because he would fail to understand what he was buying. When he buys a certificate marked with a par value of $100 he feels that in some way he is buying a tangible $100 worth of property, while if he were to buy simply a participation certificate—an interest in the general business of the company—he would be getting something rather beyond his comprehension.

The sale of bonds at a discount presents a question quite different from that of the issue of stock below par. From the company's point of view, the yield on the investment is the only thing in which it is interested. In other words, the price it has to pay for its money is what determines the sale of securities at any given time. It makes no difference wherether a 4 per cent. bond is sold at a discount or a 5 per cent. bond at a slight premium, if the company has to pay 4¾ per cent. for its money it is in the same financial position whether it issues a 4 per cent. bond or a 5 per cent. bond. The discount is taken up over a series of years and to all intents and purposes is the same as interest.

The price which a company will have to pay for its money cannot be fixed or, in fact, influenced by a law or by the action of a commission.

A railway company has to bargain for its money in much the same way that any man would go about mortgaging his real estate. Its object is to get the greatest amount of money for the least interest payment possible, consistent with mortgaging its assets in such a way as to make future financing as easy as possible. It was the unanimous testimony of all of the bankers that market conditions for money are such that sometimes a road could get a loan at an actually lower interest by selling a 4 per cent. bond at a discount than it could by selling a 5 per cent. bond at a premium, or vice versa. Most of the witnesses conceded that the sale of bonds is such a delicate and highly technical operation that it could be much more advantageously carried out by a board of directors free from the immediate supervision of a commission or the restriction of any laws.

The members of the New York Public Service Commission and of the Massachusetts commission did not concur in this view. In both Massachusetts and New York the law provides that the commission may fix a minimum at which bonds can be sold. The members of the New York commission cited an instance in which a certain railway had come to them and asked permission to issue bonds at a certain figure, say 79, and that the commission had refused to permit the issue of these bonds unless the company could get a higher price, say 83, for them, and that the commission by standing firm had succeded in actually getting the higher price for the company for its bonds. One is led to surmise that this was a particular case, in which the bankers who were to buy the bonds were already so deeply interested in the other oustanding securities of the company that they were in a position which permitted the Public Service Commission to coerce them to a quite extraordinary degree.

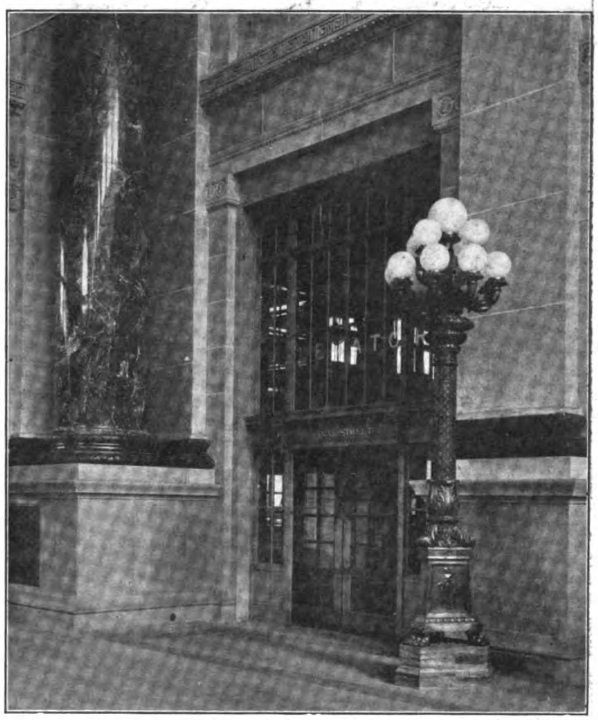
The question of publicity was viewed quite differently by different witnesses. It was conceded, however, by most that there ought to be a certain amount of secrecy about any business transaction of this kind while the negotiations were still pending, but that it was desirable and only right that eventually full publicity should be given to the whole transaction. The differences in opinion as to publicity lay largely in the question of how soon after the negotiations for security sale had been closed the company should be compelled to make public its record and as to the amount of detail that should be required.

