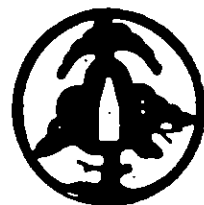


THE TO-KEN SOCIETY OF GREAT BRITAIN  
for the Study and Preservation of Japanese Swords and Fittings



HON. PRESIDENT. B.W. ROBINSON, M.A., B.LITT.

SECRETARY. H. M. HUTCHINSON, 141 NORK WAY, BANSTEAD, SURREY.

PROGRAMME NO. 72

JANUARY - FEBRUARY, 1973

NEXT MEETING

MONDAY 8th January, 7.30 p.m. at the Princess Louise, High Holborn. To get there:- Underground to Holborn, turn west, cross Kingsway and the P.L. is 50 yards down on the left hand side.

FOLLOWING MEETING:

MONDAY 5th February at the Princess Louise, 7.30 p.m.

SUBJECTS:

8th January: Dallas by Bon Dale

5th February: Kantei Nyusatsu

CHAIRMAN'S REPORT: by John Anderson

The Chairman once again puts pen to paper to offer his report which as usual is more of a rambling letter than a report.

Firstly, it may be noticed (but most likely not) that my recent talk on cleaning and restoring armour has not been published in the programme. The reason is that, purely coincidentally, I received from Ian Bottomley an article on this subject which he hopes to publish in this programme at some later date. As his article covers the same ground plus some, I don't intend to forestall him in any way. Further to my talk I met a collector and was invited to see a collection of armour, some of which had passed through the hands of somebody (I am not sure whether a dealer or collector) who had spent a vast amount of time ruining what had, until he got hold of it, been very reasonable if dirty armour. He has spent a vast amount of time and effort in painting helmet bowls, dyeing lacing and fabric, stripping out lacing and replacing with football boot lacing, replacing roses on masks and the lavish use of what seems to be fibre glass to rebuild bits including the construction of some very clever helmet.

crests. These latter are the least detrimental of his activities as they are delightful pieces of imagination and can be simply removed. However, the point I am trying to make is this; here we have a case of someone who has considerable ability and patience who if he had sought guidance could have channeled this ability into a worthwhile restoration of the armour in his possession. The present owner has about three times the work he would have had if these pieces had been left alone and in some cases there is just nothing that can be done.

The moral to this story is of course quite clear and must necessarily go for collectors of the sword as well - if in the slightest doubt, leave well alone and seek advice. The objects in our possession are ours only by right of our present ownership and irrespective of their present monetary value are irreplaceable from a historical standpoint.

#### NOVEMBER MEETING

New member Peter Stratton was welcomed to the meeting and we trust that he will become a regular visitor.

Visitors included George Durac of Phoenix Gallery and Colin Rolland, once more down from Scotland with his kitbag full of goodies.

Sydney has received a letter from the B.B.C. regarding the Tameshigiri film for T.V. in which he ably assisted. The film is called "The Japanese Sword", which will be programme No.4 of 'The Ascent of Man' series, to be released next year.

A preview early in the New Year, possibly at Lime Grove, is in the offing. I understand the theatre has a seating capacity of 25.

The main point - Sydney has further publicised our cause by obtaining a written credit on the film, to the effect - "The B.B.C. wishes to thank the TO-KEN SOCIETY OF GREAT BRITAIN... etc. Syd then went on to talk about his recent holiday which included sword seeing in Corfu (this has been covered in a separate article in the programme). It really is amazing where the Japanese art form turns up.

A brief discussion followed on Clive Wheeler's book - Fortune Telling from Japanese Swords. Apparently marks and flaws on the blade are used to signify good or bad fortune. For instance, a moon shaped mark facing the point is considered good luck. So take a good look at all those blisters and cracks, you could have a very lucky sword, and take along a copy of the book just to convince the lucky buyer.

JOHN ANDERSON then gave his talk on Cleaning and Restoration of Armour.

Since a full article is being produced for this programme I will summarise the main items of interest.

John opened his talk by showing, what I believe to be a Koshozan-hoshi-kabuto (high sided multiple helmet with projecting rivets). One half had been restored and the other half left in its original crummy condition. It is interesting to note that this same helmet in the same condition was shown at Shorrolds Road - we left there in '66 !! John did emphasise however that patience and care are the by-words in restoration.

Basically procedure is as follows:-

Strip helmet as far as possible noting positions of individual pins and parts so they can be returned to original positions. Clean rust carefully with chisel and wire wool - brush and wash with meths to remove oil - brush and finish with clear lacquer. Should russet be gone then various colourings were suggested; iodine, hypo to gun barrel browning. Great care must be used as the iron of individual helmets will react differently. Good quality helmets are easier to clean than poor. Pins after careful extraction may be heat treated to afford easy replacement, heat to red and then quench (this softens copper). Lacings, if good, a light hoover should suffice if not a carpet shampoo that dries to a powder. Washing not generally recommended, colour fastness is not guaranteed. Lacquer - wash with meths or spirit - polish with wax.

Restoration and cleaning should be kept to producing the original condition as far as possible. Filling and building up with fibre glass etc. may, after many long hours, produce a better looking helmet, but it will make it a useless piece - a 20th Century replica in fact.

ANY OTHER BUSINESS consisted of considerable cross-talk on the most blood-thirsty of Japanese films. It was generally accepted that TENCHU gave the most blood for money and included crucifixion amongst other niceities. RED LION was considered difficult to comprehend, was it comic or serious.

SANJURO, an excellent film with superb sword play, was voted the film we should try to obtain for showing at a later date.

