

A presentation from  
CSIRO Forest Biosciences 2008 Seminar series  
Ian Wark Laboratory Clayton

# **The Chronicles of the Forest Products Laboratory**

**1918 – 2008**

V. (Bill) Balodis  
July 2008



# The Chronicles of the Forest Products Laboratory

1918 - 2008



Bill Balodis CSIRO Clayton, June 18, 2008

[Vilnis.Balodis@csiro.au](mailto:Vilnis.Balodis@csiro.au)

[vbalodis@mira.net](mailto:vbalodis@mira.net)

Chronicles - a record or account of events in the order of time (Macquarie Dictionary) - as perceived by the reporter.

I have chosen **Forest Products Laboratory (FPL)** as the topic for the talk instead of **Division of Forest Products (DFP)**, because

1. FPL has been the core name for forest products research since 1918, whereas DFP has officially existed only for two periods, viz. 1928-71 and 1991-96.
2. The structure and activities of DFP were largely based on the US Forest Products Laboratory in Madison, Wisconsin.

## Major sources of these chronicles

- Forest Products Newsletters (FPNL) 1932-1975
- DFP staff lists 1928-1971
- Hundreds of DFP photographs
- Bulletins and pamphlets
- Biological data bases, commonly known as memory

401 issues of FPNL; 100 pages of staff lists from Annual Reports; CSIR and CSIRO bulletins, technical and technological papers.

(The staff lists are fully digitized, I can e-mail it to anybody who would like a copy.

The digitized FPNL, as an indexed PDF file of about 200MB, will be ready in October)

## The Western Australian Forest Products Laboratory

This is a complex story involving strong personalities, and State and Federal Agencies. The following slides are largely based on the following publications.

L. R. Benjamin (1923) - Manufacture of pulp and paper from Australian woods. CSIR. Bull. 25,

L.R. Benjamin (1959) - The challenge of the eucalypts, Appita 13(3): 90-103

I.H. Boas – The commercial timbers of Australia, their properties and uses. CSIR publication, Melbourne, 1947

L R Benjamin (1923) - A valuable historical document. Please let me know if you would like a copy of Bull. 25 on a CD.

L R Benjamin (1959) - A very interesting review of the early history of the FPL.

I H Boas (1947) - A great source of information of more than 350 pages, with 40 high quality photos and 50 pages of Bibliography of Australian Forest Products literature.





**C E Lane-Poole**

Conservator of W.A. Forests



**I H Boas**

Chemistry Department, Perth Technical School



**L R Benjamin**

In about 1918, following a report of successful French pulping tests of young *E. globulus*, Lane-Poole suggested to Boas that wood from karri regrowth may also be suitable for pulping.

Its interesting that in 1959 Benjamin wrote,

***We were both (in 1918), fortunately as it turned out, almost completely ignorant of the techniques of pulping and papermaking.***

Fortunate because, instead of pulping, they tested karri for cellulose content. It was nearly double the pulp yield reported by H E Surface (1915) for Tasmanian eucalypts . **The high cellulose content provided the impetus for a pulping study of karri and jarrah.**

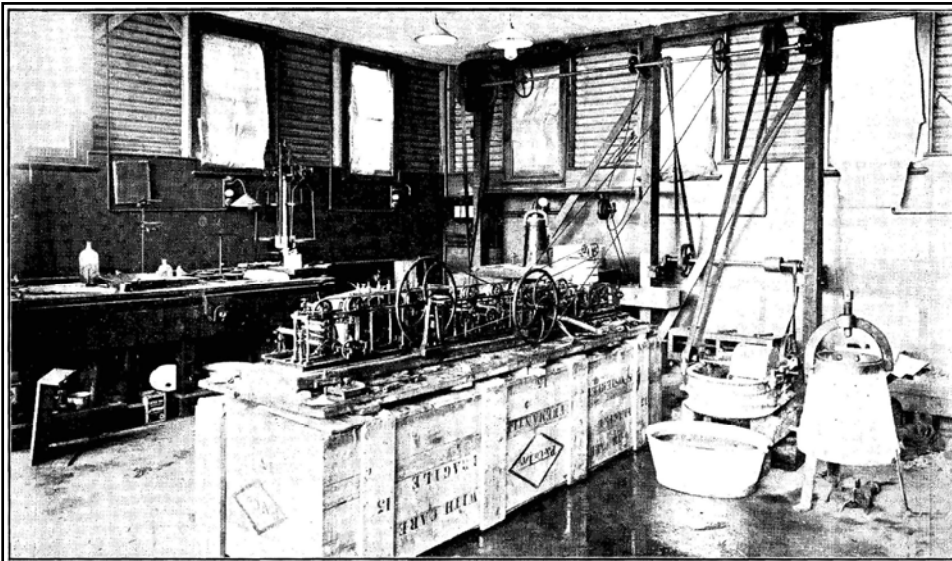
In the 1915 tests, samples from old trees (equivalent to firewood) were pulped using high sodium hydroxide charges. The pulp was of poor quality and pulp yield only about 30%. The disappointing test results for the Tasmanian eucalypts set back the Australian eucalypt pulping industry by at least 10 years.

In 1919 Federal authorities agreed to establish a Forest Products Laboratory in Perth and sponsored I H Boas to study forest industries and research facilities overseas.

On return he persuaded various WA newspaper owners to contribute £600 to purchase a model paper machine and some auxiliary items.

But, the Federal authorities would not adopt Boas' full plan to set up a laboratory on a scale that could deal with forest industries requirements.

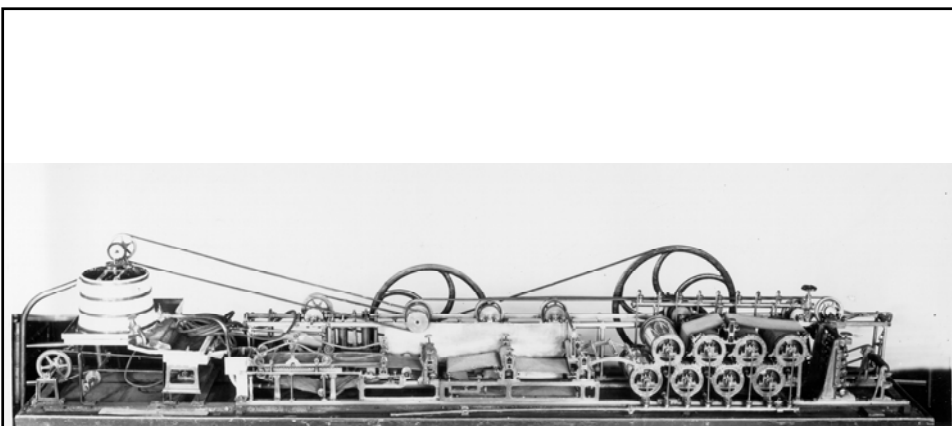
After setting up the Forest Products Laboratory, and, the Pulp and Paper Section with Benjamin in charge, Boas resigned from the Institute of Science and Industry to work in private industry in Victoria.