"Happy Arabia," known now as Yemen, is to have a railway, extending from the Red Sea at Hokeidah, which is about 150 miles north of the outlet of that sea, into the interior 73 miles to Obal. It is hoped to eventually continue it further to the plateau east of the coast range, but to do this a pass 9,500 ft. above the sea must be reached. A harbor also is to be constructed 10 miles north of Hokeidah, which is about 500 miles south of Mecca, which will be the terminus of the nearest line.

CHICAGO PASSENGER TERMINAL OF THE CHICAGO & NORTH WESTERN.

The new passenger terminal of the Chicago & North Western in Chicago was opened for traffic Sunday, June 4, and since 6 a. m. of that date all the through and suburban trains have been operated into and out of the new station. The terminal includes two new approaches, the north approach being about one mile long and the west approach about 1¼ miles long, in addition to the station building and train shed, which occupy the blocks between Madison street and Milwaukee avenue and Clinton and Canal streets.

The station proper is 320 ft. x 218 ft., and is four stories high. In addition to the main entrance on Madison street, there are six other public entrances, giving easy access to all parts of the building from any direction. The walls are gray Maine granite and the column shown in the photograph of the Canal street entrance is marble. The inner vestibule of the Madison street entrance is shown herewith. The entrance to this vestibule is

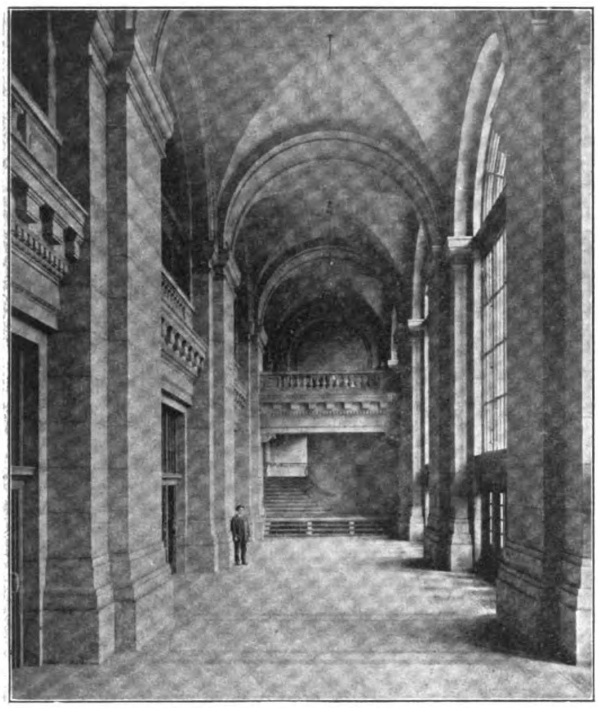


Canal Street Entrance.

through three large arches, each containing five bronze and glass doors. Corresponding doors lead from the vestibule into the public court. This court is ample in area to accommodate travelers while transacting all business incident to a journey. The ticket office contains 33 selling windows and is provided with every facility for serving the traveling public promptly. In addition to the ticket office, the other conveniences grouped around this court include a lunch room, public telephone booths, drug store, telegraph offices, information bureau, parcels check room, automobile and cab booths and baggage room. The broad stairway shown at the left, in the view of the public court, leads to the main waiting room on the floor above, a general view of which is shown. As an example of the care that has been taken to include every possible convenience in the design of this station, the lights on all stair landings should be pointed out. These lights can be seen in the photographs at the landing in the stairway leading from the ground floor to the main waiting room. Strong reflectors are provided which throw a

bright light on the landing, a point which is usually obscured by shadows.