Swords were in abundance, so many in fact it was impossible to note all of them. However, here are a few:

Ted Newman showed a fine tanto in excellent taste:-

Blade - Hira-tsukuri about 11" with gomabashi. Hada, mokume with traces of ayasugi. Hamon of suguha. Nakago with 2 mekugi ana and illegible signature. Possibly Yamashiro Den.

Koshirae - Tsuka in black same with white cord binding. Gilded Nenuki representing Sode - Fuchi Kashira, Kozuka all silver en suite. Thin Iron Tsuba designed as a cloud. Saya in red lacquer with gold clouds and Hoho birds.

David Parker - a naginata with a very wild Notore Midare hamon and Kaen boshi. Signed "Shimosa Dayo Fujiwara Kanemasa" on the omote and on the ura "Echizen no ju". (A mid 17th century smith). An interesting piece.

Federico Luciano - an interesting katana polished by an Italian - it seemed much too vivid but the detail was clear. Hamon of Suguha in nioi with a violent midare at the mono-uchi, ko maru boshi and mokume hada. Similar in style to Kunisuke (Settsu) early Shinto. Unsigned. Koshirae - Fuchi Kashira & Kojiri en suite of dragons, Higo school.

Another blade - A Shin Shinto Katana with choji hamon just visible, signed omote "Bizen no Kuni Okayama ju Sukemori". Ura - One lucky day Tempo 5 (1835).

All mounts en suite, Higo style inlay gold wire depicting flowers and butterflies. Tsuba of iron with a butterfly in negative silhouette and silver rim.

Brian Carver - Wakizashi mounted as Kaigunto.

One very seldom sees a good blade mounted in this fashion. This was the exception. Hamon ko midare with some sunagashi in yokiba. Small groups of nie scattered along hamon. Hada in ko itame. Boshi O Maru.

Sorry if I missed your sword but there were far too many to describe in one issue of this programme.

#### DECEMBER

A welcome was extended to Bill Gray, a Birmingham member, who is now Chairman of the newly formed Birmingham Nippon-To Society - the history of which is as follows:

#### Birmingham Nippon-To Society

For some months now 5 or 6 To-Ken members have been meeting at different houses to discuss Japanese Arms and Armour. At one of these meetings it was decided to put an advert in the local paper and see how many people could be induced to attend

a meeting held in a public house, with the object of forming a Birmingham Nippon-To Society.

Shortly after the advert was placed, three local newspapers and the B.B.C. contacted them and all produced features and broadcasts on the proposed society and its aims.

The inaugural meeting was held on the 13th November at the 'Kings Head', Hagley Road, B'ham and a leaflet, briefly describing the sword and the enthusiasm that grips us collectors, was handed out to the 16 people who attended. Many of those present brought swords along. In spite of the sparse attendance, the meeting was a great success and the following committee, all To-Ken members, were elected.

Chairman - Bill Gray  
Secretary - Roy Leary  
Treasurer - Clive Richards

Bill Gray then gave out an open invite to any member who is prepared to assist by giving a talk etc. and get the new branch under way. A meal and rail fare is offered to any speaker - visiting guests will also be very welcome.

We also had the pleasure of seeing Arthur Kingdom from Swindon; Clive Richards from Birmingham; Tom Long from California; Mr. Monkman, Colin Nun and a very familiar face - Lt. Col. Smith.

#### STOLEN SWORDS

Sydney Divers notified the meeting that 4 swords and a gun had been stolen from Tudor Bill. What with the steady increase in value of our treasured possessions and the ever open eye of those members of the population who acquire items of value without payment, it is perhaps wise to take the advice of John Anderson and overhaul our security arrangements, or as some members do - keep them in a bank vault.

However, each sword is individual and can be readily recognised. All members are requested to keep a look out for these stolen swords and to inform Sid - Tudor Bill or the Police should any turn up.

We have been fairly lucky in regaining lost items. Bon Dale did get his back after 10 years.

BON DALE - Welcome back from the woolly wilds of Dallas.

At the next meeting he will give a talk on the Dallas shinsa and illustrate it with slides - should they come out. Any rate he poured forth the following choice morsels as appetisers:

The Dallas shinsa was a tremendous piece of organisation

which could be compared from the planning point to our Ashmoleum function. That was planned for 1 year to open one month. Dallas was 2 years work for 5 days achievement.

Dr. Keith Evans the main organiser had 2000 entries for the shinsa, one man had 200 blades submitted. If anything, it was over-successful, with the Shinsa panel working like a production line. The panel worked from 8.30 to 6 approx. with coffee and sandwiches to sustain them. Bon mentions the speed of judgement was most surprising, this was the factor that was most noticeable at a Japanese Shinsa I attended. Each man has literally a stack of blades to wade through each day at the rate of (1 a minute?). Seeing is believing.

A Kiomaro somewhat nicked, that had passed through the hands of Bon and Allan Bale, was on show in perfect condition and rated Juyo. Also a Suyasugu 1340-60 that Bon had bought 12-15 years ago at £6 and sold at £8 was now in all its glory as Juyo. "Oh, what price knowledge". Apparently American collectors consider the talk in our programme is quaint but at least they like it.

They use the term 'Tiger' to describe people who use the correct words in the sword world. It has been said many times that you cannot learn properly unless you use the correct terms. With this usage you can talk with anyone - no matter what language, and be understood. Any technical subject follows the same rule - first learn the definitions and terminology and you are well on your way. The finest glossary of sword terms, I would say, is Hawleys Volume Two, Japanese Sword Smiths.

Bon then brought up the visit of Mr. Sasano & Ikeda and the misunderstandings and mix up that occurred mainly over the expected cost per blade. The visit finally became a private one and some members were invited along with their blades for Kontei, no charge was made.

