



# WOOD SCIENCE NEWSLETTER

Institute of Wood Science

March 1994

## FROM THE PRESIDENT

As I write my penultimate article as President, the hours of daylight are at last increasing as we awake from the spell of mid-winter torpor. This can mean only two things for certain - a few more millimetres extra around the waistline after Christmas, and the run-up already to our showpiece activity, the National Conference, which by now you will be aware is to be held in Chester during April. There are more details of this within our Newsletter so I will avoid duplication except to say "I know we are on a winner again" and how proud I am that my own Branch of the Liverpool and District will be the hosts in this my final year of the presidency. With sponsorship from Kronospan Ltd, we intend to make our Conference again a noteworthy occasion.

It seems quite strange to be even contemplating the hand-over this coming September to our President elect, Dr. Martin Ansell. I feel as though I am only just settling in myself, but time marches on and, as the word gets around, I have found myself over and above ones usual duties being invited to various organisations as a guest or to make a presentation. Recent invitations have included the Builders Merchants Federation and, to my surprise, a local branch of the English Speaking Union. These are opportunities to promote our Institute and, of course, the product from which we derive our livelihood, wood! We should be prepared to stand up in support of the use of timber and not shrink from the bombardment of hostile criticism coming at us from all quarters. Our industry is fighting back, the activities of our trade organisations are becoming much more effective, but individually we must all do our bit.

Being members of the Institute of Wood Science must give us confidence to debate environmental issues and many of our local Branch meetings have, and will, continue to address them (as reported later in the Newsletter).

Since writing last, Roger Thornton of Howarths of Huddersfield, who was awarded the United Sawmills Bursary following his success in the IWSc Final Examination, has visited Finland and was treated to a grand week, visiting the U.S.M. sawmills and forests. This has been a fine gesture by U.S.M. and much appreciated by both the IWSc and our prizewinner. I was able to catch up with Roger for a few days at the end of his week whilst visiting Finland on behalf of my company and earlier on in the same week I was able to divert for nearly two days to visit the Finnish College of Forestry at Kotka, where I was given the opportunity of seeing the College and making a presentation to three of its officials on the activities of our Institute which we should not forget has a worldwide membership.

Before closing, I hope by now, from some of my earlier epistles, that you will have been made aware of all the background work that goes into keeping the IWSc affairs in good order. I have always made a point of thanking the individual committees of Finance & General Purposes, Education and Membership. This time, I am taking the opportunity of mentioning the Council of Management itself. The Council meets four times a year to ratify the decision of these Committees. Members make the journey from all over the country to London to attend, in some instances forfeiting holiday allocation from their companies to do so. That's dedication. For the majority, who happily do not have to make this supreme sacrifice, we are thankful to their employers, who support their staff in these attendances. Despite commercial pressures, which have dominated people's time recently, Council meetings have been well attended and it is a comfort to know that IWSc interests are being well looked after and, on your behalf, I thank all our Council Members.

Best wishes to you all! Hope to see as many of you as possible at Chester.

Keith Purcell, AIWSc

## IWSc COUNCIL MEMBERS 1993/94

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# EDUCATION & TRAINING

## EDUCATION

The Institute has initiated the second stage of its restructured education programme with a new **Associateship** course. Like the Certificate course, which must be completed before the Associate course can be taken, it has a modular format. It seeks to achieve two major objectives, to explain why wood and wood products behave in the ways they do and to apply this understanding to their more effective and economic use. It is rewarding for both the candidate and his or her company in providing the knowledge necessary to make judgements and give advice on a sound technical basis.

There are two compulsory components in the course:

A core module concerned with Wood as a Material and the Handling and Processing of wood, and a Project study, equivalent to two module units.

Two additional modules complete the course requirement, based on those available for the course or by accreditation of (approved) prior learning.

**Assessment** of performance will be on the basis of the submission of the Project study, work associated with the modules and an examination.

The course **must** be undertaken with the direction and guidance of a Training Agency but can be pursued by whatever means is convenient in-college, in-company or distance learning, though it should be anticipated that a period of face-to-face teaching is required and throughout the course there must be arrangements for communication between the candidate and his or her training adviser.

There is no fixed time for completion of the course but it can be expected to take not less than one year or to a programme agreed with the Training Agency.

The **Project study** (equivalent to two modules) is a practical exercise undertaken, ideally, in the work place and relevant to the candidate's and his or her company's interests. It should be agreed between the candidate, the training officer or other representative of the company and the Training Agency. A title and brief synopsis of the proposed work must be submitted by the candidate via the Training Agency for approval by the Institute before any extensive work is undertaken.

**Topics** should be of a practical nature, requiring observation and collection of data, interpretation of results and conclusions/recommendations arising from them. The subject matter can be technical or commercial. If of a confidential nature, this must be acknowledged and will be respected. Within this broad remit, any topic which makes an appropriate submission, which should amount to between 3000 and 5000 words, is acceptable.

Two optional modules must be completed. Modules are currently available for:  
Timber in Building, and,  
Business Economics.

A module on Timber Trade Practice is in course of preparation. Other modules will be prepared or accepted from elsewhere as they are needed or become available.

Prior learning which is relevant to the timber industry, has led to a recognised award and is approved by the Education Committee of the Institute can be accredited as satisfying a modular requirement. Discussions with the Training Agency are required for a candidate to identify what course already completed is acceptable and what further course(s) are selected to meet the requirements of the optional modules.

The **Associateship** course is currently on offer from Mid-Warwickshire College, Leamington Spa and Buckinghamshire College, High Wycombe; for arrangements to take the course contact should be made with these colleges.

Dr. J.D. Brazier FIWSc (Hon) Chairman Education Committee.

## TRADA TAKES OVER SECRETARIATS OF FOUR BSI TECHNICAL COMMITTEES

The secretariats of the four main timber related BSI technical committees, together with their 11 sub-committees, and two CEN working groups for which the UK holds the secretariat, are now to be administered by the Timber Research & Development Association (TRADA) under a joint agreement between TRADA and BSI.

BSI will continue to be responsible for policy and overall control with TRADA providing the day-to-day servicing and committee administration. The transfer will be phased in over the next three months as each committee meets for the first time.

The committees are: B/518 Structural timber, B/525/5 Structural use of timber (including input into Eurocode 5), B/541 Wood-based panels, B/543 Round and sawn timber. The CEN Working groups are TC112 WG4 Co-ordination of test methods (for wood based panel products) and TC124/WG2 Timber structures (slid timber).

Trada's intention is to have one secretary for the "structural" committees and one for the "non-structural". Part of their task will be to monitor the output of the related CEN committees and keep the UK committees.

Don Rodwell will take on the secretariat of the structural groups and Juilan Lessey, the non-structural. Both have extensive experience of timber, committee work and British Standards.

## "BACK TO THE FUTURE"

Nowadays we are frequently faced with the need to justify the predictability of wood, particularly in terms of its strength.

It is not usual for density to be quoted in technical information and references to stress grading marks are common place.

It might also be interesting to know that a lively curiosity on the potential strength of timber existed a hundred years or so ago. Perhaps more interesting was the awareness that moisture content had a significant influence on, amongst other things, STRENGTH!

Quoting from an 1886 Timber Trades Journal a reader asked:

*Increase in Strength of Beech by Seasoning - can you inform me, through your "practical Notes" column, what is about the increase in the strength of beech timber when seasoned - naturally seasoned, I mean? - R.T.E. (Cork).*

The technical brains of the time responded with the following explanation:

*Increase in the Strength of Beech by Seasoning - in reply to "R.T.E." (Cork), beech increases in strength by seasoning 61.9 per cent, in other words it is more than half as strong again. Ash increases 44.7 per cent; Oak, 26.6 per cent; Elm, 12.3 per cent; White Pine, 9 per cent. - B.P.*

It would be fascinating to know the source of this information.

If they were referring to the increase of strength in compression parallel with the grain they are close to the figure quoted by George Tsoumis in his book "Science and Technology of Wood" (VNR 1991) in which the increase in the strength of beech from green to air dry is quoted at 63.2%.

However, if one takes bending as the mode of loading, then the 1886 figures seem somewhat optimistic! Tsoumis suggests a MOR of 43.1% and an MOE of only 22.8%.

What does seem somewhat odd is the relatively modest increases shown for Oak, Elm and White Pine (taking account of the date I imagine this refers to *Pinus strobus*).

Have the IWSc readers of this Newsletter any views?

