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The World's Columbian Water Commerce Congress  
CHICAGO, 1893

ON THE UTILISATION  
OF  
WATER AND RAIL ROUTES IN HUNGARY  
AND  
Their Competitive Influence in Reducing Freight Charges

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## ERRATA.

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ON THE UTILISATION OF WATER AND RAIL  
ROUTES IN HUNGARY,

AND THEIR COMPETITIVE INFLUENCE IN REDUCING  
FREIGHT CHARGES.

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I.

GENERAL REMARKS.

The great progress accomplished throughout the whole of Hungary since the Compromise of 1867, by which its independence was assured, is also apparent in the development of the transportation facilities of the country. If one considers the reciprocal effects of the institutions and the economical conditions, it may be said that the means of transportation have been one of the principal factors in this progress.

The railroads have rendered eminent service to the traffic of the country, but have not been able to reduce the importance of the water routes. To be sure, since the economical reawakening of the country, public attention has been turned almost entirely to the railroads, and the funds obtained, through the loan of 150 millions of francs (30 millions of dollars), for canal and railroad purposes, has been spent on the construction of railroads, and most of the loans since contracted by Hungary have been absorbed in extending and buying up the railroads. But if human labor has been denied in forming and developing the river routes, Nature has undertaken to overcome this deficiency by supplying the country with a system of rivers which allows of a very extensive development of navigation.

The river routes of Hungary extend over 5,000 kilometres, 3,000 of which are easily available for steam navi-

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gation. The Danube, one of the greatest commercial routes of Europe, passes through 973 kilometres of the central portion of Hungary, by a route which, even in times of antiquity and the Middle Ages, was of the first importance, and has maintained its importance as a water connection between the eastern and western countries. With few exceptions all the rivers of Hungary belong to the Danube system, thus making a connected system, by which the products of all parts of the country are collected on this principal route. The advantages of the unity would be much enhanced, however, if the frequent changes in the beds of the river, due to the lack of regulation works, did not cause obstacles in many places, occurring especially in summer and autumn, when the wheat crops, the staple product of the country, require the greatest efforts of the transportation companies.

The general formation of our river system also presents some disadvantages. If our principal river, instead of flowing to the east, followed the direction of our commerce, and flowed to the west, or if the other rivers, the Theiss, Save, Drave, ran into the Danube, not on the south frontier of the country, but near the capital, the political and economical centre of the State, then the water system would be in harmony with the economical organization, and our products carried by the water routes would not have to make long circuits and be taken up stream. But even in their present state, owing to their extent and their topographical conditions, our water ways are successful competitors of the railroads.

In fact, competition was inaugurated when the first engine started out on the rails, and it was increased when the railroads were extended into the regions till then served only by the rivers. It was not long ere the railroads drew away a larger traffic than the rivers. This necessarily happened in Hungary, as everywhere else.

The question now is to find out whether, notwithstanding the triumphant progress of its powerful rival, the water



way has maintained its importance with regard to traffic, and has increased its attractive power. It is therefore necessary to establish the respective situations of the two systems, and the relative extent and conditions of the services rendered by each.

## II.

### PASSENGER TRAFFIC.

We will first consider passenger traffic, for which the water ways are available to a large extent.

The Danube, over its whole length, is used for the transportation of travelers; but on the Theiss, owing to frequent obstacles to navigation, this travel is cut in sections, and extends over half of its navigable course. The Save is also used by travelers. There are over 2,000 kilometres of our rivers that are used for the transportation of passengers. Taking no account of travel from one bank to the other, this transportation is done by three different companies: The Imperial and Royal Navigation Company of the Danube, The Navigation Enterprise of the Hungarian Railroads, and The Navigation Company of Lake Balaton. The last two companies have but short routes, used in part for merchandise. The Danubian Navigation carries on 90 per cent of the passenger traffic, and maintains regular routes over 2,050 kilometres (967 kilometres on the Danube, 467 kilometres on the Theiss, and 607 kilometres on the Save river).

In 1891 these three companies carried 2,690,987 passengers over the water routes, or 79,271,906 kilometre passengers. On the other hand, our railroads, extending over 12,000 kilometres, transported in 1891 some 35,886,050 passengers, who traveled 1,504,346,679 kilometres.