Ed: I would like to round off this subject with a letter from John Harding

#### JOHN HARDING'S LETTER

Dear Members,

It has been my practise to disregard the nonsense and backbiting that seems to be the main topic in the Token programme, if it were not so sad it would be extremely funny.

However, the recent inuendos about the Shinsa need some reply. Mr. Ikeda and Mr. Sasano went to England on a private visit, it was suggested that while they were there they could give an informal Shinsa, and a questions and answers session for the benefit of Token members. It was never suggested that a charge of any kind would be made. £15. per sword seems to be a figment of Mr. Baxter's imagination - which appears vivid to

say the least. Perhaps Mr. Baxter is referring to the \$15 - charged at the Dallas official Shinsa.

In any event the date of the gentlemen's arrival was given by me to Syd Divers - at a Token meeting - four months before they arrived.

The Society were given a chance to study - and blew it!  
John Harding.

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Ed. This now closes the matter.

SYDNEY DIVERS explained to the meeting that Hawley has a computer programmed to Shin Shinto.

You feed in the relevant information and out comes the name of the smith. Sounds fantastic, but then so would the programming be for such a venture and one's input information would have to be absolutely accurate. How does one achieve this when even experts agree to disagree. Still, the results will decide, we can only surmise.

#### TALK - ALAN BALE - IRON TSUBA SCHOOLS

Good iron tsuba has been produced at Kyoto from 1400 down to the Edo period. Early works were elegant and very thin, round and with simple designs.

UMETADA SCHOOL originated in Kyoto in the early 16th century from a family of swordsmiths. Myoju starting the Tsuba offshoot. The iron was of very good quality and well worked with skilful chiselling and true inlay. Mitsutada was the first to sign.

SHOAMI SCHOOL. Ko Shoami in Katchu shi style was produced from 1400. About 1600 the school spread out and branches were established in Kyoto, Aizu, Shonai, Akita, Iyo, Bizen etc. Characteristics:- Large hitsuana - irregular piercing; piercing for Kogai, occasional odd shapes. When in doubt this is the usual school for work to be attributed to.

The best work came from Kyoto and Akita. Some works look like good Higo and Owari.

CHOSHU SCHOOL - an offshoot of Shoami and influenced by both Shoami and Umetada schools. Choshu other than iron is very rare. Most works have a very rich black patination. Generally rather flat with Chinese landscapes and somewhat inferior.

GENERAL. Good colour patination depends on quality of iron and varies with the different schools.

Grain tends to show itself as irregularities in the thickness of the Tsuba. Good points to look for are bones on the edges and slight splits in Hitsuana.

When cleaning - do not heat, as this can ruin the work

completely. Wash with a soap based detergent, dry off and swab with clove oil and gently break up rust - remove with a piece of horn, then finish off with antique wax.

For those who wish to produce the beautiful polish as practised by the Japanese, you need a soft cloth and many many hours of patient rubbing - it takes a great deal of time but the results are excellent.

PRINCESS LOUISE. Will all members please note that the Princess Louise has been booked for our meetings on the first Monday of each month throughout the year. The one exception being January when it is the second Monday.

CORFU MUSEUM - Sydney Divers

I have just returned from a Mediterranean cruise where, due to the ship hitting its side in the Corinth Canal and blowing up a condenser in the engine room, we had to pull into Corfu for repairs which took 2 days. I recalled Andrew Ford saying something about a museum of oriental art on the island. This took about 2 hours to find and eventually it turned out to be only 5 minutes walk from the ship!

It is housed in the Old Royal Palace where I understand Prince Philip was born. It all looks very dingy with no furniture or furnishings but in its heyday must have been quite a place. There are 8 rooms on the landing, 7 of them being devoted to Sino-Japanese art. There are 2 tachi, 14 katana and/or wakizashi and 2 dirks. All are mounted. There are two people looking after the place and they wouldn't let me examine the swords. I got the impression that they had never been out of their scabbards.

There are 2 bows, a few short arrows, an arrow case, 2 helmets, 2 mempo and 1 dō. All in poor condition. Quality well below average (swords included) of what one sees at London auctions.

The tsuba are displayed in a butterfly cabinet. All iron - 66 altogether - some quite good but only 4 early ones. There were 3 fuchi kashira, 1 kashira on its own, 6 kozuka - only 1 good.

The rest of the collection comprised a series of buddhas, a nice lot of mirrors (some early), a very fine considerable collection of cloisonne vases and small pots and boxes. There were a number of kakemono, ceramic vases and 4 woodcut print books hand coloured. That's the lot, as far as Japanese art was concerned. Most of the collection was devoted to Chinese art and there was a multitude of fine snuff bottles, large Ming vases and so on. There are no catalogues or postcards and, on enquiry, apparently none have ever been produced.



My wife and I were the only two people there at the time but just as we left a party of school kids descended on the place. On enquiry back at the ship, we found out that this museum is used as a "filler" on conducted tours of the island if it is raining!

In all, very disappointing, though it does surprise one to come across Japanese swords on a small semi-tropical island.

### STOLEN SWORDS

Your co-operation is requested in the recovery of the undermentioned items. Information to Tudor-Williams or Sydney Divers.

Japanese Swords missing, supposed stolen, from  
New Lindsey, Southover, Burwash.

