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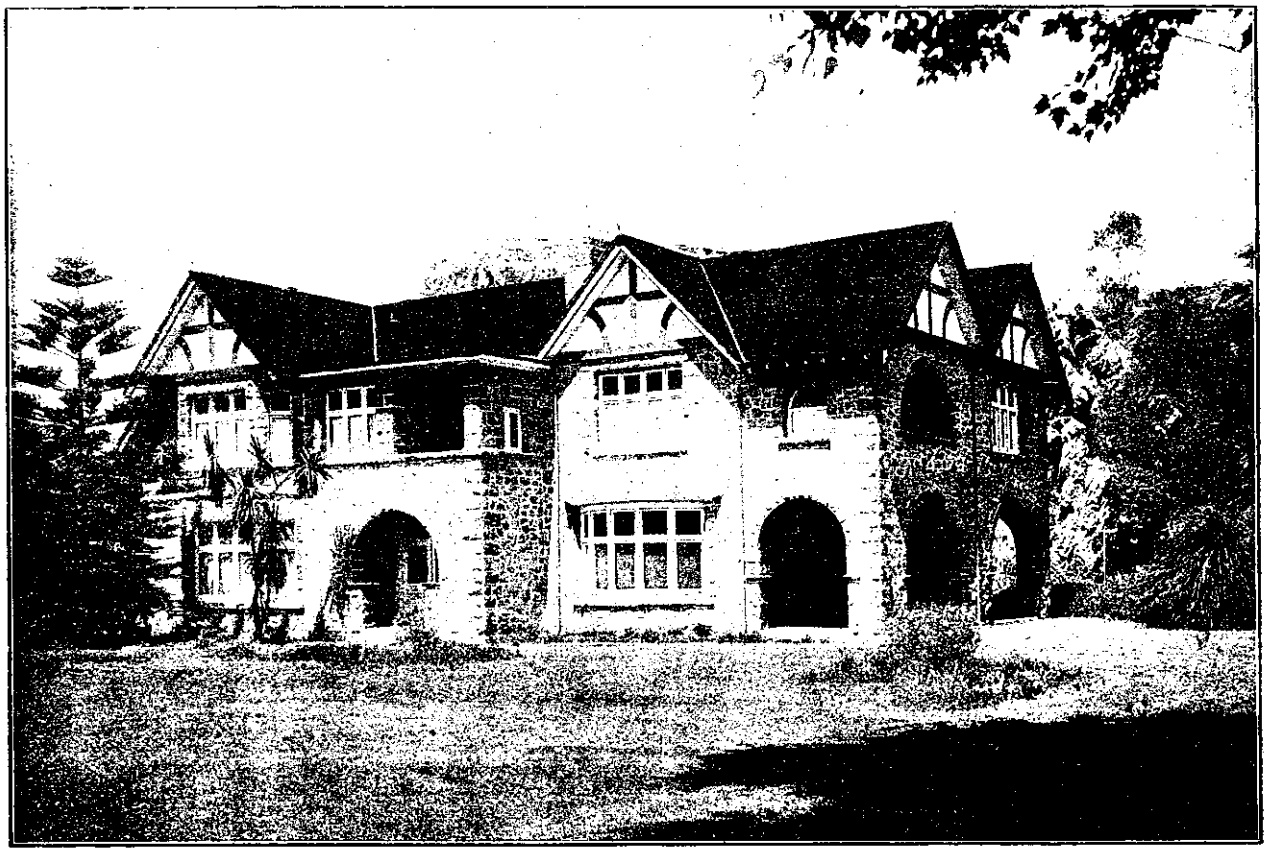
PROGRESS

For those interested in Architecture and Building.



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N.Z. BUILDING PROGRESS

CHAS. E. WHEELER, Editor.

A Journal for Progressive men interested in the development of New Zealand's Architecture, Building, Engineering and Industries.

Official Journal of the Dominion Federated Sawmillers' Association (Incorp.).

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The Editor reserves the right of publishing any or all the designs submitted, and while every care will be taken of drawings, no responsibility is accepted should any loss or damage be sustained. Those desiring their designs returned must send postage to cover cost of same. No award will be made unless at least three designs are sent in for any one competition. Unless otherwise stated drawings are to be in black and white only.

Contents for this Month :

Subscription Order.

.....192

The Manager:
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Dear Sir,

Kindly add my name to your list of subscribers to "Progress," for which I enclose postal notes amounting to 8/6, covering subscription for twelve months.

Yours faithfully,

Name.....

Address.....

VOL. XVII. No. 3. MONTHLY. [*Registered as a Newspaper.*]

N·Z·BUILDING PROGRESS

THE TARIFF.

No tariff ever presented to a Parliament met with complete acceptance, for the whole business is one of conflicting interests. The revision proposed by the Government this session is a great disappointment to the secondary industries of New Zealand, but under the exceptional conditions, we fail to see how the Government could meet the requirements of this class. There is more than a suspicion that protected industries in New Zealand have consistently followed the policy of charging for their products all they could get, and not attempting to give to the New Zealand consumer full advantage of the supply of cheap raw material in the country. This experience is being brought out by speakers in the Financial Debate in Parliament, one member quoting as an example the fact that farmers were obliged to sell hides, a raw material for boots, at a fixed price, less than world's parity, yet the New Zealand product kept close company with the high prices of the imported articles. The recent tariff exhibition by New Zealand manufacturers ended in a feeling of disappointment because the Government had not given the exhibitors protection with a lavish hand. The results of this exhibition must, however, be of permanent benefit, for it conclusively showed the public, apart from the legislators, how efficient are many of our secondary industries. Our own opinion is that the Government's comprehensive scheme of cheap hydro-electric power is going to do more good to the secondary industries of the country than any extension of protection, so long as manufacturers in New Zealand are saved from the pernicious effects of dumping. It seems very attractive to the consumer to get certain articles, now and again, at "bargain rates," but dumping, as long experience shows, is always followed by extremely high prices, once the local industries have been starved out of existence by the competition of the dumper. We notice that the tariff makes no change in the duties relating to timber, but the anti-dumping proposals which will in due course come to light in a Government measure will be welcomed by the New Zealand timber millers, who should take care that timber, rough and dressed, and also joinery, is included in the schedule of the Bill.

TRADE WITH BRITAIN.

Some months ago we took to task H.M. Trade Commissioner in New Zealand for attempting a defence of the British manufacturers' shrewd, but dishonest action in unloading enormous accumulations of orders upon an unsuspecting colonial public, just before prices broke from boom to slump. The operation created a very bad impression in the minds of Dominion business people, who are still suffering from financial stringency as a consequence. It seemed to us that if the British Trade Commissioner—as seemed to be indicated by his defence of the Home traders—regarded this as a perfectly justifiable proceeding, then he and his clients ought to be enlightened upon the other side of the position. It is with pleasure that we can now record that although Mr. Dalton did his best to stem the tide of vigorous criticism of the British traders in New Zealand, he was presenting a diff r-ent aspect to the British manufacturer, to whom he made plain that the methods followed had created a bad impression. Mr. Dalton contends that the piles of orders to "ship as soon as possible" should have been more closely supervised by the importer, as these orders remained on the books. He points out that the receipt in New Zealand of "slump" news immediately affected the buying public, and an almost entire cessation of general buying cynchronised with the time when very large shipments of goods began to arrive. "During the second half of the year," he explained in his annual report, "every ship brought full cargoes of goods to New Zealand, and it was not long before financial resources were exhausted. In many cases the goods arriving were deliveries in execution of orders which had accumulated on the books of manufacturers over a long period. In the absence of financial facilities many importers were unable to take up their documents, and many goods had to be left in bond; retail sales became the order of the day, and in some cases auction sales of newly-landed goods were the only recourse for those responsible for their importation. Even the

largest firms in New Zealand have found it very difficult to carry on with stocks accumulating, with banks pressing for reduction of overdrafts, and with no apparent outlet for the goods arriving. The seriousness of the situation can hardly be under-estimated, and it says a great deal for the old-established firms here that they have been able to weather the storm as they have."

THE FORESTRY SERVICE.

Forestry policy is not suffering to-day from under-advertisment. The work of the New Zealand Forestry League is getting the public well interested in the question, while the new Forestry Department seems quite capable of displaying its advantages in cold print. The first annual report of the Department presented to Parliament contains much interesting information about possibilities. It is explained that the past year has been one of preparation, but that the year to end on March 31st, 1923, will be one of fruition and results. The Department has secured a fairly large staff, and some of its immediately practical applications have been in the direction of emphasising the fact that there are varieties of New Zealand timber suited for nearly all commercial requirements. Numerous inquiries regarding other specialised uses of various timbers indicate that the local markets show preference for the New Zealand manufactures where available rather than for the imported article. The work of advising on such inquiries is, however, states the report, hampered by the lack of information regarding the physical and mechanical properties of practically all the New Zealand grown timbers. This state of affairs, coupled with the length of time required to obtain a report on such matters as wood-pulping, stresses the necessity of establishing a forest products laboratory to conduct such research. If any evidence were needed of the fact that timber millers were not given the same opportunity of charging "world parity" prices the Forestry report provides it :—"The demand for timber during the year was not reflected in prices, as would ordinarily be the case under usual trade conditions, for during the whole period the prices have been subject to control by the Board of Trade, so that a review of prices in relation to the year's trade conditions is not called for. This, of course, refers only to trade within New Zealand, for it is quite well known that the prices secured for timber exported to Australia during the greater part of the year were considerably higher than those permitted to be charged locally."

A DRASTIC BILL MODIFIED.