These few figures show the inferior role of the water routes. This is still better shown if we go back to ten years ago.

The passenger traffic in Hungary shows the following figures :—

WATER ROUTES.			RAILROADS.	
No. of Passengers.	Distance in Kilometres.	Years.	No. of Passengers.	Distance in Kilometres.
2,455,717	93,283,532	1881	10,213,333	580,272,865
2,533,034	66,303,431	1889	19,036,700	939,909,211
2,659,888	75,088,824	1890	29,163,756	1,327,016,947

It would seem at first sight that the passenger traffic had not much diminished, at least as far as the number of travelers is concerned, notwithstanding the large extension of the railroad routes; on the other hand, railroad travel did not increase much till 1889, and did not make a great showing till 1890. This last is explained by the fact that the new tariff was introduced on the Hungarian State railroads in August, 1889, by which Hungary inaugurated a new epoch in the history of transportation rates, the powerful effects of which is shown by the results of the last two years. This reform shows that the stagnation in travel that lasted such a long time with regard to the railroads, was due to the high rates of the old tariff, which exceeded those of any other country except England and Turkey.

If we wish to study the elements constituting the traffic on the water routes, and see the decadence of this traffic, we must examine the group of figures of the preceding official returns, and distinguish between the long-distance travel, between a long series of landings, and the local travel, established between the two shores at Buda-Pest, between the capital and the suburbs, or between certain stops on the Lower Danube. The above table contains the results of the totalizing of all these services, including the boats that only ply between the two shores in the capital. This local travel constitutes a very large part of the total traffic; thus of the 2,593,882 passengers transported by the Danubian Company in 1890, there were 1,199,745 whose trips did not extend outside of the capital. It is evident that the traffic of a capital whose population and territory is constantly increasing in an extraordinary measure, will



always exert a favorable influence on the total results; but it should not be taken in account in appreciating the role of the water routes as compared to all the means of communication of the country, and the transportation of travelers.

This distinction is necessary, not only in order to appreciate the traffic of the different lengths of routes, but also to bring out the influence of railroad competition on navigation. This influence varies with the length of the trips. It is evident that this competition has reduced the rates on long distances, but has not affected the development of local service; and this explains the fact that we have already noted, that the total number of travelers carried by water does not sufficiently show the diminished traffic.

In the existing statistics we have found the quinquennial average of each kind of travel to be:—

Long routes, annual average for 1881 to 1885,	900,025	passengers.
“ “ 1886 to 1890,	770,731	“
Short routes, “ 1881 to 1885,	1,733,977	“
“ “ 1886 to 1890,	1,810,970	“

Without doubt it is the railroad competition which has had the greatest influence on this result. The simple establishment of a railroad, that is an improved method of travel, suffices to draw away from river travel the large flow of passengers. Here it is man that is being transported, so that speed will be insisted upon, and the regularity and precision of the stops; advantages that the traveler will be willing to pay for at higher rates, especially as—notwithstanding the much lower tariffs—transportation by water is not always the cheapest on long distances. For long distances river navigation can scarcely hope to hold its own against railroad competition, although the latter has somewhat higher rates. The traffic on the Danube gives us a good example of this. The steam navigation companies run boats from Vienna and Buda-Pest to the country of the Lower Danube, and even to the Black Sea. In 1880 and 1881 the Hungarian lines carried from 700,000 to 800,000 passengers per annum. Since then the railroads

have been built from Buda-Pest to Pecs, to Zimony, and to Bruck along the banks of the river, and the number of river passengers has fallen off to from 600,000 to 700,000; yet the railroads maintained their high rates, while the navigation companies were reducing theirs, in order to maintain the competition.

The decrease in the passenger traffic is not only shown by the number of passengers, but also in the mileage, showing that the travelers choose the river routes for shorter and shorter trips. Here is a table that shows this:—

NUMBER OF TRAVELERS ON			
	the Danube.	the Theiss.	the Save.
In 1883 . . .	788,480	63,786	76,533
“ 1886 . . .	717,097	45,865	68,862
“ 1889 . . .	690,853	41,999	50,105
NUMBER OF KILOMETRES TRAVELED.			
In 1883 . . .	62,316,083	6,961,496	13,965,672
“ 1886 . . .	51,598,079	3,786,020	10,028,954
“ 1889 . . .	46,866,830	2,364,182	6,545,599

#### CONSEQUENCES OF THE ZONE TARIFF.

After the reduction of tariff obtained by the Zone Tariff the railroads obtained a very much larger proportion of the travel. Navigation made vain efforts to reduce the effects of this tariff, which revolutionized passenger traffic in Hungary.