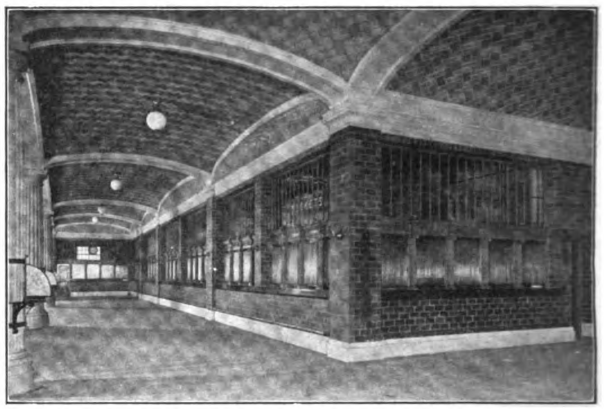
The waiting room is treated as a Roman atrium with a barrel vault roof. The pilasters and the entire order up to the spring of the vaulted ceiling are of dull finished, light pink Tennessee marble. The columns are of Greek Cippolino marble of a delicate green hue. The ceiling is of self-supporting tile construction with ribs of terra cotta, ornamented with symbolic designs. The lighting includes clusters of high power incandescent lights supported on solid bronze fixtures and a complete system of in-



Inner Vestibule on Madison Street.

direct lighting, concealed behind the cornices. The large clock shown at the end of the waiting room is one of thirteen located in different parts of the station and controlled from one master clock. The ventilation of this room, as of every other part of the building, is effected by a forced draft system which completely changes the air in the building every 20 minutes. The mahogany settees in the waiting room are all numbered for the convenience of patrons in making appointments in this room.

A separate waiting room for ladies is provided at the west end of this floor, a corner of which is shown in a photograph. Adjoining this ladies' waiting room is the main dining room. The architectural treatment of these rooms harmonizes with the general scheme of the interior and the lighting is by the indirect system, which supplies a soft, light without any shadows. The service in the dining room is from a kitchen on the floor below, the equipment of which is equal to that of the kitchen in any metropolitan hotel. At the east end of the main waiting room is the barber shop, newsstand, smoking room and public and pay toilets. On the third floor are provided ladies' rest rooms, dressing rooms, wash rooms and baths, a ladies' tea room, and the nurse's and matron's rooms. Adjoining the latter room is a physician's office and emergency department. The facilities for hospital and emergency service are very complete and are furnished free of charge. On the same floor are the men's lounging room, men's barber shop and bath rooms. This service is designed so that a suburban patron can change to evening



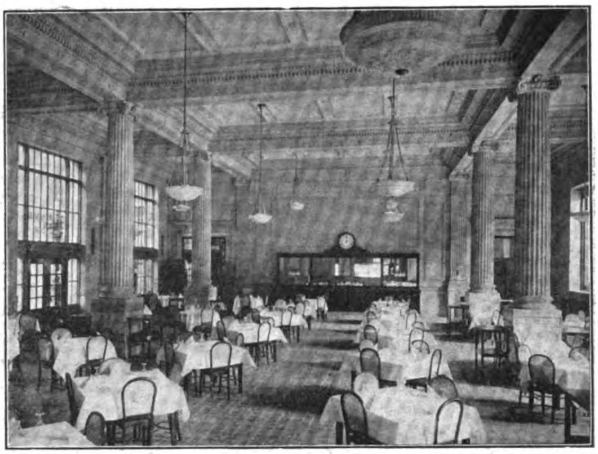
Ticket Office.

dress and keep his evening appointments without the necessity of going home.

From the main waiting room entrance is had directly to the train shed concourse. This concourse is as substantially built as any other part of the building and will be heated in winter to a temperature of 60 deg., allowing passengers to wait for their trains in comfort. The train announcing boards, shown on the left, are operated by a perforated ribbon somewhat similar to a piano player record, by which only the names of towns at which a train stops are displayed on the board. The balcony at the right of the picture is for the train announcer. The heavy sliding doors at the left of the picture open into the train shed. This shed is the Bush type. There are 16 tracks in the shed, which covers an area of 265,800 sq. ft. As shown in the photograph, the floor construction is concrete throughout, allowing the space between the tracks to be flushed and kept in a perfectly clean and sanitary condition. Belt conveyors are pro-

Public Court on Ground Floor.

Corner of Women's Waiting Room.