There has been so much wanton and careless destruction of valuable timber in New Zealand through forest fires, etc., that the Forestry Commissioner, Sir Francis Bell, submitted to Parliament a measure which provided very drastic penalties for this class of offence. However, the Forests Bill had to be submitted to the Lands Committee, which is strongly representative of the farming interests in the House, with the result that the really drastic clauses were torn out, or reduced to a very unoffending shape from the point of view of prospective law-breakers. One year's imprisonment or a fine of £100 was frequently indicated in the penal clauses of the Bill as it went to the Lands Committee, but the fine was reduced to "not exceeding" £50, and the possibility of imprisonment almost completely removed. It was sought originally to give forest rangers power to arrest trespassers, but this was simply thrown out by the Committee. The farmers on the Lands Committee might have had some justification for toning down the penalties in general, but they showed complete class prejudice in their own interests when they deleted, without any alternative provision, Clause 40, which made it an offence to unlawfully depasture stock (which is very destructive to the growth in a forest reserve), or to hunt game, liberate animals, or to occupy, clear or break up any land for cultivation or other purpose in a reserved area. This class of offence ought certainly to be prevented, and we hope to see the House, when it deals with the Bill, insert another clause which bears at least some semblance to the original. Although it is the general practice in Canada and America to conscript all labour in vicinity of a forest fire, to get the outbreak in hand, the Forestry Department showed bad judgment in suggesting such a conscription proposal to the New Zealand Parliament, especially as it did not provide any satisfactory guarantee that the conscripted labour would be properly paid. Of course the Lands Committee threw out this clause, which helped to create the impression that the Bill had been drafted without proper appreciation of New Zealand conditions. However, a measure to protect our forests is badly needed, and we hope it will be something more substantial than the remnants of the Forest Bill left by the Lands Committee. It is reported, as we go to press, that the Bill will secure a further—and let us hope a more discriminating—overhaul by another Select Committee specially appointed for the purpose. Certainly a mistake was made in leaving it to the mercy of a collection of members mainly interested in securing land for settlement as cheaply as possible. Though many farmers are enthusiastic advocates of a sound forestry policy, quite a number show absolutely no realisation of the value of any growth but grass, except for shelter purposes. The many scenic reserves created in all parts of New Zealand have suffered badly through this unenlightened attitude. Farmers have allowed stock to break through the reserve fences, eat the undergrowth, and generally prepare it for a first-class "burn," which has duly come off. Then the devastated "scenic" asset has stood forlorn for a few years, until the farmer has demonstrated to the local Land Board that the reserve is quite useless as a scenic asset, and he is then allowed to make a complete clearance.

Auckland Arts Building Competition.

The baffling thing about competitions is that they never seem to give much satisfaction to any of the parties concerned—except perhaps the winners—and the Auckland Arts Building Competition seems to be no exception to the general rule. The Auckland University went to the trouble of engaging Professor Wilkinson, Lecture of Architecture to the Sydney University, who acted in conjunction with Mr. W. A. Cummings, of Auckland, and Mr. Basil Hooper, of Dunedin, and the result of their decision (which we published in our July issue) seems to have provoked a storm of derision from a number of the unsuccessful competitors, and a feeling of disappointment from most people who are sufficiently sensitive to appreciate a good design.

The design is described by an Australian technical journal *Building*, "as a similar abomination to that which was foisted on the Melbourne public in the Newman College at the University." The same paper says:—"In the latest freak—the Auckland building, however, the designers have thrown over their claim for "new art" Yankee notions that were put into the Newman College as architecture, and without much alteration have now claimed an inspiration from English Gothic. The assertion that English Gothic had anything to do with the design published, should make our great English architects turn in their graves; for whereas these latter had a purpose and a power associated with wonderful decorative features, these so-called inspirations lack every fundamental of any sort of architecture, and look more like the crudeness of the child with a set of building blocks." According to a correspondent in an Auckland paper at least two exterior designs are far superior to that selected, and one is forced to the conclusion that these two designs were thrown out owing to the cost.

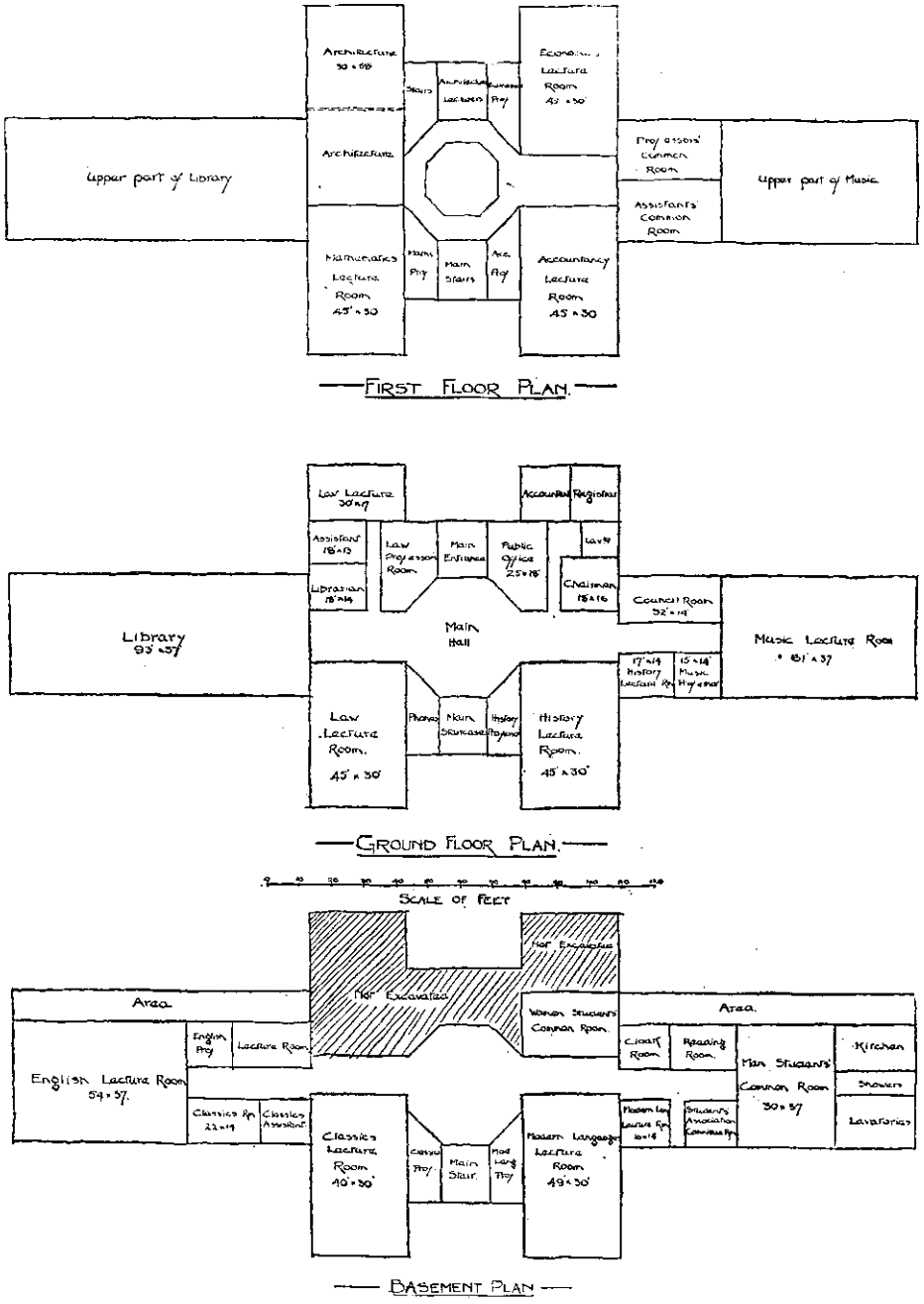
It seems obvious that the Board had some difficulty over the design, as the Education Board's architect apparently had some very caustic criticism to offer which resulted in the winners taking their designs back to "re-study the treatment of the front of the building, particularly the tower, and submit to the Council and the Minister of Education the result of his study in a month's time"—according to a report of a meeting held in Wellington of the architects, the Auckland Education Board and the Minister of Education, details of which were published in the Auckland dailies.

Mr. Lippincott at this meeting naturally defended his design, but agreed that "in a re-study of the treatment it might be possible to embody some of the suggestions of the Government architect." When this report appeared in print Mr. Mair, the Education Board's architect, replied as follows to the Minister of Education:—"My attention has been drawn to a report published in Auckland on August 8th of a discussion on the chairman's report of his interview with yourself and officers in Wellington on July 27th last with reference to the plans of the proposed Arts Building for Auckland University. From the newspaper report it would appear that the chairman did not appreciate the position, and placed the Council's architect in the unfortunate position of having to publicly state the correctness or otherwise of adverse criticism made by the Department's architect. This position, as a matter of professional ethics, I was at pains to avoid, and accordingly suggested to the director the course followed—that is, a private discussion of the plans between the architect and myself before their consideration at the conference. Having carefully examined and frankly criticised the composition on fundamental principles, and come to a friendly understanding with Mr. Lippincott as to how he proposed to modify on re-study, I felt satisfied the final design would be quite satisfactory, and purposely so worded my interim report as to obviate traversing before others the particularities as set forth in my detailed report of July 29th." Mr. Mair's delicacy over a point of professional ethics is to be commended, but if the design is good enough to be placed first surely the designer need not fear criticism.

The plan we publish in this issue of the winning design is the result of a thumb-nail sketch made while the drawings were on view in Auckland and is therefore not necessarily exact, but the measurements given are approximately correct. We understand that the six designs in the final competition were Messrs. Lippincott and Billson (Melbourne), Alex. McKee (Brisbane), McDonald, Mullions and Smith (Auckland), S. Goldsboro' (Auckland), and two designs by Messrs. Coombs, Macfie and Millar (Dunedin).