1. Katana (long sword) in plain wooden scabbard (shirasaya). The latter bearing the ink inscription "Presented to Lt.Col. Churchill by ? ? Commander of the Seki Arsenal" with a date. This is a "Murata-to" & therefore unusual and very easily recognisable. The blade is in mint condition and bears a polishers signature under the habaki - also unusual.
2. Tachi (long sword) in lacquered leather covered scabbard, orange/brown colour with black linear design. Blade signed "- - - - San-zen Nagamichi" with pronounced fumbari and deep groove on both sides. Condition fair. Fully mounted. Scabbard with only one hanger (Satsuma style) chape and scabbard mouth mount missing, gilded copper mounts, design of leaves and tendrils in low relief, circular gilded copper tsuba (ishime surface) with dai seppa covering holes for kodzuka & kogai. Hilt bound with green and white tsuka-ito over blackened same, with the unusual characteristic that all the crossovers are the same way, white over green. Flower menuki. Tachi type kashira.
3. Katana (long sword) in black lacquer scabbard with some whitish blooming. Blade unsigned, fair condition, and typical Kanemoto style san-bon-sugi yakiba and tang. No groove. Hilt bound in black braid over normal same, menuki horses, Tachi type kashira. Very fine Mokko shaped plain iron tsuba with no design but marked graining. There is also an olive-green sageo.
4. Efu-tachi (Court ceremonial sword) very florid gilded brass mounts (incomplete) somewhat damaged gold-flecked red lacquer scabbard (some longitudinal grooves scratched in the mid-section). Blade poor, flawed and of no great account.

5. Matchlock gun. About five feet long, usual Japanese pattern. Complete and lock working. Design of animals and flowers in gilt wire. Signed. Bell shaped muzzle. 3 or 4 stains on the off-side of the stock at butt end.

LETTER - IAN ROBERTSON

Yesterday the most incredible exhibition of Japanese Swords, lent to me so very kindly by Mr. Cottis, was dismantled. It was truly the show of the year, which would not have taken place without the generosity and helpfulness of the TOKEN Society.

I owe all my thanks and the pleasure that I have had in setting this Exhibition up, to Mr. Cottis, who has unstintingly given up many many hours of his time in helping me with this work.

It really was an excellent Exhibition to which many people came and I cannot thank him enough for his stirring work and the lending of his all-embracing fine collection that has been on show here for nearly six weeks.

It makes me very pleased and proud that I can rely on such an excellent and friendly society. After all this is the society of England and I want to thank all those in the Token Society who made this exhibition possible very sincerely for something that I have immensely enjoyed doing and that so many people have had the opportunity to see the magnificent skill and nature of this great art.

Ed: Well done Peter.

CORRECTION to letter by HAN BIN SIONG

Programme 71, page 19, refers to the sword of Lieutenant General Nishioeda, for "yellow tassels attached to a brown and fawn udenukio" read:- "yellow tassels attached to a red and fawn udenukio".

IMPORTANT NOTICE

Will all readers please note the address of the Programme Secretary and send all the letters and information you can possibly manage to:

TONY CHAPMAN  
71, INGAWAY,  
BASILDON, ESSEX.

I have already warned the local Post Office of the expected flood!

KANTEI NYUSATSU. Extract from Nihon to Newsletter.

The literal translation for this term is 'bid for judging'. For those who have had some background in the study of Japanese sword, we are sure that they have come across this term at times. This Kantei Nyusatsu is, without exception, conducted at all serious sword meetings in Japan and is probably one of the better ways in advancing one's knowledge in sword study. For those of us who study Japanese Swords, our chief aim is to:

1. be able to tell a good blade from a bad one;
2. to distinguish the period in which the blade was made;
3. to distinguish what province it was made in;
4. to tell what school the blade belongs to and finally if at all possible,
5. to be able to tell who made the blade.

Japanese Swords like any other art, is no exception, there are many forgeries and as such, to be able to tell the good from the bad is one of the aims of our study. Therefore, a basic knowledge again becomes that much more important.

In the Kantei Nyusatsu at club meetings, there will generally be five swords for this purpose. The blades will be in Shirasaya, but the Saya is removed and the exposed blade is displayed with the Tsuka wrapped in paper. The reason for this is, if the blade is in a mounting, someone may recognize it from the Tsuka or the Tsuba. The covering of the Shirasaya Tsuka with paper is so no one will recognize it. If someone still recognizes the blade, then he must admit that he knows the blade.

The blades for Kantei Nyusatsu are generally those which follow the respective traditions faithfully. Blades which are extremely difficult are not used, such as a difficult Wakimono.

When looking at blades at Kantei Nyusatsu, one must always have a Fukusa handy and if possible a Nugui as well. This is an essential piece of etiquette. Take a hold of the handle and hold it at arms length to get a good idea of its shape and length. At this stage it should give the observer some hint as to which period the blade was made.

Also here it must be determined if the blade is a Suriage or not. The blade held at arms length and if the Fumbari is seen at the Habaki, then it should be a Ubu blade, in most cases. On the other hand, if the blade at the Habaki 'seems' narrow and wider towards the tip then it will be a Suriage. Look at the Kissaki to see whether it is long or short, small or large. Look at the Shinogi to see whether it is high or not, narrow or wide. Look at the blade around the Hamon and see if

it has "niku" or not, the Hamon to see whether it is in Nioi or Nie, then the Boshi, Jitetsu, Hada, Jini, Tobiyaki, Yubashiri, Utsuri, Chikei, etc., which all combined should tell one the following:

1. from the shape ..... the period
2. from the Yakiba ..... the tradition
3. from the Jitetsu ..... the area or province
4. other points to be on the look out for are the individual traits and characteristics of smiths.

Never casually look at a blade. Each blade should be given a detailed "going-over". Even if one thinks the blade to be an 'unusual' one, he should first of all look for basic characteristics. Looking at the Jitetsu has traditionally been the main emphasis in judging, whether it be at a Kantei Nyusatsu or otherwise, however, the study of the Jitetsu for a beginner is next to impossible, it is known to take a lifetime to be able to fully understand it and many never "get it". Therefore, the more easily understood phasis such as the shape, Yakidashi, Boshi and Hamon should be considered. The Boshi and the Yakidashi are the two key points to look out for, so this should not be overlooked.