David Woodbridge, FIWSc

Robert Waring, AIWSc, who recently graduated from the Buckinghamshire College with Honours Degree in Forest Products Technology and whose particular interests are in wood preservation, the environment and forestry, is looking for a potential Timber/Environment subject area in which to carry out research with the aim of obtaining a M.Phil or PhD. He would be pleased to hear from any organisation or company who might benefit from such research.

Replies to R. Waring, c/o IWSc Office.



# EDUCATION & TRAINING

## PRIZE GIVING - 28 SEPTEMBER 1993

As in past years, prizes were awarded to the most successful students prior to the AGM which was held at the Timber Trade Federation Offices.

Peter Latham once again presented the prizes. The Bryan Latham Prize was awarded to Ray Anning of Leaderflush Doors (Final Examination) and the Swedish Finnish Council Prize was awarded to Richard Baker of Arnold Laver (Certificate Examination), whilst Roger Thornton of Howarth Timber was awarded the USM Bursary.

Mr. Latham drew attention to the fact that the three awards had gone to employees in the timber trade this year, rather than to academic or research areas, which he felt was particularly pleasing, especially in these difficult times for the trade.

Mr. Latham remarked that this is the first year of the new Certificate examination which embraces five Work Books in modular form and has been a most successful concept. The Associateship course he said was now virtually completed and he gave particular credit to the authors of the Work Book for the contribution they have made to the study of wood science.

He commented that the examining role is very important for the Institute, but the Institute also has an important role in encouraging further study and further development of wood technology in the industry, i.e. through the Journal, Conferences (which was particularly successful this year, he felt) and also through the Branches.

## CERTIFICATE LEVEL NORDIC TIMBER COUNCIL PRIZE Richard Baker - Arnold Laver

The other successful candidates were:

Atkinson Martin	Manson Timber
Barson Stephen	Harcros
Bentley Craig	Arnold Laver
Berry Paul	Harcros
Burton Paul	Harcros
Coates Daniel	Meyer International
Connolly Philip	
Crichton Paul	Harcros
Curd Bryan	Harcros
Farnworth Neil	Southern & Darwent
Follows Martin	Manson Timber
Giles Elizabeth	Harcros
Goodwin Simon	Harcros
Hage Richard	Mason Timber
Hands John	A.S. Worrall
Hannon Julie	Ellis Hill
Hart Andrew	Meyer International
Hobson Elizabeth	Manson Timber
Holt Peter	John Riddiough & Co
Jarvis Nadine	Manson Timber
Jones Timothy	Harcros
Lead Paul	Arnold Laver
Lee Liam	Manson Timber
McKen Charles	John Fleming
Murphy Anthony	Roger Haydock
Newman Gary	Makerfield Timber
Ng George	
Norman Martin	Meyer International
Pack Darren	Hunter Timber
Parr Alan	Meyer International
Peebles Donald	Meyer International
Poole Malcolm	Dean & Furbisher
Read Charlotte	Harcros
Reid Alan	MOD QAD (S & C)
Sands Andrew	Arnold Laver
Scott Sarah	Harcros
Slaney Craig	Arnold Laver
Smith Andrew	Harcros
Sodhi Parveen	Harcros
Southern James	M.H. Southern
Stoyle Alan	Leeds Metropolitan Univ
Thorpe Stuart	Arnold Laver
Watson Martin	D. Cover & Sons
Wignall Ian	Manson Timber
Woods Nigel	Construction Timber
Woods Paul	Harcros
Wright Alistair	Meyer International

Bird Anthony	Harcros
Cliff Paul	Leaderflush Doors
Cullingworth Mark	Nixon Knowles
Fowler Mark	Nixon Knowles
Glasscock Vince	M.H. Southern
Graham Alan	Harcros
Gregory Sarah	Meyer International

Holmes Nigel  
Jennings Stephen  
Lamont Alan  
Maloney Mark  
Partridge Ian  
Price Russell

Harcros  
Meyer International  
Wood International  
Harcros  
Timber Supplies  
William Bird

Sidlow Craig  
Steel Alasdair  
Tolchard Paul  
Troake David  
Vokes Philip  
Willis Colin

G.E. Robinson  
Meyer International  
E.H. Thompson & Sons  
J.O. Walker  
Meyer International  
K & B Forest Products

## IWS FINAL EXAMINATION 18th June and 3rd December 1993

## CONGRATULATIONS TO THE FOLLOWING WHO WERE SUCCESSFUL IN THE FINAL EXAMINATION

### The Bryan Latham Prize:

Ray Anning - Leaderflush Doors  
Optional Module: Timber in Construction.

### The United Sawmills Bursary:

Roger Thornton - Howarth Timber  
Optional Module: Biodegrade of Wood and its Protection



Other Candidates successful at Associate level:

NAME	SELECTED MODULE	EMPLOYER
Barton Paul	Yard Operations	Harcros
Bowes Paul	Timber Trade Practice	Trafford Wharf Timber
Currie Ann	Yard Operations	Harcros
Davey Paul	Yard Operations	Harcros
Dey Peter	Yard Operations	Harcros
Dorel Wayne	Yard Operations	Harcros
Ellis Janet	Timber Trade Practice	Price & Pierce
Francis Andrew	Yard Operations	Harcros
Frommont Stephen	Panel Products	James Latham
Hughes Elizabeth	Yard Operations	Harcros
Johnstone Charles	Yard Operations	Harcros
Jones David	Yard Operations	Harcros
Jones Owen	Panel Production	Meyer International
Kershaw Nicholas	Timber in Construction	North Yorkshire Timber
Kynhoff Jorgen	Timber in Construction	Meyer International
More Jonathan	Timber Trade Practice	Hunter Timber
Mudd Trevor	Yard Operations	Harcros
Perry Dawn	Timber in Construction	Cyril Ridgeon & Son
Pettitt Nicholas	Yard Operations	Meyer International
Porcas Christopher	Timber Trade Practice	Meyer International
Saunders Peter	Timber in Construction	Harcros
Sunter Andrew	Yard Operations	Harcros
Watkin Nicholas	Yard Operations	Harcros



# BRANCH LINES

## SCOTTISH BRANCH

Forum - "Forests Forever .....?" September 1993

This was our most prominent event in Scotland since resumption of our activities in the Scottish Branch a few years ago.

Keith Purcell, our President, was Chairman of a panel of guest speakers, experts in their particular spheres, consisting of G L Venables for Forests Forever Campaign, M Mather for World Wide Fund for Nature UK, J Woods for Friends of the Earth, D McCrae for Council of Forest Industries - Canada, and E Mikkonen, United Sawmills Ltd, Finland.

Mr. Venables gave account of the formation of the Forests Forever voluntary organisation, an independent body representing the timber industry, its aims to promote the use of wood and safeguard permanent sources of supply. Stewardship and verification schemes to these ends were explained.

Mr. Mathers expounded further on policies for growing, bio-diversity, careful stewardship of existing stands of temperate/tropical forest and land, while discouraging the unnecessary consumption of wood.

Mr. McCrae gave the board view on timber supplies in Canada, mainly on land in public ownership. He outlined federal government policies for major increase in afforestation, conservation in natural parks and reserves as well as the development of a forest culture of some variety.

Mr. Woods spoke briefly and to the point on the views of Friends of the Earth, forests in the context of the environment, misuses in man's development and social upheavals, imperfections in import regulations and certification schemes. He emphasised that welfare should take priority over economy.

Mr. Mikkonen gave a different slant on growing resources in the Finnish industry, where the assets are privately owned to a large extent, many in family ownership. Careful forest management has been developed over a period of 100 years, including improved conditions of growth and maintenance of bio-diversity. Economic use of all parts of the tree, bark, roundwood and converted timber is practised to a fine degree. Use of wood is to be encouraged from an energy-saving stand-point and the anti-rainforest concerted action is therefore unhelpful.

Discussion was then opened to the participating audience when a variety of topics were raised including paper-making and recycling, effects of government policies, taxation, funding for development of unused land, international and social pressures, without forgetting timber in building of energy-efficient housing!

Overall it was felt that the meeting was beneficial as a learning exercise as well as a stimulant to more understanding of the present ideas of looking after our forest assets, social welfare, the environment, perhaps requiring a review from time to time to determine our priorities.

Eric Wyllie AIWSc Secretary Scottish Branch.

