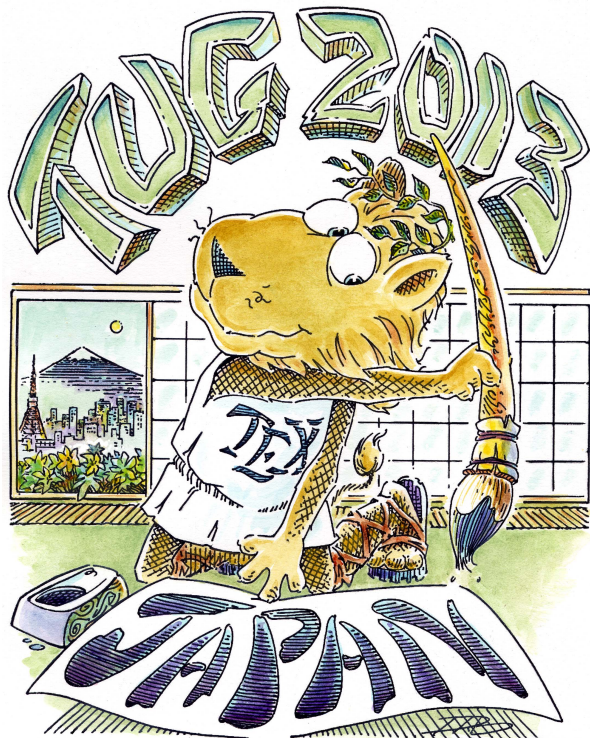


TUG 2013 in Tokyo*

Norbert Preining



In 2013, the TUG conference was held for the first time in Japan, at the University of Tokyo. The following was originally published on my blog [1] and edited for publication. So you want to know what you missed if you weren't able to be there? Here are my very personal recollections!

1 Pre-conference reception

The day before the actual conference started we had a nice reception in the university building of the conference. All kinds of snacks and drinks and warm-up chat made the hours fly by. Although I came straight from my home in Kanazawa and arrived a bit late, I had a wonderful time. Especially for me, meeting all the old friends I haven't seen for long time was a great pleasure.

2 First day

2.1 Morning

The first day started with an opening address of Haruhiko OKUMURA¹ and, via Skype, from the president of TUG, Steve PETER. Steve brought his Ja-

* Thanks to Haruhiko Okumura and Pavneet Arora for providing photos

¹ For consistency we will use *First LAST* for all names here, with apologies to Japanese tradition to write the surname first.

panese to a quasi-near-native level and was honored with big applause for that (and probably also for what he said, but I can't remember that as well).

The first session brought presentations on extensions and reimplementations of T_EX:

- Didier VERNA — TiCL: The prototype
- Shizuya HAKUTA — LISP on T_EX: A LISP interpreter written using T_EX macros
- Andrew MERTZ — A gentle introduction to PythonT_EX

While I am myself a great lover of Lisp, I somehow couldn't crank my brain to think about implementing a typesetting engine in Lisp. Still, fun to hear and see the development over the years. Shizuya HAKUTA's talk was another proof that we can do everything in T_EX — which leaves the question of whether we *should* do everything. Programming Lisp in T_EX doesn't sound like something I will ever want to do. But the technical accomplishment was impressive! Finally, Andrew MERTZ's introduction to PythonT_EX helped a lot and gave a nice and accessible starting point for using Python as an extension in T_EX.

The second session was dedicated to tutorials:

- Yusuke KUROKI — Introduction to tutorials
- Tsutomu YADA and Daniel KOBAYASHI-BETTER — An introduction to the structure of the Japanese writing system

A short introduction to the tutorials by Yusuke KUROKI was followed by an excellent tutorial by Tsutomu YADA and Daniel KOBAYASHI-BETTER on the history, structure, and peculiarities of the Japanese writing system. Filled with examples, old and new, a very enjoyable time. Paired with the insight into Japanese culture given by the combined presentation of a professor and his assistant, it was a memorable experience in all senses. I only hope they can get permission to publish all their presentation slides, since I would very much like to read over them once more.

