration in the volume will, I am sure, leave anyone just as full of enthusiasm for Suzhou embroidery as I am; if I have persuaded any readers to acquire the book, I am sure that they will be just as impressed with it as I am, and I am equally sure that they will be grateful to me for recommending it to them. It is truly a thing of beauty, and one need not be an expert in embroidery to appreciate the beauty.

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