## WESTERN COUNTIES BRANCH

The 1993/94 season got off to a flying start with a Sunday visit to the Fleet Air Arm Museum at Yeovilton. Graham Mottram, the Curator, gave us a detailed insight into two wooden First World War fighter aircraft, the Sopwith Pup and the German Albatross. The Pup was constructed from spruce and Ash, braced with piano wire and bonded with casein animal-based glue. Propellers were fabricated from Ash, Walnut and Mahogany laminates. The long fuselage members were constructed in the form of wooden I beams, maximising stiffness and strength to weight ratios. Attendance at this meeting was low due to late publicity but those who came also enjoyed a vintage vehicle rally.

The first of our joint meetings followed in October when Tim Phillips of Jotun Protective Coatings gave an excellent presentation on interior wood finishes, attended by the local branch of the Joinery Managers Association. Tim brought along plenty of exhibits and showed a wide selection of slides reflecting his considerable practical knowledge of the industry. The meeting was concluded with a buffet which has become a regular feature at the Clarks Wood venue. This meeting was complemented by Justin Worringham's excellent talk Cuprinol external preservatives which we enjoyed a month later. Subjects covered included pigments, ultra-violet inhibitors, creosote, copperchrome-arsenic treatments, varnishes, oils, wood stains and the appropriate British and European standards.

Dr. Peter Bonfield of the Timber Division of the Building Research Establishment at Garston gave a comprehensive and entertaining overview of timber research at BRE covering activities under the headings construction and applications, materials, fire and environment and energy. We learnt about mechanical testing and Eurocodes as well as the more practical issues surrounding Molly's brush and Gordon's European Standard mallet test! Peter brought some friends along with him in the form of several live Hylotrupes (house longhorn beetle) larvae. Dave King of Clarks Wood was somewhat anxious about the safety of the maple cladding in the board room.

In April 1995 the Western Counties Branch are proud to announce that they will be holding the Institute's national conference in Bristol with a decidedly Canadian theme. The Conference hotel will be a superb, four star establishment in the centre of the city and the conference will enjoy sponsorship and an extensive social programme to match that at the Chester conference this year. More details will be released as arrangements are finalised.

Martin Ansell, FIWSc, Western Counties Branch Chairman.

## OBITUARIES

REG STOCK AIWSc 1912 - 1993

We regret to announce the death of Reg Stock, Chairman of the London Branch of our Institute. Reg died on the 7th of December 1993, a few days before his 82nd birthday.

He was a founder member of our Institute with membership No. 11, and was a prodigy of the late and great Professor Frank Jane, with whom he commenced study at the City of London College in 1931.

Reg himself went on to teach our subject at the City of London, and Hammersmith College of Technology. Many of our older members will have received their instruction from him.. He was timber buyer for first the LCC, and then the GLC, being renowned as their timber expert. Reg was a regular and enthusiastic attendee at the Institute Conferences and London Branch meetings and we will miss him greatly on these occasions.

We thank Reg for his friendship and wisdom which we enjoyed for so long, and extend our sincere condolence to Barbara his wife and their daughters.

A walnut tree is being presented on behalf of the Institute, and this will be planted in their garden in memory of Reg.

Don Scutt CMIWSc  
Richard Murphy FIWSc, London Branch



JACK MATTHEWS., AIWSc: 1920 -1993

We regret to report the death of Jack Matthews on 1 December 1993.

Jack was a founder member of the Western Counties Branch of the Institute of Wood Science when it was set up in about 1956 and until very recently he was a committee member serving in most capacities, including Chairman.

Jack's career in the timber trade began in 1936 when he was employed by Sharpe and Fisher Ltd of Cheltenham to manage their timber department.

His interest in timber was such that Jack sat the old TDA teachers course and from 1948-53 attended Gloucester Technical College to study for the Institute of Wood Science examination of which he was a national prize winner.

All of us will have been enriched by having known him and by his love of timber and the timber trade. Our thoughts and sympathy go to his widow and family at this time.

Roger Taylor AIWSc Secretary  
Western Counties Branch.



# SIDE LINES

## NEW MOTOR INSURANCE SCHEME

Many members have already taken advantage of the professional advice offered by Members Select and have made savings on their home buildings and contents insurances.

Following on from the success of Household insurance, Members Select are now offering discounted motor insurance to members of the Institute of Wood Science.

You will only be too aware how expensive car insurance has become. Members Select operate on a direct basis, using sophisticated technology, and are able to offer lower premiums as a result of their reduced overheads.

To obtain a free quotation, simply complete the Request for Quotation leaflet enclosed with this newsletter. There is a FREEPOST facility so it won't even cost a stamp to get a quote.

Even if your current insurance is not due to be renewed it is worth requesting a quote now and Members Select will automatically provide you with an up to date quotation nearer to your renewal date with everything you need to take out a policy.

*The  
Enthusiasm  
of the  
present  
CREATES  
the future.*

## CORPORATE MEMBERS

The IWSc is very pleased to be able to welcome four new Corporate Members, The Austin Timber Co. Ltd, Richard Burbidge Ltd, Howarth Timber Group Ltd and T.P. Jorleson & Co. Ltd, and thanks them and other Corporate Members for their support.

Anglo-Norden Ltd, Austin Timber Co. Ltd, John Boddy Timber Ltd, Boulton & Paul Ltd, BSW Timber plc, BPIB, Richard Burbidge Ltd, The Buckinghamshire College, Crosby-Sarek Ltd, Coillite, Cuprinol Ltd, James Donaldson & Sons Ltd, EOLAS, Fairlight Preservation Ltd, Forest Service N. Ireland, Harcros Timber & Building Supplies Ltd, Hickson Timber Products Ltd, Howarth Timber Group Ltd, T.P. Jorleson & Co. Ltd, James Latham plc, Marlow & Co. Ltd, F.W. Mason & Sons Ltd, Meyer International plc, MBM Forest Products Ltd, Price & Pierce Ltd, Protim Solignum Ltd, Rentokil Ltd, Timber Trade Federation, Timbmet Ltd, TRADA, Travis Perkins plc, Henry Venables Ltd, Wickes plc.



*Nicholas Howarth being presented with the Howarth Timber Groups Corporate Membership Certificate by the President and Jim Coulson, Chairman. Tynes-Tees Branch*

## BUILDING WITH TIMBER FRAME - AN OPEN FORUM

A forum where timber frame construction in house building can be debated is to be held on 21 April in Coventry, organised by TRADA Technology Ltd. A second forum will be held in Scotland on 12 May.

The timing of the forum is significant: April is the first month when domestic consumers will see the addition of VAT to their fuel bills and during 1994 the proposed tightening of Building Regulations covering thermal performance will come into force. This will focus the attention of consumers and housebuilders on the need for more energy efficient domestic construction.

The forum, chaired at Coventry by Sir Michael Latham and in Scotland by Professor Charles Robertson, will cover technical and regulatory matters, new developments and commercial considerations in the morning session. The afternoon will be given over to an open debate, led by a panel of experts, when all the issues can be aired and discussed. Speakers will include builders who have experience of both masonry and timber frame construction.

Contact: Val Allcorn TRADA Technology Ltd. (0494) 563091

## DATES FOR YOUR DIARY

April	15/17	IWSc Conference, Chester
	21	Building with Timber Frame (TRADA) Coventry
	27	CTIS Examination, Stirling, Scotland
May	29-3 June	IRG 25 Nusa Dua, Bali, Indonesia.
	12	Building with Timber Frame (TRADA) Falkirk
	14	FA Cup Final, Wembley
	18/23	International Furniture and Woodworking Fair, Milan
	24	Educational Committee Meeting (am)
	24	Membership Committee Meeting (pm)
	24/27	Chelsea Flower Show, Chelsea
June	1	Derby Day, Epsom
	27/29	National Education Fair, Sheffield
	17	IWSc Examinations
	7/8	Building & Construction Show, Bloomsbury
	20-3 July	Lawn Tennis Championship, Wimbledon
	29-3 July	Royal Regatta, Henley
July	5	Council, TTF Offices
	11-15	Pacific Timber Engineering Conference, Gold Coast
	14-17	Open Golf Championship, Turnbury
Sept	6	Education Committee Meeting (am)
	6	Membership Committee Meeting (pm)
	27	AGM and Council, TTF Offices
	29/2 Oct	House Improvements DIY Exhibition, Olympia
Nov	2	Education Committee Meeting (am)
	2	Membership Committee Meeting (pm)
Dec	4/6	Building Trade show, Wembley centre
	2	IWSc Examinations
	8	Council, TTF Offices



# MORE SIDE LINES



## BOTH BILL KEATING AND JOHN BRAZIER HONOURED

At the Annual General Meeting of the IWSc held in September both Dr. John Brazier and Bill Keating were elected Honorary Fellows of the IWSc. John Brazier was presented with his certificate at the AGM in London and whilst on his visit to Australia was able to present Bill Keating with his at the Australian Branch AGM on 20 October at CSIRO, Division of Forest Products, Clayton, Victoria. Our warmest congratulations to them both and our sincerest thanks for all they have done for the IWSc.