2.2 Afternoon

The first session in the afternoon brought two talks and a tutorial:

- Didier VERNA — The incredible tale of the author who didn't want to do the publisher's job
- Hans HAGEN — How we try to make working with T_EX comfortable
- Keiichiro SHIKANO — Indexing makes your book perfect

Didier's second talk gave us funny stories about his life as author-editor-fighter for human rights in the publishing business. Filled with anecdotes on how bad it can get when you are working with an in-

competent publisher, he reminded many of us of our own hard times. Hans HAGEN's talk tried to make us more comfortable with \TeX —well, most of us may already be comfortable with it, but I guess his work is very much appreciated since levels of comfort vary. Mine, for example, is very low. The moment I see an `\expandafter` I run away screaming. The indexing tutorial of Keiichiro SHIKANO gave a good overview of problems with indexes in various languages, filled with nice examples of Manga usage for teaching math/statistics.

After another break followed one of the highlights in my opinion (but then, there were so many highlights!), a mixture of talks, each a pearl of its own:

- Jason LEWIS — How I use \LaTeX to make a product catalogue that doesn't look like a dissertation
- Yasuhide MINODA — \TeX in educational institutions
- Wanmin LIU — Online publishing via pdf2htmlEX
- Frank MITTELBAACH — The stony route to complex page layout

Jason LEWIS started off with how he managed to generate a catalog for his wholesale business in down-under, which used a lot of different techniques merged together. I liked how he didn't get religious and presented \TeX , Perl, MS Access and more, mixed together to get his company working. The following talk then blew me away: Yasuhide MINODA presented the installation of \TeX as the main document processor in a preparation school for the University of Tokyo entrance exam. About 200 teachers there were trained in \LaTeX , and now all the products, from homework to internal notes, are done in \LaTeX . That was completely beyond my imagination—a history teacher, or classical Chinese teacher—using \LaTeX . Same for the next talk by Wanmin LIU, who presented a program to convert PDF to HTML. The conversion is not done from the source code, but from the PDF, and the output looks very much—often nearly indistinguishable—from the original PDF. Great work. Finally, one of Frank MITTELBAACH's great talks on how complicated things can be, especially when it comes to multi-column typesetting and the wishlist of users. I didn't know till now that this is so complicated, but now I do.

2.3 Evening

After the successful first day a few people spent the rest of the evening in a nice izakaya (casual pub) with food from the southern parts of Japan (Kyushu and Okinawa), accompanied with lots of Orion beer,

fun talk, and much laughter.

3 Second day

The second day brought a big section on graphics, two excellent tutorials on Japanese typefaces and text layout, a hands-on tutorial on typing Japanese on computers, and plenty of other talks.

3.1 Morning

The morning session started with a series of talks on how to use various graphics packages:

- Masataka KANEKO — Making math textbooks and materials with \TeX + KETpic +hyperlinks
- Alan WETMORE — Wind roses for \TeX documents
- Boris VEYTSMAN & Leila AKHMADEYEVA — Plots in \LaTeX : Gnuplot, Octave, `make`

Myself being a hard-core TikZ -user, I still enjoy seeing other graphics system. In the case of \TeX + KETpic +hyperlinks, I was surprised what can be done. It would have been even more interesting to me to see more actual code, as I want to know whether it is easy to write such code. Alan WETMORE's talk presented us some beautifully designed wind roses. I really appreciate these kinds of talks, since we always have lots of technical talks; some artistic design reminds us that we should go forth and create *beautiful* works of printing. Last in the first session was Boris VEYTSMAN (who gets the prize for the most questions—as far as I can remember he had questions or comments after each talk) and Leila AKHMADEYEVA on how to automate plot generation using `make` and Gnuplot and Octave.