In comparing the plan of the winning design with the conditions one naturally asks—Why have not the specified sizes of rooms been more closely adhered to? The library, for instance, is approximately only two-thirds of the required area, and it will be seen from plans that there are other rooms that have been varied in dimensions in order to obtain with the least possible trouble, necessary symmetry and balance. Further, the lighting of corridors and class rooms is fundamentally bad, and no re-arrangement of window spacing could be carried into effect without disturbing the elevations or working utility of the class rooms. No provision seems to have been made to comply with the rules of the competition regarding future additions—it being difficult to see from the plans how access is to be gained to future blocks. No portion of the building seems to have been allocated for heating and ventilating plant.

Finally, as it is the usual custom in architects' offices to prepare drawings with the street frontage (or main entrance) to the bottom of the paper, it may be well asked, Why in the design under consideration this custom has been departed from? But perhaps this is the rule in Australia.



PLAN OF WINNING DESIGN IN THE AUCKLAND ARTS BUILDING COMPETITION.

This rough plan has been made from notes taken while the plans were on view in Auckland recently. It is not necessarily correct in every detail, but is approximately so.

Wellington Architectural Students' Association.

After several spasmodic efforts on the part of Wellington students they have at last formed an Association under the patronage of a practising architect. At a meeting held on March 18th, 1921, officers and committee were elected, and it was announced that Mr. Stanley W. Fearn had accepted the office of patron to the Association.

The Association has progressed rapidly since the formation, a suitable room having been obtained as a studio for evening work. Rules have been approved for the guidance of members and the first meeting under the new regime was held on June 16th, when the patron gave a most interesting address to members, which runs as follows :—

WELLINGTON ARCHITECTURAL STUDENTS' ASSOCIATION.

Back Row—R. J. Finn D. O. Naughton A. T. Bowley H. A. Hill R. Wakelin A. E. Connell
Centre Row—J. R. D'Oyly W. J. McKeon (2nd master) Stanley W. Fearn (Patron) V. P. Haughton (1st master)
B. W. Johns (Sec. & Treas.)
Front Row—T. J. Heiseldin J. N. Scott

To Members of the Wellington Architectural Students' Association—

This occasion—the opening of the Wellington Architectural Association—is going to be, I hope, an epoch in the development of architectural education in Wellington.

In the past the facilities for the education of the students of architecture have been of a meagre kind, being confined to office training combined with, perhaps, evening technical classes. Now, I do not wish to belittle the excellent training that one may receive under either or both of these systems, but I think that we in New Zealand, a comparatively young country, should profit by the experience of the old countries of the world, and if we look round, we find that in England, America, and France it is recognised that some other system of education is necessary than that of mere office training, and about the most valuable institution is the A.A.

I am not one of those who hold that architecture should be taught exclusively in schools and universities—in my opinion this is quite a mistake; I submit that the ideal training is the apprenticeship system combined with attendance at University or A.A. schools. This, by the way, is the recommendation of the Wellington Branch Sub-Committee of the N.Z.I.A. on Architectural Education set up to report on the matter.

In my experience, especially in New Zealand, the office pupil gains a practical knowledge at the expense of design, and at the schools in other countries he gains an intensive culture in the matter of design but very much at the expense of the practical side. One office I was in in London was flooded with men who had just finished their course at the Liverpool School of Architecture and, al-

though they could do full justice to the designing of a triumphal arch or a mausoleum, they soon found that in private practice there were not very many opportunities for the designing of triumphal arches or mausoleums, and that a little knowledge of specifications, etc., would be of no small account. Therefore, if we sum up, I think we may conclude that the ideal combination is office and school, and in my opinion office should come first especially here to-day where we must be *very practical and economical* and where Van Dycke beards and brown velvet coats would last about five minutes.

Now, if we study our streets to-day, we find that hitherto the practical side has had a very good innings—it must be so because the buildings have not fallen down, the plaster has not fallen off the walls, the iron (that bane of my existence) has not blown off the roofs or walls, the foundations have not settled—therefore the practical side must be all right—but what of design—"alas! my prophetic soul," where is the design? I maintain that it is sadly lacking and therefore it will be the aim and object of this A.A. to teach or endeavour to teach design, both in plan and facade, for let me say here that there is much beauty, rhythm, and harmony in a well worked out horizontal design or plan.

However, in the A.A. we do not want to lose sight of the practical side, and it will be my endeavour to persuade certain gentlemen to attend and give us addresess on suitable subjects as opportunity offers.

Now, we are starting in a small way and in more or less uncomfortable quarters—it is unfortunate that one must get out one's bench before starting and clear it all away before one leaves, but, my fellow-students, I am ambitious, and I see in the future commodious quarters; I see a nice library and reading room; I see a well polished brass plate at the portals inscribed in beautiful, tasteful letters—"Wellington Architectural Association"; I see all these things if only we will all stick to it and play the game. Therefore if things are not quite so comfortable as we may wish to start with, let us stick hard and carry on, even if it is only building up a foundation for those who come after.

I am only looking upon this room as a temporary home, for in the very near future I think we shall be justified in being a little more ambitious, and I would therefore take this opportunity of asking all members to keep a look-out for a room which we can occupy exclusively.

There are other disadvantages under which we must labour: we have no history here or traditions worth following, no sound library as yet; so that we must look to other countries and their traditions for our examples, and I would advise you all to try and collect photos, even if they are only postcards, of the best examples of the architecture of the world—not only collect them, but study them often; if any of you have friends going to England, ask them to bring you back postcards. These can be purchased for a very small sum and I should be pleased to advise members at any time as to suitable ones to get, and where they may be obtained. No! We shall not be working under the most ideal conditions, but if we put our shoulders to the wheel and help each other I am sure that at the end of the season we shall have progressed a little towards our goal, i.e., the betterment of architecture in New Zealand, and in that case the results will have been well worth the effort.

Now, with your permission, I would like to offer a few words of advice and encouragement in the hope that one with slightly longer and more varied experience might be able to throw out a few hints or ideas calculated to be of use to the younger members of the profession.

After seventeen years spent in the study of architecture, I can say that I much resemble Uriah Heep—"I am very 'umble"; and this spirit I wish to inculcate into you who listen to me to-night, for the architect, or would-be architect, who thinks he knows all about it will never get anywhere.

I do not suggest for one moment that you should go about with a ticket pinned on your backs inscribed, "I don't know anything about architecture," but I do suggest that you should confess to yourselves periodically that your knowledge of the subject is, to say the least of it, "thin." The subject you have taken up is so vast that you will never know very much about it and although, as I did, at the end of four years' articleship you may say—"Ha! Ha! Architecture is easy. I am IT." Believe me when I say that you will live to be sadder but wiser men!

I have no hesitation in saying that we who are privileged to enter the noble profession of architecture, must be prepared to devote our whole lives to the study of our art if we wish to do one masterpiece before the end comes. Do not be discouraged, but keep on plugging away, and if you develop the keen spirit which is necessary to success, you will soon learn that it is all very much worth while. One old chief of mine in London once said, "There is no doubt about it, Fearn, that the pleasure of doing an architect's work must be half the pay." This remark might not appeal so much perhaps to those who have attained success easily, but I can assure you that in my case at any rate these words can be applied with much relevancy. Let me stress this very vital point and acclaim with a loud voice—"Architecture must not be a matter of £.s.d." At any rate as far as *our own* pockets are concerned, even if it *must* be so in regard to our clients; when a small job comes into your office, do not think to yourselves—"This job will not pay me—I cannot give many details for this." You may perhaps say as much—but never act it—do those details, give that necessary supervision, not only for the love of the game but because the one job carried out conscientiously and well, must lead to another job—perhaps a big one—at some future time.

(To be Continued.)

Obituary: W. R. Beauchamp-Platts.

The New Zealand Institute of Architects has suffered an incalculable loss in the death of Mr. W. Beauchamp-Platts, who passed away, after a long illness, on the 5th instant.

Bartlett & Andrew Ltd. photo

MAJOR W. R. BEAUCHAMP-PLATTS
Died November 5th, 1921

Mr. Beauchamp-Platts came to the Dominion from England some 35 years ago. First settling in the Manawatu district, he later went to Wellington to join the Treasury Department. After twelve years in the Government service he left to enter the service of Messrs. J. H. Bethune and Company in the capacity of chief accountant. He left this firm in 1907 to commence practice as public accountant, auditor and company secretary. He had many interests. In military matters he was an enthusiast, and at the time of his death held the rank of major in the N.Z. Territorial Forces. Boxing and other forms of sport had in him a keen supporter. In 1914 he was appointed a Justice of the Peace. In Freemasonry he had held and was holding at the time of his death high office.

In 1909 Mr. Beauchamp-Platts was appointed secretary to the New Zealand Institute of Architects, and from that time forward took an increasing interest in all that appertained to the Institute. In the latter months of his life he became more and more absorbed in the Institute to the exclusion

of other interests. He became increasingly interested, too, in architecture. He told the writer on several occasions before his fatal illness commenced how glad he would be to be able to devote his whole time and service to the Institute. But this needed no telling. No one of those who came closely into touch with him, especially during the last year or two of his life, but could judge where his heart lay. In point of fact during the last few months he had devoted almost the whole of his time and attention to Institute matters. He continued actively engaged upon work for the Institute until his last conscious moment. His mind was clear and active to the last. He again and again expressed a wish that he might live long enough to have everything in order for the annual meeting, and was busy preparing matter for that occasion when he passed away. In his long illness he proved himself a gallant gentleman, courageously fighting until overcome at last. One of the oldest members of the Institute and a Past President wrote as follows :—

"As one who has been intimate with the history of the Institute's many strenuous experiences, I would wish to pay tribute to the whole-hearted loyalty and ability of our secretary, Mr. William Beauchamp-Platts, in all matters large or small, pertaining to the best interests of our Institute and its members, since his appointment on the 24th of November, 1909.