Portion of Paper-Pulp Laboratory, Perth, W.A., showing Autoclaves, Beater, Paper Machine, etc. (from Bull.25)

This is a very basic laboratory by today's standards, and yet it yielded results of major significance.

Note the unprotected belt drives coming from a main drive shaft - a common feature in factories of the day before distributed electrical power became widely available.



Miniature Papermaking Machine  
Built for the Edinburgh Exhibition, 1886

This machine was presented to the Institute of Science and Industry by the leading newspaper companies of Western Australia. It was used in the laboratory paper-making experiments. The width of the sheet is 4 inches, the maximum speed 3 feet per minute, and the length of the machine is 6 ft. 6 in. from flow-box to the reel. (Caption from Bull. 25)

This type of laboratory papermaking machine was not unique, because in Bull. 25 Benjamin mentions that, "A machine almost identical with this is used in the laboratory of the American Writing Paper Co., Holyoake, Mass., U.S.A."

In 1959 Benjamin wrote, ...”as Boas foresaw, the model papermaking plant not only served a very useful function in teaching us the rudiments of papermaking but was also of great propaganda value”.

Samples of white paper, made from pink karri and red jarrah, were sent to state Forest Departments asking for funds, with a promise that their woods would also be investigated.

The fund gathering scheme operated for a few years.

In 1923 the FPL of the Institute of Science and Industry was moved from Perth to Brunswick Technical School in Melbourne.

The Brunswick laboratory closed in 1928 and the papermaking machine was transferred to DFP premises in East Melbourne.

After the closure of the Brunswick laboratory Louis Benjamin, John Somerville and Brook Jeffreys joined the Tasmanian Paper and Newsprint Company Limited (later ANM), and in time played leading roles in the paper industry. Wilby Cohen remained with CSIR and joined the newly created Division of Forest Products where he became leader of the Wood Chemistry Section. These are just a few snippets from Benjamin's 1959 essay, "The challenge of the eucalypts". It is a story worth reading.



In 1921, when this photo was taken, R A Fowler had replaced I H Boas as Officer in Charge of the FPL



John Day with the model papermaking machine which he restored in his living room

The WA papermaking machine has been restored and since 1996 it has been on display in the foyer of Wark Laboratory, CSIRO Clayton.

Warren Hewertson, the last Chief of DFP, deserves thanks for securing funds from the pulp and paper industry and for arranging the restoration.

John Day restored the machine to museum quality.

Photo and caption from OnWood (summer 1995-96 edition). The major cost for the restoration was donated by Australian Newsprint Mills (ANM), \$11,000, with a small contribution from DFP. The machine was built by Marshall & Co., London for the Edinburgh Exhibition in 1886.



The Appita L R Benjamin Medal honours the late Louis Reginald Benjamin, CBE, a pioneer of the development of the pulp and paper industry based on eucalypts. The award is designed to encourage technical excellence, innovation and achievement, and is awarded to persons who have contributed in an outstanding way to the technical progress of the pulp and paper industry in Australia and New Zealand. The contribution should be largely personal and can be in research, development, engineering or management. The nominee need not be a member of Appita.

Since 1971 four of our CSIRO colleagues have been awarded the L.R. Benjamin medal:

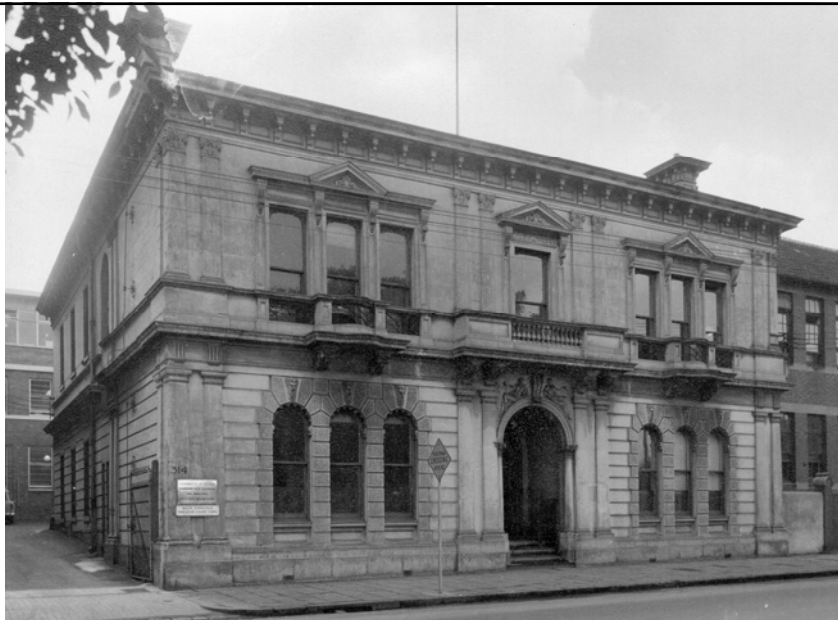
<b>1974</b>	<b>A.J. Watson</b>
<b>1977</b>	<b>H.G. Higgins</b>
<b>1997</b>	<b>R. Evans</b>
<b>1999</b>	<b>A.F.A. Wallis</b>

The Medal is awarded for outstanding personal contributions to the Australian and New Zealand pulp and paper industry.

## Division of Forest Products

DFP was formed on July 1, 1928.  
I.H. Boas was appointed as Chief, with a  
staff of one research officer, a half-time  
typist, all located in one room at  
314 Albert St East Melbourne.

It could be said that the Forest Products Laboratory became DFP. The Brunswick FPL closed and DFP was formed in 1928. Some of the equipment, probably more than just the papermaking machine, was transferred from Brunswick to Albert St., East Melbourne  
**I H Boas founded both; in 1919 he created FPL and in 1928 he was appointed Chief to create DFP.**



Entrance to 314 Albert St East Melbourne, DFP in 1928

## **The 1928-29 DFP Annual Report**

### **The Divisional policy was to train staff and to provide training facilities for them**

The parallel, on-the-job and academic, training did produce highly skilled researchers with extensive contacts, and with a wide knowledge of the industry.

It could be argued that this policy greatly contributed to the high public esteem enjoyed by the Division of Forest Products.

The staff lists reveal that many researchers obtained higher academic qualifications during their working life, and that senior degrees were often obtained overseas.

To take a particular example, Geoff Christensen is listed in 1939 as a junior assistant who progressed to a Senior Research Officer with an MSc and PhD degree in 1954. During the time he had a year study leave for his BSc and two years overseas study for the doctorate.

