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PROGRESS

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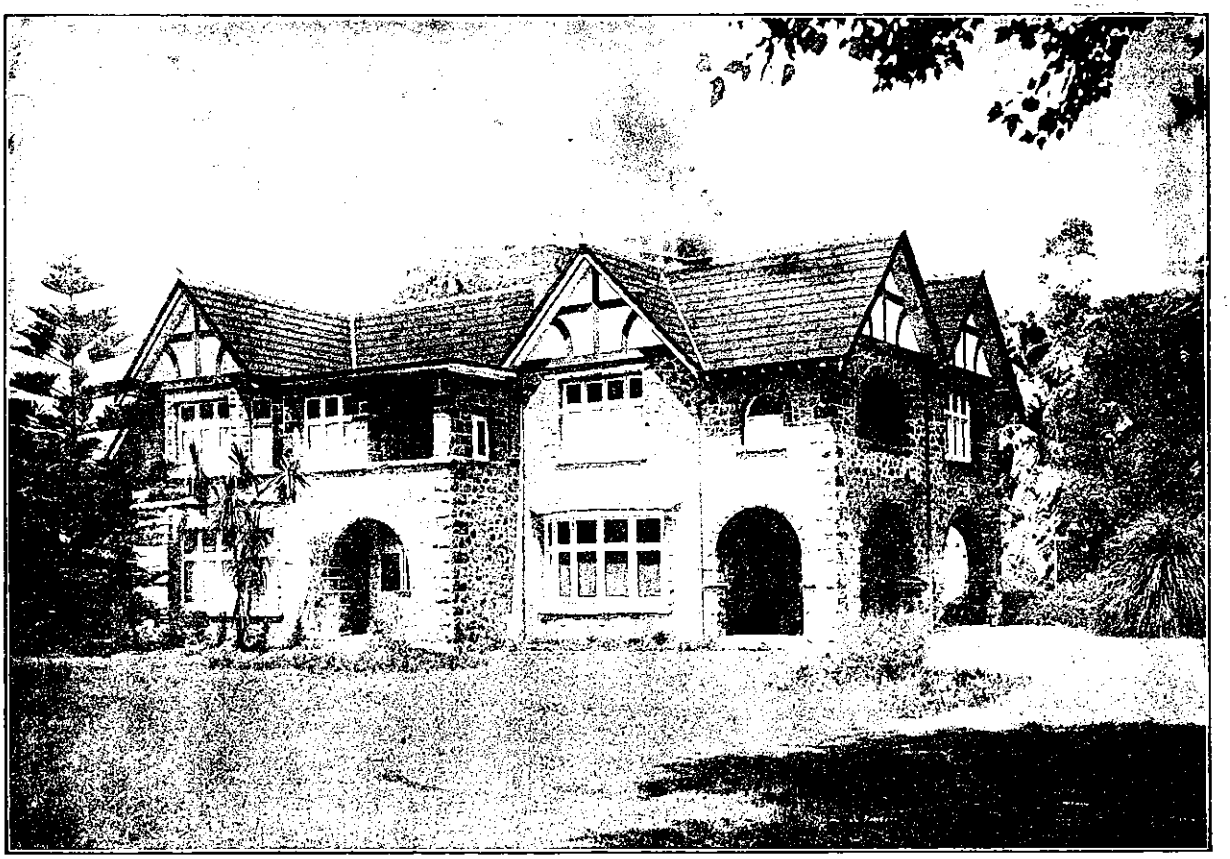

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N·Z·BUILDING PROGRESS

THE STATE OF TRADE.

There is nothing more eloquent of the stagnant condition of trade than the curtailment of the New Zealand railway service, and the laying up of thirty steamers usually engaged in the coastal and inter-colonial traffic. This happens to be the quietest part of the year, when the important staple products of the Dominion are not ready for the market. Some slackness is always evident at such a time, but it has been accentuated this year owing to the scarcity of money curtailing the enterprise of those who wish to make ready for busy times which come with the reaping of the harvest. For the first time in many years, the New Zealand railways have failed to return sufficient to pay all running charges and interest, hence the reduction of mileage, which the commercial community has accepted as a reasonable policy under the circumstances. New Zealand is not by any means singular in experiencing bad times, for the principal railway systems of the world show similar symptoms of high costs piled upon a reducing revenue. Fortunately for the New Zealand railwaymen, the staff has been short for some years, and the men who did so well in handling heavy traffic with inadequate appliances are now reaping some benefit by their exceptional work. Arrears of holidays long overdue are now being taken by the railwaymen, and the service, as restricted, can be conducted without overtime which was so constant under normal traffic conditions. New Zealand's prosperity during the last six years has been due, not to high production, but to high values. We have now reached the position when nothing but increased production of staple products will meet the needs of the times, and as the railways charge for services, not on the basis of values, but on weights, we can predict that the slump, so far as this undertaking is concerned, will disappear with the coming in of the productive season.

HOUSING IN NEW ZEALAND.

Among the details disclosed by the last census are those relating to the number of inhabited houses in New Zealand. The total increased during the five-year period, but when the increase in population is taken into account, it is found that there has been only one additional house for every five or six additional people in the country. Thus it is evident that the housing shortage has hardly been touched, despite the activity of the Government and some local bodies. In Auckland, the centre of largest population, it is satisfactory to find that even under the present conditions of depression, building is going on apace, and the timber mills are hard at work providing material principally for dwellings. Christchurch City Council has given special attention to the problem owing to the serious overcrowding existing in its area, and it has adopted an attractive scheme for quantity production of wooden dwellings to cost about £600 each. The Government has been asked to help with finance, and probably it will give the required aid although the Consolidated Fund is loaded with exceptionally heavy obligations at the moment, owing to the scarcity of private employment necessitating a heavy expenditure on public works and special relief works. When the problem of housing was mentioned incidentally by a Labour deputation to the Government recently, the Acting-Prime Minister, Sir Francis Bell, made the singular suggestion that this was a matter for the local authorities. He believed that the local bodies would resent the Government "poking its nose into their business." Sir Francis Bell must have forgotten the actual policy of the Government, which undoubtedly regards the housing problem as a national one, because its main activities are carried out by a State Department operating in many cities and towns in the Dominion. That the Government, when laying down its policy had regard to the local authorities, is evident from the financial arrangements it made in the last Housing Act. There is provision for loans to local authorities for housing purposes, but these loans were restricted, indicating that the Government proposed to shoulder the main responsibility. Auckland and Christchurch have been the only local authorities to complain of the restricted extent of the financial arrangements in the

Act, which shows that as a general rule, the community is well content to leave the problem to the State.

PARLIAMENT AND THE TARIFF.

It is so many years since the New Zealand Customs tariff was revised that the coming session promises to be especially interesting, for this is the biggest task on its programme. When the late Hon. J. A. Millar, as Minister of Customs, undertook the tariff revision, he had less aid than the present-day Minister of Customs, who is well fortified with the comprehensive report of a Departmental Committee which has thoroughly investigated the conditions of New Zealand industries. This proceeding suggests that the Government will adopt a policy of increased protection where local industry can benefit. With the development of cheap hydro-electric power there is undoubtedly a chance to develop the secondary industries, especially those which will utilise the Dominion's products as their raw material, but it is to be hoped that the well-organised protectionist element will not be allowed to go too far under the impression that New Zealand can speedily become a manufacturing country.

THE WORLD'S HOUSING SHORTAGE.

It was suggested to the Government by the Labour deputation already referred to that intending immigrants should be told the truth about New Zealand s housing shortage and the extent of unemployment. We heartily concur, but we do not believe that the truth would stop one Britisher from emigrating. Conditions could hardly be worse than they are in Britain to-day, both in regard to housing and employment. Prior to the war, about 80,000 dwellings for working men were built annually in Britain, at a cost enabling them to be let at an average rent of ten shillings weekly. Hardly a house was built during the war, and by the end of 1918 the shortage of dwellings in Britain totalled between 300,000 and 400,000, to say nothing of the thousands of so-called houses which are only allowed to remain in use because their condemnation means turning the tenants into the street, with no chance of obtaining a roof elsewhere. Canada is experiencing the same difficulty of shortage due to the leeway during the war. In Winnipeg during two pre-war years, 3,302 houses were built, but the sum total during the whole war period was only 258 new houses. We are so near to Australia that the details of the shortage in its principal cities are well known. The United States figures on the question show that whereas the pre-war increase in the number of dwellings averaged between 350,000 and 400,000, only 70,000 new houses were built in 1919. It is estimated that the nation requires a million and a quarter new homes. In the face of these figures, it is evident that New Zealand's housing shortage is far from being exceptional, and that the position is not likely to deter intending immigrants. Once conditions become sufficiently normal in New Zealand to warrant the resumption of much-needed immigration on a reasonable scale, a selection of artisans by the High Commissioner will help us to overcome the problem, which is one of the most important in relation to the national life.

THE ARBITRATION COURT.