The Zone Rate was first put in operation on August 1, 1889. At the end of the year—that is, in five months—the increase in the number of passengers had reached 3,203,388, as compared with the corresponding period in 1888. This increase, representing 134 per cent, was still greater the following years. The influence of this rate was very disastrous to the river routes, whose total traffic, already reduced, went down to 775,140 in 1890, with a total of 61,712,462 kilometres traveled; and still less in 1891. The travel on long routes of the Navigation Co. in 1891 was only 495,373 passengers, carried 50,486,882 kilometers.



The services on short routes naturally felt this influence much less. The short time, comfort, and pleasure of the trips, here present advantages for the water routes that the traveler will naturally choose, on condition that the companies reduce their rate as low as is necessary for competition. By all these circumstances, the results on short routes remain the same, notwithstanding the competition of the railroads. Local traffic, especially in the capital, is increasing, and this helps to bring up the totals on river transportation.

Thus the total for 1891 shows an increase on that of 1890, for it shows 2,690,987 passengers, carried 79,271,906 kilometres. This result has been obtained only, however, by great sacrifices and reductions in rates. Thus the Danubian Transportation Company carried in 1878, 3,196,443 passengers, with receipts of 3,598,736 florins\*; in 1890 it carried 3,565,063 passengers, and received but 1,619,993 florins. To-day the transportation in Hungary is carried on by the company at a loss.

#### CONCLUSIONS AS TO PASSENGER TRAFFIC.

Now let us summarize our opinion as to the role of these two methods of transportation, by water and by rail, and the effect of their competition with regard to passenger travel.

Passenger service by steamboat, inaugurated in Hungary about 1830, was able to maintain its supremacy until railroads were started, especially the roads following the lines of the river. Since that time business has constantly been on the decline, notwithstanding the extent of the river and the importance and richness of the cities accommodated. Expressed in figures, the number of passengers carried by water routes in the last ten years has diminished from 10 to 15 per cent.

The appearance of the locomotive has caused this decrease, notwithstanding the reductions of rates made by the

\* A florin is equal in value to 50 cents.

navigation companies, and the higher rates that the railroads felt that they must maintain. But the complete defeat of navigation came when the railroads decided for their general interests to inaugurate that extraordinary reform known as the Zone Rate. This reform, after increasing enormously passenger travel, imposed new concessions on navigation companies, which, however, did help to maintain their previous position. Low prices leave to navigation companies only the role of serving short routes, which is the only mission left them for passenger transportation.

### III.

#### FREIGHT TRANSPORTATION.

The situation is entirely different with regard to the question of transportation of merchandise, for which river navigation is favored by several conditions.

Hungary is especially an agricultural country, and cereals form the principal article of production, traffic, and foreign commerce. At one time the country was considered the granary of Europe; but the competition of Russia and America has caused a change in this respect. But its productive power, and capacity for export have not ceased,—in fact have increased. How the cereal production has developed in the last few years, is shown by the following table:—

From 1869 to 1873	the annual production was	90	1-4	million bushels.
“ 1874 “ 1878	“	“	112	1-2 “
“ 1879 “ 1883	“	“	134	“
“ 1884 “ 1888	“	“	172	1-2 “

The native consumption does not need these enormous amounts of grain, notwithstanding the constant increase in the population: by increasing its production through a more rational cultivation, the country can easily furnish for exportation an amount averaging 42 1-2 million bushels a year. These quantities come mostly from the regions of the Theiss and Maros Rivers, of those between the Theiss



and Danube, and from the right bank of the Danube ; here we constantly see the mass of grain being carried up on the main line to its outlet in the West. The quantities put in motion by the native production is still more increased by those of the Danubian countries of the Balcan Peninsular, whose economic life is also based on the export of agricultural products, and which also send a large portion of it by this same route, except when prevented by political or custom house measures.