### **The foundation members of DFP (1929-30)**

Chief of Division	<b>I.H. Boas</b> , M.Sc., A.I.C.
Senior Seasoning Officer	<b>S.A. Clarke</b> , B.E., A.M.I.E.Aust.
Assistant Seasoning Officer	<b>C.S. Elliot</b> , B.Sc.
Cadet in Seasoning	<b>Ross Baird</b> .
Preservation Officer	<b>J.E. Cummins</b> , B.Sc., M.S. (Wis)
Senior Chemist	<b>W.E. Cohen</b> , B.Sc.
Chemist	<b>H.E. Dadswell</b> , M.Sc.
Chemist	<b>Mrs. I. Dadswell</b> , M.S. (Wis)
Assistant Chemist	<b>A.L. Baldock</b> , B.Sc.
Laboratory Assistant	<b>W. Wilshire</b> .
Assistant Technologist	<b>Miss M. Burnell</b> , B.Sc.
Librarian and Records clerk	<b>Miss I. Hulme</b> .

It is unusual to see a married woman, Mrs. I Dadswell, on the research staff. For many years, on marriage female staff were required to resign from CSIR(O) - a normal requirement for female State and Federal public servants of the day. From staff records Mrs. Dadswell worked at DFP for two years.



DFP staff numbers increased rapidly, from 19 in 1931 to about 40 by 1934. The offices and laboratories in the backyard stables and service buildings at 314 Albert St must have become very crowded..



Frontage of 67 Yarra Bank Road in 1935, the building site for the new DFP Laboratory. The land was obtained on a 50 year lease from the Victorian Government

The site was in excellent position, adjacent to the Spencer Street Bridge, and within half a mile of Melbourne CBD and the interstate railway station. The location will enable the Division to maintain close contact, on the one hand with the main city centre of the timber industry, and on the other, with the most important body of timber users, the public generally. FPNL #45 (1935),



Derelict buildings on the DFP site in November 1935.

## The hurried construction

Tenders for the construction closed on October 7, 1935. In November the site was still empty, but pile driving begun soon after.

By the end of March 1936, framework had already reached roof level.

Before the end of 1936 the laboratories had been transferred from East Melbourne to the new building. The building was officially opened in April 1937.

The successful tenderers were John R. and E. Seccull, Pty. Ltd., St Kilda. A note in FPNL #59 (1936) "The laboratories of the Division of Forest Products have been recently transferred from their temporary quarters in East Melbourne to the new quarters in South Melbourne. Inquiries should now be addressed to the Chief, Division of Forest Products, Yarra Bank Road, South Melbourne, S.C.5, (Tel. M4706)."





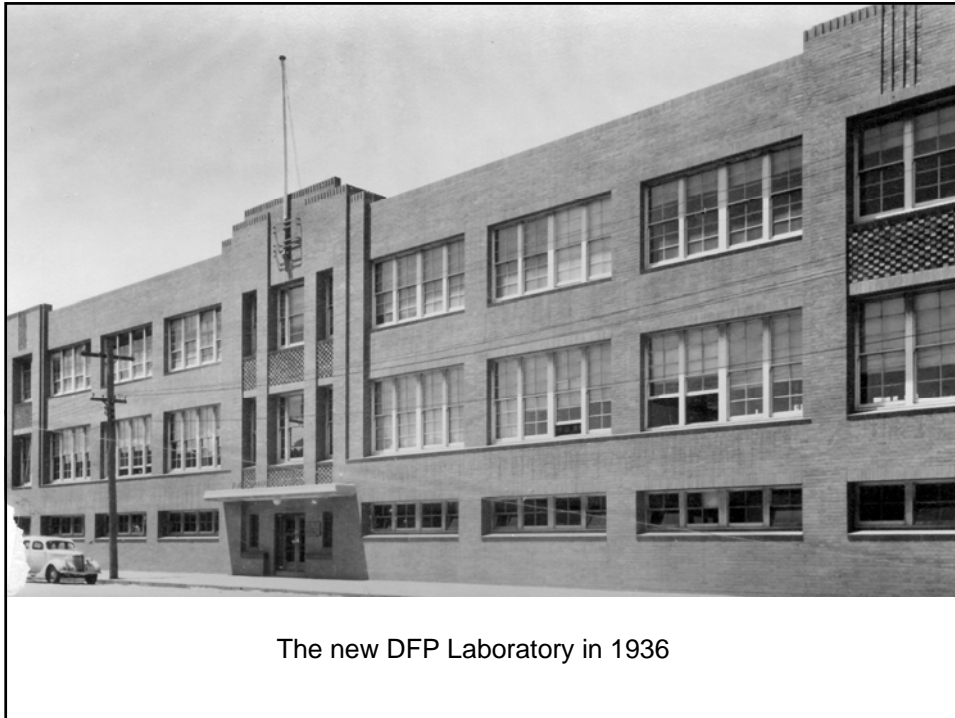
The DFP building was supported by piles, which had limited load capacity.

The site was subject to flooding.



Framework of the new building (photo 24 March 1936)

The construction was not solid brick, but a steel framework with brick cladding.



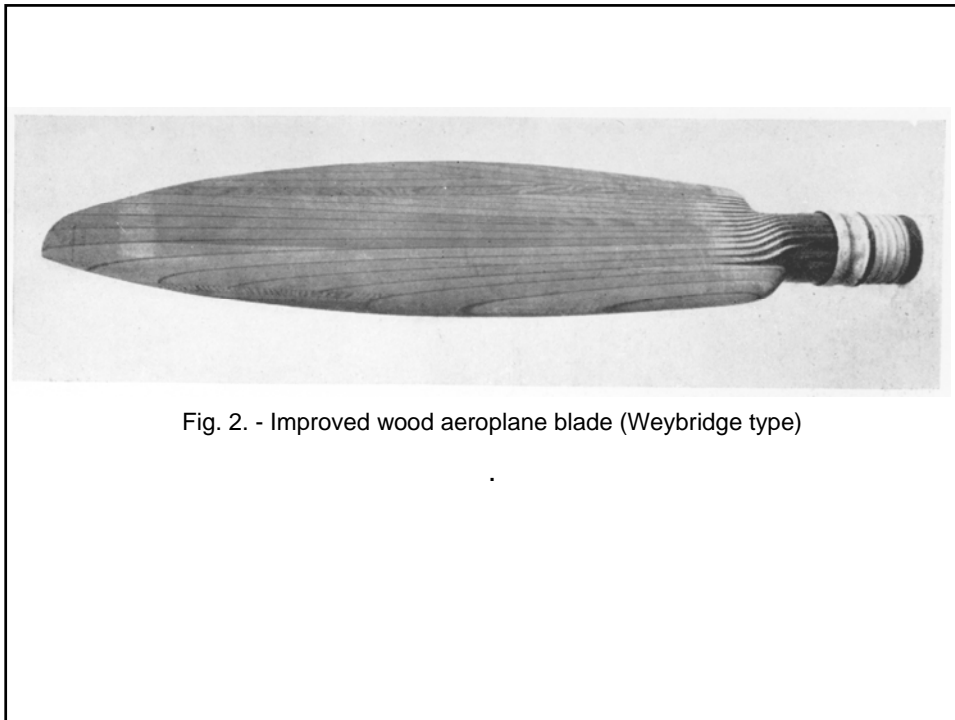
The building was officially opened in April 7, 1937 by the Postmaster-General, Senator McLachlan. FPNL #64 (1937)