The resignation of the workers' representative on the Arbitration Court owing to the reduction in shearers' wages awarded by a majority of the Court, despite the stabilisation agreement made last May, has raised the big question whether the arbitration system is sufficiently successful to be maintained. At first, it seemed as if the trade unions were aiming at making the Court ineffective by refusing to nominate a successor to Mr. McCullough, but this was only a passing phase. More consideration has evidently satisfied the men's leaders that it would be a doubtful gain to get rid of the Court during a very difficult and dangerous economic era. Mr. McCullough held a view of the stabilisation agreement which his colleagues on the Court contend was never intended, as they expressly mentioned that exceptional conditions might warrant reconsideration of an agreement, which otherwise would stand until May, 1922. The majority of the Court hold that the wool producers are in an exceptional position, which involves the economic stability of their operations. Like many others, they are working on a falling market. If the Arbitration Court was done away with, some method of settlement of trade disputes equally well backed by Statute should be substituted, otherwise on a falling market the Dominion would be involved in an endless series of industrial disturbances, big and little. The Wages Board method, successfully adopted in the settlement of a dispute between the railwaymen and the Railway Department, seems a fair arrangement. The parties are directly represented at a round-table conference, presided over by an independent chairman, selected by mutual agreement. Special care has to be taken over the appointment of the chairman because his decision, in the event of a disagreement, carries great weight. This system was tried with the Judge of the Arbitration Court as chairman, but did not satisfy the railwaymen. They were, however, more content when a business man of wide experience controlled a subsequent meeting of the Board, and the agreement then arrived at is working satisfactorily to-day. Possibly the Wages Board system could be conducted in New Zealand as well as the Arbitration Court with a lawyer at its head. Whatever the system, the results should have the force of law, otherwise cut-throat competition between individual workers, and by employers capable of making a hard bargain with their employees, would add to the situation a series of troubles from which we have been free for many years.

Building Guilds.

Their Working in England.

An enquiry into the working of the Building Guilds in England by Mr. Ernest Selley at the instigation of *Garden Cities and Town Planning* has been published in the June issue of that paper. Mr. Selley is not connected with the Guild movement, but gives his report as a skilled, unbiassed investigator on similar subjects. As such the report makes excellent reading, and we feel sure our readers will be intensely interested in this movement which looks as if it held the key to the solution of so many of our labour difficulties. The writer says :—

A year ago bodies of building trade operatives in various districts were passing resolutions in favour of Building Guilds. Many people thought these resolutions were mere expressions of pious opinion; but to-day Building Guild contracts are being carried out in different parts of the country, and the experiment is being watched with intense interest.

With a view to placing on record some of the results already obtained by the Guilds, I visited a number of the sites where Guild contracts were being carried out. It is too early, however, to submit the Guild schemes to a complete test; this will not be possible until some of the contracts have been completed and the accounts settled.

THE AIM OF THE GUILDS.

The Building Guild is an entirely new type of industrial organisation. One of its fundamental principles is declared to be the establishment of complete democratic control within the industry. The final control "rests with the people who do the work, and not the people who put up the money." The Guild guarantees continuous pay to its workers during wet time, frost, sickness and holidays, and devotes the whole of its surplus earnings not to dividends, but to the improvement of its service. It regards capital as "the hired equipment of industry to be paid for, if required, at limited rates without powers of control." Moreover, it maintains complete publicity as to costs, charges and prices.

The watchword of the Guild is "Organised Public Service." The idea is to unite all branches of the industry—administrative, technical, clerical and operative—for a common purpose : the service of the community. The immediate aim is to build as rapidly and economically as possible the houses so urgently needed by the working classes. This should provide plenty of work for Guildsmen in the near future. They do not, however, intend to dissolve the Guilds, or to cease operations, when the housing shortage has been met : they mean to contract for any kind of building work—churches, cinemas, public buildings, and even jobbing or repair work. (The Manchester Guild has completed £1,500 worth of plumbing.) They claim that the Guild will be able to tackle any job usually undertaken by the ordinary contractor. They say that the way to solve the problem of production is to substitute enthusiasm for fear as the driving force in industry. The speed at which the men work directly affects labour costs. The Guilds, it is said, will set up a new and better industrial order, in which those who work with their heads and those who work with their hands will co-operate freely in producing those things which the community needs. Co-operation will take the place of disunion. The team spirit will supersede the instinct of the horde. No one is to be in the industry to get what he can out of it for himself : rivalries will occur in the giving of service, not in the getting of it. Labour is not to be a mere commodity to be bought and sold, or used or cast aside indifferently. Guildsmen are to have a new status as free men, working in a democratic comradeship of service. Last, but not least, the Guilds are to revive the true craft spirit of the Middle Ages. The Modern Guild organisation is to provide scope for the craftsman which no industrial order has provided since the time of the Mediæval Guilds.

Guildsmen claim that, apart from theory, experience so far proves :

1. That industrial control by Guild workers has been successfully established;
2. That houses are being built quicker, better, and cheaper by the Guilds than by private contractors.

The object of this inquiry was to ascertain (as far as it can be discovered at present) whether the Guilds were making good these claims.

THE SCOPE OF THE INQUIRY.

It was not possible to visit all the schemes. London and Manchester were selected as representative areas. Five Guild housing contracts were inspected, and the work thoroughly investigated. The schemes visited included sites at Walthamstow and Greenwich (London Guild), Walkden (Bolton Guild), and Clayton and Weaste (Manchester Guild). These five contracts involve the building of 986 houses, with a possibility of additional contracts involving a further thousand houses if the work on the existing contracts is carried out expeditiously and economically. At the time of the inquiry (March and April, 1921) no houses had been completed on any of these schemes; but at Walthamstow, Greenwich and

Clayton many houses were nearing completion, and the work was sufficiently advanced to provide the basis for a considered opinion as to how far the Guilds were likely to prove a success.

The question was approached in a critical spirit, and information was obtained from:

(*a*) Unofficial sources: e.g., from guildsmen and others not in official positions; and

(*b*) Officials: such as foremen, architects, surveyors, clerks of the works, borough councillors and members of the Borough Housing Committees.

The method adopted was, first of all, to inspect the building operations informally, that is, without introductions to any of the officials or staff. After obtaining information in this manner, I secured introductions to Guild officials on the site and proceeded to cross-examine them with the strictest impartiality. In all cases I found the officials willing to submit themselves to cross-examination and to place at my disposal, without reserve, such facts and figures as were available. The information thus obtained I submitted for verification to other persons not officially connected with the Guild schemes.

THE GROWTH OF THE GUILDS.

Before dealing with the building operations now proceeding under Guild contracts, it is necessary first to sketch the rapid growth of the Guild movement and to outline the structure of Guild organisation. There are slight differences in details of organisation and practice in different areas, but the principles are the same throughout. The important thing to bear in mind is that the Guild movement is a natural growth, not an artificially created movement. The first Building Guild was formed by the operatives in Manchester in January, 1920. The Manchester District Committee of the Operatives and Bricklayers' Society, having considered the possibilities of a Guild, unanimously passed a resolution in favour of the scheme and referred it to the Manchester Branch of the Federation of Building Trade Operatives. From a delegate meeting convened by this latter body the first Guild came into existence. The movement spread with unexpected rapidity all through the country, but particularly in Lancashire. London followed close on the heels of Manchester. To-day there are about a hundred Guild Committees in Great Britain. A number of these have reached the stage of being able to submit tenders and commence work. The first intention of the Manchester operatives was to form a North-Western Building Guild, but as applications for affiliation came in from various parts of the country, it was decided to form a National Guild.

London, while not affiliated to the National Guild, declared that its principles and aims were the same. At present a scheme for the setting up of a National Guild is under consideration, and it is expected that very shortly all Building Guild Committees will be affiliated to one National Guild, with properly constituted regional councils, having full powers to enter into and carry out all contracts, leaving to the National Guild the control of supply, credit, finance, insurance and policy. At the time of inquiry, the Guilds were affiliated either to Manchester or to London. Under the new scheme the London and Manchester Guilds will be termed regional councils. These regional councils will be practically autonomous, and will have representatives on the National Board.

THE STRUCTURE OF THE GUILDS.

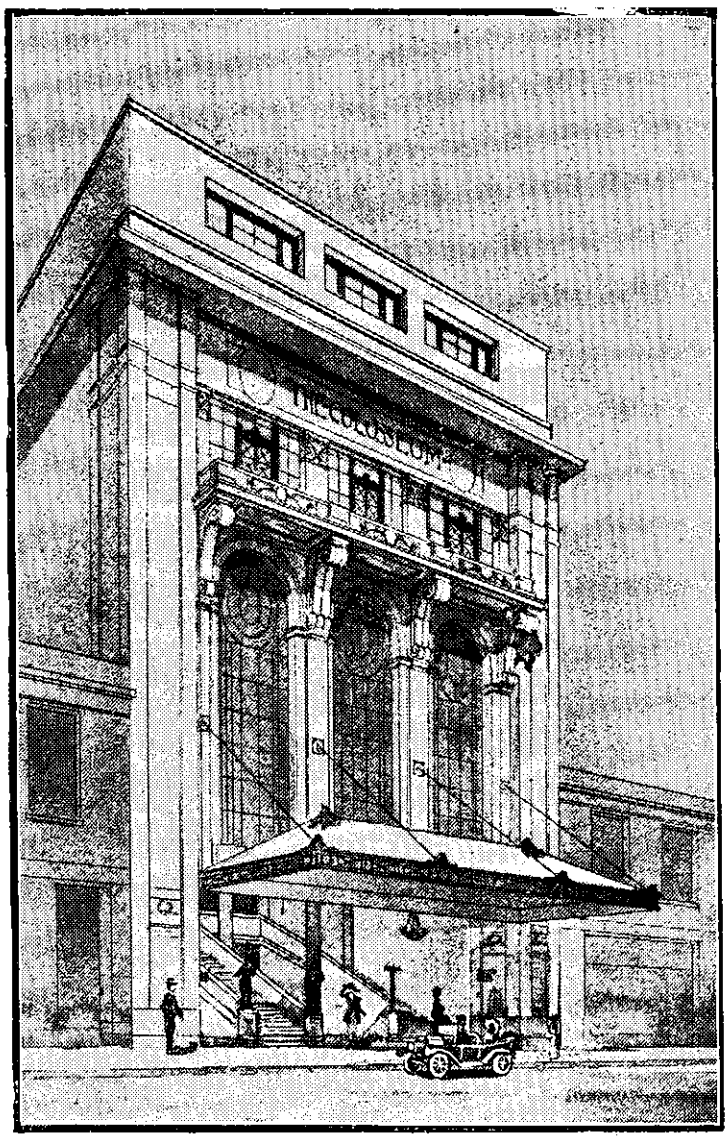
In describing Guild structure I will deal with the London Guild, because it is typical of Guild organisation throughout the country. The London Guild operates in Greater London, which is divided into eleven areas corresponding to the district sections of the National Federation of Building Trade Operatives. Area committees have been formed in seven of these districts. An area committee consists of representatives selected by every craft union in the local building industry. Each committee elects a chairman and secretary, and agrees to organise the supply of labour for building operations within its own area as and when required. The area committee is not a legal entity for the purpose of entering into contracts. The legal entity is the Guild of Builders (London), Ltd., which is a society registered under the Industrial and Provident Societies Act, 1893 and 1913. The Board of Directors of this society consists at present of twelve representatives elected by the Building Trade Unions in Greater London affiliated to the National Federation of Building Trade Operatives. In addition, there are representatives of other functional organisations, i.e., architects, electricians and clerks; each of these groups has one representative. In addition to the above, each local Building Guild Committee elects one member to the board. The Guild of Builders (London, Ltd., by its rules, is competent to become builders, decorators, general contractors, and may functiin in all branches of supply whether as merchants, manufacturers or transporters. The Board of Directors is responsible for the appointment of a manager and headquarters staff, and for the fixing of their salaries. The general foremen are nominated by the local committees and ratified by the Guild of Builders. Departmental foremen are elected on the job by the different crafts concerned. No one in a managerial position can have a seat on the Board of Directors. Such persons can offer advice, but are not entitled to vote. The managerial department cannot do anything without the sanction of the directors. The manager is responsible, not only to his own staff, but to the whole of the organised Building Trade Operatives in the district. This gives him security without weakening the full democratic control by the workers. The term manager really does not appear in the Guild dictionary. Mr. Malcolm Sparkes, the London secretary and manager, describes his function as "the service of leadership." The structure of the local committees and the central managing