"He possessed wonderful ability in grasping the technical details of our profession and showed tactful and skilful administration in carrying into effect the wishes of our governing council. A marvellous memory as to the Act and Regulations made him a veritable encyclopædia of reference, until it became a frequent expression: 'Ask Platts.'

"Mr. Beauchamp-Platts had a way with him of carrying conviction. His suggestions and advice bore the hall-mark of wisdom and common-sense. No trouble, no time, or the expenditure of midnight oil did he ever begrudge where the interests of the Institute, or its individual members were concerned. No secretary in any official capacity enjoyed more absolute confidence and good-will than was placed in him by our Governing council and members.

"Many incidents could be recited by those who knew him best in collaboration with him over the affairs of the Institute, in evidence of his great devotion to its interests. It was always *the Institute first*, his own private and business affairs second.

"Those who may not have that personal knowledge of Mr. William Beauchamp-Platts, may well accept the assurance of those who have."

The President's message to the members of the Institute and the resolution of sympathy passed by the Executive Committee, which we print below, bear added testimony to the esteem in which Mr. Beauchamp-Platts was held by those who knew him best.

PRESIDENT'S MESSAGE.

"I deeply regret to announce the death at Wellington, on the 5th instant, of the Secretary of the Institute, William Richard Beauchamp-Platts.

"Since his appointment as Secretary in 1909, Mr. Beauchamp-Platts has given to the Institute most devoted service, service which only ended, literally, with his death. Gifted with great natural ability, possessing an amount of special and general knowledge which is rare, combining great energy with force of will, Mr. Beauchamp-Platts was no ordinary Secretary, and his untimely death has cut short a career of eminent usefulness.

"I am confident that every member of the Institute shares the deep sorrow occasioned by the passing away of so faithful a servant. Those only, however, can fully appreciate the true magnitude of the loss sustained by the Institute who, like myself, have had the advantage of Mr. Beauchamp-Platts' personal acquaintance, and who have received from him, on so many occasions, so much willing assistance and invaluable advice in the Institute's behalf."

RESOLUTION OF SYMPATHY.

"That the members of the Executive Committee of the New Zealand Institute of Architects desire to place on record their feelings of sincere regret at the death of Mr. W. Beauchamp-Platts, Secretary of the Institute, and their deepest sympathy with Mrs. Beauchamp-Platts in her bereavement, and to give expression to their great admiration for the late Mr. Beauchamp-Platts, for the thorough manner in which he performed the secretarial duties during a period of twelve years; that this Executive recognises that the late Mr. Beauchamp-Platts not only conducted the routine business of the Institute in a masterly fashion but had its welfare deeply at heart and was ever ready to suggest and support new activities and measures whereby architecture might take its rightful place both as a profession and an art and considers that the Institute and the architects of New Zealand generally owe to him a great debt of gratitude; and further, that the members of this Executive who for so long came into very close touch with our late Secretary, can testify to his unfailing courtesy, tact and fine administrative ability and by whom he was held in the highest esteem and affection."

War Memorial, King's College, Auckland.

Good progress is being made with the campaign to raise £8,000 to erect a chapel at the new King's College, Mangere, in memory of the old boys of King's College and St. John's College who fell at the front. Old boys, parents of old boys, present boys, and a few friends of the school are being invited to contribute. The sum of £5,000 is in hand or promised to date, considerably more than half this amount having been contributed by the old boys themselves.

"An Improved Process for Combining the Production of Synthetic Ammonia with the Working of a Coal Gas or Coke Producing Plant."

Devised by

Messrs. L'Air Liquide Societe Anonyme Pour L'Etude et L'Exploitation des Procedes Georges Claude.

It is, of course, well known that in the carbonisation of coal there is produced an average of from 250 to 300 cubic metres of gas per ton of coal, the gas so obtained containing about 50 per cent. of hydrogen. The carbonisation process therefore constitutes an important source of hydrogen for the extraction of which from the mixed gases several different processes can be employed. A new and important process for the utilisation of the hydrogen thus produced, in installations of relatively small size, has been devised by the well-known French company, L'Air Liquide Societe Anonyme Pour L'Etude et L'Exploitation des Procedes Georges Claude, who make use of their patented hyper-pressure processes (see for example British Patent No. 130086) for the manufacture of synthetic ammonia for disposing of the hydrogen obtained in carbonisation processes. The new process permits of the adaptation to this new application, under relatively simple conditions, of existing coking installations and gas-works.

In the first place the gas resulting from the carbonisation of the coal is treated by processes for obtaining hydrogen which consist in taking advantage of the very low degree of solubility of the hydrogen in certain solvents (see for example the processes described in British Patents Nos. 130092, 130358 and 131091). On thus separating the hydrogen a gas is simultaneously obtained consisting almost exclusively of methane and consequently of exceptional calorific power. In practice only a little nitrogen escapes solution, but this presents no drawback in connection with the process under consideration. Matters are found to be much improved in practice, when, as is most often the case, the installations of coke ovens and gas works are provided with the necessary purifying apparatus and when, consequently, gases are produced which it is very easy to treat.

It must be remarked that not only carbon monoxide but also carbon dioxide are only present in a small proportion in the gases in question, and that, consequently, the process which furnishes the hydrogen cannot at the same time supply carbon dioxide. If, however, this carbon dioxide is required, it will be necessary, for example, to find it in the gases of combustion.

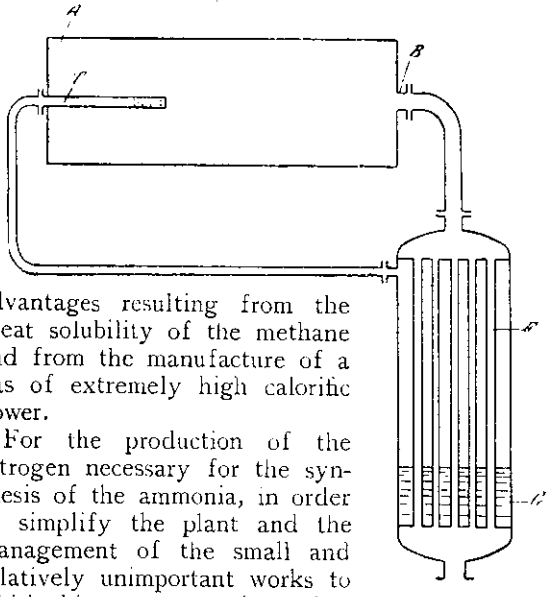
In the second place the extraction of the hydrogen as referred to above deprives the coke or gas works of the greater part of its gases, as it is necessary to use a fairly considerable portion thereof for compressing the gaseous mixture to the desired pressure (50 or 100 atmospheres for example); if all the gas produced by the furnaces were used, this is the case in gas works properly so-called or in well-combined metallurgical establishments, it would not be possible to replace the part of the gas necessary for the manufacture of the hydrogen except by using new furnaces to an extent corresponding to the deficit or else by heating the furnaces with the aid of air gas for example.

A better means which obviates any such necessity consists in profiting by the fact that, in almost all existing installations the coke on leaving the furnaces, and especially metallurgical coke furnaces, at a temperature exceeding 1,000 degrees Centigrade is quenched by means of water, and by the fact that there is thus lost without benefit an enormous quantity of heat of the order of that which would produce the combustion of 40 kilogrammes of coke per ton. Now it is easy to avoid this loss by producing in the furnaces themselves, without great expenditure for additional plant, by the aid of this heat and of a very small quantity of coke, a considerable quantity of water gas which can be added to the gas supplied by the coke furnaces and will thus permit of the—so to speak, gratuitous—extraction of the hydrogen existing in a much larger quantity of gas.

When the distillation in a furnace is terminated it suffices to introduce therein towards one of its ends A, as illustrated in the accompanying diagram, a current of steam produced and superheated by the gases themselves which result from the operation, as will be seen from what follows. This steam becomes progressively decomposed in the course of its transit in contact with the incandescent mass, so that at the other end of the furnace, where a very high temperature will prevail up to the end, a mixture of carbon monoxide and hydrogen will pass out at B. This mixture enters at the top of a vertical group of pipes immersed at their lower part in the water of the steam generator G, and produces steam and effects its superheating. When passing this steam into the furnace, the necessary precautions must be taken to prevent damage to the refractory lining of the latter; for example, the steam may be introduced through a long pipe T of suitable metal having a series of holes pierced towards its end, in order to distribute the steam which is highly superheated. The fact of introducing this steam superheated to 300 or 400 degrees Centigrade limits to that temperature the cooling of the parts of the furnace which are in the most unfavourable conditions, and prevents the drawbacks which might result from the too rapid or too complete cooling of the furnace both from the point of view of its solidity as well as of the further carbonisation. Even with this restricted use of the heat of the coke the production of water gas remains very appreciable and may exceed 30 per cent. of the normal gaseous output of the oven.

This operation, by being repeated successively in the different furnaces composing the plant, may thus be arranged to supply a constant addition of water gas to the production of normal gas. This supplementary water gas could also be produced, as has already been proposed, by sending the red coke on being withdrawn from the furnace into extinguishers, where it is quenched by jets of steam. In accordance with the new process the supplementary water gas produced by the preceding means may be added to the gas normally produced and the hydrogen may be extracted from the whole of the gases obtained or else it may be reserved, either alone or mixed with methane, for heating the furnaces, the production of motive power, etc., the rich gas being reserved for the extraction of the hydrogen, so as to benefit from the

Fig 1.



advantages resulting from the great solubility of the methane and from the manufacture of a gas of extremely high calorific power.

For the production of the nitrogen necessary for the synthesis of the ammonia, in order to simplify the plant and the management of the small and relatively unimportant works to which this new process is particularly applicable, there may be burnt in gas engines with air about one-seventh of the hydrogen available which will thus yield, at the same time as the nitrogen, a part of the motive force required in the plant.