## BOOK REVIEW

"Dry Rot - The beast in the Basement" By Peter Barber. MIWSC

This small book is described on its back cover as being "intended to enlighten and reassure people who may be unfortunate enough to find their home affected by this most damaging fungus."

Certainly I have long felt the need for such a book, for dry rot has for too long been shrouded by the mystery and fear generated by the lack of knowledge and understanding of the layman, fired by anecdotal stories and fuelled by the emotive style of the reports prepared by some remedial treatment companies.

The reader is given an introduction to the history of dry rot beginning with references to the Book of Leviticus in the Old Testament, is told the difference between white rot and brown rot, is introduced to the more common species of wet rot and is given guidance on the treatment of such wet rots.

In the later part of the book the reader is instructed in "the identification of dry rot", is taken through a typical survey to establish the presence and extent of an outbreak and then, in the penultimate chapter, is advised "How to treat Dry Rot".

I found this slim volume to be well illustrated (pity some of the excellent photographs could not have been in colour), with some amusing cartoons produced by the author's wife, to be easy to read and comprehend and containing much information that would be of interest to a householder faced with having to tackle dry rot in his own property.

John Bricknell, AIWSC.

## EUROFORTECH - A Trans-European Network for Training and Education for the Forestry, Paper and Timber Industries.

### Background

EUROFORTECH was established during January 1991 and is an EU initiative under the COMETT programme. It is a Trans-European network for training and education for the Forestry, Paper and Timber Industries. The EUROFORTECH programme is primarily designed to encourage interaction between, Universities, Technological and Training Institutes and Industry. The training and education initiatives are initiated by the EUROFORTECH partner network and financially supported by the European Commission and industry. The EU fund aiding to EUROFORTECH is largely allocated through the COMETT programme. Additional support is provided by industry, universities and other institutions in both cash and in-kind. The Institute of Wood Science provides financial support to one specific training initiative.

The EUROFORTECH training and education programme is implemented primarily through three specific actions:

1. Mobility programme
2. Training seminars and training courses,
3. Future Actions

The objective of the **Mobility Programme** is to move people between countries and between industry and technical and 3rd level educational institutions. This is realised by the placement of students into industry to give them an exposure to industry. This placement is generally part of their academic programme. In addition, the mobility programme provides financial assistance to companies and universities to place a staff member abroad in an university or industry respectively.

The objective of the **Training Seminar and Training Course** is primarily the transfer of technical knowledge into the industry. This action can be initiated by educational, training and technical institutions or by industry itself. The format is a 2 - 4 day seminar or teaching modules which can be used at 3rd level educational institutions or practising professionals.

The objective of Future Actions is to invest new ventures which both develop the network and its facilities. This is achieved by establishing a closer working relationship with partners and accessing other relevant EU funding sources.

In the **Training Programme**, financial assistance has been given for 12 training seminars (2-3 days duration) which have been formulated and implemented across Europe. In addition one long term training course, EUROFORTECH / STEP (Structural Timber Education Programme), is being developed over a period of three years. This programme is coordinated by Centrum Hout and the Technical University Delft in the Netherlands. In the programme, 50 lecturers from across Europe, are formulating 100 lectures on the many aspects of the structural use of timber and the relevant Eurocode 5 standards which influence the utilisation of timber in structural applications. Modularisation allows the training material to be targeted at University students and practising professionals. In conjunction with TRADA (UK National Representative Organisation), the Institute of Wood Science actively supports the development of the STEP programme.

Dr. J.A. Evertsen FIWSC

## The Act of Parliament Clock

The Clock in the accompanying photograph was presented in 1947 to the staff of the old CSIR (it was the Council for Scientific and Industrial Research then) Division of Forest Products, Yarra Bank Road, South Melbourne, Victoria, Australia, by the staff of the Forest Products Research Laboratory, Princes Risborough. For some time in the years of World War II, the staff of Forest Products had been sending food parcels to their colleagues at the English laboratory and the gift of the clock was a very sincere expression of the latter's appreciation and friendship. It is now located at the Clayton laboratories.

The clock was made by the staff of F.P.R.L. from English oak taken from a bomb-damaged portion of the House of Commons. The linen fold panels on the front and side of the pendulum case are particularly fine examples of English wood craftsmanship. In style it is an "Act of Parliament" clock, with the typical large octagonal face unprotected by glass, and trunk long enough to take a seconds pendulum, of the year 1797, when because of a tax levied in England on all clocks and watches, tavern keepers and others, anticipating a scarcity of private clocks and watches, adopted a bold type of time piece for the convenience of their patrons. Although the Act relating to the tax was repealed the following year, many of these clocks are still to be found.

The Plaque reads as follows:  
"This clock is sent by the staff of the  
Forest Products Research Laboratory  
Princes Risborough  
to their friends in Australia as a  
Token of Goodwill."

The case is of oak from the war-damaged House of Commons, and is copied from an "Act of Parliament" clock in the hall of the Art Workers' Guild. London 1947."

(The above notes are taken from an article in the Forest Products News Letter No. 158 in 1948.)



Dr Brazier admiring the clock presented by F.P.R.L. Princess Risborough, staff to D.F.P., South Melbourne, staff in 1947.



# FOREST TIMBER & THE ENVIRONMENT

Joint meeting of the High Wycombe and Midlands Branches at Buckinghamshire College 19 October 1993

The seminar was introduced by the IWS Sc President Keith Purcell who welcomed everyone to the College and then handed over to the Chairman Richard White. Richard White introduced the first speaker, Gavin Jordan, lecturer at Buckinghamshire College, whose presentation was entitled "Principles of Environmental Forestry".

Gavin's talk covered the principles and history of environmental forestry and its effect upon the timber trade in the UK. He described the setting up of the Forestry Commission in 1919 with its aim to enlarge the UK timber resource. This has largely been successful with forest cover being around 10% now compared to only 3.9% when the FC was founded. Although there were few objections to FC policy in the early days, recent years have seen a steady growth in the public awareness of environmental issues and there has been some concern about certain aspects of FC policy, particularly the planting of monocultures which can lead to problems such as acidification of soil and susceptibility to disease.

The principles of environmental forestry are multi-objective and multi-purpose. An holistic approach is taken whereby various roles for the forest are identified and methods of trying to meet these are developed. These roles include timber production, watershed management, recreation, scenic improvement, sustainability and increase in wildlife. Frequently these roles conflict and a compromise has to be sought.

A greater degree of management is usually involved and this has cost implications as does the planting of less profitable species and other factors such as leaving some areas unplanted to create irregular forest areas. However other sources of income such as car parks, visitor centres and gift shops help to offset these costs.

The effect on the timber trade from a drop in production has implications for our balance of payments, but Gavin believes that there can still be an increase in productivity and quality using environmental forestry principles and demonstrated this by means of a case study from the Sagamatha National Park in Nepal.

The second speaker was Geoff Pitts, Deputy Chief Architect at TRADA Technology Ltd., who spoke on "Timber for Green Buildings". Geoff spoke on his ideas of what constitutes a "green" product and asked "When is a house a "green" house, or indeed a greenhouse." One building Geoff knows was certainly not "green" despite his having seen a man painting it with a can of green paint.

More seriously, Geoff believes that an energy efficient house can be described as a "green" house, as it contributes to lessening the effects of many of the main environmental problems facing us today, such as global warming, the rise in CO<sub>2</sub> levels and the consumption of fossil fuels and raw materials in general.

Timber frame construction is an excellent way of constructing energy efficient housing, as the cavity in the timber panels makes high levels of insulation relatively easy to obtain. Timber buildings also have a much lower energy of production than other construction materials. Comparing three beams designed for the same load carrying purpose, if a glulam beam has an energy requirement of 1 unit then an equivalent reinforced concrete beam would have an energy requirement of 5 units and a steel I beam requires 6 units. An American study showed that for a 2200m<sup>2</sup> warehouse, the timber option required only half the energy of production of any of the steel or concrete options.