body does, in fact, make possible complete democratic control. A man may be a rank-and-file bricklayer and a director at one and the same time. The workmen have displayed much sagacity in the selection of their representatives on the Board of Directors, and ten months' experience has proved that an efficient directorate can be chosen from and selected by the rank and file.

THE GUILD CONTRACT.

The Guild form of contract, as approved by the Ministry of Health for Municipal Housing Schemes, provides that the price paid by the local authorities shall be the prime cost of material and labour at standard rates. To this sum 6 per cent. is added to cover head office administration, plant, insurance, and, if necessary, interest on borrowed capital. In addition, there is an allowance of £40 a house to enable the Guild to guaranteee continuous pay to its workmen in all contingencies. Thus, with full publicity as to costs, the Guild removes all doubt as to the existence of invisible margins and hidden profits.

The Co-operative Wholesale Society functions as joint contractors with the Building Guild, and the Co-operative Insurance Society acts as guarantor for the due performance of the contract. The Co-operative Wholesale Society advances the



PROPOSED NEW THEATRE FOR AUCKLAND.

The illustration is the facade to Queen Street of the proposed new theatre to be called the Colosseum. It will have seating accommodation for about 2000 persons, and should prove one of the most imposing examples of its kind in the Dominion. Messrs. Grierson & Aimer are the Architects.

money for plant, etc., and acts as the Guild Bank. The Guild of Builders (London), Ltd., for instance, has an overdraft of £8,000 secured against payments due under contracts. The local authority makes weekly payments to the Guild for labour and materials and other authorised charges. Arrangements have been made by the Guild whereby a cheque presented at the local co-operative society enables the secretary of the local Guild to draw the wages for the week. The Guild undertakes to keep a record of costs in accordance with a system of costing approved or prescribed by the local authority. The allowance of £40 per house is paid into a pool, upon which each Guild Committee engaged in supplying labour is entitled to draw. Two sets of time sheets have to be made out—one for the time actually worked, which counts as cost; the other for wet time, sickness, etc., which comes out of the "pool." Thus, all Guilds alike pay into the pool, but draw out only what is necessary. Any surplus in the pool will go for the betterment of the industry, and the creation of a reserve. When this reserve is large enough, it is intended that all guildsmen shall be "on the strength."

CONTINUOUS PAY.

The Guild form of contract has been subjected to criticism by Building Trade Employers on the ground that: (1) the £40 a house is in the nature of a subsidy, and that in this matter the Guilds possess an unfair advantage over other employers. Guildsmen reply that there is nothing to prevent other employers paying their workmen continuous wages. The Guilds claim that continuous pay, instead of adding to cost, actually reduces it, because the men work better under this system; (2) it has been said that the allowance of 6 per cent. is too high for establishment charges. Guildsmen point out that this sum provides not only for head office expenses, but for maintenance of plant and insurance.

GUILD MEMBERSHIP.

A man who wishes to volunteer for Guild service fills in a form, which he can obtain at any of the Building Trade Union branches, in which he states the nature of his craft and declares that he is willing to work for the Guild when called up. There has been no difficulty in getting men to volunteer. There is always a long waiting list. When a man volunteers, his name is placed on a list in date order, and he is called up in that order. If he does not respond, his name is not struck out, but is placed at the bottom of the list. I came across numerous instances of workmen who had left good jobs and good pay to volunteer for the Guild. One general foreman I had met had left a job where he was getting £2 a week more than the Guild pays him. He said, speaking of the Guilds: "This is the sort of thing I dreamed of when a young man, but could never quite figure out." In another instance a district organiser of the Bricklayers' Union threw up his organising work to lay bricks for the Guild. He felt that he would not be doing his duty unless he placed his skill at the service of the Guild. In another instance a man left the security of employment with the Port of London Authority to volunteer for the Guild. These cases are typical, and they suggest that there is something in the scheme of Guild organisation which evokes spontaneous enthusiasm.

(To be Continued.)

Christchurch War Memorial.

The winning design for the Bridge of Remembrance War Memorial is from the firm of Prouse and Gummer, architects, of Wellington and Auckland. Mr. Allan C. Ford, architect, of Invercargill, was placed second by the assessor, Mr. Leslie D. Coombs, of Dunedin, out of 24 designs sent in. The first prize is £100 and the second £50. It is hoped to proceed with the work of the understructure of the bridge at once. It was laid down definitely some time ago that the understructure was to be done by the City Council. As soon as this is finished the Committee can proceed with the erection of the memorial in accordance with Messrs Prouse and Gummer's design.

The assessor's report says that the winning design shows "distinct originality and a comprehension of the situation," and would be a beautiful and permanent memorial.

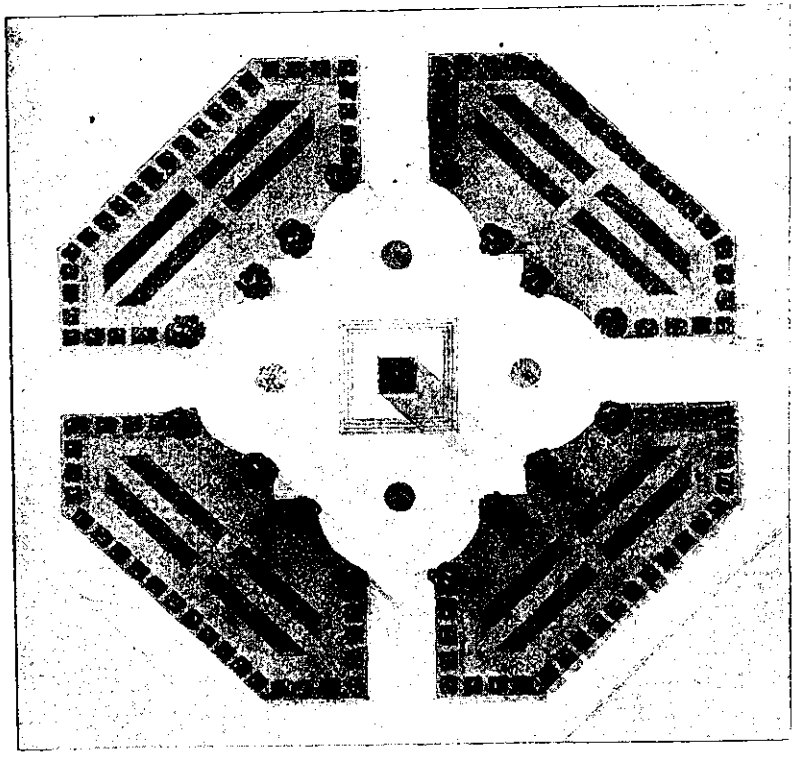
Addressing the meeting of the Committee, at which the assessor's decision was announced, Mr. L. D. Coombs, President of the Dunedin Branch of the Institute of Architects, said cost had a great deal to do with the solution of the problem, and the winner had given the maximum for the money. In economy of material the author was a master. Great simplicity marked the design. The bridge is to be erected over the River Avon at Cashel Street, replacing the existing structure, and is estimated to cost £17,000 for the superstructure. We hope to be able to publish the design in our next issue, together with the assessor's report.

War Memorial for Wanganui.