Before lunch we had one tutorial, one I was eagerly awaiting:

- Yumi TAKATA — Japanese typeface design: Similarities and differences from Western typeface design

This tutorial started with an excellent introduction to Japanese writing styles and its history, only slightly overlapping with the tutorial of the first day. After that Yumi TAKATA got into the specifics of type design and how to create the huge amount of glyphs necessary. In the last part she gave a glance at the difficulties of encodings in use. Although I personally would have liked to hear more about the actual design process and technical procedure, this tutorial was one of the highlights for me. All the pieces were very well presented and explained. Thanks!

3.2 Afternoon

The first session in the afternoon brought two talks:

- Aleksandra HANKUS & Zofia WALCZAK — \LaTeX and graphics

- Frank MITTELBACH — \LaTeX 3: Using the layers
Our guests from Poland were very enthusiastic in presenting the history and different options of using graphics in \LaTeX . While there were a few omissions, they did a very good job in reminding us of what else there is besides TikZ . But maybe it was only me who was reminded. Frank MITTELBACH spoke about \LaTeX 3 and how it is structured — or how it will be structured. While the future of \LaTeX 3 is not clear to me, even after that talk, I see the ‘use-now’ packages in ever-growing use in \LaTeX 2 ϵ , so I am confident that we will see further developments.

After a short break (Let me mention here that the coffee breaks were excellent, too. The variety of snacks, cakes, crackers, strange tube-shaped sweets, fruit gelees, and much else I’ve forgotten, really drew the attention of at least all the foreign attendees! Thanks to the team!) another set of two tutorials:

- Masafumi YABE — Japanese text layout:
Basic issues
- Yusuke KUROKI — Some notes on Japanese \TeX t processing

Masafumi YABE is a long-term contributor to several standards of Japanese text layout, and thus the perfect source of detailed information. Layout of the page in a typical Japanese book, details about spacing between Japanese and non-Japanese glyphs, vertical versus horizontal typesetting — you name it. All the important information without losing oneself into the details. After that, Yusuke KUROKI gave a hands-on tutorial on how to actually input Japanese text. Supported by fast-fingered Moe MASUKO, they explained how to input text on smart-phones as well as computers in a variety of ways. He also gave some warnings concerning implementations and spacing, as well as the current state of \TeX engines.

The last session brought two talks, on TeXShop and TeX Live Manager :

- Yusuke TERADA — Development of TeXShop — the past and the future
- Norbert PREINING — TeX Live Manager ’s rare gems: User mode and multiple repository support

First, Yusuke TERADA gave a good overview of the current state of TeXShop , one of the very user-friendly \TeX editors on Mac, and how over the years, thanks to him and other Japanese developers, the capabilities with respect to Japanese typesetting have been improved. His experiments with his own name, containing a special kanji, were very amusing, since it often gets garbled up during operations. I guess for many in the audience seeing these examples finally made them understand how nasty beasts are lying down there in the implementations, and often not

even companies like Apple manage them properly. Unfortunately one talk had to be cancelled, namely “ $\text{TeX Live for Android}$ ”, since the presenter could not attend the conference. A pity, as many had been looking forward to that talk. The last one for the day was my own talk on TeX Live Manager ’s rare gems, user mode and multiple repository support. While I have talked already last year about multiple repositories, a few more features have been added over the year to `tlmgr`. And user mode, although not often used, needed some explanation, too.

3.3 Evening

After the successful second day, not surprisingly, a few people spent the rest of the evening in a nice okonomiyaki place — a bit upmarket and posh, but with excellent food. And Didier finally got his most-beloved Japanese food, a nice Kyoto-style okonomiyaki (a savory Japanese pancake) . . . not to forget the beer.

4 Third day — Excursion

The third day of the conference was dedicated to an excursion to the Tokyo Printing Museum [2] housed in the Toppan Printing Company’s building. Divided into three groups, we took turns in three activities: a guided tour through the museum, a letterpress printing workshop, and a calligraphy workshop.