By the extraction of the hydrogen from the gas of the coal carbonising furnaces which is rendered easy by use of the dissolving processes hereinbefore referred to and which is still more facilitated by the production, in a kind of gratuitous manner, of a large quantity of supplementary water gas, and further owing to the use of a process for the synthesis of ammonia which permits of the employment of units of as low a degree of output as desired, the synthetic ammonia may be regarded as a by-product of the manufacture of coke, and especially of metallurgical coke, as the production of coke of any given works is only diminished thereby by 4 or 5 per cent. A battery of furnaces producing 300 tons of coke per day, for example, produces a rough total of 100,000 cubic metres of gas containing 50,000 cubic metres of hydrogen from which, even if not counting upon the hydrogen from the supplementary water gas, it is easy to extract 40,000 cubic metres of hydrogen, permitting practically of the manufacture of 15 tons of ammonia, NH_3, the market value of which is close upon that of the 300 tons of coke.

If it be remarked, on the other hand, that the utilisation of synthetic ammonia, save and excepting unexpected developments, entails of necessity the manufacture as a by-product of carbonate of soda (see for example British Patent No. 130365) it is possible to see what important consequences of an individual character are bound to result from this inevitable conjunction in the future of three of the greatest modern industries, namely, metallurgy and the industries devoted to the production of nitrogen and soda.

The features of novelty comprised in this new process of L'Air Liquide are as follows :—

1. The method of obtaining hydrogen and nitrogen for the synthetic production of ammonia by the hyper-pressure process consisting in separating hydrogen by a solution method from the gases given off in the distillation of coal in a coal gas or coke producing plant, utilising a part of the hydrogen for the manufacture of the ammonia and utilising another part of the hydrogen as fuel in a gas engine whereby nitrogen is obtained for the manufacture of the ammonia.

2. The method of obtaining hydrogen and nitrogen for the synthetic production of ammonia as set out in (1) above and of increasing the quantity of available gas from the coal carbonisation plant by the addition of water gas obtained by passing steam over hot coke which remains after the distillation of the coal.

3. The combination with a coal distillation plant of plant for the synthetic production of ammonia by the hyper-pressure process comprising means for separating hydrogen by a solution method from the gases given off in the distillation of the coal, part of said hydrogen being employed in a gas engine to remove oxygen from air, the remaining nitrogen being employed for the production of the ammonia.

4. The combination with a coal distillation plant, of plant for the synthetic production of ammonia by the hyper-pressure process comprising means for obtaining water gas by injecting super-heated steam on to the hot coke of the coal distillation retorts generating and super-heating the steam by means of the heat of the gas evolved from the retort mixing the water gas produced or part of it with the gaseous products of distillation of the coal and means for separating hydrogen by a solution method from the mixture of gases, part of the hydrogen being employed with air in a gas engine so obtaining the necessary nitrogen for combining with the hydrogen to form ammonia.

5. The combination with a coal distillation plant of means for obtaining hydrogen and nitrogen and for the synthetic production of ammonia by the

hyper-pressure process comprising a plant for separating hydrogen by a solution method from the gaseous products of distillation of the coal, part of said hydrogen being utilised for the manufacture of ammonia and part of the hydrogen being used as fuel in a gas engine so removing oxygen from the air, the remaining nitrogen being employed for the manufacture of ammonia using hyper-pressures.

Personal.

We are always glad to be able to record the success of New Zealand's young architects, and it gives us pleasure to learn that for the Victory Scholarship, 1921, of the Society of Architects, London, the jury have selected two designs in the final competition as being of equal merit, and they have recommended that the prize of £100 shall be divided equally and the gold medal duplicated. One of the successful candidates is Mr. J. H. White, A.R.I.B.A., of Dunedin. The other is Mr. B. Fraser, M.S.A. Both are students at the First Atelier of Architecture. The jury's report of recommendations is subject to confirmation by the Council of the Society of Architects. During his course of study at the Architectural Association, Mr. White has been a very successful student, and it will be remembered that he was one of seven in the final for the Rome Scholarship last spring; while in association with Mr. S. Natusch, also of New Zealand, his design was selected for the Ideal Inn.

The Victory Scholarship competition is held yearly by the Society of Architects and carries with it the gold medal of the Society and £100 prize, and is open to all students of the Empire under thirty-five. It consists of two competitions. First one of twelve hours, open to everyone, and then ten are selected to sit for the final. This consists of a twelve-hour "en loge," in which the candidate has to set down roughly the solution of the problem. After that he is given a month to develop it, but any serious change from the first idea disqualifies the competitor. This year the first subject was "The Facade of a Theatre," and there were fifty-one entrants. The second subject was "The Arts Group of a University, including Museum, Administration, Lecture, Ampitheatre, and four Lecture Halls with necessary adjoining rooms; 16 Ateliers arranged round a formal garden and a loge building with 100 cubicles on each floor."

According to all the building papers, Mr. White was unlucky in having to share honours and the prize. At present he is designing one of the largest stores in London, and he finds it really most interesting work, but, unfortunately, he will not even see it started, as he left for New Zealand in October. He has completed his course at the Architectural Association, and he had the good fortune to gain the Association Diploma—one of the first three awarded. This is equal to the A.R.I.B.A. Degree.

"Esitol" Wood Preservative.

An interesting booklet published by the manufacturers of "Esitol" wood preservative gives some details that prospective users should know. The manufacturers claim that "Esitol" will do all that creosote will do. It is odourless, making the immediate habitation of a house possible, and it is harmless to plant life. In greenhouse and conservatory work there is a big future before "Esitol" because it is so much cheaper than paint. It preserves the wood better than paint, and is considered for this purpose quite as decorative.

Creosote does not always preserve wood, being a combination of an oil and an acid, the acid portion tends to destroy the fibres of the wood. The only preserving action that creosote has is due to the oily constituents, these being volatile; in time wood treated with creosote will be left entirely unprotected. The hotter the climate the more rapid will be this volatilisation.

The chemicals of which "Esitol" is made are not volatile; therefore they cannot be driven out of the wood by increased temperature. As temperature does not effect the wood preserving qualities of "Esitol" it is a much more permanent preservative than creosote.

With regard to the degree of penetration, very often in the case of piles, pit-props, railway sleepers, etc., the creosote has to be forced into the wood under pressure, which is a very expensive process. Now plain water penetrates wood more easily than an oil will. It is a well-known chemical fact that certain inorganic salts in solution in water have a peculiar affinity for wood. Therefore they will penetrate, attack, or bite into the wood more easily and more rapidly than anything else. This is the case with "Esitol" wood preservative, altnough water is the medium used for impregnating the fibres of the wood with preserving chemicals; once these chemicals come into contact with the tannin and cellulose of the wood they form an insoluble compound that cannot be re-dissolved by water. For this reason "Esitol" can be used for under-water piles with perfectly satisfactory results; the insoluble chemicals will resist the *Teredo* and other sea vermin much longer than piles treated with an oily preservative like creosote.

The colouring matter penetrates into the wood just as deeply as a similar application of creosote. The chemical explanation of this fact is that the wood preserving elements in "Esitol" are practically colourless; the surface of the wood acts as a kind of filter, the colours purposely being retained on the surface and being "fixed" there by means of a chemical fixative which enables the colours to resist the action of the weather—wet or dry.

"Esitol" is non-inflammable, and is a very quick dryer. It can be painted over or varnished over immediately it is dry, and is claimed to be an excellent preservative for railway sleepers and much cheaper than creosote or tar.

Sawmilling Section.

[This Section is published by arrangement with the Dominion Federated Sawmillers' Association (Incorp.) in the interests of the Sawmilling Industry of N.Z.]

Acting Editor: ARTHUR SEED.

The Tariff.

On November 3rd the Budget and new Customs Tariff were placed before Parliament by the Government, and consideration of these two matters is probably the most important work before the House this Session.

To all those engaged in the timber industry, whether employer or employee, the lack of provision in the Tariff for any increase in the duty on imported timbers and timber manufactures will come as a surprise and disappointment. There is not even any provision for preference for British timbers, and the same old duties are proposed to be perpetuated in practically the same unscientific schedule that was brought into force so very many years ago, and the duty of 2s. per 100 on rough sawn timber is to continue the same as it has been ever since 1871, fifty years ago!!!

Rough sawn Ash, Hickory, Lance-wood, Lignum Vitae, Beech-wood, Cedar, Oak and Walnut are to come in free, apparently simply to satisfy a popular craze or fashion of the public for furniture of imported woods, while we have timbers in New Zealand incomparably better than anything which may be imported for furniture and interior fittings. It would appear, however, that our present Government in its wisdom considers that it would be better to continue to fell and burn these timbers and make "one blade of grass grow where two trees grew before" and continue to send millions of pounds out of the country to support foreign and black labour in forest industries.

Consider Japanese Oak—a timber which has been shown to take the borer within practically a few months of landing—on the free list!! while we have such a wonderful furniture timber in Beech going up in smoke by the millions of feet simply to please a popular fancy and for lack of reasonable protection for our native timbers.

What is to become of our newly inaugurated Forest Service and the much vaunted Forest Policy of the Government if this same Government continues to allow low grade foreign timbers to be dumped wholesale into this country? Is it not almost humourously ironical that with one hand our all-seeing Ministry is erecting under the Forests Bill a new Department of State which has been proclaimed as essential on all sides, while simultaneously with the other hand, by means of the Timber Schedule of the new Tariff, it puts an obstacle in the path of this new Service which will render all its efforts and scientific knowledge of little avail.

It would be a very different matter if it were possible for the timber interests in New Zealand to take advantage of any increase in the Tariff to raise the prices of timber to the consuming public. The Government, however, has absolute control of timber prices and continues to exercise this control through the Department of Industries and Commerce. This is surely sufficient safeguard that the public would not be exploited were reasonable protection given to the industry and the very forests for the control of which our same all-seeing Government has created a special Department.