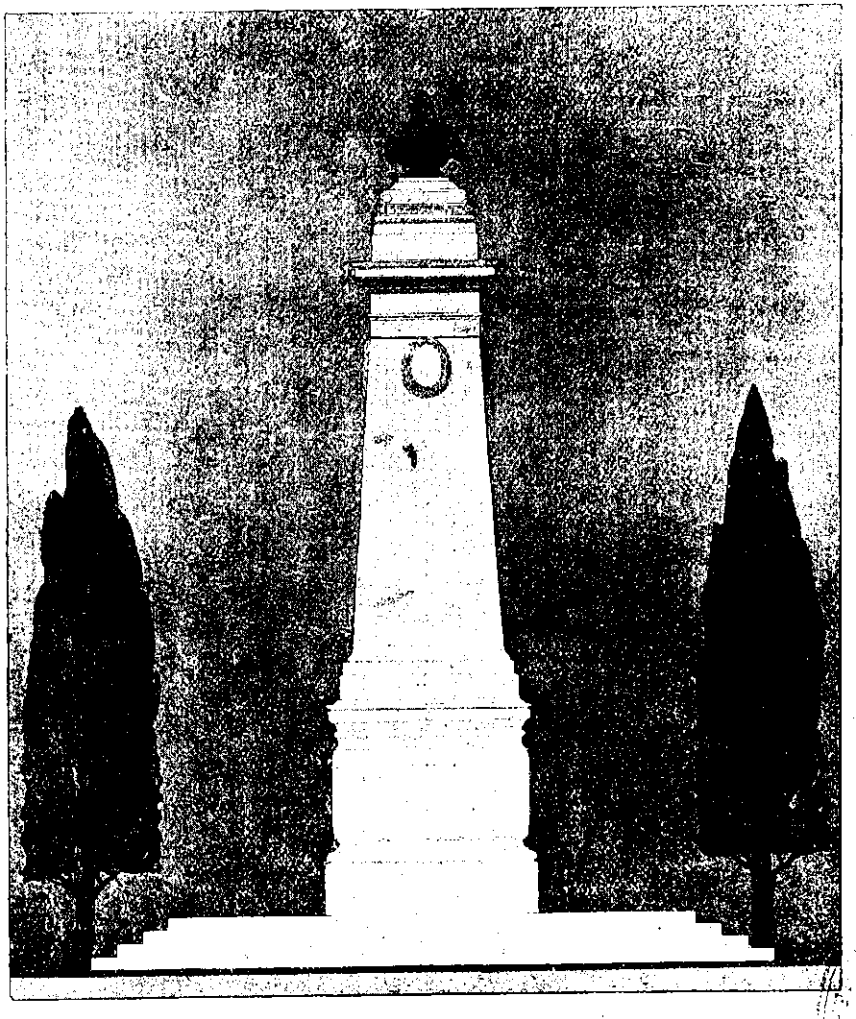
A movement to erect a suitable memorial in Wanganui to the memory of the soldiers from the town and district who fell in the war took definite shape on the 1st of this month, when a sub-committee, representative of the Borough Council and other local bodies, the Patriotic Society, and the returned soldiers, came to a decision. It was resolved to erect a memorial tower of striking design on Durie Hill, near the site of the flagstaff. The spot commands a wide view of country and sea, and as an electric elevator carries people to the site the tower will be very accessible.

N.Z.I.A. War Memorial Competition.

WINNING DESIGN.



Design by A. D. Connell (with Mr. Stanley W. Fearn), placed first in N.Z.I.A. (Wellington Branch) Students' Competition.



N. Z. I. A.

Wellington Branch Competition for War Memorial.

We regret to record the fact that the Students' Competitions being held by the Wellington Branch New Zealand Institute of Architects are not receiving the support they should. Only three designs were received for the second bi-monthly competition, as follows :—A. D. Connell (with Mr. Stanley W. Fearn); B. W. Johns (with Mr. William M. Page); and W. D. Quinn (with Mr. F. E. Greenish).

Mr. J. F. Munnings, the judge, placed A. D. Connell first and B. W. Johns second. The first prize consists of books to the value of £3 3s.; second prize to the value of £1 1s. The winning design is published on page 11.

N. Z. I. A. (Invercargill Branch).

At the quarterly meeting of the Southland Branch of the New Zealand Institute of Architects, held on September 5th, the members passed a vote of congratulation to Mr. Allan C. Ford on his success in winning second prize in the Christchurch War Memorial Competition. The members considered the result a great credit to him seeing he has been in business on his own account for so short a time.

Personal.

There were seven competitors in the final test held in London for the Rome Scholarship, 1921 (offered for painting, sculpture and architecture), of whom three were New Zealanders. The result has just been made known, the successful entrant being Mr. S. Rowland Pierce. Mr. E. W. Armstrong, of Feilding, the holder of a N.Z.E.F. scholarship, comes second, and so receives the Henry Jarvis studentship, which is of the value of £250 a year and tenable for two years at the British School in Rome. Mr. Armstrong has been studying at the Architectural Association for two years, and a year ago he passed his A.R.I.B.A. examination. The awards were made by the Faculty of Architecture of the British School at Rome.

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Mr. H. A. Mealand, of Auckland, is a student in London. He intends taking his exam. for A.R.I.B.A. and diploma in Town Planning subjects.

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Mr. Frank Peck, F.R.I.B.A., who has been residing in Christchurch for some months past, is removing to Wellington early next month. Mr. Peck, it will be remembered, was commissioned to design the Wellington War Memorial Cathedral.

Architect and Client.

By C. REGINALD FORD, F.N.Z.I.A.

(Continued from August issue).

The architect's very effort to please the client often leads to his undoing. He knows that it is as difficult to add £200 worth of work or material to a plan already drawn as it is to take it away. He knows that the client is prepared to spend £2,000 on the house and would like to do so; that he would like to get as many of his requirements satisfied as possible. In a pardonable effort to accomplish this result the architect goes too near the mark only to find that the lowest tender reaches perhaps the sum of £2,200 or £2,300. It must not be forgotten that even with the working drawings and specifications complete contractors themselves, who are by the nature of their business more in touch with the material and labour market than the architect can possibly be, vary within fairly wide limits in their tenders. Considerable space has been given to this matter of cost and approximate estimates because it is one which so often leads to trouble and dispute.

In the case of works of larger magnitude, the question of cost is frequently the determining factor. If the proposed building cannot be erected at such a cost as will enable it to pay certain interest and other charges plus a margin of profit to the owner it obviously cannot be proceeded with. But the cost cannot be determined even within a reasonable approximation without fairly complete preliminary studies. The owner should be prepared to pay for the work involved in this as he would for other professional services, even if it is found that the work cannot be proceeded with. Both the architect and the owner should allow a fairly liberal margin to cover unforeseen items which it may be found necessary to include as the labour of preparing the working drawings and specifications proceeds.

The owner should carefully consider any drawings or specifications submitted to him. This is especially necessary in the case of the preliminary studies. It is unfair to the architect for an owner to criticise important details in the working drawings if he has not given fair consideration to the preliminary studies. It is an expensive matter to alter drawings when they are in an advanced stage, and one for which the owner may be called upon to pay. The architect will appreciate the efforts of an owner to "follow all important points brought out in working drawings and specifications as they are being developed. It is not difficult to follow these details with the architect's explanation, and the owner will be in a position to know exactly what materials, methods, equipment and details of planning will be incorporated in his building before it is constructed. By following these matters closely and visualising them in a practical manner, the owner may prevent results which are not satis-

factory to him. This is an important point, as the owner is called upon to approve all working drawings and specifications, and such approval applies to every detail indicated therein."

Before the plans are completed the question of the procedure to be adopted in letting the contract will be discussed. The architect's advice should be taken upon this point. Should it be decided to call for tenders by advertisement and anyone calling himself a builder allowed to submit tenders, then it is not by any means necessarily the wisest thing in the owner's interest to accept the lowest tender. The contractor whose tender is the lowest may be approaching financial insolvency—he may be of dishonest character, or he may be an incompetent tradesman employing incompetent workmen. To accept a tender from any of these men against honest and capable contractors is unfair to the latter and unwise for the owner. It may prove indeed a case of "penny wise and many pounds foolish." Again, the lowest tenderer may be a very satisfactory man in other classes of building but without the experience or the organisation necessary for the work in question. But it may here be argued that it is just because there are dishonest and incompetent contractors that the client engages the services of an architect, and if the contractor employed does come within this category it is to the architect the client looks for protection. The writer submits, however, that this, while perhaps a common conception of the functions of an architect, is an almost wholly erroneous one. If after taking every ordinary business care (which in this case infers the asking and taking the architect's advice on the matter) in the selection of a contractor or the acceptance of a tender, the owner does unfortunately find himself in the hands of an unscrupulous or incapable contractor, he can depend upon the architect sparing no effort to protect his interests. It may be pointed out, however, that to protect absolutely against dishonesty is impossible with the amount of supervision that the architect can reasonably and equitably be called upon to give, and, further, that it is equally impossible to teach an incapable contractor or a squad of incompetent workmen their trades within the course of one building work. It may be added, too, that this hardly comes within the ordinary duties of an architect, nor has it been anticipated in assessing the amount of his fees. It is presumably unnecessary to do more than mention that it is likewise not his function to come to the rescue of a contractor tottering to financial ruin, although the latter's collapse may involve the owner in considerable trouble and even monetary loss.

In the case of a small work it is frequently undesirable or unnecessary to call for tenders. The plans may be submitted to a trustworthy contractor, and if his price is within the architect's estimate the contract may be let to him. In the case of larger works tenders may be considered desirable. In the writer's opinion the best method of proceeding is then to select a small number of competent contractors, in any one of whom trust may be placed, and invite them to tender. Where public work of any sort is involved there appears to be no option but to call for public tenders with all its attendant risks.

The contract let and the actual work of erection of the building commenced, an excellent rule to follow is never to alter it in any point. While the plans are in course of preparation one part is adjusted to the other again and again, and no one unacquainted with the practical work of planning and design can possibly realise to what extent an apparently simple alteration made in a building in course of erection may lead to other quite serious "consequential" alterations not foreseen. A client sometimes thinks an improvement might be effected in some part of the building. The order goes forth to make the necessary alteration and the work is done, only to find out later that it has spoilt the design or plan in some other and perhaps more important respect. Sometimes alterations made without very careful consideration involve actual risk to the structure. In any case they spell "Extras"—that bugbear of clients for which the architect is so frequently blamed, sometimes justly but more often unjustly.