This route over which, besides grain, large quantities of the products of the agricultural districts pass, presents a very animated aspect.

In the opposite direction, that is, from West to East, it is the mass of manufactured products that prevail. These go to the less developed sections, which are obliged to rely on importation for these products.

#### NATURE OF THE TRAFFIC.

The character of the traffic is manifested in the results of the companies called upon to effect the transportation. Four groups of merchandise (grains, grist, fuel, and building and working woods) constitute from 60 to 70 per cent of the merchandise transported.

This proportion of bulky freight brings out the importance of the river routes, and explains their ability to stand against the competition of the railroads. Those articles that constitute the principal item of freightage of both means of communications, take the river routes from choice, owing to their peculiar nature. For the reception and transportation of grain, these routes provide strong boats of large capacity, which the companies are constantly enlarging. From 1870 to 1890 the river fleets of Hungary only increased 16 per cent as to the number of boats ; but the capacity was increased 246 per cent, and the number of boats of over 600 tons capacity is constantly on the increase. More than 30 per cent of the fleet consists of boats of over 300 tons. As they are mostly used for carrying grain, they are ar-

## THE HUNGARIAN RAILROADS CARRIED IN

Year	Grand Total	[All measured in hectolitres.]			Fuels,		Per cent	Timber	Per cent	Total Per cent
		Cereals	Per cent	Grist	Per cent	Coal, Wood				
1891	14,524,709	3,072,722	(21.1)	606,719	4.1	2,181,109	15.0	976,993	6.7	46.9
1890	13,456,192	2,438,826	18.1	583,492	4.3	2,119,658	15.8	940,695	6.9	46.1
1889	8,447,936	1,864,756	22.0	631,724	7.5	1,810,734	21.4	774,331	9.2	61.1
1888	8,862,755	2,182,138	24.6	626,330	7.0	1,385,128	15.7	748,708	8.4	55.7
1887	6,996,158	1,622,251	23.2	465,491	6.6	1,369,070	19.5	699,182	9.9	59.2
THE DANUBIAN TRANSPORTATION COMPANY CARRIED										
1891	1,660,446	665,622	40.1	151,140	9.1	147,716	8.8	122,858	7.4	65.4
1890	1,917,618	890,052	46.6	157,385	8.2	173,193	9.0	149,167	7.7	71.2
1889	1,743,739	695,834	39.9	156,648	8.9	184,195	10.5	148,686	8.5	67.8
1888	1,714,953	747,607	43.6	176,466	8.2	141,082	8.2	142,963	8.3	70.3
1887	1,574,080	619,940	39.3	152,813	9.7	123,784	7.8	116,661	7.4	64.2

*Handwritten notes:*  
 Cereals  
 Grist  
 Fuels  
 Timber



ranged for easily loading and unloading large quantities. A boat of 600 tons will carry 60 full car loads, representing two freight trains.

The water routes allow of transportation in bulk, whereas the railroads take grain only in bags, which costs much labor and expense. The water route presents another advantage: the Danube is so long that merchandise can arrive at destination without transshipments, which cause so much expense and loss. The Danubian Transportation Company can deliver Bulgarian and Roumanian wheat even into Bavaria; frequently the boats are used for storehouses, which is favorable for speculation, whereas the railroads charge high rates for demurrage and handling.

On the other hand, one cannot overlook the inconveniences inherent to river transportation,—such as the slowness and uncertainties of the trips, which are doubly felt in Hungary, where merchandise for export is obliged in most cases to travel up stream in order to reach the Western markets, and are also delayed by low waters, which coincide precisely with the season of the greatest rush of the export trade.

It is generally thought that the river routes attract only bulky merchandise,—that is, articles requiring a large amount of space, out of proportion to its value, which can therefore not stand the high railroad rates. This is not true in Hungary, as well as in some other countries. The great competition between producers, and the increase in salaries, have reduced the profits of the contractor very materially, and he looks for compensation either in the reduction of the cost of production, or of transportation. It is therefore natural that merchandise whose value presents a favorable ratio to its weight, and could therefore stand the higher rates of transportation, should also seek the water route if the rates are lower than those of the railroads. This happens all the oftener in Hungary, as these products of greater value, which are traveling toward the East, go *down* the Danube, and can therefore travel pretty

rapidly. Consequently here, also, the water routes compete with the railroads. The returns of The Danubian Navigation Company show, not a reduction, but even an increase of traffic belonging to this class, notwithstanding that both banks of the river are lined with railroads, and that the traffic between Vienna and Buda-Pest, particularly important for these products, is no longer reduced to a single railroad route on the left bank, but has also a railroad in first-class order on the other bank at its disposal.