Substantial savings can also be made in energy use in buildings. Some 40% of the energy costs in the UK is in buildings of which 65% is in domestic buildings. The most significant potential savings in this area come from improved wall insulation and this is where timber frame construction has greatest advantage. Not only does the panel void allow extra insulation material, but wood itself is a good thermal insulator. Very basic timber frame construction easily meets a thermal insulation 'U' value of 0.43W/m<sup>2</sup>K whereas brick and block construction struggles to meet the basic building regulations requirement of 0.45 W/m<sup>2</sup>K. If the normal wall stud size in timber frame is increased to 140mm then a value of 0.24 W/m<sup>2</sup>K can be obtained at minimal extra cost and if the depth is increased to 200mm a value of 0.18W/m<sup>2</sup>K can be achieved.

Other energy savings can be made using double glazing and by careful minimisation of air leakage which accounts for the loss of approximately 50% of the heat in an average home.

The final speaker was Francis Sullivan, Forest Conservation Officer for the World Wide Fund For Nature (WWF) who spoke on "Certifying Timber and Sustainable Sources".

The WWF have over 100 field conservation projects and much of their work is involved with trying to influence government and trade policy on environmental matters. For some years WWF have been concerned with the rate of deforestation in the world and they believe that most initiatives to halt this have so far failed due to the influence of the trade and the effects of local consumption of the timber.

WWF feel that the solution lies within the trade who should put pressure on the timber producers to provide evidence that their resources are well managed. WWF have set up a "1995 Group" of about 20 companies who are committed to obtaining all their timber products from sustainable sources by the year 1995. These companies are therefore faced with the problem of proving that sources are sustainable.

It has now been agreed to set up the Forest Stewardship Council (FSC) which will define the requirements for sustainability and will police bodies that will verify and certify producers operating in accordance with the FSC rules. The FSC have defined a series of principles that will be applied and these take into account economic, social and ecological factors. It is hoped that the FSC will be in operation within the next 6 - 12 months.

Following the presentations there was an interesting question and answer session involving all three speakers and covering issues such as the effects of privatisation of the Forestry Commission on UK timber supplies, the effect of timber certification on price and availability of products and the introduction of energy rating schemes for new houses.

Following the questions session Keith Purcell proposed a vote of thank to the speakers, to the organisers and to the college for providing the venue. Following this the meeting was closed but informal discussions continued for some time over a cup of tea.

Vic Kearley AIWSc, High Wycombe Branch.



From left to right  
Richard White (Chairman H.W. Branch), Keith Purcell (President), Francis Sullivan (W.W.F.), Gavin Jordan (Bucks College), Geoff Pitts (TRADA).



# THE FIRST OFFICIAL EXCHANGE VISIT

## SUCCESSFUL VISIT BY DR. BRAZIER

So ran the heading in the Australian Branch's "Wood Science Digest", November 1993 issue.

Six years ago Bill Keating, Vice President of the Institute and past Chairman of the Australian Branch, attended our AGM whilst on a visit in the UK and in his address to the meeting proposed that arrangements should be made for formal exchange visits between the Australian Branch and ourselves. His proposal was that every two years alternate official visits should be made. In the past, members from Australia visiting the UK, or UK members visiting Australia, tried whilst on business trips or holiday to make contact, but these visits were ad hoc, and mostly of a social nature.

Without discouraging these informal visits Bill's proposal was to put matters on an official and more purposeful basis. The meeting was in complete sympathy with this and a formal proposal was put to the meeting and enthusiastically carried.

Dr. John Brazier, Past President and current Chairman of the Education Committee, became the guinea pig for the first 'official' exchange. In a three week visit, the Australian Branch very efficiently organised his tour, embracing Victoria, Melbourne, Canberra, Sydney, Perth and Brisbane.

The following is taken from the Australian Branch Newsletter "Wood Science Digest" and our thanks to Joe Mack, the Editor, for permission to reprint his report.

Dr. John Brazier came to Australia as a representative of the Institute's parent body to meet with the Australian Branch Committee and give talks at a number of venues. He was accompanied by his wife Nancy and for both it was their first visit to Australia; they arrived in Melbourne shortly before midnight on 16 October and departed for home from Perth on 5 November.

Dr. John Brazier is one of the world's foremost wood scientists. His international reputation has been established in several fields, but of particular interest is his ability to utilise his scientific background for the benefit of industry. As a consultant his services are sought after by Government and trade interests. He has published extensively on the properties and use of juvenile wood in softwoods and on the conservation and utilisation of tropical hardwoods.

Dr. Brazier's academic background comprises degrees in Forestry and Botany from the University College of North Wales and a Doctorate in Science awarded in 1981 from the same establishment for his work on the growth, properties and uses of plantation growth Sitka spruce (*Picea Sitchensis*). This work was undertaken during his time as Group Leader at the UK Forest Products Laboratory, Princes Risborough where he was employed up till 1987.

In recognition of his achievements Dr. Brazier has been made a Fellow of The Institute of Wood Science, the International Academy of Wood Science and the Institute of Chartered Foresters. In 1987 he received the Outstanding Service Award from IUFRO (International Union of Forest Research Organisations) and also holds the award of Companion of the Imperial Service Order. He has held several senior positions in professional associations, in particular, President of the Institute of Wood Science and from 1982 - 1985 Chairman of the Commonwealth Forestry Association and is currently a Vice-President of that organisation.

Dr. Brazier's visit was invaluable to the Branch Committee and a number of matters relating to the organisation of the Institute were discussed. It will be of interest to retired members of the Australian Branch that next year a reduced membership subscription will be available in this category if the member does not wish to receive the Institute's Journal. Dr. Brazier attended the Annual General Meeting of the Australian Branch held in the evening of 20 October at the CSIRO Division of Forest Products, Clayton, Victoria, and gave a most interesting talk on European harmonisation, the text of which follows.

While in Victoria, Dr. Brazier was taken on a tour of a regenerated mountain ash forest and Gould's eucalypt sawmill at Alexandra; he then visited the University



*Dr. Brazier with members of the IWSc Australian Branch Committee.  
L to R; Standing: Bill Joe, Jack Taylor, Yugo Llic, Boris Iskra, David Williams, Andrew  
Rozsa, Prof. Peter Vinden, Harold Breiting, Chairman Dr. Harry Greaves;  
Seated: Dr. Ed Dougal, Paris Alexiou, Dr. Ted Hillis, Dr. John Brazier*

of Melbourne's Forestry Department at Creswick where he was given an overview of the course there and shown the work being done on high temperature drying of eucalypts; also at Creswick, Dr. Brazier was shown the sawing of highly stressed eucalypt logs at the facilities of the Timber Industry Training Centre.

On Thursday, 21 October, the Braziers travelled to Canberra where they were hosted by the Australian National University; Dr. Philip Evans of the Department of Forestry reports that Dr. Brazier was given a tour of the Department's research and teaching facilities including the pilot scale wood preservation and kiln drying plants. He took time during this tour to talk to undergraduates who were studying wood anatomy and identification as part of their course in wood science; the students were greatly reassured by Dr. Brazier's comments, given his expertise in hardwood anatomy, on the difficulties of identifying eucalypt timber on macroscopic features alone. Dr. Brazier was pleased to learn of the importance that is still attached to the study of wood anatomy and identification at both Australian forestry schools.

Dr. Brazier gave a formal seminar in the afternoon, attended by NSW and ACT Institute members and staff and postgraduate students of the A.N.U. This seminar was similar to that delivered at the CSIRO Division of Forest Products. It was well received and generated lengthy discussions on the possibilities for increased

trade in Australian timbers between Australia and the EEC. (This matter also arose during question time after his address in Melbourne. Ed.). Dr. Brazier remarked that there was once, in the 1930s, a considerable trade in timber between the UK and Australia and he thought that there could be a resurgence in such trade, particularly if substitutes for the currently used tropical joinery timbers could be found. Dr. Brazier thought that there were tremendous export opportunities in the EEC for a light-red joinery timber and this led to considerable discussion on the Australian tree species that could provide such timber. Dr. Brazier suggested that there were benefits to be gained from studies on the potential of lesser known Australian hardwood timbers, including many under-utilised eucalypts, to provide high value timbers. While Dr. Brazier commented on the benefits to be gained from a renewed focus on the potential of native hardwoods to produce 'value-added' products, he felt no doubt as to scientific and technical challenges ahead for the wood science community if such potential is to be realised. At the conclusion of his seminar, Dr. Brazier was afforded customary applause. As a former Chairman and current Vice-President of the Commonwealth Forestry Association he was later entertained by Australian members of the Association.