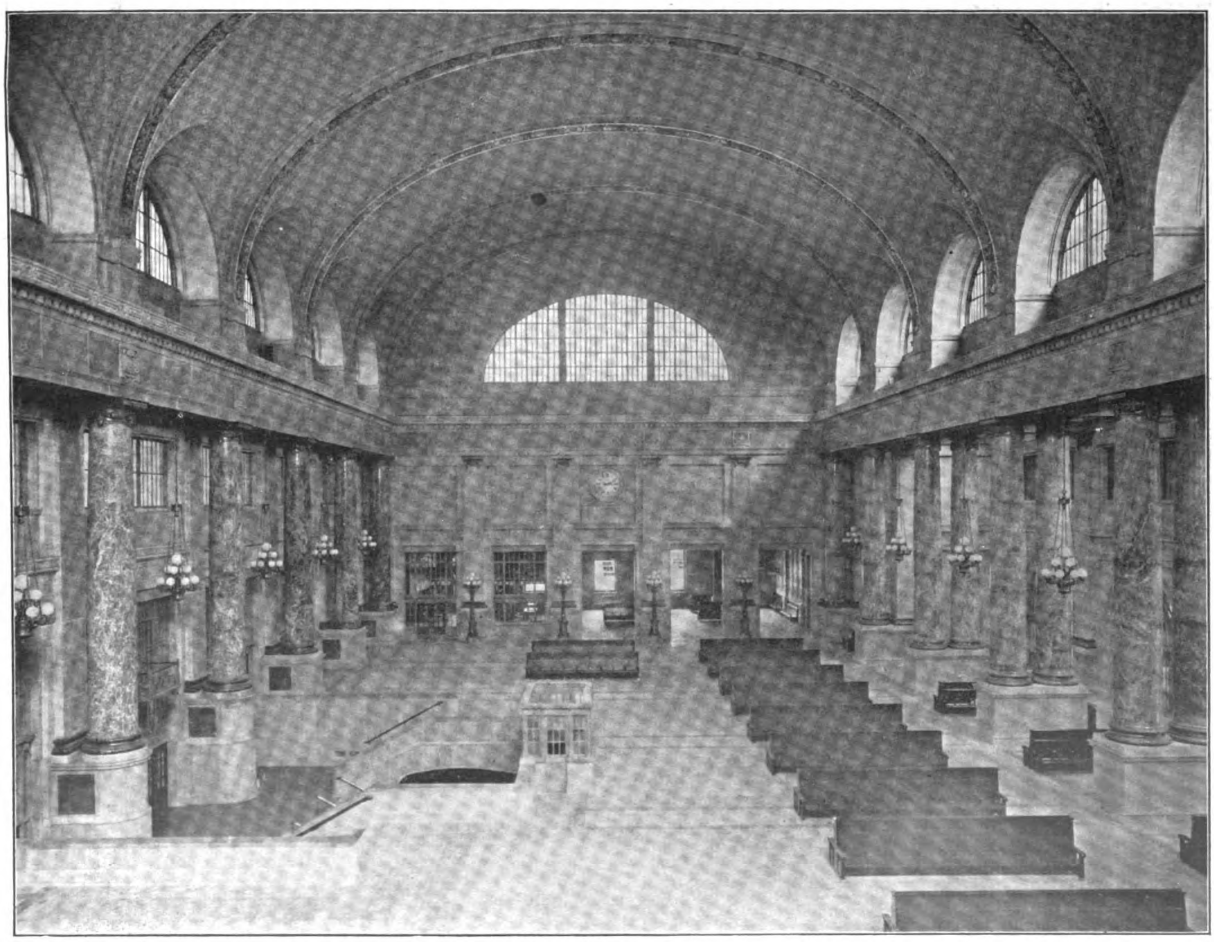


Main Dining Room.