Extras can and should be avoided. No good architect will involve the owner in extras without first consulting him. Being human the architect, while preparing plans and specifications, may overlook something necessary to the completion of the work. But a small sum is usually included in the amount of the contract to provide for this contingency. It is the architect's prerogative to expend this sum or any part of it without consulting the owner.

Under no circumstances should any authority be given by the client to the contractor or his workmen for any alteration or addition. Nor should any complaint be made to them. The client should give all instructions in reference to the work only through the architect. On the other hand the contractor who comes to an owner with suggestions, or to call his attention to real or fancied errors in the drawings or specifications, should be referred to the architect.

No moneys whatever should be paid to the contractor except in response to a certificate issued for the amount by the architect. An owner should, at the commencement of the work, ascertain from the architect in what amounts and at what intervals payments for the work are likely to be required. He should then make his arrangements to meet the certificates as issued.

"There are," wrote Mr. C. Stanley Taylor in the *Architectural Forum* recently, "many instances which arise as the work progresses in which the owner may show a fair-minded spirit which will be appreciated both by the builder and the architect. The owner must realise also that as between the building contractor and himself the architect is

really an arbitrator, whose duty it is to see that the various agreements are carried out in fairness to both parties and who will not hesitate to tell the owner that he has taken an unfair position if this be true. Therefore, the owner must not expect the architect to exhibit any false loyalty in dealings with the contractor and the sub-contractors.

"It is evident that the owner who fully realises his duties and who strives to develop and maintain the proper spirit of co-operation with the architect has much to gain. It is very difficult for an architect to work enthusiastically if he is forced to worry about the attitude of the owner. It may be readily understood that without enthusiasm an architect cannot do his best work.

"For the period during which the structure is being planned and built the architect is in practically every sense a business partner of the owner. He is working for the same results, and if the owner will but consider his duties as the duties of one associate to another he will not only fully appreciate the work and responsibility of the architect, but he will do much towards expediting the work and guaranteeing his own satisfaction."

Architectural Design.

In the preceding pages while the fact that the architect is artist as well as constructor and man of business has not been lost sight of, yet this fact has not, perhaps, been given the weight it deserves. It is primarily because of this fact—because his aim is the production not of mere building, but of architecture, that the architect, as such, persists.

What is the difference between Architecture and Building? It is very difficult to put into words. A satisfactory definition of architecture is yet to be found. Professor Lethaby wrote somewhere—I quote from memory—that a definition which pleased him for a time was "building touched with emotion." This definition, even if incomplete, at least suggests the difference between architecture and building. Building provides—however efficiently—for the satisfaction of physical needs only; architecture, on the other hand, while providing equally well for the physical needs, satisfies in addition the needs of the spirit. Mr. Clutton Brock, in his illuminating essay, "The Ultimate Belief," says that "we do not understand the importance of the æsthetic activity, because we suppose it to be merely a source of pleasure, whereas it is an activity of the spirit without which the spirit can never be satisfied." That the craving for beauty is a spiritual activity cannot be denied. That beauty in building can evoke the spiritual emotions and minister to the spiritual side of life, many glorious temples and cathedrals have testified through the centuries. But temples and cathedrals no longer form the main building activities of whole peoples. To-day schools, libraries, hospitals, post offices, factories, and other utilitarian or altruistic buildings are taking their place in the common life. To-day rulers raise money not for churches but for workers' homes; not for cathedrals but for power-houses and town halls. All these buildings touch the common life of the people at every point—surely they should be made to minister to their spiritual and not alone to satisfy their physical needs? To do this they must be as beautiful as it is possible to make them. This does not mean that something—some extraneous ornament—must be added to them, although ornament will probably, in some form be there, but beauty must be inherent in the structures themselves. The conception of the plan, the proportioning and the combination of the structural forms, the texture and colour of the materials, must together result in the satisfaction of the æsthetic craving in those beholding the buildings. In other words, they must be examples of architecture and not specimens of mere building. And it is the function of the architect alone—not the engineer or the builder—to create architecture. He will be successful—as in his other functions—in varying measure. First in accordance as he is possessed with ideals and definiteness of aim and has within himself an appreciation of beauty. Secondly in proportion to his opportunities. The power of æsthetic appreciation is in part at least a gift, but a gift capable of training and growth. It must be developed in every properly trained architect to some extent by that study of ancient forms in architecture, sculpture and painting, which is an essential part of his training. The measure of the original gift and the extent of its training and development will be the measure of his success in the field of design, in so far as that success is conditioned only by his own personality and attainments. But unfortunately an architectural designer is limited in many ways—he is partly dependent upon the skill and goodwill of others to execute his design—he is dependent far more than artists in any other field of work upon those who employ his services. A sympathetic appreciation upon the part of the latter of the ideals for which the architect is striving, and of the difficulties in his way, will be an invaluable help. A readiness to make some sacrifice for the attainment of beauty, too, will be an inspiration, for beauty is rarely cheap or easy of attainment. A willingness to be guided by the architect in this, the æsthetic side of the problem, will, as in that of the practical, be wholly to the client's benefit.

The Registered Architect and His Fees.

In 1913 the New Zealand Legislature passed an Act for the Registration of Architects in which certain qualifications for admission to the Institute of Architects at that time and in the future were laid down. This Act was asked for by architects on two principal grounds. It was felt by members of the profession to be only equitable that they should secure that increase of public confidence, that rise in status, which State sanction always gives. This privilege had already been long accorded to other professions. It was felt also to be only fair and right that the regular practitioner, whose professional qualifications were the result of arduous

and expensive labour, should be secured from the unfair competition of unaccredited and unqualified competitors. This measure of protection had also been long accorded to other professions. But it was not alone self-interest which caused the architects to ask for State registration. They recognised that the public required the same protection from the unqualified architect as it already had from the quack doctor and the unqualified lawyer. It was a manifest absurdity that while the law required that the man who did the plumbing and he who laid the drains of a building should be licensed, anyone who cared to erect a brass plate at his office door could make himself responsible for the design of the whole structure, involving its planning arrangements, its æsthetics, its hygiene, and its very safety! While, however, Parliament undoubtedly passed the Act with a view only of giving the public a measure of protection in the direct sense of safeguarding persons from knowingly employing an unqualified practitioner, yet the Act has served the public interest in another way. Indeed, this other way may at present be said to be largely the only way in which it has fulfilled its purpose; for Parliament, strangely enough, did nothing to prevent any one who cares to do so from practising as an architect without any qualifications whatever! He must not, of course, describe himself as a registered architect, nor as a member of the Institute of Architects, but he may describe himself as an architect and practice as such.

In yet another respect the Act is at present faulty. The Code of Ethics of the Institute quite properly says that a member of the Institute must not act in the dual capacity of architect and builder, for the architect should surely be always in the position to give full and frank advice removed from the slightest possibility of being affected by self-interest. But the Act does not prohibit a registered architect practising also as a builder, and the Courts have decided that the Institute cannot enforce its code in this respect. This is so obviously an oversight and operates so manifestly against the public interest that it cannot be long before the Act is amended in this direction also.

If the Act has not given that direct protection to the profession and to the public which some had hoped, it has, however, as has been said above, benefited both in another way. It has enlarged, strengthened, and given an enhanced status to the Institute of Architects. With this improved status, widened powers, and extended scope for service, there inevitably followed an increased sense of responsibility, more clarity of aim, more definite ideals of public service. Since the Act was passed the Institute has been a steadily growing influence in the profession; it has crystallised high ideals of practice; it has been steadily organising so as to help its members to better performance. It has been steadily working to promote the education of students—the architects of the future—to see that they shall be as fully equipped as possible to serve the community in an honoured profession. It has framed a Code of Ethics governing professional conduct as between architect and architect, and as between architect and client. All this is in the public interest. The Institute has, too, established a Scale of Charges for professional services to which every registered architect is bound to adhere. The scale is arranged as far as possible so as to secure for all kinds of work a payment which, while being fair to the client, will yet enable the architect to keep up the means of performing it properly. This, too, is a service to the public. It makes known what is the established usage and prospective builders need not be in any doubt as to the amount of fees which they may be called upon to pay for architectural services; it prevents architects being brought into competition one with the other in point of fees and thus supplements the Code in wisely safeguarding the architect's disinterested position from the standpoint of self.

A copy of the Scale of Charges will be given to any prospective builder upon request made to any registered architect. It is sufficient here to say that the remuneration for architectural services, as is customary throughout the world, is in general based upon a percentage of the cost of the completed work. In considering the fee which he is to pay the architect the client should not fail to remember that it is not net profit to the architect. He has to allow a large percentage for various overhead charges, and for wages to the draughtsmen who assist to prepare the drawings. It should further be remembered that besides the professional skill and knowledge required of the architect he also has to bear a burden of responsibility which cannot be paid for at so much per hour. This responsibility is one by no means to be lightly regarded, and should be kept in mind by the client in assessing the value of architectural service. Any fees lower than those provided in the Institute's Scale are most certainly unremunerative provided that the full and proper service is rendered.

(*Concluded.*)

Fama Flooring.

This excellent flooring material is already well known to those specifying flooring materials for buildings, and it is with a view to coping with the demand for this material that the Fama Flooring Co. have opened a branch recently in Waring Taylor Street, Wellington. This material, which can be laid in many designs and colours, is specially useful for hospitals, hotels, as well as private dwellings, bathrooms, etc. It can be laid on wood or concrete with success, with terrazzo, veined and granite effects.

