

TABLE II.—SUMMARY FOR THE PLOT—AREA 0.2 ACRES

(a) Statistics of the average tree, all species, based on 49 living trees, from Table I.

D.B.H. (inches)			Height (feet)			Basal Area (sq. ft.)			Volume (cu. ft.)		
1921	1927	Inc.	1921	1927	Inc.	1921	1927	Inc.	1921	1927	Inc.
8.17	8.71	.54	56.5	59.0	2.5	.356	.414	.058	11.50	13.72	2.22

(b) Totals for the Plot—49 living trees.

## Numbers Living Trees

	1921	1927	Mortality
Rimu	42	42	Nil
Silver Pine	6	6	Nil
Miro	1	1	Nil

Total Basal Area (square feet)—	1921	1927	Increase
All Species	17.49	20.30	2.81

Total Volume (cubic feet)—	1921	1927	Increase
Rimu only	526.82	627.37	100.55
All Species	563.62	672.03	108.41

TABLE III.—STATISTICS OF GROWTH PER ACRE.

(a) All Species.

No. of trees per acre	1921—245
	1927—245
Volume per acre .....	1921—2,818.1 cub. ft.
	1927—3,360.2 cub. ft.
Increment during 6½ years	542.1 cub. ft.
Periodic Annual Increment (per acre)—	83.4 cub. ft.
Periodic Annual Growth per cent (by Pressler's Formula)	3.19%

(b) Rimu only—

No. of trees per acre, both periods—	210
Volume per acre .....	1921—2,634.10 cub. ft.
	1927—3,136.85 cub. ft.
Increment per acre, 6½ years	502.75 cub. ft.
Periodic Annual Increment per acre—	77.35 cub. ft.
Periodic Annual Increment per cent—	3.17%

## ANOMALOUS TISSUE IN THE STEM OF RIMU

(C. S. Barker)

While carrying out an investigation on the sapwood and hardwood of Rimu (*Dacrydium cupressinum*), (Soland.), a peculiar form of cell growth was noted in the pith and radiating out from the latter. These radiants protrude in some trees from 15-20 growth rings.

Microscopically this growth may be confused with "star-shake," which it resembles in appearance though not in texture, as "star-shakes" are clefts in the wood filled with resin, while the phenomenon under discussion consists of a system of radiating cell tissue, somewhat darker than the ground mass. This anomalous structure was noted up to 1.5 mm. in width; the length could not be ascertained as only discs of about 4 cms. in width were investigated. These discs were cut from the butt and top

sections of the merchantable boles of the trees, the top discs showing the structure of the same extent as the butt discs, so there may be reason to believe that it extends throughout the length of the tree. On split longitudinal radial surfaces the structure appeared as an irregular dark mass.

Microscopically the structure takes up a cellular form. The cells are filled with a brownish content. The structure often completely surrounds isolated masses of normal secondary tissue, the latter looking as though they had been torn away from the parent mass, and if the abnormal tissue was taken away the normal isolated masses could be joined up cell to cell with the ordinary xylem ground mass. In longitudinal radial section these intrusions at times show that they may have an origin at some common point.

The cells of this abnormal tissue are irregular in shape and size. The walls are very thick in proportion to normal parenchymous or prosenchymous tissue in Rimu. As seen in transverse section the walls are up to 8μ

in thickness,  $12\mu$  in longitudinal radial sections and  $10\mu$  in longitudinal tangential section. The cells show their greatest length in transverse section, the major axis of  $20-80\mu$  running in a tangential direction. In longitudinal radial section the shape of the cells are rather variable, the major axis running in no definite direction with the exception of where the cells appear to have some common origin, in which case the major axis tend to radiate out from a common point. In longitudinal tangential section the cells take up the arrangement as seen in transverse sections.

From the above description it might be said that this anomalous tissue is some form of tyloses, but under close examination this apparently is not true, as in no single case could be seen an abnormal cell taking its origin from the pits of the tracheids, or any openings in the normal parenchymous tissue. The abnormal tissue may be due to the work of the cambium-miners, small insects which chiefly belong to the order Diptera; but the literature that we have at present on this subject is very meagre, so nothing more can be said on this point.

Illustrations of the three sections, transverse, longitudinal radial, and longitudinal tangential sections of the centre of a Rimu stem, showing the anomalous tissue described, appear in the plate in the centre of this journal.

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## THE FORESTRY LEAGUE'S NEW PAVILION

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The Canterbury Branch of the New Zealand Forestry League has given another indication of its sincere interest in forestry by erecting a unique permanent pavilion on the Show Grounds at Addington. The local League has for many years arranged an exhibit of forestry specimens in a tent at the Canterbury Agricultural and Pastoral Show, but this year a permanent structure was erected in the form of a Swiss Chalet about 25 x 45 feet built of undressed larch logs with uprights of macrocarpa. The larch was provided by the State Forest Service from its Hanmer Plantation, the macrocarpa was grown in the Avoca Valley, on Mr. J. F. Scott's property, "Hillsborough," and the insignis pine sarking for the roof was supplied by the Selwyn Plantation Board. The Canterbury Builders' Association supplied most of the labour and the building was used at the Royal Show in November last to house a very extensive exhibit which comprised log sections, planks, wood specimens, nursery stock, potted forest

trees, cones, foliage, furniture, gates and doors made from locally grown exotics and exhibits demonstrating timber preservation. The exhibits were arranged by the staffs of the School of Forestry, the local office of the State Forest Service, the Christchurch Botanic Gardens and the Selwyn Plantation Board. Members of the staffs of the School of Forestry and State Forest Service were in attendance during the Show.

The building was opened officially by Mr. Jas. Deans, President of the New Zealand Forestry League and was thronged with interested visitors throughout the Show period.

The originator of the scheme for a Swiss Chalet was Mr. W. H. Winsor, President of the Canterbury Branch of the League. His idea was taken up with enthusiasm and now that it has been carried to completion it should go far to educate the public in the true meaning of forestry. C.E.F.

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## CLUB AND SCHOOL JOTTINGS

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### FORESTRY CLUB

The first meeting of the Forestry Club was held in the Forestry Laboratory on the 16th March, when the following new members were welcomed to the Club:—

W. Te A. Haig, from Te Aute College, a candidate for the Degree of Forestry.

G. H. Hocking, from Wanganui Collegiate School, also taking the Degree course.

D. Kennedy, of Loburn, taking the Ranger course.

D. Turnbull, of Christchurch, also taking the Ranger course.

The following Club officers were elected for the ensuing year:—

President: A. F. Clark.

Vice-President: C. S. Barker.

Secretary-Treasurer: R. J. McLaren.

Committee: The above officers with W. S. Tannock.

Mr. Clark then delivered his presidential address, taking for his subject "Rayon," or artificial silk. He opened with an account of the relative merits of the real silk and of the artificially manufactured article. He gave details regarding the cost of the raw materials and the methods and costs of manufacture. He also dealt with the various machines employed in the preparation of the silk fibre from the