Look also how meekly our Government forces the people of New Zealand to lie down to the indignity placed upon us by our Australian neighbours in treating New Zealand as a "foreign country" by its new Tariff. It is a fact that for tariff purposes New Zealand verily is a "foreign country" in the eyes of Australia, for that country has imposed a duty of 6s. per 100 on New Zealand timbers, the same as charged on Japanese, Swedish, American and other foreign timbers. Our Government proposes to continue to allow Australian timbers to come into New Zealand partly on the free list and partly under the low duty of 2s. per 100.

Then also, how progressive we are, for we do not propose to make any alteration in a duty which was imposed 50 years ago. Had the duty on timber been on an *ad valorem* basis at 2s. per 100 fifty years ago we would now be paying a duty of at least 10s. per 100, for it is quite safe to estimate that timber has increased in value from at most 5s. to at least 25s. in that period.

America has imposed an Emergency Tariff which practically prohibits the entry into that country of our wool, meat and butter, but we must not retaliate. We must continue to allow their low grades of timber produced by inferior grades of labour—Chinese, Hindu, Japanese and Middle-East European—to enter this country at the same "gentle" tariff as was imposed 50 years ago.

It is sufficient to make the late Sir David Hutchens "turn in his grave" to think that our all-wise Government has so little concern for our forests and their welfare and proper utilisation that it does not see fit to give them reasonable protection against the admittedly inferior timbers from foreign countries.

The industry itself is the second largest employer of labour in New Zealand, and is also the second largest industry in respect to the amount of capital involved. It contributes in no small measure to making New Zealand self-supporting, it swells the country's exports, and in the future—

as in the past—must remain as a determining factor in the economic development of the Dominion. It militates against the drift of population to the towns and develops a hardy type of essentially good citizen; yet the successful perpetuation of the industry is in no wise provided for by the present Tariff proposals.

It is essential that the industry be 100 per cent. efficient, and this can only be attained by protection of those grades and species of timber which it is impossible to utilise while the markets are open to the dumping of foreign timbers of inferior quality.

In the country's interests the industry demands a more reasonable measure of protection than that provided for in the present Tariff proposals.

N.Z. Industries Exhibition.

The Exhibition of the products of New Zealand industries which has just been held in the Wellington Town Hall and one of the large Harbour Board Sheds near by, attracted very considerable interest, and was organised by the New Zealand Industrial Association for the purpose of demonstrating to Members of Parliament and the public generally the necessity for adequate Customs protection for the industries of New Zealand.

The whole display was indeed very creditable, and persons viewing it had to stop and think many times to realise that the whole of the goods displayed were produced within the Dominion. Many articles were exhibited which very few people, apart from those actually engaged in or connected with the particular industry, knew were being produced in this country, and as an educative medium the Exhibition can be proclaimed an entire success.

The Timber Stall or Exhibit, presented by the Sawmillers' Federation in conjunction with the State Forest Service, attracted very considerable attention, and there were shown beautiful samples of doors and mantles of figured Rimu, which many who have viewed them declare cannot be excelled for beauty of figuring by any wood in the world. There were also samples of mottled Kauri, Mangeao, Tawa, Puriri, etc., from the North, and furniture and articles made of Red Beech from the Nelson Province and Southland Beech from the far South. Probably this latter timber has attracted more universal attention for its general utility than any other timber in the exhibit. The excellent Plywood from Manunui and samples of bent-wood articles from Christchurch have also been an eye-opener to many visitors, who had no idea that such were produced in New Zealand. The whole exhibit performed a very useful service on behalf of the sawmilling industry, the importance of which to New Zealand was well illustrated at the stall by graphs and tables illustrating the number of employees, etc., in the timber industry compared with other leading industries of the country.

The Sawmillers' Federation and Forest Service are indebted to those millers and manufacturers who sent forward the items for display, and we feel sure that many more would have responded to the appeal for articles for exhibit had they realised what a great service the exhibit performed, not only for the industry as a whole, but for the particular firms who sent forward articles; for the number of enquiries made as to where different woods or items can be secured was quite astounding.

All this goes to show that the industry as a whole has not been sufficiently alive in the past to the necessity of advertising or propaganda work such as this Exhibition represented. It is hoped that the main part of the exhibits will be retained for exhibition elsewhere or kept as a permanent exhibit of the State Forest Service to show the splendid examples of the products of the New Zealand timber industry.

There is no doubt whatever that the exhibit, and the comparative statistics displayed in the form of graphs conclusively demonstrated the necessity of giving this industry adequate tariff protection in order that it may be developed to the fullest extent, and the utmost use made of hitherto little exploited timbers and resources of our forests

A booklet on the "Forestry Resources of New Zealand" has been issued in connection with the exhibit, and this places before the public the important part the timber industry of New Zealand has played in the development of trade. It also illustrates and stresses the fact that the greatest danger attached to the heavy importation of timber is the possible entry of large proportions of low grades which has the inevitable result of displacing from its natural market an equal quantity of the lower grades of our native timbers which in consequence will be either left in the bush to rot or burned upon the slab heaps. This in turn is diametrically opposed to the universal desire for the conservation and higher utilisation of our native forests, and will inevitably lead to dearer timber for the people of New Zealand in the future

The national importance of the timber industry is also clearly demonstrated from the point of view of number of employees affected and the total wages paid, and the booklet concludes with a long list of the purposes for which our native timbers are best suited, including various species which have hitherto been made little use of, and a report on the suitability of certain New Zealand timbers as paper-making materials.

It is sincerely to be hoped that those Parliamentarians who will so shortly be called upon to decide the question of the new Customs Tariff will have made full avail of the lessons to be learnt from study of the timber and forestry exhibit.

Breakdowns in rush times will represent more than the actual cost of the broken parts, as considerable productive time is sacrificed.

The Forests Bill.

In our last issue we noted that the Forests Bill had not received much comment or criticism from the Press, though the measure itself had received very wide publicity. Since then, however, the Bill has been through the hands of the Lands Committee, and many articles have appeared since its report therefrom strongly condemnatory of the fact that no provision is made in the Bill for adequate and proper examination of the remaining forest lands of the Dominion by experts of the Forestry Department before they are liable to be thrown open for settlement, and that such lands as are already proclaimed Provisional State Forests—as the Bill now stands—may be declared as required for settlement purposes on the recommendation of the Minister for Lands alone.

There seems no doubt that this new provision to a large extent defeats the work that has already been accomplished to the ends of Forestry by the proclaiming of very large areas of Provisional State Forests, and before these are again made available for settlement it would seem only right and proper that their chief suitability for permanent State Forests or for settlement should be adjudicated upon, not by the Lands Department which is a mere machinery Department, but by experts of the State Forest Service and the Agricultural Department jointly.

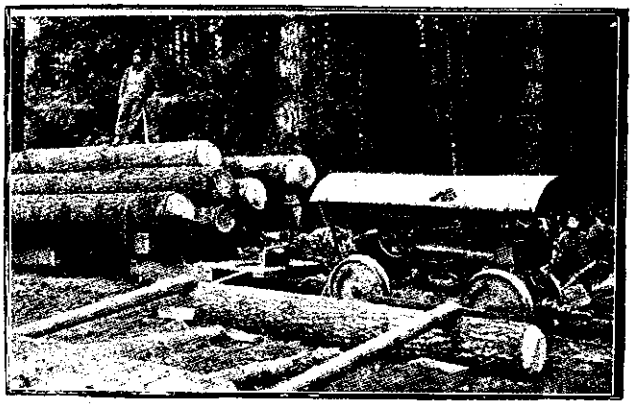
To overcome the friction which appears to exist between the Lands Department and the newly-created Forest Service, and in order to ensure that no further forest lands shall be made available for settlement and no further forests felled and burned without proper "demarcation," or the proper utilisation of timber resources of such bush lands as may be judged more suitable for settlement than for permanent forests, a reasonable provision would be to embody in the Bill a section to the effect that no further Crown Lands bearing bush shall be opened up for settlement until they have been reported upon as to their greater value as permanent forests or for agricultural purposes by a joint examination by experts of the State Forest Service and the Agricultural Department. There is not only the question whether such bush lands are best suited for agriculture or not, but if they are so judged there is the vital matter of the proper utilisation by milling and conversion of the timber which is at present standing upon them before they are opened up for settlement, and obviously the State Forest Service should retain control of these lands till the timber is removed.

We are indebted to the State Forest Service for copy of November issue of "Te Karere o Tane," the monthly departmental journal of that Service, but lack of space precludes our quoting many matters from it which are of interest to sawmillers.

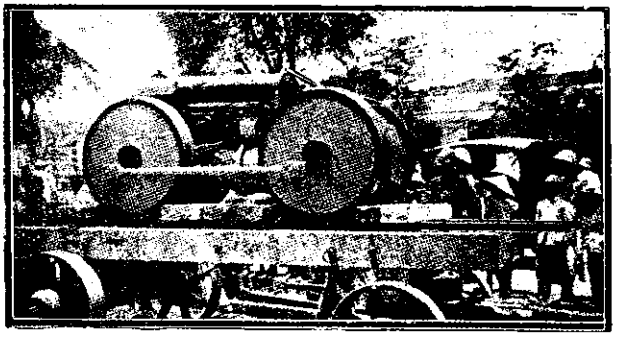
Tractors for the Sawmiller.

By the courtesy of Mr. R. B. Gibbons, of the Colonial Motor Company, Limited, we have been supplied with a copy of "Ford News" of September, 1921, containing illustrations and description of a Fordson tractor converted for use on rails. The illustration given shows this little petrol locomotive drawing quite a big load of logs, and following is the item in reference to it :—

"The Fordson locomotive is doing excellent work in the lumber camps of British Columbia



Fordson in the Woods.