4.1 Printing museum

After arriving in the museum with the bus and first introduction the three groups started off into their courses. My group started with the guided tour, and I was responsible for translating the guide’s explanations from Japanese to English for our foreign guests. I must apologize here for the poor and incomplete translations.

Before entering the main exhibition space we were guided along a wall filled with replicas of famous objects related to writing. From a copy of the stele of the Code of Hammurabi (the original is in the Louvre), over ancient Chinese and Japanese prints, to a Gutenberg Bible, from French cave drawing over Japanese Hanga art to modern books and ads, all in replicas, all to be touched, all to be experienced. It was the second time that I visited the museum, and I believe this is an interesting and funny idea. Of course it is impossible to have all the originals, but the collection along the timeline creates an interesting effect.

The guided tour was followed by some free time to explore the exhibition space and a lunch at the restaurant in the same building.

4.2 Calligraphy workshop

Satisfied with the morning and with stomachs filled we were off to the calligraphy workshop. An initial introduction and welcome message followed by two teachers showing us the variety of calligraphy by writing the Japanese letter for wind 風, and let us compare their two writings. One I could recognize without any problems, the other on the contrary looked so stylistic that I had no chance of recognizing it—even Japanese colleagues nearby slightly twisted their heads while trying to decipher it.

After that we were shown how to make ink, how to use the brush, some techniques on drawing lines, etc. And then we dived into practice. All of us had a bunch of exercise papers which we filled more or less eagerly with our own inspiration. I for myself was a complete newcomer to calligraphy. I remember the only time I had to write with a brush was during my wedding in a Japanese shrine, and I was so nervous that I did not even manage to write the most simple things, not remotely thinking of calligraphy and style. So I considered this my first trial, and consequently filled page after page with simple kanjis—or kanjis I thought to be simple: 山 (mountain), 岳 (peak), 水 (water), 道 (path), and words like 山岳 (mountains) etc. (I realized that I have an inclination to mountains, not so strangely for those who know of my non-TeX activities!)

After having practiced for some time—and me actually running out of exercise paper due to my frantic writing—we were told that now is the time to create our *masterpieces*. Meaning that we got a nice (and bigger) piece of paper, and a bigger brush, and should decide on something to write, meditate on the meaning of this particular word or sign, and then draw it full of our own feelings. After everyone has finished this and some signing and stamping a seal onto the *masterpieces*, everyone stood up and explained what he wrote and why.

I choose the path 道, with a quite wild look and the character somehow running out of the frame. For me it was a bit like my future, unclear on how and where. Others wrote words related to printing, to feelings, to their families. All very interesting and nice pieces of personality, if not to say of art.

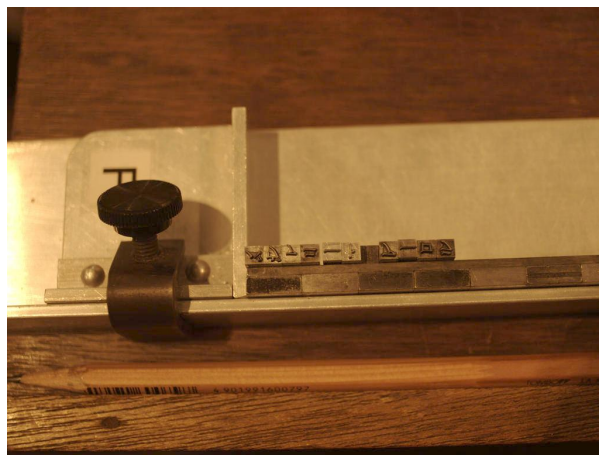


After packing up all our exercise sheets and masterpieces we were sent off with more presents—a

calligraphy written by one of the masters, candies, and origami—and returned to the printing museum.

4.3 Letterpress printing workshop

Returning to the printing museum, we had more free time. Some explored the exhibition space as well as the temporary exhibition on the first floor, some retreated to the coffee house for relaxation. But soon we all gathered together for the last activity of the day, the letterpress printing workshop. We were about to set our names in katakana and print bookmarks with it. We started with putting the metal types into the composing stick. This wasn't so difficult except for the small metal types and my clumsy fingers.