### **DFP Sections Staffing - 1944**

<b>PRESERVATION</b>	(8)
<b>SEASONING</b>	(12)
<b>TIMBER MECHANICS</b>	(11)
<b>AIRCRAFT TIMBER</b>	
<b>INVESTIGATIONS</b>	(32)
<b>TIMBER PHYSICS</b>	(4)
<b>UTILISATION</b>	(7)
<b>VENEERING AND GLUING</b>	(13)
<b>WOOD CHEMISTRY</b>	(11)
<b>WOOD STRUCTURE</b>	(11)

Total staff about 140, including administration, maintenance, photography, etc.

1944 is the last year when everybody was listed on the staff list. After Isaac Boas retired in 1944, Stan Clarke, the new Chief, restricted the annual staff lists to include senior staff only.



In Britain, a shortage of metals during World War 2 made investigation of wooden aircraft components a national imperative. The above sample is a variable pitch airscrew blade, made in England from improved wood. Improved wood is produced from a composite of thin veneers bonded with resin and compressed at high temperature and pressure. The Australian manufactured blades, made from improved wood developed by DFP, were comparable to the best of the English product. Boas (1947) pp.112-15 and Plate 19, Fig. 2.



Following addition of a fourth floor in 1946, the building had reached the maximum allowable height. Photo in FPNL #148 (Jan 1947).



View of the city and the Queen St bridge from the roof of DFP Laboratory

The photo is probably from the late 1940s. In those days Yarra Bank Rd was a busy area, unlike that of later years when all the riverside buildings had been demolished or burned.



Floods at the DFP front door and on Yarra Bank Rd in 1950s

Days when it was hard to get to work without getting wet feet. were fairly frequent before the 1960s when the first major water reservoirs were built on the Yarra River.



The strength and deformation (creep) of timber, under long term load, was studied from about mid 1930s to 1950s. The rooftop was used as a laboratory.

The rooftop of the new building was the domain of the Timber Physics Section.



Timber Physics staff on the rooftop in 1953.  
Occasion, sendoff for Dorothy Hancock (centre).

Staff from top down and left to right:- Harry Heath (1), Paul Grossman (2), unknown (3), Brian Faul (4),  
Second row:- Reg Kingston (O.i.C in suit), Joy Nilan, Evelyn Tansey, Jean Haywood, Bill Clarke, **Dorothy Hancock**, Bill Keating, Les Armstrong, Noel Edwards,  
In front:- Gwen Tunks, Jack Nicholls, Joan Morris, June Lester, Kath Kelsey, **Ruth Steele**.  
DFP was a well-known 'marriage bureau'. Ruth Steele (later Mrs. G N Christensen) who was at the Seminar, told us of many marriages amongst the TP staff. With the prevailing government policy, once married the 15 girls lost their jobs to be replaced by new starters.



The Chief's office in 1936

The first floor contains the rooms of the Chief and Deputy-Chief, the library, the general offices, and the rooms of research officers, while the second floor contains the laboratories of the Sections of Wood Structure, Timber Physics, Chemistry and Wood Preservation. FPNL #60 (Jan. 1937)



The Library in 1952

In 1952, Miss I Hulme the Librarian, Miss A Forbes Assistant Librarian, and probably a junior. The librarians were very dedicated and a great asset to the research staff. When needed, they also helped with research. One of the best essays about the first 40 years of DFP was penned by Sue Preston, FPNL #350 (1968)





The 1957 British Commonwealth Forestry Conference in the Chief's meeting room

The Chairman, S A Clarke (Chief), at the top table is flanked by H E Dadswell (Assistant Chief) and Vice-chairman J S Reid (NZ). At the right-hand side table, starting from the bottom, is Secretary A P Wymond (DFP), and, representing the State Forestry Departments, S E Jennings (Queensland) and E B Huddleston (NSW). The names of the overseas delegates are listed FPNL #235. (In 1957 the author was working under Stan Jennings at the Queensland Forest Products Research Branch.)



Ted Hillis' chemistry laboratory 1958 (looking from the door)

Today such clutter would not be acceptable in any laboratory. In 1958 Ted Hillis was Senior Research Officer



Ted Hillis' chemistry laboratory 1958 (looking towards the door)

Ted Hillis' desk is probably the one in the top right-hand corner. Note the electric bar radiator a few centimetres from the chromatography column possibly filled with flammable solvent!



The Secretary's office

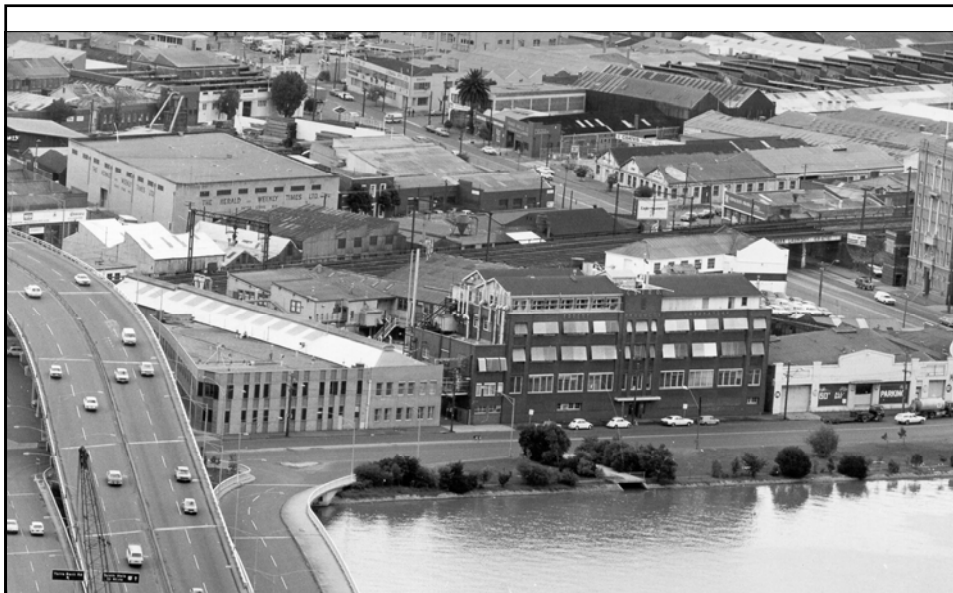
Secretaries were not listed in Annual Reports and some had very little space. Secretary Mary Browning.