Owing to all these favorable conditions, freight traffic by water, instead of declining, and suffering from the competition of the railroads, shows symptoms of a systematic development.

In the report that we had the honor of presenting to the Paris Congress of Interior Navigation, in 1892, we showed the development of river traffic. We will here give a summary of it. It will suffice to go back only ten years, as during that time the navigation companies have had to withstand the influences of the increase in the rail routes and their new system of tariff.

Here is the comparison of the traffic of merchandise in Hungary over the railroads and the rivers:—

Years.	By River Routes.		By Railroads.	
	Tonnage.	Kilometric tons.	Tonnage.	Kilometric tons.
1881	1,865,992	678,470,685	13,861,818	1,621,593,755
1890	2,839,572	1,002,180,777	21,286,320	2,797,132,372
1891 *	2,841,856	927,176,830	23,258,978	3,104,244,529

It is evident that the river traffic is insignificant as compared with that on the railroads, but it must be remembered that there is much more traffic by water than would appear by the above tables, as they are taken from the official returns of steam navigation only, and take no account whatever of the traffic by rowboats and rafts, which is quite important, but much more difficult to obtain. In examining the tables, however, we notice that, notwithstanding the very unfavorable conditions, the total river tonnage has increased 52 per cent, and the total distance traveled 78



per cent; which increase is all the more remarkable, as the railroads, working in much more favorable conditions, and whose length has been notably extended, show for the same time, almost identical increase; *i. e.*, 53 per cent for the tonnage, and 72 per cent for the total distance run.

INFLUENCE OF RATES ON THE TRAFFIC BY EITHER ROUTE.

We must now examine the important role played by the tariffs, or rates, in order to produce the present state of affairs.

It may be stated in a general way that the rates have a downward tendency; and if from time to time rates on certain articles are raised, the general tendency, is notwithstanding, toward a reduction. The transportation companies have to comply with the economical exigencies of the traffic, and everywhere the interests involved have obtained reductions of rates,—which rates are an item in the cost of production. This reduction, therefore, has a general motive. But there always has been, and always will be, interests of special nature, for which transportation companies will be willing to cut under the reduced rates in certain cases; thus when it is to render certain raw materials or certain ingredients more accessible, in order to favor increased industrial or agricultural production, or when it is necessary in order to allow native production to compete with foreign production. In these cases the reduction is in the form of various favors. The reduction of rates may also be due to competition between different transportation companies,—a war in which rates form a very efficacious weapon.

As the latter is the case that we are considering, we will note that it is not always a war between the railroad and the water route. It may be between two railroads, or two water routes. The latter, in fact, presents more definite results.

Whereas the railroads are more or less monopolies, and, in a certain way, are under the control of the public, and

have fixed tariffs, the river ways form a free route, on which rival transportation companies can use various methods for regulating their rates and making their contracts.

#### WATER ROUTES.

That which caused for a long time reduced rates in Hungary was not the competition of rail and water routes, but the rivalry between the different navigation companies.

The Danubian Navigation Company, owning 190 steamboats and 782 towboats, of a total capacity of 276,809 tons, and which covered extensive routes, soon occupied a dominant position, and on the Lower Danube stations had a monopoly; but private navigation finally became a powerful rival, as shown in the following figures.

At the close of the year 1891 native companies and individuals owned 112 iron boats of a capacity of 34,486 tons, and 1,000 wooden boats of 200,119 tons capacity, making a total of 1,112 boats, and a total tonnage of 234,605. This fleet in 1891 carried 267,911,802 kilometric tons, or 41.3 per cent of the total river traffic; whereas, The Danubian Navigation Company, which carried 90 per cent of the passenger traffic, carried only 58.7 per cent of the freight which traveled by water routes. The great activity and the light expenses of private navigation enterprises have caused frequent variations in transportation rates, and, by forced competition, reductions which have had their effect on the railroads and their tariffs.