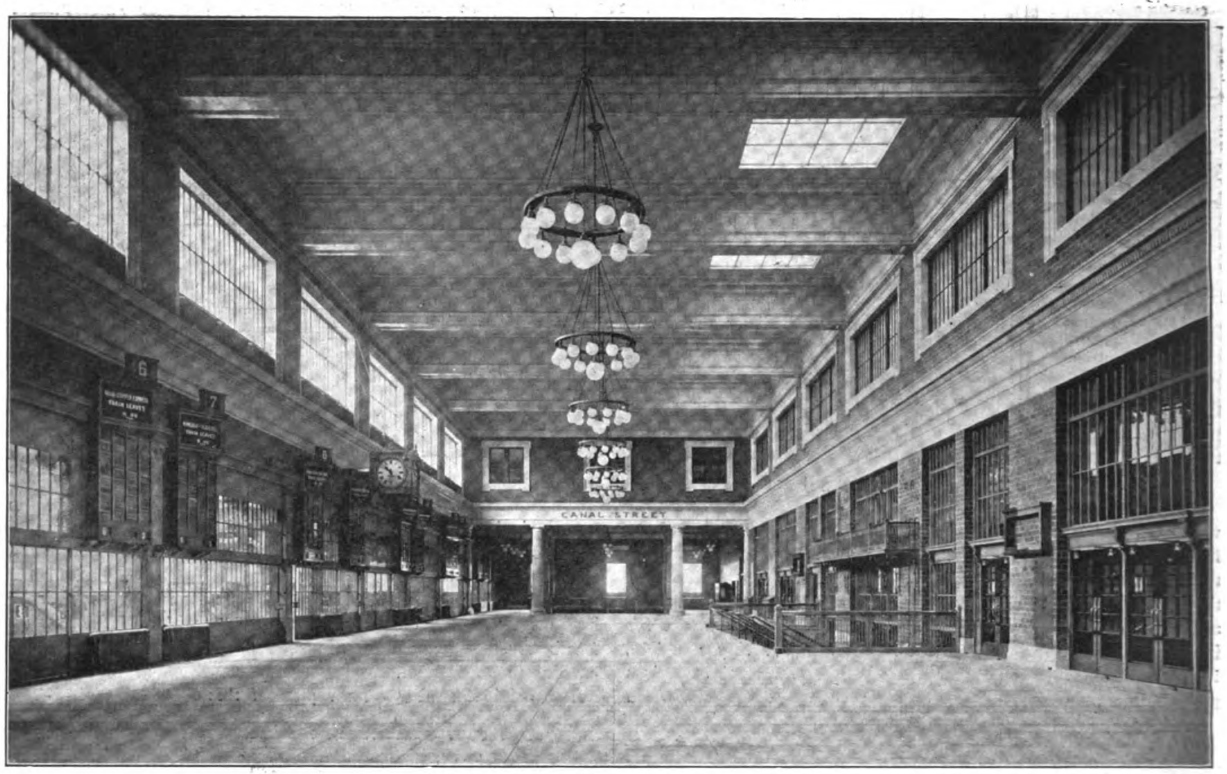
vided between tracks on to which mail sacks are thrown direct from incoming mail cars. These conveyors carry the mail to the post office sub-station below the train shed. In addition to the post office the space under the train shed includes baggage and express rooms, cab and automobile stands and quarters for immigrants. The facilities for the immigrants are very complete, including a lunch room where good food is served at a low price, complete baths and toilet for men and women and wash rooms, including steam dryers whereby the immigrant women may do the washing for their families and have it dried while they wait.

A suburban concourse midway between Randolph and Washington streets, and extending the complete width of the station, furnishes entrance to the main shed without requiring suburban patrons to go through the station proper.

The original studies on the plan of this terminal were begun



Main Waiting Room, Looking East.