Jitetsu and Hada should not be confused. Jitetsu is the steel and the Hada is the effect of the steel.

If one becomes careless, he will say Shinto to a Koto blade or vice-versa, misinterpret one tradition for another and so these points should be carefully considered.

In Kantei Nyusatsu, if one "guesses" the swordsmith's name, then the answer by the judge will be Atari meaning a "hit" and is given 12 points on the first try, 10 points on the 2nd attempt and 8 points on the last attempt. The point system varies from one club to the next, some clubs give 10 points whereas others give 15 points.

If the "guess" is a father-son, brothers or teacher-student relationship, then the answer to the guess is Atari-Dozen or 'equivalent to a hit' and is given 10 on 1st try, 8 on 2nd try and 6 on 3rd try on the 12 point system. The writer has in his long years of studies, found that to make a mental notation of the following, made things easier for himself. Length, Sori, width, width of the Yakiba, Hamon, Boshi, Kissaki, Hada, shape, period, province and if the answer to each of the above is made then a picture should form and one can come up with a smith's name or very close to one, that is providing that the description for each is made correctly.

Say you are looking at a blade with the following characteristics:

length: about 8 Sun  
width: little wide for the length  
width of the Yakiba: uneven  
Hamon: In Nie and in Gunome Notare Midare with Imanoha  
Midare  
Kissaki/Boshi: pattern is continuation from the Hamon with  
little Kaeri  
Hada: with Jinie and has Chikei and Yubashiri  
shape: Tanto  
period: Mid-Kamakura  
province: Soshu

There is only one smith that fits the above description - Masamune. Not all blades fall into a pattern this easily, however, we have found that this is an easier way to come up with a correct answer or very close to one.

Since Kantei Nyusatsu is not conducted in the West and the only opportunity closest to it will be in a form of a sword quiz (we expect to have this in future issues) one does not need to follow and observe all the rituals, nevertheless, he should still observe all of the other rudiments of sword study.

The above practice is not only good for Kantei Nyusatsu, but if it is followed in looking at blades it forms a good practice just the same. The time for the Nyusatsu is about 2 hours after which the judge compiles the score of each bidder and the top three is selected on the point system, the 1st position is Ten or heaven, 2nd is Chi or earth and 3rd is Jin or man.

On Kantei Nyusatsu, taking an example:  
Sanjo, Gojo and Ayanakoji school are listed together for Yamashiro Province. If a bid is made for Sanjo Yoshiie for a Gojo Kanenaga blade, then the answer given for the bid by the judge will be "Atari-Dozen" and he will be given 10 points.

Another example: Osafune Nagamitsu for a Mitsutada blade will also be "Atari-Dozen".

The following shows the replies given to each bid.

1. a clean hit, that is a swordsmith by his name is "Atari".
2. father-son or brothers or teacher-student relation is "Atari-Dozen".
3. If the bid is for a smith of the same province but who has no connection with actual smith, the answer given for this is, "Yoku-Soro", freely translated it means "your close".
4. if the bid is for a smith of the same Kaido, the reply will be "Tori Yoku Soro", meaning your on the right Kaido.

5. if the bid is Koto for a Shinto blade or vice-versa, the reply will be "Jidai Chigai" meaning wrong Jidai.
6. if the bid is other than any of the 1st 4 listed above, the reply will be "Iya" meaning NO.
7. if the bid is made for a smith of the same school, however, living in another province, the reply will be "Iya-En", meaning no but has relation.
8. if the bid is made for any of the Masamune students in connection with another, the reply will be "Iya-Suji" meaning no, but same connection.

To explain more precisely the above replies. One and Two does not need explanation. #3, say, if one bids for Yamashiro Nobukuni for a Rai Kunimitsu blade ..... both of these smiths are of same province, but they have no direct connection with one another, the answer to the bid will be "Yoku Soro", so then one has to search in the same province for someone else, so by deduction one should be able to come up with a smith or one close to him which will give "Atari-Dozen".

#4, if the bid is for a Nakajima Rai for a Yamashiro Nobukuni, the reply will be Tori Yoku Soro. Nakajima Rai Kuninaga or from the Rai School who went to the Settsu Province and Settsu is in Kinai or the same Kaido. An awataguchi blade for a Rai blade, Hosho blade for a Tegai blade all fall into this category.

A Hatakeda Morie for a Ko Aoe blade. Morie is Bizen Province and Aoe is Bitchu Province, both of these provinces are on the Sanyodo, so this will be "Tori Yoku Soro".

#5, if a bid is made for Masamune whereas the blade is by Horikawa Kunihiro, this will be Jidai Chigai. Kunihiro made many copies of Masamune so often times his work is mistaken for Masamune's work.

#6, a bid is made for Rai Kunitoshi for an Aoe Moritsugu blade, the reply will be "Iya". There are no connection with one another.

#7, Tadayoshi of Hizen Province for a Horikawa Kunihiro. The answer to this will be "Iya En". The two having studied under Umetada Myoju.

#8, Hasebe Kunishige for Etchu Norishige. The reply to this will be "Iya Suji". Both of these smiths were students under Masamune. Naming any of the 10 Masamune student for another will be "Iya Suji". This is the same for the three students under Sadamune as well.

Masamune Jittetsu

Go Yoshihiro

Hasebe Kunishige

Shizu Kaneuji

Sadamune Santetsu

Bizen Motoshige

Yamashiro Nobukuni

Tajima Hojoji Kunimitsu

Etchu Norishige  
 Bizen Kanemitsu  
 Bizen Chogi  
 Rai Kunimitsu  
 Chikuzen Sa  
 Seki Kinju  
 Ishimi Naotsuna

In replies to some of the bids, the answer given for a province which will fall under the same Kaido will be "Tori Yokusoro", therefore knowledge of the Kaido in relationship to province is a must.