New South Wales Branch Committee representative William Joe reports that on 25 October, Dr. and Mrs. Brazier were taken to visit some radiata pine



# AUSTRALIA

plantations at Oberon and talked to the Research Foreman on aspects of forest management practice and some of the field work taking place to predict log quality and yield using a program called MARVEL. The party was also given a guided tour of CSR's MDF and particleboard plants at Orberon and were shown some of the scenery of the Blue Mountains. The following day, Dr. Brazier was taken to the State Forests of New South Wales's Research Division at West Pennant Hills to meet with research personnel from various sections including Forest Products, Silviculture and Ecology, Soils, Nutrition and Hydrology, and Biology and Chemistry. He presented a talk similar to that given in Melbourne on the forestry and forest products scene in the UK and the significance of European harmonisation.

David Gough, the Queensland representative on the Branch Committee, reports that in Brisbane on 28 October, Dr. Brazier addressed a joint meeting of members of the Institute of Foresters of Australia and the Institute of Wood Science; he talked about the history of plantation forestry in England and timber quality research in spruce plantations. Dr. Brazier said that communications between foresters and wood users were essential, and in his research he has looked at the effect of changes in plantation silviculture on the quality of timber produced. He paid tribute to the Australian who established plantation forestry in England after the First World War, Lord Robinson; Lord Robinson was born in Perth and was educated in Adelaide before going to England as a Rhodes Scholar. He became the first Director General of the British Forestry Commission and the man who chose the North American spruce for British plantation development.

"After World War II forestry was allocated to the poorer land as the main emphasis was on food production," Dr. Brazier said. "Forestry had to go up, so we planted at heights of 700 - 1400 feet."

Planting at these heights exposed the trees to high winds. Winds of 70 - 90 miles per hour in north west England are not unusual, he said. In these high wind areas, the decision was made to do no thinning. While this allowed the trees to grow well, research was needed to look at the quality of the timber that resulted. The spruce they grew was not the same as the imported timber from North America; it was lightweight wood, acceptable for pulp and particleboard and adequate for timber framing. It's slow to dry and it is extremely difficult to get preservation into it.

Dr. Brazier said most of the wood would be about equivalent to the Australian F5 stress grade; sawmills would need to recover 90 percent of their product as F5 grade or better in order to remain viable.

A research project undertaken by Dr. Brazier was set up to assess the effect of different planting spacings, some with thinnings and some without, on the stress grades obtained. The timber was sampled from trees in spacing ranging from 0.9 to 3.9 meters. Four metre logs were taken from 480 35 to 45 year old trees from various plots around the country; the logs were all cut to a standard framing size and each piece was stress rated. The results showed a reduction of wood strength as the spacing widened. "All the other things we looked at also tended to detract from performance as spacing widened," Dr. Brazier said "As the space widened, the size of juvenile wood increased. However, the amount of wood grown outside this was almost grown independent of spacing." They also discovered there was not much increase in adult wood



*John Brazier, Bill Keating and Harry Greaves sharing a cuppa with their wives*



*Dr. Brazier discussing aspects of a Radiata Pine plantation with state Forests of NSW Personnel at Oberon, NSW*

after the age of 15 - 16 years.

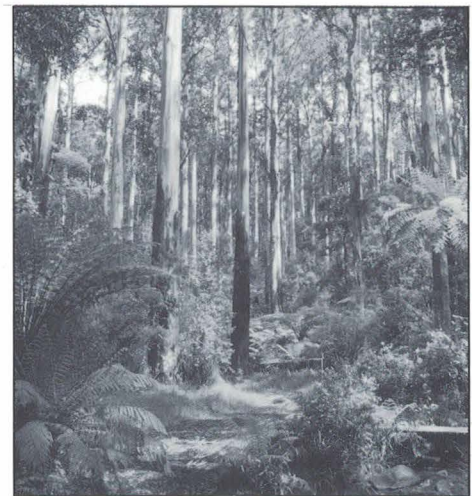
The result showed that 2300 trees per hectare was the optimum if they wanted to be sure of an average 90 percent of useable framing timber.

Pruning is not favoured in the UK because of the cost, but Dr. Brazier thinks this may change in the future. (the above notes are taken from a report written by Judith Aitchison of the DPI Forest Service Publishing Section, for which due acknowledgement is made. Ed.)

Finally, the Braziers travelled to Perth where they were hosted by Western Australia Committee representative Paris Alexiou. Paris reports that on 1 November, at CALM at Como, Dr. Brazier presented a talk to 14 people from private enterprise, CALM, Curtin University and the Forest Industries Federation of Western Australia. This was the second IWSc seminar held in Perth this year and attendees again enjoyed the opportunity to form and renew contacts, discuss industry and research developments, as well as listen to a distinguished wood scientist and forester speak on European harmonisation of wood and wood products standards. The following day, the Braziers visited Bunning's predrier facility at Yarloop and CALM's Wood Utilisation Research Centre at Harvey, hosted by Dr. Graeme Siemon. Their final official visit was to view the next day the coastal pine forests before heading inland to see a jarrah thinning operation

and a mine rehabilitation site. John and Nancy Brazier returned to Perth that evening where they enjoyed a couple of free days before departing Australia in the evening of Friday 5 November.

All in all, Dr. Brazier's visit was an outstanding success and showed that the exchange visit scheme between the UK headquarters and the Australian Branch of the Institute was well conceived. We trust that the Braziers enjoyed their visit to Australia as much as we did.





# WATCH OUT FOR WOMBATS & OTHER AUSTRALIAN REFLECTIONS

By Dr. John Brazier

I attended the AGM of the Australian Branch, presented Bill Keating with an Honorary Fellowship Certificate and addressed IWSc Branch members and others at Melbourne and in Canberra, Sydney, Brisbane and Perth and in a busy schedule, met and talked with wood scientists at the CSIRO Division of Forest products, at the Universities teaching wood science at Melbourne and Canberra, and at the State Wood Utilisation research centres at West Pennant Hills, New South Wales, Indooroopilly, Queensland and Harvey in Western Australia. I also saw something of the forest and timber utilisation activities in each of the States visited and give some reflections on these below.



"It's a fur-coated tank." Gary Waugh, Principal Research Scientist at the Division of Forest Products, Melbourne, was describing a Wombat. He added, "When I hit one, it simply lifted the car through 90 degrees and ambled off." Of Kangaroos, he said, "Miss the first one, but watch out for the second, always a metre or so behind, otherwise it can end up in the back of the truck." And sure enough, some days later, one and then another bounded across the track as we drove through the forest; fortunately the second was some yards in front of the car.

We were off to see the eucalypt forest on a range of hills called the Dandenongs, north-east of Melbourne. Gary distinguished the several species of eucalypts, mainly on their bark features but he acknowledge that it was useful to know what to expect in a locality. The most common and commercially most important are the mountain ash and alpine ash, *Eucalyptus regnans* and *E. delegatensis*. Their wood, once shipped in quantity to the UK, has some resemblance to ash but the trees are quite different. There was southern hemisphere beech, *Nothofagus cunninghamii* and Australian blackwood, *Acacia melanoxylon*, both with attractive woods, and, in parts of the forest, a spectacular understorey of tree ferns.

The mountain ash trees are magnificent. Old growth can be 60m or more in height and regrowth, which happens after fire, grows quickly to a large size to produce fine, straight, cylindrical stems. But what might appear to be the sawmiller's perfect log presents great problems in conversion, bending off the saw because of very high growth stresses and giving sawn timber of variable shape and dimension. Drying, too, of many eucalypts is a slow process and, with a initial period of air drying followed by kilning, it can be two years before sawn timber leaves the mill gate.

There is a positive move to get more value from the

hardwood resource. Formerly used mainly for house framing, attention is being given to added value and more highly valued markets. With much of the hardwood forest publicly owned, quality logs are only assigned to mills capable of conversion for added value and this has led to support by industry for hands-on training courses in saw-milling, drying and machine processing. Those at Creswick in Victoria, though set up with some Federal and State funds, are now supported entirely by industry. Small groups of around half a dozen 20-30 year olds, with some experience, are taught not only how to operate equipment more effectively but also why procedures are adopted. It is an excellent example of applying and capitalising on technology.