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.

During the past month among the sawmiller visitors to Wellington whom we have met were Messrs. W. J. Morris from Reefton, G. A. Gamman and Punch from Rangitikei, and Wesney from Southland; and we would like this to be a reminder to all sawmillers, that if they happen to be in Wellington at any time and can find time to call at the office of the Federation, Room 20, 153 Featherston Street, their visits will be appreciated.

* * *

We regret to have to report that recent news from Mr. Irvine from Sydney is to the effect that he has suffered another severe attack of his old illness, and that he has had to return to the Sanitorium for treatment.

* * *

We were pleased to read a very able leading article in the *Dominion* of September 5th under the heading of "Forestry and Settlement," dealing with the statement just issued by the Minister for Lands (the Hon. D. H. Guthrie) respecting the Urewera lands and their settlement. The article in question calls attention to the fact that the Minister has dealt with only one aspect of the question of Forest Conservation in this region, and aptly points out that besides providing for the preservation of forests on the hill-tops and banks of rivers to prevent erosion there is the bigger question of proper demarcation of other forest lands that were more fit to retain in permanent forest than for settlement, and also the question of proper utilisation of forest wealth on those lands which are more suitable for settlement when cleared. These questions had already been exercising the minds of members of the Forestry League, and this body has in hand the quesuon of making suitable representations to the Minister to have thoroughly reliable reports made by competent men with a view to proper demarcation before any of the land carrying bush is thrown open for settlement, and we would add a word to urge that this be done. It might not be inappropriate to suggest that several practical and expert timber men be appointed to report upon the areas as to their suitability from a milling point of view. The Minister's statement on the question is reprinted below.

UREWERA LANDS.

PRESERVATION OF FOREST.

WHAT THE MINISTER PROPOSES.

The Minister of Lands (the Hon. D. H. Guthrie) stated recently that the plans for the opening up of the Urewera Country made provision for the preservation of necessary forest. He had discussed the plans with officers of his Department and others who were well acquainted with the country. The Urewera land was not of very high quality. It had a good surface soil on a bed of pumice, and the removal of all the forest from the area would undoubtedly have a damaging effect. The plan of settlement would provide for the preservation of the forest on the hill-tops and also along the banks of the rivers, where there would be danger of serious denudation and erosion if the ground were cleared. The bush that was required to be preserved would not be touched.

The Minister mentioned that arrangements were being discussed for the reservation of an area of 26,000 acres in the neighbourhood of Lake Waikaremoana. This was forest land required to be maintained as a catchment area for the lake, in view of the hydro-electric scheme. The land that remained in the hands of the Maoris under the scheme of consolidation in the Urewera Country would include a very large amount of bush.—*Dominion.*

* * *

Following is an extract from the Auckland *Star* of August 30th, on the same subject, giving the views of one who knows the country in question thoroughly, Mr. Elsdon Best, and who was also quoted in the article in the *Dominion* previously referred to:—

SAVE THE FOREST.

A PLEA FOR THE UREWERA.

MR. ELSDON BEST'S WARNING.

A strong protest against the indiscriminate deforestation of the Urewera which is to be opened up by the Government as soon as the question of titles is settled with the Maori owners, was made by Mr. Elsdon Best, who knows the country from end to end. He lived for many years not far from Ruatahuna studying the peculiar customs of the "Children of the Mist"—the natives still point out the pretty little slab-whare with its crimson rambler roses climbing over the roof, which "Peihiti" occupied—and made a memorable trek through to Lake Waikaremoana, over the lofty Huiarau Range, snow-covered at the time, in search of legends and folk-lore, the record of which is still a classic. Mr. Best says the country was very steep, over-laid by pumice on which is about six inches of humus.

"You fell the bush and grass it. It grows magnificently for three years or so. The first and second year you have cocksfoot higher than your

knee. About a year or so later it gets shorter, and finally dies out, and the land grows a crop of rubbish. There is no body in the soil; and not only that, the underlying pumice makes the whole thing so friable that the stock tear it off the face of the earth. Most of the country is very rough, and a lot of it should never be deforested. We must preserve a lot of our bush or our climate is going to suffer, and the rough country like the Urewera is the part we should keep intact as far as the forest is concerned. There is no doubt, in my opinion, that New Zealand will sooner or later have to grow her own timber entirely—judging from what is taking place in other parts of the world. Such country as the Urewera is natural forest country—and much of it suitable for nothing else."—*Star.*

* * *

Relative to the foregoing subject the following has been supplied to us as being appropriate to the occasion :—" The people who originally put the little green splashes on the map of New Zealand appear to have held that all that area of mountain top, which contains no millable timber, which produces no revenue, which will never produce revenue, which will not carry more than one goat to 20 acres, and which nobody has or is likely to ever have any use for, shall be known hereafter as 'State Forest.' It is no doubt easy to argue that such country could be State forest for climatic, scenic, soil-protection, river and water perservation, etc., reasons. On the other hand any tract of land clothed in forest of sufficient value to produce a little revenue, must, according to their lights, be earmarked a land for settlement, and when, with the assistance of fire and axe, the forest is no more (and the hill sides have slipped into the valleys, and the floods and droughts have ruined the countryside), the settler (?), having succeeded in making 'one blade of grass grow where two trees grew before,' buys a motor-car from the proceeds of the sale of the timber and moves on to the next bit of bush."

* * *

The Rev. J. H. Simmonds, the well-known forestry expert, is at present on a visit to Australia. Writing to Mr. R. Reynolds, Cambridge, a few days ago, Mr. Simmonds stated that he had "done" Tasmania and Victoria, and was moving on to New South Wales. It was in the quiet valleys of the back country, where there was plenty of rain, that one saw gigantic trees, and plenty of them; but the sawmills are busy, and the day cannot be far distant when nearly all parts of the original bush will be cut out. Other forests are coming on, said Mr. Simmonds, but in them the trees will be smaller. One of the main objects of Mr. Simmonds' visit is to find out what are the best trees suitable for growing in New Zealand, and how seed can be secured from the original sources, true to name, and of the best strains.—*Waikato Independent.*

From the first of a series of most interesting articles on "Forestry" by R. R. Macgregor, Ph.D., F.R.I.A., appearing in the *Waikato Times*, but which is too long to print in full, we cull the following, which will be of interest to timber men :

". . . . with the industrial development of the present age, we find that the consumption of timber far exceeds Nature's rate of production, and the consequence is that the available timber supplies are diminishing with startling rapidity. Great Britain consumes timber to the extent of over £100,000 each day of the year. At present for the coniferous timbers used for railway work, for mining, and for building and general structural purposes, England now produces only about 2 per cent. of the amount consumed. In New Zealand we have good timber land, many millions of acres of it, quite unfit for agriculture, but ideal for forest, now lying more or less waste. We must afforest it, and as mistakes with a crop which takes from half a century to a century to mature are apt to be costly, we cannot afford to adopt slipshod rule-of-thumb methods . . . . ." (It might be stated here that New Zealand's timber import is of nearly the same value as her timber export, the former consisting chiefly of eucalypts, iron bark and jarrah from Australia, and coniferous timber from U.S.A., Canada and Baltic countries.)

* * *

By the courtesy of the State Forest Service we have received the first two copies of "Te Karere o Tane," the monthly newsletter issued by the personnel of that Department. It is bright and interestingly written, and, though mainly devoted to matters of purely Departmental and personal interest to the staff, it still contains much that is of especial interest to timbermen, and several items culled from it have already appeared in the daily Press. Among these latter is the following rather important ruling upon the matter of "Forest Reserves" :—

FOREST RESERVES.

POSITION AS TO CONTROL.

The first issue of "Te Karere o Tane," the interesting monthly newsletter issued by the personnel of the State Forest Service of New Zealand, says :—

"An opinion of great interest to this service was recently given by the Crown Law Office. It is, in effect, that all 'forest reserves,' 'timber reserves,' 'bush reserves,' 'reserves for the growth and preservation of timber,' and 'forest plantation reserves,' made under any Land Act prior to August 4th, 1908, are now under the control of the service, and not under the Lands Department, as was generally thought to be the case. This important ruling will result in an area of approximately a quarter of a million acres being placed under forest service control. Steps are now being taken to secure an accurate list of these reserves, and it is hoped that shortly each con-

servator will be in possession of full particulars in regard to the new State forests in his region. Copies of the opinion are now being made for distribution to all officers interested."

Universal Classification.

In our January issue appeared a short paragraph advocating a universal classification or system of grading timber for the whole Dominion, and since that date several instances have occurred which further stress the necessity of such a uniform list of grades upon which the price-list for each district could be based. At the present time there is a distinct system of classification in vogue in almost each province—certainly in Southland-Otago, Canterbury, Nelson, West Coast, Wellington, Gisborne, Taranaki, Waikato, and Auckland—and probably several others besides. The same grade of timber is called by a different designation in almost every one of the foregoing districts, though the prices are adjusted to more or less the same figure for each grade throughout. It would certainly be a great advantage to all persons handling or dealing in timber in any way if a uniform system were adopted throughout. In the first place the greatest advantage would be to the sawmillers themselves, but how much easier would it be for the merchants and builders and others buying timber if there were a uniform grading system and they knew exactly the standard to which a particular grade would conform were they buying from districts outside their own and whose present classification they were not familiar with. Also it would be a distinct advantage to architects to know that in specifying a given grade the timber would conform to a certain standard wherever it might come from. It is a question that could well be taken in hand by the Sawmillers' Federation to the great advantage of the trade generally.