#### The Kinai or Go Kinai

Yamashiro  
 Yamato  
 Kawachi  
 Izumi  
 Settsu

#### Tozando

Omi  
 Hida  
 Kozuke  
 Iwaki  
 Rikuzen  
 Mutsu  
 Iyo

Mino  
 Shinano  
 Shimozuke  
 Iwashiro  
 Rikuchu  
 Uzen

#### San Indo

Tamba  
 Tango  
 Tajima  
 Inaba  
 Hoki  
 Izumo  
 Ishimi

#### Seikaido

Chikuzen  
 Chikugo  
 Buzen  
 Hizen  
 Higo  
 Hyuga  
 Satsuma  
 Osumi

#### Tokaido

Ise  
 Shima  
 Mikawa  
 Suruga  
 Izu  
 Musashi  
 Kazusa  
 Hitachi

Iga  
 Owari  
 Totomi  
 Kai  
 Sagami  
 Awa  
 Shimofusa

#### Hokurikudo

Wakasa  
 Echizen  
 Kaga  
 Etchu  
 Noto  
 Echigo  
 Sado

#### Sanyodo

Harima  
 Mimasaka  
 Bizen  
 Bingo  
 Aki  
 Nagato  
 Suo

FORGING & STEELS

The talk given by Sydney Divers in September appears to have started something.

E. Mathers writes to put his point:-

Upon reading the latest edition of the newsletter, I simply felt that I had to put pen to paper. The impetus for this is the chat given by Sydney Divers at the September meeting. Some of his remarks strike me as being nonsenses which imply a misunderstanding of fundamental metallurgy (sorry, Sydney!). The most contentious remark is about the reduction of strength after about 20 foldings which is attributed to "the adhesion of the molecules.... being made more difficult", and implying that there is some form of super-glue bonding the layers together. To understand metallic bonding one must consider the atomic structure of metals and I will attempt to explain this as simply as possible.

Metal atoms have only a few outer electrons which are relatively easily detached - if this is done the atom is said to be ionised. As an electron carries a negative charge and an atom is electrically neutral, the resulting ion is positively charged - every schoolboy knows that unlike poles attract, like poles repel and thus the ion is attracted to the electrons. It seems rather Irish, doesn't it? However, research has shown that the electrons form a continuous negatively charged "cloud" around the metal ions, which can be likened to currants in a pudding; the whole is held together by electrically attractive forces which will not be overcome during hot working. The electron cloud gives rise to the phenomena we normally associate with metals, e.g. high electrical and thermal conductivity. The treatment here is greatly oversimplified but it is fairly obvious that to talk about the adhesion of molecules is nonsensical. For a fuller but excellent treatment see page 31 of "Elements of Materials Science" by Van Vlack.

I can advance a couple of arguments to account for the loss of strength but lacking any really hard facts my remarks are open to criticism. Perhaps other members with more experience than mine may care to comment. There are three main factors to be considered.

- a) a loss of carbon, this being the most important element in determining tensile strength of a steel. The loss is rather unlikely in view of the fact that a carburising "atmosphere" is used in the reheating furnace but a possibility if the process is not either at equilibrium or on the carbon rich side.
- b) grain growth. The larger the grain size the lower, in general, the tensile strength. Grain growth could be caused by the slag and non-metallic inclusions being



reduced to such a size that they can cause "tearing" of the grain boundaries during reheating and a consequent grain growth. A possible cause, but would probably only be secondary.

- c) the entrainment of oxides and other non-metallics during forging. I would consider that five to ten foldings would be sufficient to remove all or most of the slag produced during manufacture of the crude steel. The continuation of folding and forging would merely serve to introduce more inclusions - even the best smith could hardly avoid this. It is interesting to note that swords made by the best smiths exhibit strong hada of Masamune, Sadamune (Hosho Goro) and would hence appear to have been forged only a few times i.e. less than 10.

The loss of strength could, of course, be a combination of all or any of the above. A further interesting forging defect is that extensive working can cause high compressive stresses at the centre of the forging and these stresses may cause cracking but it seems unlikely, although not impossible, that this could occur when sword-making.

My second crib - rather niggling perhaps - is that Ishikawajima-Harima have never produced a  $250 \text{ kg/mm}^2$  steel. They were experimenting in 1970/71 with a  $150 \text{ kg/mm}^2$  steel but so far without much success and  $100 \text{ kg/mm}^2$  strength steel is available but is, I believe, very pricy.<sup>2</sup> The Americans have been experimenting with a  $200 \text{ kg/mm}^2$  superalloy but I believe they are encountering great problems. As far as I know, no tankers or subs have been built from anything much over  $80 \text{ kg/mm}^2$ . The IN process was first used by IHHI around 1960 but it bears little resemblance to any sword manufacturing process. The strength of the steels in question is developed by charging the melt with nitrogen then adding aluminium, zirconium, niobium, titanium etc. to give fine nitrides which refine the grain size and precipitation harden the steel. The highest strengths, of around  $100 \text{ kg/mm}^2$  are produced by quenching and tempering these steels.