Having managed to compose our names and centering it (and getting my name's spelling corrected—after four years I still have problems), the names were transferred into a bigger frame by the instructor, put into the letterpress printing machine, and after some trial runs we were ready to print our bookmarks. Splitting them carefully and packaging them up, we had to wait for a day or so, but now all of us have three beautifully printed bookmarks with our names—self-made!



Having finished the printing workshop, we still had time to explore the surroundings of the workshop room, where many strange and disturbing things could be found: Metal type of Japanese kana at 3.5pt—that is so small that I couldn't even see the letters on it, never mind trying to move them. Also real type, I mean not electronic fonts that have been downloaded, but real metal types of hundreds of fonts. How beautiful. I could have spent hours digging through old fonts, and trying to print all kind of things by myself.



But soon we had to leave for the last part, a movie of typesetting math—in the old style. The printing museum personally set a page of mathematics in old style for us, made a movie and—incredible—a 3D animation how the setting was done—in which order, which pieces come in when. We were all deeply impressed, both by the difficulty of setting math by that method, and the love of detail with which they have produced the movies. Here you see the final metal frame used to print the mathematics.



Filled with lots of new experiences we left the museum at around 6 pm for the conference and hotel

area. From the feedback we got already on the bus, everyone really enjoyed the time.

4.4 Evening

After this once again fully packed day, I ventured out with other organizers and spent the evening over excellent fish, delicious sake, long discussions about typography, the conference, and much more.

5 Last day

The last day brought a wild mixture of math, fonts, touching various aspects and exhibiting the power of $\text{T}_{\text{E}}\text{X}$ & friends far from its original target.

5.1 Morning

The morning session started with two talks and two short tutorials related to Japanese typesetting and typography:

- Matthew SKALA — Tsukurimashou: A Japanese-language font meta-family
- Takuji TANAKA — up $\text{T}_{\text{E}}\text{X}$: Unicode version of p $\text{T}_{\text{E}}\text{X}$ with CJK extensions
- Hiroki KANOU — On the possibility of automatic balancing of ideographic character design
- Haruhiko OKUMURA — Japanese typesetting for the mathematically oriented

In the first talk Matthew SKALA introduced the audience in a very humorous style to the components of kanji, and how he is using them in building up a Metafont family for Japanese (and more). Enriched with lots of Manga-like cartoons and episodes he not only presented the essentials of his Tsukurimashou project, but also additional tools for searching in large kanji-corpora for constituents. For a practical one-man-project, a very impressive achievement. The next talk also featured a one-man project: Takuji TANAKA's up $\text{T}_{\text{E}}\text{X}$, a Unicode-enabled version of p $\text{T}_{\text{E}}\text{X}$, the main typesetting engine in Japan. I myself am deeply in gratitude to TANAKA-san, as I use up $\text{T}_{\text{E}}\text{X}$ almost exclusively. Many of my files are UTF-8, and in addition contain not only ASCII, but also German umlauts and other Latin-1 characters. A breeze with up $\text{T}_{\text{E}}\text{X}$ —big thanks!

After the two regular talks a scheduled presentation on the history of $\text{T}_{\text{E}}\text{X}$ in China unfortunately had to be canceled due to visa problems. Two Japanese colleagues graciously stepped forward to give short tutorials. The first was by Hiroki KANOU on automatic balancing in character design. I think the few participants included in the audience very much enjoyed the presentation, as it gave interesting points on how to balance stroke width in ideographic characters to achieve a balanced output. What type

designers for Latin characters normally do on a one-by-one basis requires some approach of automation to achieve in the context of thousands of ideographs. The second tutorial by Haruhiko OKUMURA recapitulated the spacing aspect of the tutorial on Japanese text layout from the second day, but targeting mathematicians, by providing a representation of the spacing rules compressed into a simple table.