Some of the direct results of systematic forestry were described at the annual meeting in Wellington of the Forestry League by Mr. A. Hanson, Chief Inspector of Forests. He said that in 1830, after foresfry had been practised only a short time in Germany, the forest lands of that country produced about 29 cubic feet per acre. In 1917 the production had increased to 61 cubic feet per acre, which meant that the forester had made three trees grow where formerly only one grew. "It is also a fact," he continued, "that one of the German States with an area of forests only half of that of the province of Ontario—one of the best timber provinces in Canada—with a well-organised forest service, produced seven times the net income of that derived in Ontario without touching the capital, as Ontario is doing. Another example of results achieved we find in France. During the last 60 years nearly 25 million acres of waste lands were reclaimed by planting at a cost of £3,000,000. These areas are to-day worth £25,000,000, and furnish an annual crop worth nearly £2,000,000, or two-thirds of the initial outlay. Results like these can be found in many more instances—in fact, you have something at Rotorua which will run close to anything produced in Europe."—*Southland Times.*

* * *

The following specimens of native trees are growing on the Bonithon Estate in Taranaki. They were planted by Mr. W. B. Davies when a boy in 1861. Their growth and measurement fully demonstrate that native trees grown under favourable conditions grow at a greater rate than is generally supposed. They are :—Rimu, 20in. diameter, 52ft. high; fine tree. Titoki, 18in. diameter; good stem; fine tree. Maire (Olea Cunninghamii), 13in. diameter; 45ft. high; fine tree. Puriri, several large trees which have been much neglected and injured during late years.

* * *

Details of a severe experience which occurred to him when engaged in forestry operations in the far North-west of Canada were given by Mr. A. Hanson, of the New Zealand Forestry Department, in the course of a lecture recently in the Trades Hall. "Sometimes getting out of the forests in the autumn is delayed for some reason or other, and then the real hardships begin," he said. "We wanted very badly on one occasion to finish up some work to save another trip back, and in attempting this we got caught in the 'freeze up.' We had to paddle for three days over lakes covered with a thin crust of ice, which made the progress cumbersome and slow, in worn-out summer clothing and mocassins torn to pieces and wet from the snow, and with very little to eat, except snow-shoe rabbits. At the end of this lake we abandoned our outfit and walked, or rather dragged, ourselves in to the company outpost, some eight miles down the stream."—*Dominion.*

Some Economic Aspects of Forest Utilisation.

(Continued from August issue)

As an indication of this state of affairs, I would like to instance a certain bush area—quoted by sawmill experts as an ordinary 8000ft. to the acre rimu bush, the other timbers in their usual opinion being of no value. The bush, however, fell into the hands of a conservationist in the true sense of the word, and last season 600,000ft. were worked off an area of 30 acres. The timbers were rimu, tawa, rata, rewa rewa, pukatea, hinau, mangeao and miro. The tawa was all marketed at rimu prices, mostly for boxes. The P. and T. Department took the rata at 45s. per 100 delivered at Newmarket, and the coachbuilders absorbed all the surplus. A tramway company took the whole cut of the log in rewa rewa to use for brake blocks. Pukatea was sold for shipbuilding purposes, and all mangeao went

to the coachbuilders. Hinau was snapped up at any price, and miro sold as rimu.

Kotuku strainers and mine props are now being taken off the same area, and next year hundreds of tons of rata, tawa and rimu firewood will complete the utilisation.

It is somewhat different to taking only 8,000ft. rimu off an acre.

From this point I intend to treat the subject purely from a New Zealand standpoint. I have here a list of importations of forest products for the year 1920, and will endeavour to indicate to what extent these articles can be produced within New Zealand. Except in the case of wood pulp, printing paper and acetic acid, the capital necessary to establish these industries is not large, and therefore presents a favourable opportunity for investment.

IMPORTANCE OF FOREST PRODUCTS, 1920.

Laths, 2,877,992	£6,939
Poles and sleepers, 113,291	129,754
Palings, 37,220	539
Shingles, 3,586,472	7,189
Shafts, hubs, etc.	—
Wheels	21,903
Doors and sashes	20,607
Furniture	69,691
Handles	33,202
Mouldings and panels	6,849
Woodenware and turnery	112,851
Wooden matches, 184,885 doz. boxes	46,664
Wood pulp, 1707 tons	60,587
Printing Paper (coarse grades only), 18,580 tons	905,507
Resin, 1,085 tons	42,457
Tanning bark, 3,890 tons	60,587
Charcoal, 6 tons	247
Medicinal bark	11,801
Wood naptha, 6,377 gallons ...	3,965
Turpentine, 77,382 gallons	45,789
Turp. substitutes, 122,522 gallons ...	13,540
Acetic acid, 230,008 gallons ...	5,528
	£1,655,876

A cursory examination of the slab heaps of most of the New Zealand mills will soon convince the expert that such articles as laths, handles, clothespegs, etc., the imports of which total some £60,000, could well be manufactured from this so-called waste.

Similarly the kawaka or mountain cedar might provide our shingle requirements.

The wax match industry is already well established in New Zealand, and there seems little reason why the wooden match should not follow: £46,000 is certainly an attractive figure for the manufacturer.

Resin and turpentine are complementary products and may be obtained from treatment of our kauri waste or possibly from some imported pines.

Private enterprise has investigated several problems of production. Satisfactory methods of obtaining a suitable tannin extract have been found; and it is hoped in one locality to utilise the whole waste of a beech forest for this purpose. Similarly a commercial plant for the production of acetic acid, charcoal, wood naptha, etc., is now being considered by a private company. Still another company for the manufacture of wood-pulp is in existence. The tests recently completed by the Imperial Institute regarding the suitability of New Zealand timbers for pulping have been fairly satisfactory, but the matter requires further consideration and is now being carried forward.

The item "Woodenware and turnery" in the foregoing list includes such products as veneers, 3-ply, etc. A small amount is manufactured already in New Zealand, but the markets would absorb many times our present output if available.

I have endeavoured in these remarks to indicate to some extent the many possibilities of establishing certain industries, and the list is by no means complete. The matter is of vital interest not only to the State Forest Service as a means of reducing waste, but also to the community in general, tending as it does to make the country self-supporting.

The above paper was read by Mr. A. Entrican, engineer in forest products of the State Forest Service, before the recent annual meeting of the New Zealand Forestry League. To our mind he might well have enlarged upon the question of importations of low grades tending to raise prices in future by causing lower utilisation, for this is a point upon which most timber users are lamentably ignorant. It were rather futile to urge upon sawmillers the need for higher utilisation if the heavy importations of low grade American lumber are to be allowed to continue, and thus displace the very grade or article that the sawmiller is urged to produce. He certainly cannot produce it if there is no market for it at a price that will at least cover its bare cost, and consequently low utilisation will continue and a vast amount of our lower grade timbers will remain in the worked-over bush to rot. However, we are pleased to note from current newspaper comment upon Mr. Entrican's paper that at last some editors are taking heed of this matter, for several used the headlines—"Danger of Low Grade Importations." Needless to say, the "conservationist" referred to who obtained such high returns from a medium piece of bush was more favourably situated than most sawmillers to secure such result, but it would not be amiss to urge upon all sawmillers the need to follow his example to the highest extent that their position and available markets allow. The State Forest Service and those engaged in the industry are indeed fortunate in having one of Mr. Entrican's ability and enterprising spirit to investigate these matters.

(Concluded)

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 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.

Our 79th Competition.

We offer a prize of £2 2s. for the best

PERSPECTIVE SKETCH

in pencil, about 6in. x 4in., of any portion of a public building, church, or college, such as a portico, porch, or bay, etc. The choice of a subject must necessarily be left to the student, but the adjudicator asks that the subject chosen shall have a certain amount of architectural merit.

Mr. Cecil Trevithick (of Messrs. Chilwell and Trevithick, Auckland) 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, "Seventy-ninth" Competition on outside, with a covering letter giving competitor's name, and address of employer. Designs must be sent in by September 27th, 1921.

Book Reviews.

Design and Tradition, by AMOR FENN. (Chapman and Hall, Ltd., London; 30s. net.)

This book covers a very wide field and has great interest to professional and layman alike. The author describes it as "A Short Account of the Principles and Historic Development of Architecture and the Applied Arts." It is one of a series of Universal Art Series devoted almost exclusively to the traditional design in Europe from classic sources. It is divided into sections dealing with Historic Review, Mouldings, Architectural Proportions, Division of Surface, Conventional Ornament, Treatment in Design, Mythology and Symbolism, etc., and is well illustrated by drawings of technical interest. The author has made a genuine attempt to produce a book that will be a guiding hand to those interested in design who would otherwise waste a good deal of energy in misdirected effort. Historic style is of paramount importance to the genuine student, and intelligent investigation will show that the underlying factors of its varying phases are much the same. A book of this nature makes a most valuable treatise for the use of students of design and art who have gone through our technical schools, and feel the need for some guiding hand to establish a permanent style based on good European traditions of an orthodox type.

The author makes a good point when he says that a designer must not be satisfied to prepare an external appearance for the object in question, but must know how it is constructed, and out of what materials, and what are the limitations of the materials over which the craftsman triumphs. An illustration of this may be given in the dome of St. Paul's Cathedral, which is not, as might be supposed, a mere copy of St. Peter's at Rome, but possesses an unseen interior construction which is as much a part of the design as the exterior.

Geometry for Builders and Architects, by J. E. PAYNTER. (Chapman and Hall, Ltd., London; 15s. net.)