Now that I have launched into print I may as well continue with some ideas of my own. As I do not appear to be an "average" collector - prog. 68 page 11 "at £5,000 a snip for the average collector", and the average price of one of my swords is £30, I have little compunction in polishing and etching blades which come into my possession. I probably have the best collection of tired and cruddy blades in the country. I have examined a Wakizashi by a Nobutomo Fujiwara - probably Hawley N0285 - working around 1720 and this tends to support Andy Fords comments (prog. 63 page 5), that the appearance of the Kaen boshi is a function of the forging technique. His other comment, that the

appearance of the hamon is also a function of the forging technique is, however, open to criticism. As Sydney Divers has explained, the cutting edge is composed of martensite and, in the steels we are considering, i.e. plain carbon steels, such structures can only be produced by quenching, although the forging technique will have an effect upon the secondary characteristics, particularly nie. The production of damascening and grain in blades has been researched by Prof. Panseri and this work is described in fair detail in *Gladius* Vol. 4 1965, which is, I believe, quite readily available.

To return to the Nobutomo sword, this has a yakidashi composed of tapering flame like streaks of nie which fade out just before reaching the ha-machi, having an appearance very similar to that of the Kaen boshi. I polished the yakidashi and the surrounding area, etched with 2% nital (nitric acid in alcohol), and examined the region by means of optical metallography. The hardened edge consists of martensite with a hardness of around 700 V.P.N. and the jigane and shinogi-ji of metallurgical phases known as bainite (jigane) and fine pearlite/cementite (shinogi-ji). The hamon (notare-midare) is a structure of martensite in a bainite matrix, the areas of martensite becoming more frequent but not changing in size (constant grain size prior to quenching), as one approaches the hamon. What is of greatest interest however, is the yakidashi.

The bright streaks of nie are martensitic, the matrix or background and the region beneath the habaki consists of a structure of coarse pearlite in ferrite with a hardness of 160 V.P.N. The flame effect so produced is a result of the forging operation and is the region where the shin-gane and uagane steels overlap. This area must have had a quenching rate sufficiently fast to form martensite in the high carbon uagane steel but slow enough not to form martensite in the low carbon shin-gane steel. Other conclusions I have reached are:-

- a) the sword is of kobuse construction.
- b) the uagane steel has a carbon content of around 0.8%
- c) the shingane steel has a carbon content of around 0.15%
- d) as the maximum hardness of a 0.8% carbon steel on quenching is in the region of 850 V.P.N. and the hardened edge has a hardness of only 700 V.P.N., the sword has either been tempered at around 250°C, quenched in warm water to slow the cooling rate or withdrawn from the quench bath prior to reaching the water temperature, the heat retained in the body of the sword being allowed to temper the cutting edge.
- e) the hada in the sword has been produced by slag inclusions and not by differences in composition.
- f) the shin-gane steel has been annealed and slowly cooled prior to welding to the uagane.

It would appear, then, that the Kaen boshi is produced in a similar fashion i.e. the overlaying of a steel with a steel of differing hardenability which is thin enough at the boshi to allow the underlying steel to show through after forging and shaping. I would imagine however, that the two steels will be of high and medium carbon, rather than the medium and low carbon steels present in the Nobutomo sword.

It seems unusual to me that an art which relies so heavily for the appeal of its artifacts upon empirical metallurgy has not been studied by metallurgists in greater depth, and indeed, that there are not more metallurgists in the To-Ken Society. The only original work which I have seen is that of C.S. Smith, although a limited amount of research has been published by the late Edgar Bain, but the rest of the literature which I have is merely a regurgitation of certain well known facts. Perhaps some of our Japanese members know of references which I could obtain of work carried out in Japan - I am sure that there must be a vast fund of knowledge available across there.

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SYDNEY DIVERS' REPLY:-

1. This man has misunderstood how to give a lecture to a group of laymen on Japanese swords. This is not a technical lecture so it had to be reduced to elementary concepts to enable everyone to understand, not just the few technical people who were present. If a paper of technicalities (such as his letter showed) were presented, members would be fed up half way through it. The way Mathers has put it is correct but I know this as well as he. Atoms surrounded by electrons etc., etc., equals molecules and the way I put it is much easier for people to understand. I elaborated this in more detail when I gave the talk as people present know. I always considered myself a slight authority on ionisation having advised the U.K. Atomic Energy Authority and the Ministry of Defence and to boot read a paper on the subject at the International ISEM conference in Vienna 1970. A mathematical paper of this nature would be the last thing the Token Society requires. Over-simplification is the essence of a Token paper, particularly as we are limited to time, and to the varied collectors' interests present.

2. Honestly, I don't think anyone at the Token Kai is interested in theories of why a loss of strength occurs. All they want to know is (a) this does happen (b) why certain smiths made stronger swords by foldings. The number of foldings to give max. strength varies to all the ingredients

and circumstances at the time. This means that it depended on the impurity of the basic material used, the hammer impact (which varied from smith to smith) and so on. Thus with one smith it would be 8 or 10 and with another 18 or 20, etc. Forging defects due to high internal stresses was covered at the time I gave my talk.

3. As a scientist I would not make a statement unless (a) I knew it was true, (b) the evidence I have showed it conclusively to be true, (c) I believe the published research done and conclusions reached were correct. So I take exception to Mathers statements on Ishikawajima - Harima steels. I refer him to:- JAPAN IN PICTURES VOL 12 No. 4.

TITLE: "Competition for Development of Super-high-tension Steel Record Tensility of 250kgs. per sq.mm. realised with hint from Manufacture of Japanese Swords".

I Quote "Last year, Ishikawajima - Harima appeared with another steel with a super-high tensility of 250 kgs. per sq.mm. It was named IN-U Steel. Unlike steels produced by the conventional metallurgical method, IN-U Steel is manufactured by the rolling method, following a hint taken from the manufacture of Japanese swords. (Japanese swords are made by repeatedly forging steel, forming layers of thin steel). IN-U steel is made by repeatedly rolling layers of nickel, copper etc., inserted between steel layers".