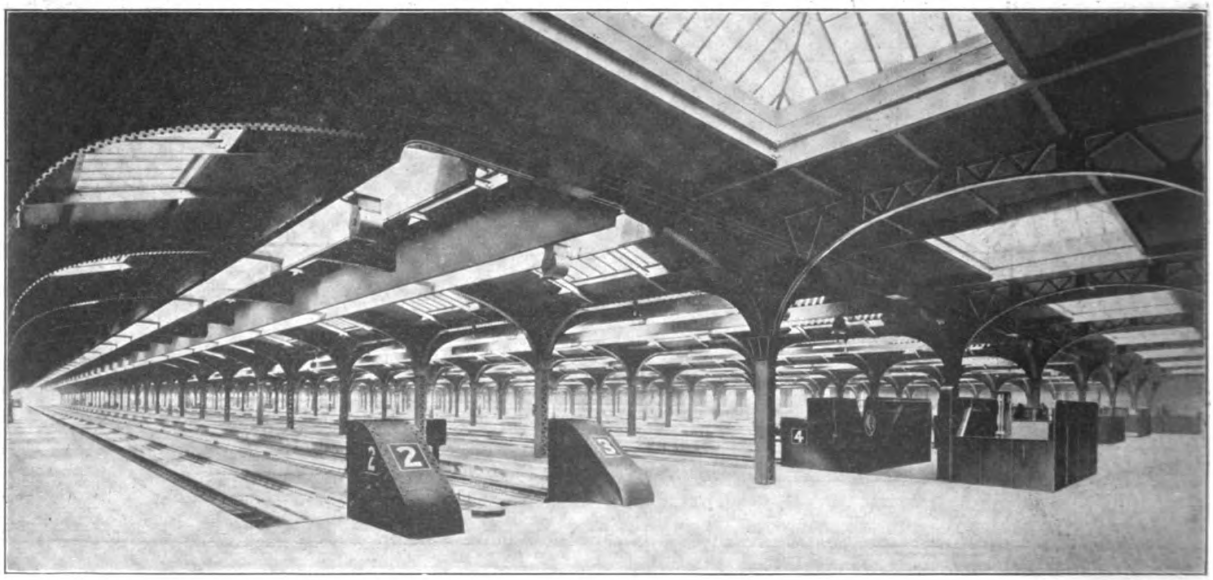
Concourse, Looking East.

in December, 1905, under the direction of Marvin Hughitt, at that time president and now chairman of the Chicago & North Western. The work of making detail plans and of wrecking buildings on the new right of way was begun in November, 1906. The raising of the Chicago & Oak Park elevated, which crosses the station tracks on Lake street, was begun in June, 1908. In September, 1908, construction work on the approaches was started, and in November, 1908, construction work on the station buildings was commenced. The approximate cost is as follows:

Real estate and legal expenses	$11,560,000
Station building and train shed	6,380,000
Power station building and equipment	810,000
Elevated approaches	5,000,000
Total	$23,750,000

For the benefit of those who may desire to refer to previous descriptions of special features of this terminal the following list of articles have appeared in the *Railway Age Gazette* is given:

General description of the arrangement of station building prepared from architects' studies, August 14, 1908.



Train Shed.

Complete description of the Bush train shed, July 16, 1909.

Photographs showing progress, February 11, 1910.

Description of the raising of the Oak Park elevated, the building of subway bridges and approach, with especial reference to their waterproofing, further details of the arrangement of the station and complete description of the power house with its equipment, July 15, 1910.

Details of construction, with progress photographs, March 23, 1911.

STUDIES IN RAILWAY ECONOMICS.

IX*.

BY W. M. ACWORTH.

Let us assume then that Lord Collins is right in saying that—at least when a Law Court has to decide the question—"the reasonableness of the charge must be measured by reference to the service rendered and the benefit received, which is unaffected by the prosperity or misfortune of the parties to the contract." "The affluence or indigence of the person rendering or receiving the service is beside the question." Let us see how this has been worked out in practice before the English Commission Court. The English commission has indeed so far been spared the task of deciding what is a reasonable rate *per se*. Parliament has fixed by statute the maximum rates and charges which the companies are entitled to make, and the court presumes that all charges within that maximum, provided that they have not been increased since 1892, are, apart from the question of undue preference, reasonable. It is only where a change has been made since 1892 that the court has jurisdiction to decide as to the reasonableness of the increase.