After the obligatory group photo we had another session before lunch with two excellent presentations on the power of \TeX :

- Ken NAKANO & Hajime KOBAYASHI — A case study: Typesetting old documents of Japan
- Jin-Hwan CHO — A case study on \TeX 's superior power: Giving different colors to building blocks of Korean syllables

Ken NAKANO told us about the great pains their company has to go through to typeset old documents, with all the scientific necessity of corrections, corrections of corrections, corrections of corrections of corrections ... and so on. Packaging all of these peculiarities into macros and producing an actual well-printed book was very impressive. During my studies of Latin and Greek I was often confronted with ‘critical apparatus’ as it is called, pages of references and citations and quotations. But what was shown there surpassed the worst critical apparatus I have ever seen.

The last talk before lunch was by our honored guest from Korea, Jin-Hwan CHO, well known for his contributions to various Korean \TeX packages as well as the main author of `dvipdfmx`, widely used not only in Korea but also in Japan. His talk gave a short introduction to the Hangul characters and their formation, followed by an excursion into auto-composition of all the Hangul characters from relatively few components. And as a consequence the ability to display the parts of Hangul ideographs in different colors, something completely unthinkable with any other software. It was particularly interesting for me to see the relation between the first talk and this one, both touching the problem of how to compose glyphs from simpler components.

5.2 Afternoon

The first session in the afternoon brought three talks:

- Michael COHEN & Boris VEYTSMAN — The multibliography package
- Pavneet ARORA — TANSU: A workflow for cabinet layout
- John PLAICE — Typesetting and layout in multiple directions

Michel COHEN and Boris VEYTSMAN presented a new approach to bibliographies, based on the idea

that having references sorted in only one way might not be sufficient, and differently sorted views onto the references should be provided. I think it an excellent idea, particularly for online publications where page limits are not so strict, especially for all those bibliographies with hundreds of entries. I see a great potential for this idea, but would like to see it integrated into the `biblatex` package.

Pavneet ARORA gave us a view into a different world, the world of interior design, especially quick sketch-ups of cabinets using \TeX and friends. Integrating many different tools (YAML, \TeX , Asymptote, etc.) into a professional workflow.

Before the break, John PLAICE, renowned as a co-creator of Ω , guided us through the intricacies of typesetting directions and mixing them. With his long years of experience in dealing with these problems, John described a concise and clear blueprint for complete support of all necessary text directions, as well as guidance in the problems of mixing directions. His examples were very elaborate — but most impressive was how fast and without any failure he could pronounce the word ‘pneumonoultramicroscopicsilicovolcanoconiosis’.

After another short break, we had the last session of this conference:

- Ross MOORE — Making mathematical content accessible using Tagged PDF and \LaTeX
- Hans HAGEN — How we move(d) on with math
- Shinsaku FUJITA — The $\XMT\TeX$ system for publishing interdisciplinary chemistry/mathematics books
- Norbert PREINING — Distributing \TeX and friends: Methods, pitfalls, advice

Accessibility is more and more often a requirement for many publications. Ross MOORE gave us a view of what is possible with tagging PDFs for proper audio reproduction. The demonstrations were quite funny, because the Adobe Acrobat program seems to randomly decide which document to read out loud, and then stick to it for a long time. Still, it was impressive to see what difference can be achieved in the audio output of the PDF content by adding some features.

After this multimedia experience we returned to the original virtues of \TeX in Hans HAGEN’s talk on math typesetting. Recapitulating the history and presenting the current status, Hans came to the sad conclusion that \TeX is no longer paving the way, but running behind other players. But he didn’t leave us completely without hope. As the cards are remixed several times, \TeX might jump forward again with new techniques mixing OpenType features with the layout excellence of \TeX .

The following talk by Shinsaku FUJITA on the \LaTeX system gave insights into the development and usage of his drawing package for chemical structural formulas. Enriched with many examples from his books, it was a great pleasure to see \LaTeX in action.