My Note: The IN steel was developed in 1962 followed by the PZ Steel which achieved 200 kgs per sq.mm. The MA Steel came and then the IN-U at 250 kgs. per sq.mm. All this whether we like it or not.

For Mathers to say "Ishikawajima Harima have never produced a 250 kg/mm<sup>2</sup> Steel" is a statement which should not be made in view of the published evidence of this article plus the photographs showing their achievements including the submarine, an oil tanker, a bridge, space vehicle and a gas tank. There are 1000 mag. electronic scanning scope pictures showing the super IN-U of thin white copper and carbon steel foils in sandwich after heating to 800°C.

One must accept the weight of published evidence. Like Mathers we were once all little Englanders at the early stages of the last war which we nearly lost because of our ostrich like attitudes. Take a tip from an old hand at the game, never underestimate your enemy. We learnt early but the enemy, so full of success, did not learn until he lost!

4. Metallurgists have studied in some depth the Japanese sword but most of the work has been done in Japan. C.S. Smith,

Edgar Bain and others have tackled it slightly differently from the Japanese. The work done is highly guarded by the Japanese as it benefits modern commercial technology. A long series of strength tests were completed on scrap blades by the Japanese before the war and the results were quite interesting.

See Journal of the Iron and Steel Institute. 1962. Vol.200 Part 4. "Nippon-To, an introduction to old swords of Japan" - Edgar C. Bain, Pages 265-282. Particularly note P.278-P.281. Sub-section "Making a Japan Sword", where 16 to 30 foldings are discussed.

5. Only two points remain from Mathers' letter -

(a) I am glad there are not more metallurgists in the ToKen Kai otherwise the whole thing will get gummed down by argument and counter argument.

Metallurgists are like Economists and weather men - more wrong than right in forecasting. Success is due to sheer luck in a lot of cases and the final theory is made to fit the achieved results.

There are more interesting things to discuss as far as the majority of our members are concerned, for instance Bale's last talk on Umetada tsubas, Anderson on armour renovation and the Vic Harris series on blade recognition.

(b) I disagree with Mathers statement that he has "the best collection of tired and cruddy blades in the country". He hasn't - I have! This has given me work slicing them into bits and taking strength tests.

Further reading of interest to Mathers and others:-

"Sword" - National Museum Art Series - Junji Homma. Tokyo 1948. Pages 6 - 8.

"Nippon-To" - Inami Hakusui. Pages 83-84 on foldings and molybdenum content.

## BOOKS

Introduction to Japanese Swords by W.M. Hawley.

Another Hawley publication which I am told is excellent value. It tells the story of the world's most famous edged weapons and the mysteries of how 12th Century smiths could produce blades of such technical perfection that cannot be duplicated.

Twenty pages of clear concise details of construction well illustrated with drawings and photos. A short article on Tanegashima the Japanese matchlock in use up to 1870. Size 8½" x 11". Paperbound \$2.00 postage 14c.

ED. If members wish to contact me I will make a group purchase for those interested; otherwise

W.M. Hawley,  
8200 Gould Avenue,  
Hollywood, California 90046, U.S.A.

#### DALLAS SHINSA

Graham Gemmel brought along a copy to the December meeting. For those interested the cost is approx. \$10 or £4. and available from R.B. Caldwell.

Again if you wish, contact me and we can make it a group buy.

#### NIHON TO NEWSLETTER

For the serious student this is a must; there is nothing in the western world that packs such a wealth of reliable knowledge into its pages. It was started in January 1968 by Albert Yamanaka & Associates. It is published bi-monthly, in English and contains over 30 pages of information you won't get anywhere else.

You couldn't even buy a crummy sword for a year's subscription, and with the information gleaned you would know sufficient to save you wasting money on poor swords.

In addition, any questions you wish to put will be speedily answered in detail.

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AIRMAIL - for overseas members wishing their programmes sent Air Mail, the subscription is increased as follows:  
Europe ... £3.50  
U.S.A. and elsewhere ... \$10.00

#### NEW MEMBERS

The Society has much pleasure in welcoming the following new members:

J. Davis 56, Cumberland Drive, Stockingford, Nuneaton,  
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M. Horsfield 16 Albion Place, Willington, Crook, Co. Durham.

A.J. Moon "Ashdown", One Oak Lane, Dean Row, Winslow, Ches.

A. Plasted 108 St. Mary's Avenue, Hailsham, Sussex.  
 P.J. Sullivan 6, Worthing Road, Southsea, Hants.  
 S. Hallard 93 Oak Lane, West Bromwich, Staffs. B70 8PR.  
 S. Knight 12820 Short Avenue, Los Angeles, U.S.A. CA90066.  
 A. Listopad 3078 Sweetbrier Circle, Lafayette, CA.94549, U.S.A.  
 J. West Zur Spinnerin 53/9/7, 1100 Wien, Austria.

CHANGE OF ADDRESS:

G. Alferes 601 Bridge Street, Fairhaven, Mass. 02719, U.S.A.  
 D. Marsh 21 High Street, Sharnbrook, Bedfordshire.  
 B.W. Thomas "Mowendee", Monbulk Road, Emerald, Victoria,  
 Australia 3782.  
 C. Jackson Allen Moosstrasse 78, 8057 Zurich Oelikon,  
 Switzerland.  
 Alan Bale 46 West Close, Woodthorpe Road, Ashford, Middx.

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OSHIGATA

A reminder to new members who may have difficulties  
 in reading tang inscriptions due to inadequate references;  
 if they care to send a rubbing (oshigata) of the tang, addressed  
 to Tony Chapman, 71 Ingaway, Basildon, Essex, he will check it  
 for them and send them all available information he has on the  
 swordsmith or inscription. Please remember to make a careful  
 rubbing of the whole tang, both sides, not just the inscription.

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