This Fordson Locomotive is being shipped up country to the sugar plantations in Java. Great use is being found for this kerosene-burning locomotive on many light railways throughout the world.

and is proving very popular with the lumberman. It is being used principally for handling logs, cedar bolts, piles, poles, ties, lumber, rock, sand, cement, gravel and coal. It is also being used successfully for laying tracks and ballasting; also for track lifting and for transporting men to and from their work.

In order to convert the tractor into a locomotive it is necessary to remove the rear axles, differential gears and pinions, substituting therefor a solid axle with bronze bearings. A steel frame is next put round the engine and the whole mounted on four 33-inch wheels—cast from centres with steel tires shrunk on.

It is equipped with hand brakes, sand box, steel cab and spring drawheads. This locomotive can be built to suit any rail gauge from 36-inch to broad gauge. Weight of the entire outfit is 7,000 pounds and its hauling capacity is 50 tons on level track; on four per cent. grade it will haul 15 tons and on a nine per cent. grade five tons."

We feel sure that if this form of traction could be introduced into this country it would fulfil a long-felt want among a great number of sawmillers, and to this end the writer had made many enquiries from time to time during the past two years regarding the possibility of converting a tractor or motor-car for use on rails; but the above is the first definite information received regarding a tractor being converted to this purpose. Should any of our readers wish to secure further information concerning this form of tractor such could probably be secured for them by the Sawmillers' Federation.

Beech and Timber Tree Fungi.

Plants are subject to "disease," due to the attacks of lower organisms, but many people would hesitate to regard a fungus growing on a tree trunk as a very deadly thing. Various fungi, however, do serious injury to forest trees. In his lecture at Wellington, Dr. L. Cockayne referred specially to the "shelf" fungus—that curious growth which stands out from a tree like a fairly level and sometimes ornamental bracket. The "shelf" is a very solid structure, but it is really only the portion of the fungus which bears flowers. The main part of the plant (mycelium) is within the wood of the tree, and, according to the lecturer, this fungus is important among the killers of the beech. He argued that the timber containing mycelium was probably much altered and injured for use, and this fact probably accounted for failures that had been experienced when the beech—properly a durable timber—had been used for railway sleepers. The relation of fungi to timber trees was one that should be the subject of special inquiry. As an indication of the durability of beech, the lecturer showed a photograph of a house. It was, he said, forty years old. It had been painted, he believed, twice; it had been looked after as badly as any house ever was looked after. Yet it was still perfectly sound; and it was built entirely of red beech.—*Wyndham Herald.*

It will be news to most New Zealanders that kauri timber grows on Frazer Island, off the coast of Queensland. Mr. Bartholomew said at Feilding recently that kauri pine was being taken from that island 50 years ago.

Your cost statistics should keep you constantly in touch with each phase and with all phases of your business. By using them you should be able to learn instantly the profit or loss of any department, and if a loss—where the fault lies.

Companies Registered.

Takapurau Timber Co., Ltd. (The).—Regd. as a private company September 9th, 1921. Office: Company's Mill, near Ohingaiti. Capital: £2,001, into 2,001 shares of £1 each. Subscribers: Ohingaiti—A. F. McKenzie 667, L. J. Vile 667, T. R. Vile 667. Objects: To carry on the business of timber merchants, sawmillers, builders, woodworkers, and deal in timber, etc., and general incidental.

West Coast Sawmillers' Mutual Accident Insurance Co.—Regd. September 10th, 1921. No fixed capital. Office: Mackay Street, Greymouth. Subscribers—Wellington: J. W. Brownlee. Kahikatea: W. T. Ogilvie. Kumara: J. Gilbert, L. Thomas, J. E. Watson, J. Murphy. Potara: A. Blair. Greymouth: D. Tennent, Jack Bros., Ltd. Christchurch: W. Goss, D. Reece. Auckland: Stuart and Chapman, Ltd. Kaiata: E. Stratford. Ngahere: J. F. Jack. Hokitika: D. S. Stuart, J. W. Butler, R. F. Perham. Objects: Insurance of workmen, etc.

Halliday's, Ltd.—Regd. September 9, 1921. Office: Invercargill. Capital: £9,000, into 9,000 shares of £1 each. Subscribers—Invercargill: J. T. Carswell 693, J. C. Thomson 1,038, G. J. Yule 692, W. Carswell 692. Mataura: A. W. Halliday 2,250. Waikiwi: P. C. Thomson 692. Limehills: G. Halliday 2,941. Objects: Sawmilling and timber merchants.

Pouakai Minerals, Ltd.—Regd. as a private company October 3, 1921. Capital: £2,000, into 2,000 shares of £1 each. Subscribers—New Plymouth: E. Whittle 250, J. R. Cruickshank 125, A. L. Humphries 125, T. Bransgrove 93, T. A. Pruden 250, W. H. Skinner 125, T. Bransgrove 32, G. Tweedie 210, A. E. Watkins 40, B. R. Leech 143, J. W. Davies 107, J. McLeod 125, E. R. C. Gilmour 125, H. W. Kirkby 125, C. H. Croker 125. Objects: To purchase certain lands, explore and search for all kinds of minerals and oils, carry on business as timber-millers and sawmillers, to farm, carry on business as carriers and taxi proprietors.

According to *Yates Quality,* many manufacturers do not realise that they are really paying for a needed piece of machinery although not purchasing it outright.

Low production, poor quality of product, excessive cost of repairs and high labour costs enter as factors that are buying that machine—buying it in a way that will never mean an actual installation in the purchaser's plant.

Costs are the dollars and cents proof of manufacturing profits.

Next year will find some with the old piece of equipment and minus the price of a new one. Does this apply to your plant? Think it over.

N.Z.I.A. Competitions.

WELLINGTON BRANCH.

STUDENTS' COMPETITION No. 3 (limited to Students attached to the Wellington Branch only).

Two book prizes, first value £3 3s., second value £1 1s., will be awarded to the successful competitors in the following competition :—

SUBJECT.—A drawing of any one of the orders to be taken from some well-known Grecian or Roman example. Showing the order complete, detail to a larger scale and drawing of the building in which the selected example has been used and some accessories of the period. The whole to be arranged as a competition on one sheet.

DRAWING.—The drawing to be on one sheet of Imperial size Whatman's paper, mounted on strawboard, and to be fully rendered in any desired medium. Marks will be given for composition, rendering and refined lettering.

TIME.—Drawings to be sent in addressed to the District Secretary, Wellington Branch N.Z.I.A., 7 Woodward Street, Wellington, under a nom de plume, accompanied by a sealed envelope marked with nom de plume and containing competitor's name and address. Date of sending in : November 30th, 1921.

STUDENTS' COMPETITION No. 4 (limited to Students attached to the Wellington Branch only).

Two book prizes, first value £3 3s., second value £1 1s., will be awarded to the successful competitors in the following competition :—

SUBJECT.—A shaded drawing from Architectural Cast. The Carrara Ceiling Co., of Riddiford Street, Wellington, have very kindly consented to lend a cast for this subject and allow students to attend at their factory during working hours to make their drawings.

DRAWING.—The drawing to be on one sheet of Imperial size Whatman's, mounted on strawboard, and may be finished in any desired medium.

TIME.—Drawings to be sent in addressed to the District Secretary, Wellington Branch, N.Z.I.A., 7 Woodward Street, Wellington, under a nom de plume, accompanied by a sealed envelope marked with nom de plume on outside and containing competitor's name and address. Date of sending in : December 20th, 1921.

Our 80th Competition.

We offer a prize of £1 1s. for the best design submitted for

THE END OF A DRAWING ROOM.

The room to be 26ft. long by 16ft. wide with a fireplace at one end in centre. The room is to be panelled to height of doors, viz., 7ft., and the ceiling to be 10ft. high.

A design for the fireplace end is required. The chimney breast to be 6ft. wide, projecting 12in. into room. All the woodwork in room is to be painted. It is proposed that the work be well carried out and good material used.

DRAWINGS REQUIRED.—½in. scale elevation, plan, and vertical sections with quarter full size details of wall panelling and chimney piece, etc. Drawings must show the treatment of fireplace opening, grate, etc. Drawings to be inked in with the sections hatched in black.

Mr. Wm. M. Page, of Wellington, has kindly set this subject.

Designs must be sent in finished as above under a nom de plume, addressed to the Editor "N.Z. Building Progress," 22 Wingfield Street, Wellington, and clearly marked, "Eightieth" Competition on outside, with a covering letter giving competitor's name, and address of employer. Designs must be sent in by November 27th, 1921.

Our 81st Competition.

We offer a prize of £1 1s. for the design adjudged the

STONE PULPIT.

The pulpit is proposed to be erected in an Anglican Cathedral, and to be worthy, both in design and scale, of the important and prominent position it is to occupy. The style of the cathedral is decorated Gothic, and the pulpit is to harmonise with its surroundings, but freedom and originality of design are expected. The position will be against the east wall of the nave on the north side. Access to be gained by stone steps. A wooden sounding board over the pulpit to be included.

MATERIALS.—A good hard freestone, with marbles of various colours where desired.

DRAWINGS.—One plan (or two if necessary), section, two elevations, to ½in. scale. Details of mouldings and enrichments ¾ full size. Perspective.

The drawings to be finished in Indian ink, no shading, except the perspective, which is to be finished in watered ink and shaded in monotone, and to show the background and immediate surroundings. The dimensions, etc., are left to the competitors, but the height of the floor of the pulpit should not be much less than 6ft., nor the internal diameter less than 4ft.

Mr. Basil B. Hooper, A.R.I.B.A., of Dunedin, has kindly set this subject.