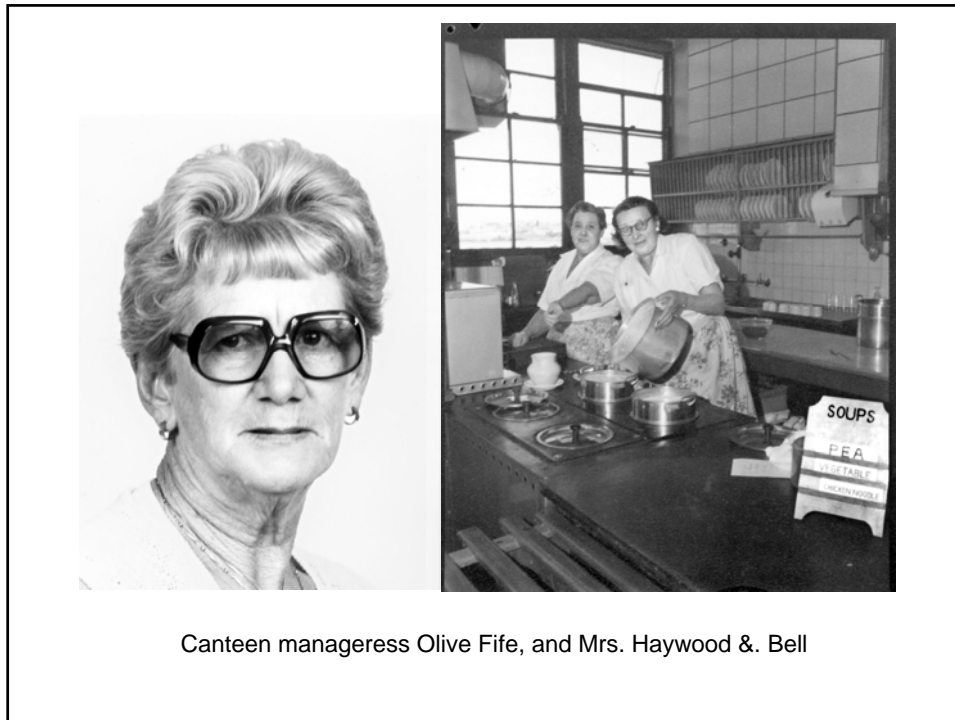
A photographer's "drill" in 1965; with about 200 of the 240 DFP staff

The building was getting very crowded, but we all managed to squeeze in!  
Photographer: Wal Hastie.



View across the Yarra of the main DFP building. Between it and the King Street bridge is a leased building housing the canteen and machine workshop (1970s)

The King street bridge was started in 1956/57, finished in 1960 and officially opened in 1961. In 1962 a lorry fractured the bridge next to our buildings.



Canteen manageress Olive Fife, and Mrs. Haywood &. Bell

Olli, as we called her, maintained law and order and didn't take cheek from anybody. The canteen was also our social hub. It was the meeting place for the Ski Club (we built our own lodges on Mt Buller and Falls Creek), Film Society (film evenings at DFP), Wine Club (to keep up the supplies), Bridge Club (with some heated discussions about intelligence of certain partners), function room for meetings, sendoffs, Christmas reviews, etc.



Machine workshop in the 1960s

The workshop looks more like a showroom, without a speck of dirt to be seen!



Carpenters, metalworkers, instrument makers and other workshop staff in 1964

Some of the best craftsmen in Melbourne!

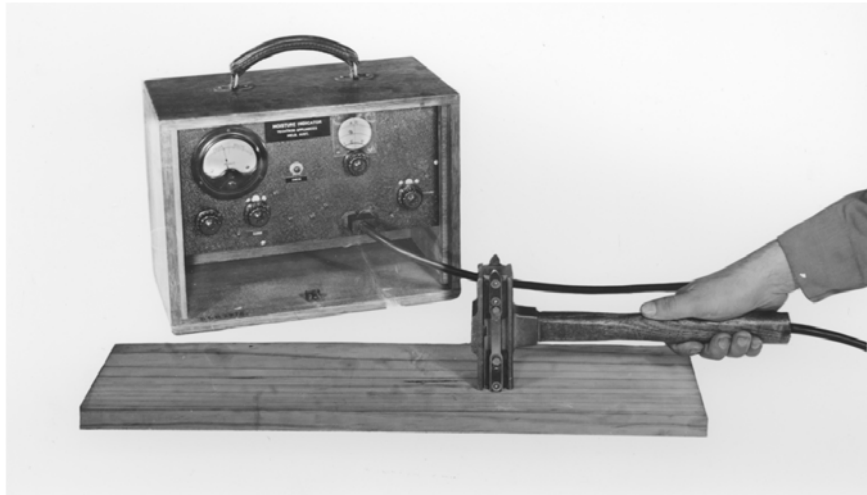


DFP rheometer for studying paper properties

Alex McKenzie in 1950s.

I used the rheometer in my first research project to study fracture of paper. The research report did not pass our internal referees. After repeating the work, the next edition eventually passed the peer review. At DFP refereeing was taken very seriously and was a vital aspect of staff training.