I myself had the honor to give the last talk of the conference on distributing \TeX Live. I tried to give a quick overview of what distributors (such as Debian, Red Hat, SuSE, ...) have to take care for when re-packaging \TeX Live for the respective distributions. Since I am involved in both the upstream development of \TeX Live as well as the Debian re-packaging of \TeX Live, I thought it would be good to sum up common mistakes and errors which we encounter.

Another very full day was finished, and I also had the honor to give the closing remarks.

6 Closing

As it was my honor to close the conference I want to convey the same thoughts I tried to express during the closing address. Let us start with the hard facts: 141 active participants (at least), 35 interesting and funny talks, an excursion full of experiences, and not to forget the long chats during breaks, dinner, at any free time. It might be one of the best-attended TUG conferences ever. I have only been at TUG 2012 in Boston, and only checked a few of the former conferences, but thanks to the huge interest in the Japanese \TeX community the number of participants exceeded all our expectations.

And not only the number of participants, but also the number of presentations — 35, some of them 1.5 hr tutorials — made for long and dense days. And in spite of this challenging schedule, most participants attended virtually all the talks, even when we finished around 8pm. The variety of talks was not less than at any other \TeX conference, something I really appreciate — one never gets bored.

6.1 Conference dinner

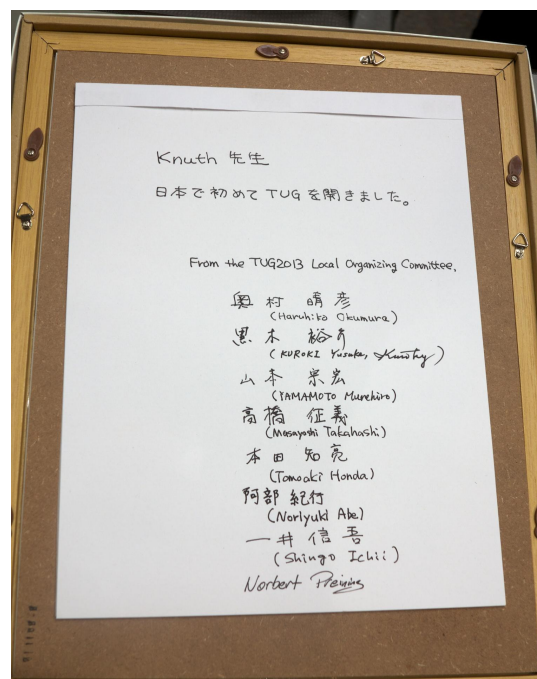
After all the formal talks and greetings we changed over to another event, the conference dinner. Our excellent guide during the evening, Harumi ASE, led us through a program of speeches by Nelson BEEBE, various toasts by Shinsaku FUJITA, greetings from Haruhiko OKUMURA as the chair of the organizing committee, as well as a closing message by Barbara BEETON. All accompanied by excellent food and lots of drinks. Even after the Sambon-jime led by Yusuke KUROKI the drinking and partying continued until we had to leave the dinner location. A memorable conference dinner for a memorable conference!

Norbert Preining

6.2 At the end

It was the first time that the TUG conference came to Japan, and I remember well the first reaction of my Japanese colleagues to this proposal: ‘The Japanese side is not ready for this.’ I think the conference showed all of us, the guests as well as the hosts, that the Japanese \TeX users were in fact very well prepared. And for this my gratitude goes to all the Japanese \TeX users, the organizing committee, the excellent lecturers and tutorial speakers, and all the participants.

My hope — and my feeling tells me I am not completely wrong — is that every participant could take home some great idea, some new knowledge, something that will improve, extend, diversify our \TeX experience in the long run. For me personally, this was definitely the case.



The organizing committee sent the original poster for the conference to DEK, with this inscription.

References

- [1] Blog — there and back again.
<http://www.preining.info/blog/>.
- [2] Tokyo printing museum.
<http://www.printing-museum.org/en/>.

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