This book, which is written for use as a text-book by architects and surveyors, as well as students and practical men engaged in the various branches of the building industry, contains examples specially selected for their practical application to the difficulties arising in actual workshop practice. The book is intended more for the practical man with some knowledge of the more elementary principles of geometry than as a primer for beginners, and as such should be widely studied. It would make an excellent book to be read after the study of Mr. Fenn's book mentioned above, by those sufficiently interested in architecture to become designers. Mr. Paynter deals with scales, angle measurement and triangles, passing on to the construction of plane rectilineal figures which form the bases of our simplest domestic architecture. Mouldings, arches, columns and sewers all illustrate the properties of the circle elaborated in a hundred different directions, and this book shows the geometrical process through which a builder must go who wishes to construct his work on sound lines—whether it be a simple brickwork arch of Gothic, Pointed or Tudor design, or a more ambitious attempt.

Building Notes.

AUCKLAND.

Messrs. Chilwell and Trevithick invited tenders for alterations to shop at Parnell for Messrs. R. and W. Hellaby; also alterations to a residence at Devonport.

Messrs. Edgecumbe and White, of Hamilton, invited tenders for business premises at Matamata. Plans to be seen at Messrs. Holman and Moses.

Mr. Frederick Browne invited tenders for two bungalows, one at Remuera and one at Papatoetoe.

Messrs. Norman Wade and A. M. Bartley invited tenders for a residence in wood at Remuera, and Messrs. A. S. O'Connor for a house at Kohimarama.

Messrs. Ed. Mahoney and Son also invited tenders for additions to the Catholic Church at Ellerslie.

CHRISTCHURCH.

During the month Messrs. Hart and Reese invited tenders for a house in St. Albans.

Messrs. Ellis and Hall invited tenders for a two-storey house in Merivale.

Messrs. J. S. and M. J. Guthrie also invited tenders for a War Memorial in concrete at Rakaia.

Messrs. Collins and Harman called for tenders for additions to Tuaranga Home at Ashburton; for erection of an X-Ray room at Cashmere Sanatorium, and for a house at Riccarton.

FRANKTON JUNCTION.

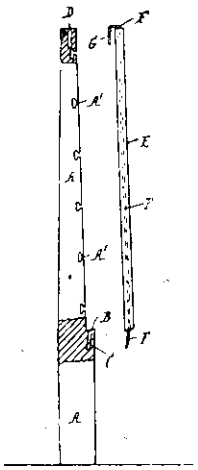
Tenders were invited last month by Messrs. Warren and Blechynden for the erection of a picture theatre at Frankton Junction.

GISBORNE.

Tenders are invited, closing November 24th, for the erection of a ferro-concrete bridge 40ft. wide and 370ft. long. Specifications can be obtained from the Borough Engineer, Gisborne.

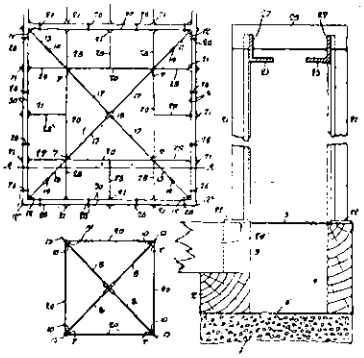
Patents of Interest to Builders.

Concrete Fencing Post.—A patent, No. 43,463, has been taken out by Herbert Winterburn and James McKay, both of Drury, N.Z., plasterers, which is formed with a number of wire-receiving slots extending across its front face, and with a hole extending vertically downward from its top end, and with a ledge projecting outwards from such face near the bottom end, having a hole ex-



tending downwards and inwards therefrom into the post, in combination with a reinforced concrete batten adapted to fit at its bottom end on to the said ledge and to extend up the front face of the post, having a wire extending longitudinally through its length, projecting from the batten at its lower end and extending beyond its upper end and being bent into hook form.

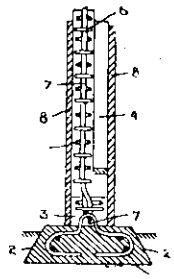
Concrete Building Erection.—A patent, No. 43,125, has been taken out by H. E. Manning, builder, of Rugby Street, Wellington, which relates to the erection of concrete buildings formed with solid walls, and provides an improved method of and means for erecting framework and moulds for the aforesaid purpose. In the erection of concrete buildings, according to this invention, a complete outfit of framework and boxing necessary for a building is provided, such framework and boxing being constructed of metal, and formed in such a manner that it is capable of being quickly and rigidly erected, and also re-used, so that after the initial expense of providing the outfit the cost of framing and boxing for subsequent buildings is rendered negligible, besides which the latter are enabled to be completed in a better manner and in considerably less time than where the old system of wooden boxing is used. In commencing to erect a concrete building the foundations are first laid, and the plates and floor-joists secured in position thereon, together with beams along the outer edges of the foundations. Angle-iron uprights are then erected on the joists inside the limits of the various rooms, one opposite each corner of the latter, said uprights being braced from the joists, and connected at their upper ends by horizontal angle irons and clips. Further angle-iron uprights are then placed in position corresponding to the inside corners of



the rooms, and connected with the first-mentioned uprights by tie-rods capable of being adjusted to the required tension. Uprights of T iron to hold sheet-metal shutters, which form the moulds for the walls, are then arranged in double rows, the inner rows being placed on the joists and filling-pieces between the ends of the latter, and the outer rows on the beams laid along the outer edges of the foundations. The T-iron uprights are placed with the flats of the uprights of one row facing the flats of the uprights of the adjacent row, said uprights being preferably inserted in shoes secured to the joists, filling-pieces, and beams, the uprights of each row being connected at their upper ends by horizontal angle irons and clips. The horizontal angle irons of the inner and outer sides of a wall-mould are kept a uniform distance apart throughout by means of horizontal spacers, while each wall-mould is kept at the perpendicular and held rigid by means of spacers from a horizontal angle iron connecting the upper ends of the first-mentioned uprights located inside the limits of the room or building. The sheet-metal shutters which form the moulds are reinforced at both their horizontal and vertical edges, the former with angle or T iron, which is shaped at its ends to work on the angle and T-iron uprights, between which the shutters are adapted to slide. Also to prevent friction and to facilitate the sliding of the shutters between the uprights, said shutters are fitted with friction rollers or wheels, to bear against said uprights.

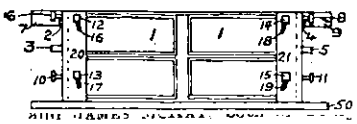
Building-Anchoring.—A patent, No. 45,091, has been taken out by J. A. Mason, of Ponsonby, Auckland. According to the invention, anchoring-blocks, formed with bevelled edges in order that their lower surfaces will have a greater area than their upper surfaces and provided with raised portions on the latter, are sunk in the ground at suitable distances apart. The slabs forming the walls rest on the raised portions of the anchoring-blocks, vertical spaces being left between the ends of the wall-slabs directly over the anchoring-blocks. The ends of the

wall-slabs, the upper surfaces of the anchoring-blocks, and the raised portions thereon have projecting loops, through which connecting-rods and wires are passed. The vertical spaces are then boxed in and concrete placed



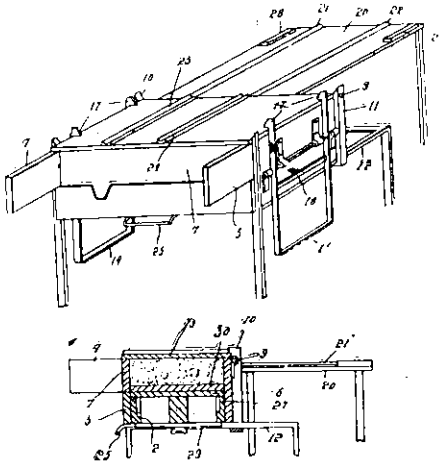
in the boxing. When the concrete sets the wall-slabs are securely united and also attached to the anchoring-blocks; besides which, vertical courses or pillars of reinforced concrete are provided at intervals in the walls.

Concrete Block Mould.—A patent, No. 43,376, has been taken out by A. G. Youngson, builder, of Invercargill,



which is characterised by having sides and ends provided with means whereby on raising the ends of the box the sides and ends expand away from the block.

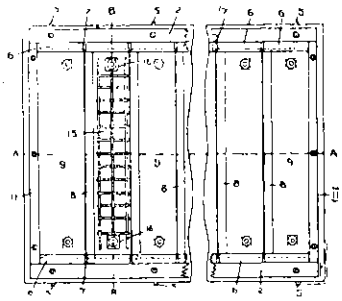
Concrete Block Mould.—A patent, No. 44,942, has been taken out by R. H. May, of Hastings Street Extension, Napier. According to this invention, a moulding-frame of the required shape is constructed and hinged to a horizontal rod arranged in a suitable stand. The frame is so arranged that the sides thereof may be placed in position and held therein while the concrete is being



placed therein. A palate-plate forming a top to the mould is then placed in position and held by special means. When the concrete is sufficiently set the mould is rotated upon the rod referred to and deposited in an inverted position upon a table at the rear of the device, means being provided whereby the palate-plate will lie upon the table in order to enable the block to be carried clear of the frame, a portion of the sides of which are removable so as to permit the moulded block to be clear of the frame.

Concrete Slab Mould.—A patent, No. 45,369, has been taken out by Geo. Ogle, Liverpool Street, Auckland, which comprises a table on which a number of slabs are moulded on the flat in the positions relative to each other they will occupy when used. The surface of the table

is divided by rails at each side and cross-partitions between the rails. The edges, which will be horizontal when the slabs are used vertically, are formed by the cross-partitions, which are shaped accordingly. Prefer-



ably inter-engaging, the fact that the meeting edges are formed on each side of the same partition ensuring fit in use, and room for grouting being placed between the edges. The vertical edges are formed by contact with the sides of sections on the inner sides of rails. The partitions are formed preferably by bending, etc., the metal plates which form the bottoms of the moulds. Core prints and means for holding same in place are provided, whereby holes can be formed and reinforcements held. The concrete is screeded level with the top of the rails, and compressed by a heavy roller running along the latter.

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