"The main element," says Lord Collins, "in such determination must be the expense to the carrier." But, with great respect, it would seem that, if "the service rendered and the benefit received are unaffected by the prosperity or misfortune of the parties to the contract," if "the affluence or indigence of persons receiving the service is beside the question," the expense to the carrier becomes not only "the main element," but the sole element in deciding whether an increase is reasonable. And so the decisions of the court in particular cases have worked out in practice. The companies have again and again endeavored to put in force an increase, and have succeeded or failed according to whether they could or could not prove that the expense of working the particular traffic to which the increase was applicable had increased. The companies' total net revenue may or may not have increased; the trade in the particular article on which an increase is proposed may be in the heights of prosperity or the depths of adversity; it matters not. Provided the company can satisfy the court that the ratio of operating expenses in the case of that particular traffic, has increased from causes of a not merely temporary nature, sanction to an increase of rate, proportionate to the increase of expense, almost automatically follows. Of all obligation to consider the question from a commercial or economic aspect the court almost ostentatiously washes its hands. "We are not a court of conciliation, or a tribunal of honor; we are not made judges of prudence or of generosity." Railways are "as traders, entitled like other traders to push their business to the best advantage." Far be it from me to presume to say that this is not good law, or even that, acting as a court of law under the statute that conferred the jurisdiction, it would have been possible for the railway commission to adopt any other course. But, regarding the question from the economic standpoint, and considering not what the law is, but what it ought to be, an economist is entitled to say that it is bad economics, and, I add, bad business.

It is surely unnatural that a tribunal of appeal should refuse to take into consideration the very matters that would be uppermost in the mind of the person who had to decide in the first instance. And, assuredly, the first thing that a railway manager takes into account, and ought to take into account, is the ability of the traffic to bear the rate; which is really "its effect upon the trade of the persons who have to pay it." To charge what the traffic will not bear, at least beyond the point which leaves the railway some profit on the transaction, is to sin against the first canon of railway rate making. But this, says Lord Collins, "is a question of railway management, which in my judgment lies outside our province." The result of a manager increasing rates from one set of considerations, and a court deciding as to the reasonableness of the increase from another set of considerations, is curiously unreasonable. The court has in more than one case sanctioned increases made by the railways in coal rates. That an increase in the cost of carrying coal has therefore been proved we may take for granted; but it by no means follows, either that the coal trade is in a good position to bear the increase, or that the companies, if left to themselves, would have tried to recover their loss in net revenue by increasing the charges on coal. It is much more probable that they would have followed the line of economic least resistance, and have put up their rates for silks and cigars and grand pianos, where there would have been no fear of killing the goose that laid the golden eggs. Indeed, it is quite conceivable that the very fact that the companies' expenses in carrying coal have increased is economically a reason why coal rates should be reduced. Take this case: The cost of raising coal in England has been increased by the introduction of the statutory eight hours' day for miners. This has raised the cost of locomotive coal to the companies, and so increased their working expenses. But, simultaneously, it has weakened the competitive position of English coal in foreign markets and, accordingly, a coal trader with a diminishing demand, bound to cut his profits or lose his trade altogether, is less able than before to pay even the old rates, let alone the new ones. Economically speaking, a railway should rather reduce these rates and thus help the trader to recover his imperilled position and so to balance a profit on a large tonnage against his smaller profit per ton. But can a legal decision be justified which puts a railway manager between the devil and the deep sea—which compels him either to accept a reduced net revenue or to raise it at the point of maximum resistance? Of course, the position may in practice be worse than this; for permission to raise increased revenue by advancing rates on traffic which the manager knows cannot bear an increased rate, and on that alone, is tantamount to a refusal to permit any increase of revenue at all.

But, though it is easy to see the economic unsoundness of the present position, it is difficult to see how a court of law could avoid it. It is clear that when a railway company has justified its claim for new net revenue, it ought to raise that revenue from the traffic that can best bear it. But how by legal procedure, with its definite parties, and precise issues, and sworn evidence, can that fact be ascertained? It is equally impossible to bring all the traders of the country before the court and to decide questions vitally affecting their interests in their absence. The moral would seem to be that, if the real question is one that cannot from its very nature be properly decided in a law court, a law court is not the proper body to decide it. On the other side of the Atlantic they seem to be gradually working out a system of regulation which is much more logical in theory, and which is likely in the long run to be much more satisfactory in practice.

*Previous articles in this series appeared in issues of the *Railway Age Gazette* of January 6, 13, 20, 27, February 3, May 19 and 26 and June 2.

The longest regular locomotive run without a stop in Germany is now between Berlin and Hamburg, 178 miles, which is made by two trains daily, one in 3 hours and 20 minutes and one in 3 hours 22 minutes. The longest locomotive run without a stop in France is 163 miles. The longest run without a stop in England is 224 miles. The English run is made by engines which take water while running.