## Moisture meter

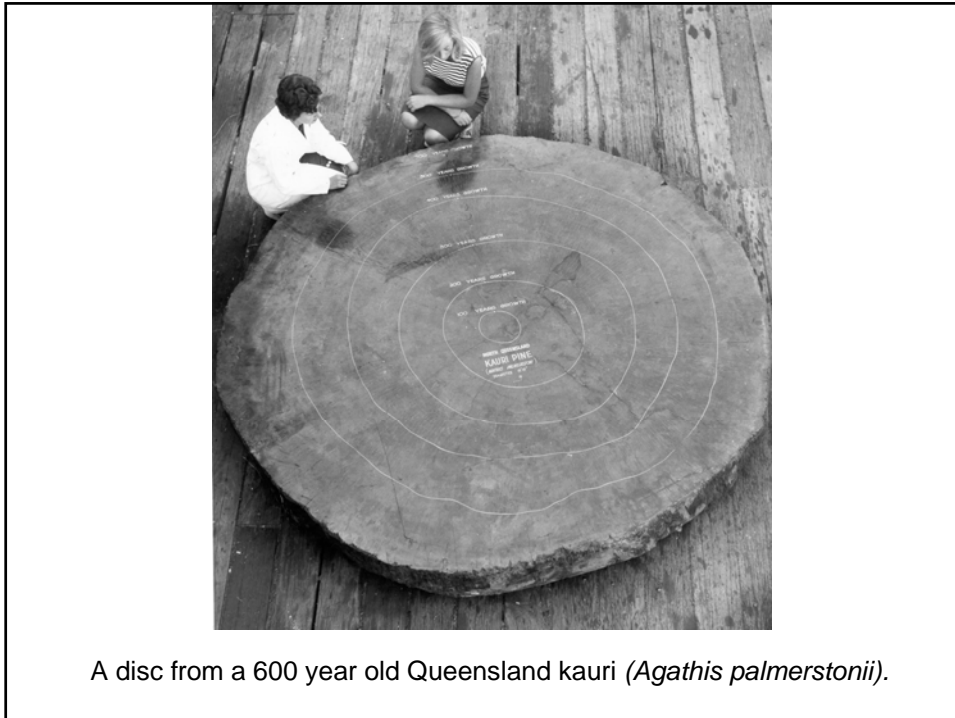


The meter measures electrical resistance of wood. Resistance varies with moisture content and (to a small degree) with species. FPNL #186 (1951)



In the late 1960s the building was officially named the  
CSIRO FOREST PRODUCTS LABORATORY

The sign didn't last long, it was taken off in the 1970s



On the disc are marked the 100 year growth ring boundaries.



In 1965 DFP had the job cutting the kauri disc.

One was sent to DSIR New Zealand, the second can be seen at the Melbourne museum in Carlton Gardens.

The disk was first bound with steel strapping to prevent any cracking. FPNL #316 (1965). Harry Heath cut all around the disc to the full depth of the saw (50 inches) and the small section in the middle was cut with a cross-cut saw.

In conifers fibre length increases from pith to bark, in pines to a maximum of about 3-4 mm. In samples from the outside of the kauri fibres were up to 8 mm long, - that fibre length maybe a world record for conifers.



Alan Wardrop and the first electron microscope at DFP. The RCA instrument was purchased in about 1950 for the study of fundamental features of wood.

According to Ted Hillis, the RCA microscope was not particularly safe and on one occasion a high voltage spark passed Alan Wardrop's head.

Alan Wardrop Joined La Trobe U in 15 Jan 1966. He was appointed to the Latrobe university Foundation Chair in Biological Sciences, and later as Dean of the school of Biological Sciences.



George Davies and the second (Siemens) electron microscope, a replacement for the RCA microscope, was purchased about 1965

An essay by George Davies about the Siemens electron microscope is in FPNL #337 (1967)



Pulp preparation and sheetmaking laboratory 1954

The Hollander beater in right forefront is of the same design as that used in the WA laboratory in 1920s and was still in use in CSIRO Forest Biosciences in 2008.



Paper testing laboratory in 1954

Conditioned testing room was kept at 65% relative humidity and 20°C as specified in testing standards of the day.





The pulp preparation and sheetmaking laboratory in the 1960s

For a time Frank Phillips and I shared a small office in the corner of this laboratory. Office space was at a premium and it was even risky to go on long service leave. In the 1970s I had my own office, but on returning after 3 months it was taken and my gear stored in a dusty room with a hole in the wall instead of a window. Luckily the hole was soon fixed.



At the laboratory  
everybody has to  
lend a hand with  
the work

Huntly Higgins (Chief of Division) and Vinod Puri using the Asplund defibrator. The photo proves that at times everybody had to work on the factory floor, including Chiefs and Indians.





Multi-vessel, air-heated laboratory pulp digester. A DFP design of 1952 that has been modified by CSIRO & Australian P&P companies. It is still the "workhorse" for routine pulping tests of fibre yield from \$200 million per annum of Australia's wood chip exports to Asia.

A historical review of the development is in, V.Balodis et al , - Australian laboratory pulp digester for China - Appita 50(5): 357-61 (1997)



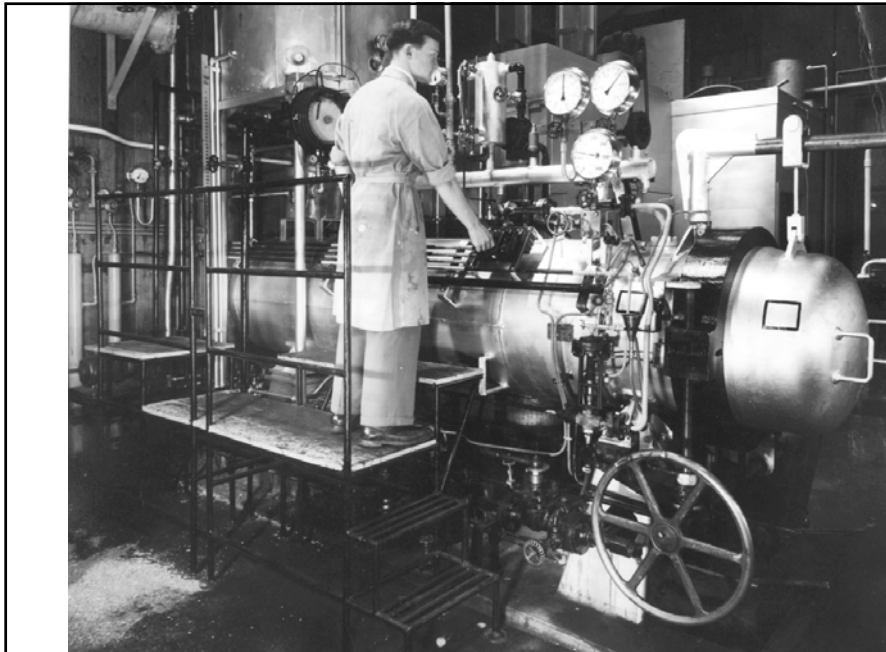
Hot and cold bath process for treating fence-post (photo 1950s)

A primitive treatment process from the 1930s that can be assembled from simple components



Portable treatment  
plant for  
preserving fence  
posts by soaking  
in low pressure  
cylinder  
(photo 1950s)

Another 1930s development; an advance on the hot and cold bath process. It looks a bit like an intravenous drip-feed for an elephant. Details in FPNL #200 (1954) article by Peter Moglia.