Research on timber is underway at a number of centres, at the CSIRO Division of Forest Products in Melbourne, once more separate from the Division of Building research with which it has been combined (though structural work on wood remains with Building Research), at both the Melbourne University and the Australian National University at Canberra, and in State Forest and Forest Products Laboratories in New South Wales, Queensland and Western Australia. As elsewhere, effort has been reduced, with cut-backs in funding and an emphasis on industrial support, most notably in the State laboratories. But, overall, the impression is that forest products research is better supported and in a healthier state than it is in the UK. Of interest is the impending setting-up of a Forestry and Wood Products Research and Development Corporation funded by a levy on timber producers, exporters, and importers and intended, as its title suggests, to help fund research and develop work in forestry and wood products.

The Australian timber industry relies increasingly on plantation-grown softwood. Pine has been introduced and extensively planted so that, today, with some 900,000 ha, Australia's softwood plantations are only marginally less than those in the UK. They are mainly radiata but, in Queensland, caribaea and patula are grown, and in western Australia there is some pinaster. By UK standards, planting distances are wide, at around 1100 stems/hectare, and most crops are selectively thinned twice, at first to 250-300 trees/ha and finally to 150-200 trees/ha. Growth is vigorous and on a rotation of 25-30 years, average log diameters are around 30cm. An interesting practice is monitoring of growth by a programme of foliar analysis, with the application of fertiliser when there is evidence of nutrient deficiency.

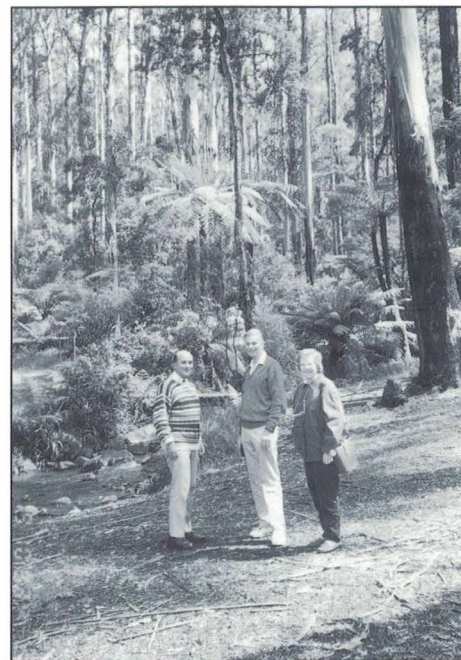
Sawn timber is kiln dried at temperatures up to 145 degrees C and stress graded. The sawn timber is used for the framing of houses which, except in Western Australia, are typically timber frame with a brick skin; however, there is increasing competition from steel for the framing of houses. But this is not the only threat to timber. Subterranean termites occur throughout Australia and, in order to protect house timbers, it has been the practice to treat the underlying soil with an insecticide. Now, there is increasing opposition to this practice on environmental grounds and more expensive physical forms of protection are being used. These include the use of fine stainless steel mesh of a layer or granite chips, although the first of these is of uncertain suitability as the provision of services through it can provide a passage for the insects.

Australia has some 34 million hectares of native forest, mainly hardwood, but only some seven million hectares are available for wood production and this

gives about 4.5 million cubic metres of logs per year. This is a low yield for such a large area for, though there are some 600 species of eucalypts, few occur in highly productive stands. The 'ash' forests of Victoria and elsewhere in the south-east are among the best but so, too, are the jarrah, *Eucalyptus marginata*, forest of Western Australia. Most of the jarrah forest has been cut over and today the only remnants of the large old trees are fire damaged specimens in the re-growth forest or those in small areas where logging, in the past, was not practicable. What impresses, though, is the extent of the jarrah forest, which stretches for very many miles along the Darling range of hills. Re-growth is often dense and, though much smaller than the first-growth trees, reaches millable size at 60-80 years. It gives a strong, very durable (by UK standards) or moderately durable (by Australian standards), red to dark red wood, used, among other purposes, for the sleepers in the tunnels of London's underground rail system. Today, in Australia, with the emphasis on seeking added value, it is sliced for veneer and laminating techniques using solid wood have been developed. As a red, durable, if somewhat heavy wood, it offers potential for purposes where oak or keruing have been used and warrants consideration for high class joinery from a fully sustainable resource.

But it wasn't all work, for there is a respect for the occasion in Australia and one such, the Melbourne Cup, occurred while we were at the Wood Utilisation Research Centre at Harvey, south of Perth. All of Australia stops for 'the Cup' and though run at 3pm in Melbourne, this is lunch time in Western Australia and was celebrated with a barbeque (or barbie, as it is called there). Mind you, the advertisements everywhere, if acted on, suggest that everyone stops for a protracted lunch wherever you are in Australia. It's an excuse for a party and for Melbourne society to dress up, even if it did rain and an Irish horse won. So what's different from here?

It was an excellent trip, thanks to the outstanding efforts made by everyone we met in Australia to make it so. The initiative of the Australia Branch in proposing such an occasional exchange was fully endorsed and I hope by meeting and talking with so many in Australia, it has helped maintain the close links between the Institute membership in the two countries.





# EUROPEAN HARMONISATION

*This is the text of the talk given by Dr. Brazier on the occasion of the Annual General Meeting of the Australian Branch of the Institute of Wood Science on 20 October 1993 at the CSIRO Division of Forest Products, Clayton, Victoria.*

You have asked me to talk about European harmonisation and its significance for the wood and wood products sector in the UK and, while I might have chosen something rather less controversial, it is a topic which is having and is likely to have an increasingly significant impact, not just for the wood sector but for trade as a whole, both within the European Community and between the world at large and the Community.

Whether, today, harmonisation is the right word might well be debated - harmony is often the last thing that appears to exist and, of course, when dissent arises, it is laid at the door of perfidious Albion.

Let me remind you that the original six countries of the Community signed the Treaty of Rome in 1957. The UK was not one of these; we first joined the European Free Trade Association, with the Scandinavians and some other countries, and it was not until 1973, after a long period of opposition, mainly from the French, and after the death of Gen de Gaulle, that Britain became politically, as well as geographically, part of Europe.

An undoubted success of European association has been an expansion and liberalisation of trade and today some 56 percent of UK overseas trade is with Europe. It is in this context that harmonisation has to be considered and, indeed, the purpose of harmonisation is to facilitate trade, making it easier between countries of the Community by treating the Community nations as one trading block with common requirements as to quality, performance, control, etc. Of course, the process is underway for all aspects of trade and when we talk about that concerned with wood and wood products, this is only a small part of a much larger whole.

Even so, the wood and wood products trade is a very important one for Europe. That for solid wood and panels has an annual value of the order of US \$12 billion and if wood pulp, paper and board are added, the figure is more than trebled. These figures are for Europe as a whole (but excluding Russia) with the countries providing the bulk of the supply, including those in Scandinavia, actively involved in the harmonisation process

It is a trade which is largely, though not entirely, within Europe, e.g. the UK, Germany, France, the Netherlands and Denmark all have large imports of sawn softwood from Sweden and Finland, Italy imports around 3 million m<sup>3</sup> of softwood from Austria, and there is a substantial softwood trade from Germany to France and the Netherlands.

The hardwood trade is much smaller, though still very valuable for France, Germany, Denmark, mainly to Italy, Spain and the UK.

The plywood trade is dominated by Finland (especially to Germany and the UK), but Sweden, France and Germany also contribute significantly.

And large quantities of particleboard are traded from Belgium, Portugal and even Switzerland, mainly to the UK, Netherlands, France, Spain, etc.

As far as the UK is concerned, we have an enormous import bill of around £8 billion for wood and wood products, 2/3 of it on pulp and board and 1/3 on wood and panels. Of the latter, the split is about 2:1 on a cost basis, about £1.6 billion on solid wood and £0.8 billion on panels. This is for imports - there is an important and rapidly developing UK production of sawn softwood, about 1.7 million m<sup>3</sup> now, doubling in the next decade and trebling by 2020; also of particleboard and mdf - we supply about 60% of the national need - but no plywood - there is no plywood mill in the UK - though some veneer is cut.

It could be argued that this wood trade and especially that between European states has progressed satisfactory for many years and this is undoubtedly so. Everyone is familiar with the principles of the Scandinavian grading rules, even if what you get depends on the shipper's interpretation of them and the forest he gets his timber from. But it is the multiplicity of codes and standards which have been produced, invariably on a national basis, which has contributed to problems in marketing and sometimes rejection of a product because it does not conform to a performance standard, assessed in a particular way and a legal requirement for acceptance in building of other use. Over the years, the national standards authorities, have gone their own way - of course with guidance of technical people - to produce standards for solid timber, panels, etc. Methods of test often differ, as do performance levels accepted, so it is hardly surprising that users have great difficulty in comparing products. Where Building Regulations require a standard of performance, which may well be written in terms of the national standard, there is often little choice in the matter.

