

in thickness, 12μ in longitudinal radial sections and 10μ in longitudinal tangential section. The cells show their greatest length in transverse section, the major axis of 20-80 μ 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.

THE FORESTRY LEAGUE'S NEW PAVILION

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.

CLUB AND SCHOOL JOTTINGS

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

wood and the comparative usefulness of the various timbers for this purpose.

On the 28th April the paper for discussion was presented by Mr. Hutchinson, and dealt with Student Summer Work in the United States Forest Service, in which he presented the conditions encountered by forestry students in the United States, based on his own experience in Montana and Idaho, showing that although differing conditions of climate and topography cause differences in application, the fundamental principles underlying forestry work are the same throughout the world. Mr. Hutchinson dealt briefly with the organisation of the United States Forest Service and the progress which has been made by that organisation in the grappling with the problem of management of virgin forests, and pointed out lines of seemingly successful attack which may prove of value in this country.

The first meeting of the second term was held on 9th June, when Mr. Foweraker delivered a paper on photosynthesis. He dealt first with its direct relationship to plant life, and stressed the need of a more detailed study of the subject. He spoke on one of its chief agents, chlorophyll, and its composition, and proceeded to quote from and comment on the most recent investigational work dealing with this subject.

The next address was a paper by Mr. McLaren on "Dune Culture." He dealt with the subject more fully than previously and spoke briefly on the Bottle Lake Reserve and the Dunedin Shore Planting, giving some details about growth and form on the latter plantations.

On July 7th Mr. Turnbull read an interesting paper on "Coffee Growing and its Manufacture." He first dealt with its origin and how, after a scarcity of the beans the trees were established in India and Ceylon in large plantations. Next he spoke of the silvicultural methods employed to raise and tend the trees, and closed with some remarks about the Indian climate and labour conditions.

The next meeting was held on July 21st, when Mr. Tannock spoke for a short time on "Arboretums," mentioning the three distinct types met with the world over. The main idea in forestry arboretums he said, was to prove the possibilities of different species of trees in different localities, and consequently under changed conditions. The paper terminated with a general discussion of the question of establishing a national arboretum in New Zealand.

On the 4th August we were privileged to be addressed by Mr. Hammersley, mill de-

signer, and New Zealand agent for Messrs. Robinson of Rochdale, makers of wood-working machinery. Mr. Hammersley dealt with Sawmill and Planing Mill Machinery, sketching first the lay-out of a typical mill, and the functions of the various machines, then entering into some detail in regard to the factors entering into machine design and operation, as exemplified in the researches being carried out by his firm, and concluding with some apt and pointed remarks in regard to efficient lay-out of plant, with particular reference to re-manufacturing establishments.

The next paper, that of 22nd September, was also delivered by an expert from outside the Club. On that occasion our guest was Mr. Paterson, of British Pavements Limited, who dealt with "Modern Road Construction," detailing the changed conditions brought into road construction by fast-moving traffic, with its attendant vibration, and then continuing to outline the methods evolved by his firm to produce a voidless mass quite unaffected by attrition, bringing out the fact that the secret of success lay not in material, but in a study of any local available material to discover the combination of materials of different finenesses which was needed to produce a solid voidless pavement. Mr. Paterson concluded with a brief description of the methods of laying, and a few of the problems encountered in Canterbury road construction.

The last regular meeting of the year was held on 6th October, when Mr. Macintyre, B.D.S., read a paper on "Meteorology," having particular reference to Canterbury. Mr. Macintyre commenced by defining his subject as a branch of the science of physics, dealing with the movement of air currents on the earth's surface, treating the various causes of weather, the planetary wind systems, and the position of New Zealand in relation to the prevailing winds of the Southern Hemisphere, outlining the causes of the various types of weather encountered and the inter-relations upon which weather is based, illustrating his paper by a large number of graphs illustrating the typical succession of weather variations experienced in Canterbury.