As to the direct conflict between the rail and water routes, the outcome is not doubtful wherever the water route serves but a small district; this weaker route will fall back to the rear, or should, more rationally, become a feeder of the railroad. But in sections where the rivers offer a first-class route,—this is the case in Hungary, where the character of the products, the quality of the merchandise to be transported, favor river traffic, and where the water routes coincide with mercantile traffic,—competition against the railroads will certainly be possible. It was not even necessary



that in Hungary this conflict should be specially prepared for; it came up spontaneously, by the nature of things, as fast as railroads were built. But it would be a mistake to suppose that this competition, based on a purely economical law, had at the same time caused reductions of rates, and that the lowering of the railroad rates was caused specially by water competition. This happened long after 1880.

At first the railroads established their rate alone; the powerful development of production, the favorable conditions to export trade, increased the amount of merchandise to be transported, so that the railroads, still incomplete, were not in condition to take all the traffic, and refuse all division with the water routes. Most of the railroads, and specially the State roads of Austria and Hungary (very important in view of the competition we are referring to), were held by private companies, who, not wishing to reduce rates solely in order to get the traffic away from the river routes, preferred to consolidate with the Danubian Navigation Company the most powerful of the water transportation companies. Thus no competition existed between these two routes to reduce rates; in some cases the water route could maintain rates almost as high as the railroad. In these conditions the railroad, instead of competing, entered into an agreement with the river route; to maintain rates, to the detriment of national development; and we are shown the strange phenomenon that the water route caused no reduction on the railroad rates, but only followed in its lead.

#### COMPETITION OF THE STATE ROADS.

The situation has materially changed in the last ten years, since the time when the old natural competition developed by the general laws of farming, has given place to a definite policy, organized with a definite end in view. The policy of State railroads inaugurated in the country became more and more prominent. Railroads were built along the rivers and bought up by the State; thus the

Danube was followed by two lines of road, parallel with each other,—one from Buda-Pest to Zimony, and the other from Buda-Pest to Bruck. The system of State roads, at the end of 1891, comprised 7,505,439 kilometres out of a total of 11,967,023 kilometres, or 62.8 per cent of the whole. The direct influence of the State also extended to certain private roads, and the total of roads run by the State amounted to 9,787,727 kilometres, or 81.8 per cent.

The predominant character of the State roads already offered a chance of reducing the rates, which was imperiously demanded by the economic situation. Besides the continued competition with our products, the tendency of protective tariffs of the different States of Europe was added. Hungary, whose life depends on the exportation of its raw materials, and which is already encumbered by the cost of production, found itself in the presence of many difficulties to maintain its own in its old markets, or to establish new ones. It was evident that the reduction of transportation rates was the only way to counteract the new difficulties of competition. The State, by means of its State roads, could do this.

The water routes naturally felt the effect of this reduction. They were still more affected by the new measures of 1889, which assured for the railroads the heavy freights on which the water routes relied. The reports of the Hungarian Minister of Commerce to Parliament enumerates the reductions, constantly increasing, which have been allowed, outside of the general and special tariffs, in order to compete with the river routes. These concessions not only refer to bulky materials, such as cereals and flour, but also to manufactured products arriving at Buda-Pest from Vienna, either direct or in transit.

As this policy was carried on systematically, the navigation companies had to submit. Under these circumstances they could only turn and reduce their rates to a considerable extent; and we have this new phenomenon, that it is rather the railroads, and not the water routes, that impose reduced rates to the competing companies.



To show up what we have just described, we will give a table of charges on cereals which the Danubian Navigation Company has made, since 1858, on some of the important routes competing with the railroads.

RATES IN KREUTZERS (ONE-HALF CENT) PER 100 KILOS, TO BUDA-PEST

year	FROM					
	Srentes	Sreged	Major Beckeres	Temesvar	Ujvidek	Zimony
1858	55	78	76	67	39	39
1864	101	92	83	106	71	78
1868	101	92	83	106	71	78
1871	92	84	76	96	66	72
1876	94	86	78	98	66	71
1881	67	61	56	70	51	55
1885	57	51	46	60	46	50
1887	60	53	50	65	48	50
1891	78	42	40	56	36	40

We might in the same way compare the rates on other products. After the moderate rates of 1858 we see the high rates of 1867-1868, which were continued in 1871-1876, when railroad competition was not yet felt. In 1881-1885 the rates begin to decline; the extraordinary fight inaugurated in 1887 by the State roads, specially on the Buda-Pest Zimony route, and the Buda-Pest to Bruck, is shown in the rates of 1891, which are about a half of those of 1867-1871.