It is to overcome such matters that harmonisation is sought.

The most obvious way in which this is being implemented is by adoption of Community agreed codes and standards for wood and wood-based products (and, of course, for other commodities). The main instrument for harmonisation has been the introduction of 'New Approach' Directives - in the Construction industry, the Construction Products Directive, which requires all construction to meet six essential requirements, including: structural integrity, safety in fire, hygiene, and so on. These will be met by the provision of Eurocodes - with that for timber structures known as Eurocode 5 (there are others for concrete EC2, steel EC3, and so on). The Eurocode, like any Code, requires the support of Standards and it will be through common or harmonised standards that conformity to the Essential Requirements can be demonstrated.

So if there is to be a Common Directive, there must be common or harmonious standards. These common standards are being written by the European Standards Organisation, known as CEN (from its French title Comité Européen de Normalisation). CEN differs from a national Standards organisation in that, whereas almost any organisation can join a national organisation, CEN comprises only national standards organisations. A further important point is that CEN represents not only the 12 EC countries but also the 6 EFTA countries (Norway, Sweden, Finland, Austria, Iceland and Switzerland). Its HQ, with the secretariat, is in Brussels.

It has two main functions:

1. The drafting of standards at the request of the EC, as a move to harmonisation.
2. The drafting of other standards at the request of its members.

Currently, for timber and timber products, some 80% of the work of CEN is for standards requested by the EC and some 200 standards are anticipated over the next 3 - 4 years!

There is an excellent TRADA leaflet on European standards, issued in April of this year, and I can not do better than paraphrase parts of this briefly

The standards work is being undertaken in Technical committees (TCs) and there are six of these undertaking mandated work covering:

TC	38	Durability
TC	112	Wood Based Panels
TC	124	Timber Structures
TC	175	Non Structural Uses
TC	193	Adhesives
TC	250	The Eurocode on timber design, Eurocode 5

Each comprises a main committee and a number of Working Groups where the actual work is done. It involves a lot of horse trading and to get a document agreed



# EUROPEAN HARMONISATION

generally means that two out of the UK, France and Germany must accept it, with the Scandinavians having a strong opinion in some matters. A preliminary draft is then referred to national standards committees for comments which are referred back to the WG. A revised draft then comes back to national standards committees for voting as to acceptance or otherwise. It sounds a cumbersome process but it is working - with a lot of effort.

It's not possible to report on the work of each TC but I will cite one development of great importance and interest to most timber suppliers and users, even to those outside the Community if they are likely to supply to it. This is the new strength class system for structural timber.

For some years now, Building Regulations in the UK have required the use of stress grade timber, either visually graded or machine graded. A system of 9 Strength Classes, 1 to 9, was introduced to cover both softwoods and hardwoods, though the main structural softwoods were covered by three grades SC3, SC4 and SC5. A British Standard (BS 5268 part 2) gave bending and other stresses, as well as stiffness values, for each strength class and span tables and other design data have been based on these. The proposed European standard on strength classes is introducing a 15 class system - nine covering softwoods - and inevitably there is going to be some difficulty in relating the former to the new - especially as the two are likely to be used in tandem for a number of years.

There is and will continue to be a high price to be paid for such standardisation/harmonisation. It has involved an enormous input on the part of both technical people - many senior staff at BRE and TRADA are spending a significant part of their time on providing technical data and arguing technical points in committee - and the industrial input from the trade has been very substantial. John Sunley, since his retirement from TRADA, has spent much of his time in managing the UK input and, of course, the same input has been going on in the main participating countries in Europe..... Let's hope it pays off in the end!

Let me turn to another aspect of harmonisation which is having its effect on the timber trade. This is the application of plant health regulations. Britain, like Australia has some fairly stringent rules about plant and, for that matter, animal imports. The UK and Ireland have been fortunate in being free of a number of the insect pests present on mainland Europe and elsewhere in the world and plant health inspectors, working closely with the port authorities, have exercised strict controls in an endeavour to prevent their introduction.

The first stage of harmonised plant health by the EC was taken in 1980 but even under these arrangements, material moving between member states could be inspected at customs frontiers. Since 1 January 1993, this has changed. With freedom of movement, there is no internal border control and so no plant health checks when goods are moved from one member state to another. But, clearly, control must still be effected and be effective to prevent the introduction of pests to the Community countries or their spread from one country to another.

Put in its simplest terms: to control spread from one Community country to another - protected zones have been set up and where there is movement of wood within the Community which presents a threat to a protected zone, a shipment must be accompanied by a plant passport, issued from the place of production, declaring the shipment to be free of pests and disease. Britain and Ireland are protected zones, free of certain insect pests on mainland Europe, and imports of softwood which contain wane or bark must be accompanied by a plant passport (i.e. have a clean bill of health!)

To control the introduction of pests into the Community from outside, controlled goods (and these include all sawn softwood) must be accompanied by a phytosanitary certificate or other approved document and are subject to inspection at their point of entry to the Community. If accepted, they can be moved thereafter within the Community provided that they are accompanied by a plant passport. I need hardly add that this has been greeted with some concern and it is to be hoped - and it remains to be seen whether or not it is a pious hope - that the rigours of inspection from Galway in Ireland to the Piraeus in Greece are uniformly stringent, as from either port, and all those in between, timber can go elsewhere in the Community without inspection.

Community action on plant health, which has been in operation for some while, has been responsible for one of the stages of the timber trade in western Europe over the last 2 - 3 years, though whether it should be judged tragedy or farce is more difficult to say! It concerns the pine wood nematode of North America which, in the right conditions, as in Japan and parts of north-east Asia where it has been introduced, can have a devastating effect on pines. Though the nematode kills the tree, by multiplying in the vascular system, it is spread from tree to tree by a beetle vector, a species of *Monochamus*. The nematode was found in wood imported into Scandinavia and this set the alarm bells ringing, even though it was reckoned that for effective spread of the vector, summer temperatures in excess of 24 degrees C are required for a substantial period. This could, of course, happen in southern Europe but was hardly likely in the north or west.

Two things happened

1, all shipments from Canada and the US had to be accompanied by a declaration that the wood was free of bark and grub holes - this in an endeavour to prevent the introduction of the vector;

2, a working party - in fact, two working parties - one European, the other Canadian, were set up to develop an appropriate pasteurisation treatment to kill vector and nematode. This took longer than anticipated, not so much to determine the lethal temperature, 56 degrees c, but to demonstrate that this temperature had been achieved and maintained for a given time at the centre of pieces of different section. Heat sensitive paints were tried, with some success, but have not been adopted because of uncertainty about their durability and whether or not they were tamper proof.

What soon became evident was that if the timber had to be pasteurised for several hours - involving stacking and loading into a kiln - it was likely it would thereafter be kiln dried. This came about at a time when the UK softwood trade was examining its own practices, recognising that the use of green timber was not in the long term interests for the reputation of wood, as well as not meeting the requirements of the Code of Practice for structural timber. It led to the introduction of a "Dry Wood Charter", requiring that all carcassing should be dried to 18 - 20% m.c.

Thus, on two counts, the pine wood nematode and the Charter, there were reasons for drying wood. The UK sawmilling industry responded by investing several millions of pounds in new kilns as virtually all UK carcassing had been sold green.

Then a combination of factors occurred. The economic depression bit deeply, most notably in the building industry, the UK came out of the European Exchange Rate Mechanism and devalued the pound; this made Canadian timber, which had been very cheap, far less attractive and, in any event, not wanted in its former quantities, and the Dry Wood Charter failed to materialise - merchants weren't prepared to pay the extra cost if they could continue to buy green, which the Scandinavians were prepared to supply.

So we have a situation where; the Canadians are required to pasteurise (and probably dry) all their shipments to Europe, except western red cedar, the UK merchanting trade continues to buy green timber from elsewhere than North America, in order to compete, the UK sawmilling industry has had to abandon kiln drying and has expensive kiln capacity lying idle.

And all largely arising from harmonisation policies.

Sufficient to say there is a weariness about the whole matter, both on the part of importers in Europe and especially the UK and on the part of shippers in Canada. As from July 1st, all Canadian timber (except cedar) has had to be pasteurised, but whether this is the end of the story remains to be seen.