High-pressure pilot cylinder for wood impregnation studies 1953

This pressure cylinder has all the bells and whistles, including working pressure of 1000 lb/sq.in. Details by Norm Tamblyn, FPNL #194 (1953)



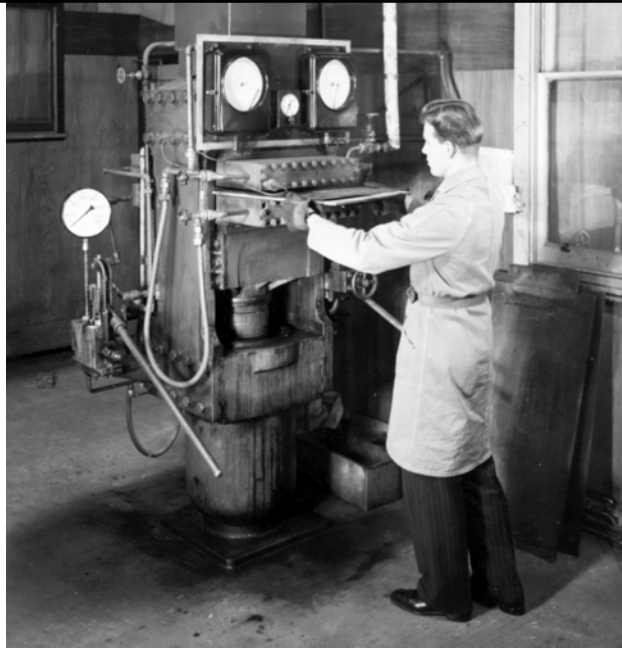
A peeler log after heat treatment (mid-1940s)

The treatment softens the wood.



Peeling hardwood veneer (mid-1940s)

The Coe lathe was donated by Russell Grimwade in the early 1940s, it cost £1,250. Sue Preston FPNL #350 (1968). General reference with photos, in the review of "Section of Veneer and Gluing", FPNL # 155 (1947).

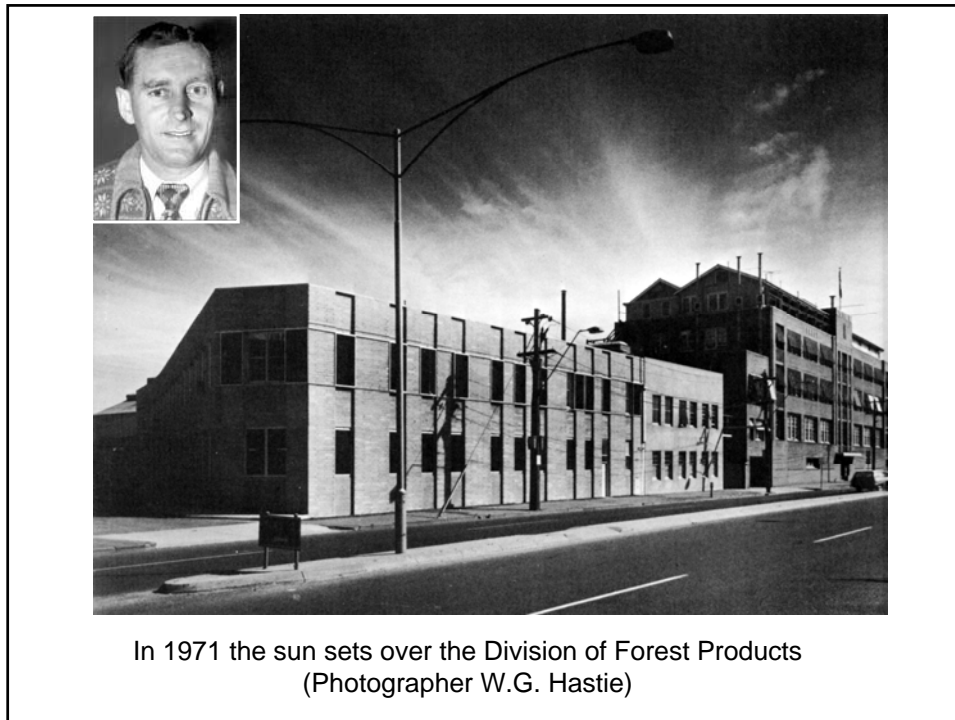


Making plywood in the hot press (mid-1940s)



Testing a model of the Sidney Myer Music Bowl 1958

DFP Timber Mechanics Section was working with the design team of the Myer Music Bowl on the use of plywood in the roof, FPNL #255 (1959).



In 1971 the sun sets over the Division of Forest Products  
(Photographer W.G. Hastie)

The building was used until 1983 when all staff and laboratories were transferred to the new Wark Laboratories at Clayton.

(Wal Hastie was a master photographer, his passport photos were equal to studio photos.)

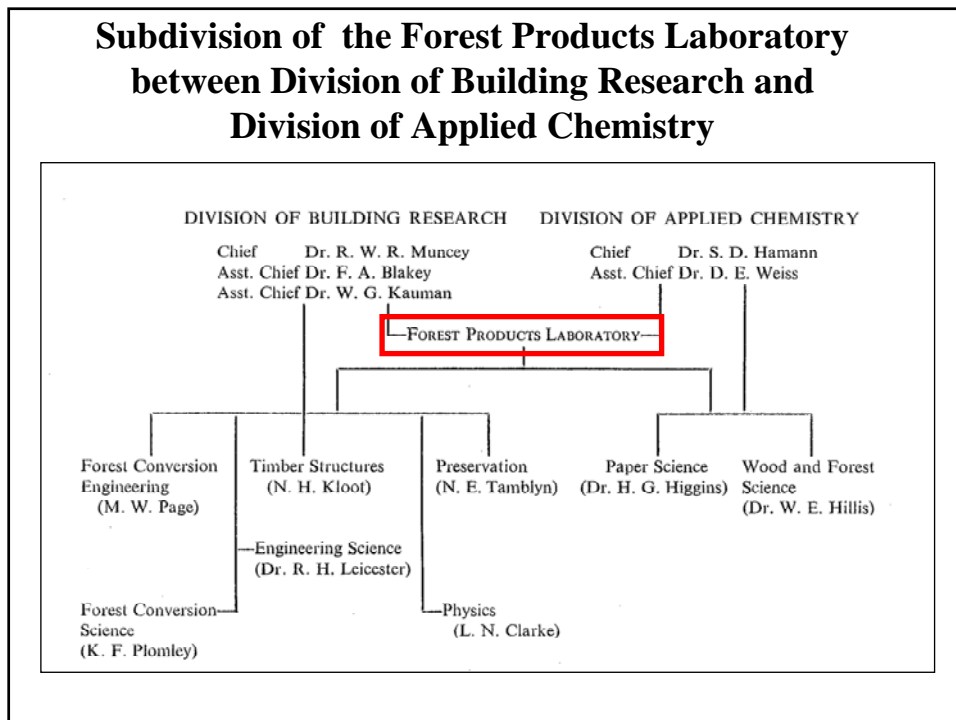


The CSIRO FOREST PRODUCTS LABORATORY is history.  
From its rubble will rise the Crown Casino.

The building was finally demolished in the 1990s and even Yarra Bank Rd disappeared under the Crown Casino.