Designs must be sent in finished as above under a nom de plume, addressed to the Editor "N.Z. Building Progress," 22 Wingfield Street, Wellington, and clearly marked, "Eighty-first" Competition on outside, with a covering letter giving competitor's name, and address of employer. Designs must be sent in by January 27th, 1922.

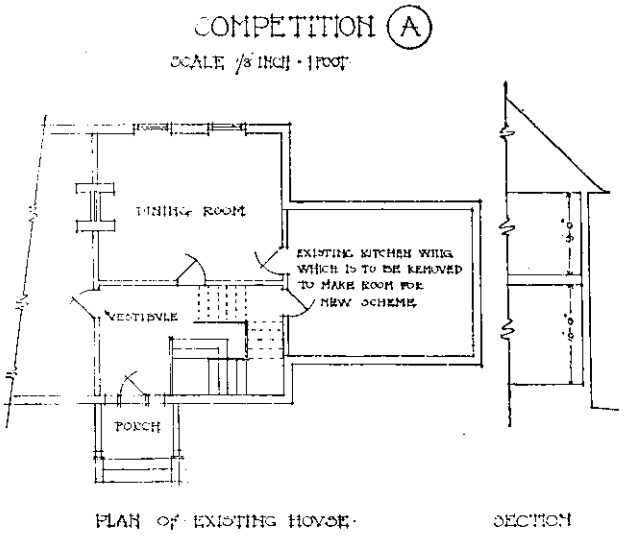
Our 82nd Competition.

We offer a prize of £1 1s. for the best design for an

IDEAL KITCHEN, SERVERY AND SERVANTS' QUARTERS

for an average house.

The kitchen and servants' quarters to be semi-detached, and connected to main house and dining-room by the



servery. Particular attention to be paid to appointments and planning of kitchen and servery, so as to save labour and eliminate walking.

Kitchen wing will be seen on approaching the house and will be near the main entrance. Attention must therefore be paid to the elevations. The kitchen is to be

well ventilated from the ceiling. Allow for range, fuel storage, heating apparatus and cooker. All fittings to be built in. Special attention to be made to arranging for store cupboards and china cupboards. Make provision for a recess for maid and living-out servants to sit. Kitchen lobby and back entrance. Maids' bedroom and bathroom fitted with bath, basin and w.c. Small laundry with three tubs, boiler and provisions for ironing and drying clothes. All to be on one floor.

DRAWINGS REQUIRED.—1 plan, 1 section, at least 2 elevations, to ¼in. scale. Also ½in. detail of part of fittings of kitchen or servery. Typewritten description of the general work.

FLOOR AREAS.—Kitchen about 160 sq. ft.; servery, about 70 sq. ft.; maid's, about 100 sq. ft.; bath, about 80 sq. ft.; laundry, about 90 sq. ft.

MATERIALS TO BE USED.—Red brick, tiled roof. See plan of existing house.

Mr. Roy L. Binney, of Auckland, will adjudicate.

Designs must be sent in finished as above under a nom de plume, addressed to the Editor "N.Z. Building Progress," 22 Wingfield Street, Wellington, and clearly marked, "Eighty-second" Competition on outside, with a covering letter giving competitor's name, and address of employer. Designs must be sent in by February 27th, 1922.

Building Notes.

The Institute of British Architects is calling for designs in England for the £1,000 competition for Auckland's memorial museum.

Mr. Selwyn Goldsboro' invited tenders for a brick kindergarten building in Wellington Street for the Kindergarten Association.

Mr. A. S. O'Connor invited tenders for a house at Edendale.

Messrs. Grierson and Aimer invited tenders last month for an isolation block of buildings for the Children's Home at Manuera last month, as well as a residence at Remuera.

Mr. A. McIan invited tenders for concrete houses at Mt. Roskill and Mt. Albert.

Mr. E. R. Morton invited tenders early this month for shops and dwellings in Remuera.

Messrs. Ed. Mahoney and Son called for tenders for alterations to the Bank of N.Z., Queen Street, this month.

Mr. G. W. Allsop invites tenders for a cool chamber in brick at Nurses' Home, Hospital, and a bungalow at Papakura.

Messrs. Chilwell and Trevithick invite tenders for a residence in Grafton in brick.

CHRISTCHURCH.

The Christchurch City Council, at a recent meeting, discussed the War Memorial bridge.

It was reported that representatives of the Finance Committee recently interviewed the War Memorial Executive and discussed the question of the erection of a bridge over the River Avon at Cashel Street. After giving the representatives' report careful consideration, the Committee recommended that the work of the under-structure of the bridge to be fully set out in the plans and specifications, for which tenderers would be required to give a separate price.

The Committee also recommended that the carrying out of the whole work be entrusted to Messrs. Prouse and Gummer, the winners of the competition.

The Committee further recommended that the War Memorial Executive be informed that the plans and specifications of the under-structure must be submitted to the Council and approved before tenders were called for the work, and that only New Zealand stone was to be used in the erection of the bridge.

Some objection was taken to the proposal that the erection of the under-structure should be carried out by the Memorial Committee architects, and Mr. R. D. Martin moved that the portion of the work for which the Council was responsible should be carried out under the supervision of the city engineer.

This was seconded by Mr. Cooke.

Mr. W. H. Winsor said it was customary to allow the one architect to supervise the whole job.

Mr. A. Manhire said it would only lead to trouble by having two sets of people supervising the work.

The Deputy-Mayor said the architect's charge for supervising the building of the under-structure would be 6½ per cent. on the cost.

Mr. Winsor said the architect would have to be paid 4 per cent. in any event.

The Council agreed to allow the clause to stand over till next meeting.

There are nine more residences at Northcote settlement, Papanui, completed. These houses have been built by the Government, and applications for them will be received at the Labour Department Office, Christchurch, up to October 31st. The price of the dwellings will be between £1,034 and £1,100.

Messrs. Hart and Reese invited tenders early this month for additions to premises, Norwich Quay, Lyttelton, for Messrs. Sutton and Co.

Mr. Roy Lovell-Smith called for tenders for a house in wood at Riccarton last month.

RANGIORA.

Mr. Duncan Brown, of Christchurch, invited tenders early this month for the erection of a new church at Rangiora.

TIMARU.

The State Advances Department has granted the Timaru Borough Council £5,000 for the erection of workers' dwellings.

WELLINGTON.

A new church—St. Michael and All Angels was officially opened at Kelburn recently. It was designed by Mr. Edmund Wilson, F.R.I.B.A., of Invercargill, and is situated on the corner of Upland Road and Upland Crescent. The design is early English, and the building is built of the best red brick and Sydney sandstone, and has a high gable roof in lighter shade red brick tiles, the general effect being such as to blend harmoniously with the surroundings. It comprises three-fifths of the nave, the entire chancel, and sanctuary, and the clergy-vestry. Inside, the church presents an even finer appearance, the general effect being one of quiet rest and simple beauty. This has been obtained by the special treatment of the brick walls, coloured glass windows, the high vaulted roof with its handsome oiled rimu principals and rafters, the general excellence of the furnishings, and the dignified sanctuary. The sanctuary, which is of generous proportions, contains several notable features. Chief of these is the altar in oak which has been carved by Mr. F. G. Gurnsby, of the School of Art, Christchurch, and ranks among the best pieces of workmanship yet seen in Wellington. The carving incorporates the symbolical use of the vine leaf and grapes with Gothic details. Other features are the sedelia and credence table of carved Oamaru stone, an aumbry, and a rich carpet. The font, situated at the west end, is an exceedingly beautiful work of art, and has already earned the reputation of being among the best in New Zealand. The gift of the Sunday School children, it is octagonal in shape, and has been carved out of rich, dove-grey Takaka marble, with black veinings. It stands on a handsome marble base, the whole being highly polished. The seats are in oiled rimu.

The seating accommodation of the church is 190, and when the full design is completed will be 320. When finished the church will end in an apse which will form the baptistry, and on the south side there will rise a stately tower, choir vestry, and organ chamber. On the north side there will be a porch.

Among notable gifts which have to be installed are:—(1) The east window subject "The Nativity," the gift of Mrs. Edward Anderson in memory of her late husband, which will be the work of Mr. Camm, of Birmingham; (2) a double light window for the nave by James Powell, London, the gift of Mr. H. Gibbons in memory of his two sons, who fell in the Great War; (3) a fine bell by Messrs. Taylor, of Loughborough, the world-famous bell-founders, the gift of Mr. and Mrs. Struthers in memory of a relative, who fell in the Great War.

Henry Pels and Co.

The firm of Henry Pels and Co., who before the war had an office in London, have written us stating that they have now re-opened their London office at 40, Great Marlborough Street, W.I. The firm's cable address is: Rypelsneh, London.

Patents of Interest to Builders.

WOOD, ETC., PRESERVING COMPOSITION.—A patent, No. 45,616, has been taken out, which comprises a mixture of ammoniacal metallic solutions and antiseptic or preserving substances, but its essential feature with regard to known compositions is that it is a mixture of phenol and ammoniacal solutions of metal hydrates and formates. The composition preferably used comprises an ammoniacal solution of copper hydrate, an ammoniacal solution of zinc formate, and an ammoniacal solution of phenol, the ammonia being sufficiently in excess to keep the whole in solution after it is diluted. The percentage of metals (copper and zinc) of this composition is preferably about 6 per cent., and that of phenol is about 8 per cent.

Memorial for Paeroa.

A well-attended public meeting to receive the report of the War Memorial Committee was held recently. Several designs were submitted for selection and the meeting decided to act on the Committee's recommendation and erect a memorial arch at the Arney Street entrance to the Paeroa Domain. The design selected was drawn by Mr. E. E. Gillman, of Paeroa, and is estimated to cost about £1,000. Mr. W. Marshall, builder, offered to undertake the supervision of the work free of charge. The meeting elected a strong committee to organise a campaign to raise the money.

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