This paper concluded the programme of ordinary meetings for the session. In addition to these fixtures, however, two extraordinary meetings were held toward the close of the year, which are worthy of some special mention:—

On the afternoon of 5th October, Mr. L. M. Ellis, Director of Forestry, met the Club and gave an address, in his delightfully informal manner, dealing with various aspects of forestry work, not only in New Zealand, but also in Canada and in France, illustrating

his remarks with a large number of photographs, maps and reports. Mr. Ellis then turned briefly toward the field of the future of forestry in New Zealand, and the place and value of forestry training, welcoming the students into a great profession and extending the hope that he would become more fully acquainted with them all in the time to come.

At the conclusion of the address the meeting became social and Mr. Ellis was entertained by the Club at afternoon tea. Before leaving he presented to the Library several personal copies of French forest working plans from tracts which he became familiar with during the war, when as an officer of one of the Canadian forestry regiments, he had an unusual opportunity for seeing the best of French technical forestry. These papers, therefore, are a most valuable addition to our forest literature, and the Club is deeply grateful to Mr. Ellis for his most thoughtful gift.

The second extraordinary meeting was held on the afternoon of October 19th, when Mr. V. T. Fail, Surveyor of the State Forest Service, addressed the Club on principles of mapping and surveying as applied particularly to the Forest Service and its needs, taking up in regard to any tract of country the progress of work done, from the initial boundary survey through the topographic and type maps, interior subdivision and lay-out maps, detail maps, work maps, etc., with a description of the purpose of each, the methods of preparing it, and the standards of accuracy demanded, with a brief concluding remark of standard scales for the various maps, and the standard conventional signs and figures adopted by the Service. Mr. Fail illustrated his discussion by a full set of carefully chosen maps, depicting all of the various matters in turn as he discussed them.

THE ANNUAL DINNER

In accordance with the custom inaugurated last year, a dinner was held by the Forestry Club to celebrate the close of the third and most successful year of the Club's existence.

Twelve members were present at the Federal Hotel, therefore, on the night of 21st October, to join with each other in a very pleasant meal with a few appropriate toasts, after which all adjourned to the Theatre for an evening of mirth and jollity in the best of company.

With this function the Club terminated its activities for the year, and as the session was virtually completed, opportunity was taken to bid farewell and godspeed to those of our members who leave us this year for

other and higher spheres of work—our President, A. F. Clark, who joins the State Forest Service in Wellington, and W. S. Tannock, who leaves shortly for Kew to continue his botanical studies.

SPRING CAMP—1927

The Spring Camp of the School of Forestry was held, as is now the well-established custom, during the second term vacation, when the entire School went out into the bush for three weeks to get first-hand experience in many aspects of applied forestry to which justice cannot be done in lecture hall or laboratory. We went back to the Coast again this year, as we had done in 1925, and Mr. A. R. Thompson, our old friend of Moana days, was again instrumental in finding us a location, providing for us a five-roomed house at Mananui, with all the comforts of home.

Messrs. Hutchinson and Clark went over two days previously to do the dirty work of arranging for transport and supply and when the rest of us arrived, late on Saturday evening, it was to find a warm fire and a tremendous dinner all in readiness, so that the camp was formally opened under highly auspicious circumstances.

The next day was spent in "organisation work"—a phrase which includes a very broad sphere of activity. To most it began with a raid on the docking pile for the wherewithal, followed by the fashioning of a bed. At this pursuit, each had his own design, which he hotly defended, meantime setting up a barrage of adverse criticism, and witticism directed against his neighbour, in which dark hints as to tensile stresses, bending moments and equilibrium of forces were to be heard. All did not partake in this sport. Clark was able to give a world of good advice, having made his previous day and weathered the succeeding night, while Messrs. Foweraker and Hutchinson were content to remain on the floor. This, of course, is sure proof of one's right to the title of forester. They say that after many years, one even gets to **prefer** the floor.

The work of the camp commenced on the Monday morning, and continued throughout the whole three weeks. Of course there was work, that was what we had come for, and it was good work, and well done too. However, it is not our intent in this article to go too deeply into the details of that side of the camp; but rather we prefer to dwell more on the lighter portions of the three weeks at Mananui. So let it suffice to say briefly that the work came under the heads of first, dendrology and ecology; second, mensuration; third, utilisation; and fourth, surveying. Hock-