The Chief and senior officers of DFP in its final year (1971). Appropriately Wal Hastie has selected a photo of the building with its Forest Products Laboratory sign.



Ref. FPNL # 383 August 1971 "Forest Products Research and the Division of Applied Chemistry".

Since 1919 forest products research has been in various Federal agencies, and in later years, units of different disciplines have been interchanged between CSIRO Divisions. Confining the discussion to pulp and paper research, it has been a component of the following laboratories:-

1919-1928	Forest Products Laboratory
1928-1971	Forest Products
1971-1974	Applied Chemistry
1974-1983	Chemical technology
1983-1988	Chemical and Wood Technology
1988-1991	Forestry and Forest Products
1991-1996	Forest Products
1996-2004	Forest and Forest Products
2004-2007	Ensis
2008	Forest Biosciences (CFB)

**Refernece 1971-1988:-** Huntly Higgins, Forest Products Newsletter, spring 1988, Division of Forest Products, Chemical Technology and Chemical and Wood Technology – The Last 20 years **Chief, period, parent laboratory:-** I H Boas (1919-20) **FPL**; R A Fowler (1920-23?) **FPL**; L R Benjamin? (1923-28) **FPL**; I H Boas (1928-44) **FP**; S A Clarke (1944-60) **FP**; H E Dadswell (1960-64) **FP**; J D Boyd (1964-65) **FP**; R W R Muncey (1966-71) **FP**; S D Hamann (1971-74) **AC**; D E Weiss (1974-79) **CT**; H G Higgins (1979-83) **CT**; W Hewertson (1983-88) **CWT**; W Hewertson (1988-91) **FFP**; W Hewertson (1991-96) **FP**; G Kile (1996-2001) **FFP**; Paul Cotterill (2001-03) **FFP**; L Little R Ede (2003-04) **FFP**; ? L Little (2004-06); T Richardson (2006- 07) **Ensis**; M Lonsdale (2008) **CFB**

## Where to next

I don't believe that Forest Products Research will cease because of the name change. In 1971 nobody would have believed that 20 years later DFP will again emerge.

But is the name so important? Good forest products science will continue to emerge, independent of the name of the house.

We have outstanding examples of great science from the 21<sup>st</sup> century.

The Marcus Wallenberg Prize, the Nobel Prize of Forestry and Forest products, has been awarded to only two Australians, **Bob Leicester** and **Rob Evans**, both forest products scientists, but from different Divisions.

Apart from recognition and considerable international prestige, the Prize includes 2 million Swedish crowns and introduction to the King of Sweden.



*The Marcus Wallenberg Prize*

**2000 Robert H. Leicester  
Australia**

for his path breaking contribution to the development of advanced probability theories to enhance fundamental understanding of the structural properties, fire performance, durability and safety of wood as a building material. This knowledge has been applied to the creation of design codes for wooden structures that take account of the variability and reliability of wood as a structural material. This work has also led to important new procedures for assessing the performance of wood materials in fire and thereby greatly expanded the range of application of wood in building construction.



Bob Leicester developed a system of structural reliability techniques that have been adopted in building codes around the world.

*The Marcus Wallenberg Prize*

**2001 Robert Evans  
Australia**

for his path-breaking contribution to the development of instrumentation and accompanying software for the characterization of the structure and quality of wood, one of the world's most complex composite materials. He developed a practical means to quickly characterize the important qualities of the component fibers of a large number of tree samples such that wood can be directed and used to its most valuable end use, whether that use be as solid wood or as pulp for the total range of different paper and packaging products. The SilviScan system integrates fiber and density measurement functions including x-ray densitometry, x-ray diffraction and tomography in a single instrument permitting extremely rapid and efficient assessment of wood properties for applications to silviculture, forest genetics and tree breeding, and to forest resource evaluation.



Rob Evans developed technology for rapid measurement of wood and fibre properties in increment cores extracted from standing trees.





A mature, seven year old, pulpwood plantation in Aracruz, Brazil. It is grown from cuttings from a single tree of *E. grandis* (flooded gum). The Aracruz team was awarded the first, 1984, Markus Wallenberg Prize.

The person in the photo, Dr Yara Ikemori, is one of the recipients of the Prize.

## The End

Dr Ikemori developed nursery techniques for producing, on commercial scale, planting stock from eucalypt cuttings. At the time, commercial clonal eucalypt plantations were considered to be near impossible.

Rob Evan's SilviScan technology extends the scope of selection criteria for plantation parent trees by including wood quality as a selection parameter.

Please let me know if you would like a digitized copy (PDF file) of the following publications:-

This booklet

The Seminar slides

DFP annual staff lists 1928-71

L R Benjamin (1923) CSIR Bulletin #25

Forest Products Newsletters 1932-75 (ready in October)

I am easier to catch at home than in Clayton.

My home e-mail address is [vbalodis@mira.net](mailto:vbalodis@mira.net),

and postal address, V Balodis, 27 Pascoe Ave., Strathmore, Vic 3041



# CSIRO Forest Biosciences

## 2008 Seminar Series

### The chronicles of the Forest Products Laboratory

Dr Bill Balodis, Honorary CSIRO Research Fellow,  
Clayton

The first Forest Products Laboratory of the Commonwealth Institute of Science and Industry was started by I.H. Boas in Perth in 1919. The CSIR Division of Forest Products (DFP) was officially formed in Melbourne on the 1<sup>st</sup> of July 1928, with I.H. Boas appointed as the first Chief. Since its formation DFP has undergone many transformations and a few identity changes. The next identity crises will fall on its eightieth anniversary.

As from 1st of July 2008, CSIRO will no longer have a Division specifically targeted to the forest and wood products sectors, and the staff will move to new Divisional homes. This seminar will present a brief history of an era now past, and some of the scientific achievements, leading scientists and other highlights. It will be illustrated with a collection of photos from the olden days

Dr Bill Balodis



Bill Balodis, an MSc graduate from University of Queensland, joined CSIRO in 1962. He has published more than 50 peer reviewed papers on topics ranging from timber and paper physics to pulpwood surveys of large native forests in Australia, PNG and Sarawak. As an Honorary CSIRO Research Fellow he has been involved in projects to establish

pulpwood testing laboratories in China and Indonesia; and more recently in digitizing DFP photos, films and publications for electronic storage and distribution.

### Event Details

- Wednesday 18 June
- 3:30pm – 4:30pm
- Main Lecture Theatre  
Ian Wark Laboratory,  
Clayton  
([map](#))

### Enquiries

For enquiries about this or any other CSIRO Forest Biosciences seminars please contact:

Dr Neil Sims  
Chair, CFB Seminar Series Committee  
Phone: (03) 9545 2163  
Email: [Neil.Sims@csiro.au](mailto:Neil.Sims@csiro.au)

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