To bring out the influence of the competition of the two routes on freight rates, it is only necessary to quote an example out of the statements of the Hungarian railroads in the cereal tariff, to show the difference in charges for the same distances with and without river competition.

THE CHARGES FROM BUDA-PEST TO THE FOLLOWING STATIONS ARE:—

Competing Stations.	Distance, Kilometres.	Charges, Kreutzers.	Non-competing Stations.	Distance, Kilometres.	Charges, Kreutzers.
Baja,	230	33	Gombsrog,	230	63
Ujvidek,	272	40	Kassa,	272	70
Vukovar,	291	40	Perbenyik,	295	73
Essegg,	297	41	Devecser,	298	73
Zimony,	343	46	B. Hunyad,	349	81
Mitrovica,	347	49	Homonna,	350	81

We should be going beyond the scope of this paper if we were to expose in details the existing conditions, and exam-

ine the effects of the reductions of rates spoken of on the expenses and the financial condition of the companies in question ; but it can be set down as a result of this great competition of rates, that a large benefit has been reaped by national production and the country at large, which cannot be overestimated.

#### CONCLUSIONS AS TO FREIGHT TRAFFIC.

Let us now summarize the results of the facts above referred to, as regards freight transportation.

To be sure, the amount of freight carried by water is much less than that carried by the railroads, but it would be hard to point out a fact that would show that the railroads have prejudiced the traffic of the water routes. As a fact, the water traffic has advanced with that of the railroads ; the work on both for a series of years shows a uniform increase in traffic, which shows that the country possesses in both economic organs full of vitality.

But, whereas in the case of the railroads, this result has been obtained by the exclusive solicitude of all the interested parties, and by the great sacrifices that the country has submitted to in order to create at short notice, a powerful system of railroads ; the water routes have obtained their success only by a constant fight against numerous impeding circumstances. It is proper to expect that the capacity, and, therefore, the use, of the water routes will increase as fast as the regulating works shall remove the present obstacles to navigation, and as fast as new artificial water ways and canals are established to complete routes that are now disconnected, owing to natural conformations of the country. Now that our railroad system is completed, public attention will have to turn to the water routes, doubly necessary in a country where bulky freight predominates.

The simple fact that a certain line of traffic has two routes at its disposal, is not sufficient to bring about a competition that will terminate in reduced rates. When both the railroad and the river route are in exceptional condi-



tions, the struggle to get traffic may cause the two enterprises to come to an understanding in view of maintaining rates equally high on both routes. This is an unwholesome state of things, prejudicial to the economic life of the country, which is in contradiction with the principle—the motives of which it is needless to expound—that the water route which, by its nature, can consent to lower rates, should exert a pressure on the railroad rates.

Competition can bring about lower rates only if the parties compete more energetically to draw away the traffic from each other, which can usually be done by means of special measures relative to rates. In all cases State railroads are more disposed and more able to reduce rates than private companies, and are much more to be feared by the navigation companies as rivals. Of course rate war has limits. On the one hand it must be considered that the State railroads are not only economic institutions, but are also financial institutions, whose profits are closely connected with the revenue. On the other hand the navigation companies, which are in competition, serve not only the private interests of their owners and stockholders, but also serve the needs of the economic life of the country. It would be a great mistake to invoke the economic role of the State railroads to the point of compromising their revenue; but it would be no less irrational to carry the struggle to the point of endangering the prosperity, or even the existence, of the navigation companies.

The rail and water routes are called to complete each other; their common calling consists in serving to the best advantage the interest of traffic. This determines the object of their competition; and if it is a question of deciding the time and the limits claimed by the interests of traffic for reductions of rates, one must never look from an exclusive point creating an unreasoned contrast between the two routes; one must always consider the general economic effect that the harmonious working of the two is called on to produce.







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