

\$50,000,000 PLAN TO HARNESS WATER POWER

Vast Conservation Project With State Ownership to Be Voted On by New York

The question of harnessing the State's water supply for power purposes is definitely before the New York Legislature through the investigation now being carried on by a joint committee which has been holding sessions for three months. The plan before the committee is that of building several great dams to store water in the flood season and let it off gradually in the dry season, thus equalizing the flow and insuring to factories and power development plants a steady supply of power throughout the year.

During the dry season now many plants are forced to shut down. During the flood season thousands of potential horsepower rush through the waterways and over the falls, hopelessly beyond capture. It is estimated that a million potential horsepower that now goes to waste in this way could be tied up and reserved for use in non-rainy days by the building

of these dams, with an initial cost to the State of \$50,000,000.

The plan provides for State ownership, operation and control of these dams and for the reimbursement of the State for their cost by a charge of at least 5¢ a horse power for the excess of power generated in plants over that which is normally generated under the conditions of unequal flow. The average cost of steam developed power is estimated as \$15 a horse power.

It is estimated that with interest charges and cost of operation deducted the net return to the State would be \$1,400,000 annually if the project were put through, thus more than paying for the initial expenditure at the end of twenty years, when another expenditure will be required.

The legal difficulties are many, owing to the lack of determination of the status of water rights in the State and previous

absence of efforts of the State to retain control of its natural resources in water rights and secure adequate return for their use by private concerns. The engineering problems, however, have been thoroughly investigated and a complete plan has been drawn by the Conservation Commission, formerly the State Water Supply Commission.

It is the opinion of the commission experts and their engineers that New York State, with the possible exception of California, possesses the richest possibilities for the development of water power of any State in the Union. It has an immense rainfall, especially in its high parts, in the Adirondacks, where in winter the snows are tremendous. One half of a rainfall soaks into the ground and the other half runs off into the streams to the sea. Already New York leads in developed water power with 80,000 horsepower, California ranking next with

about 100,000. Of this supply the greatest force comes from Niagara, where 200,000 horse-power is developed, and from the waters of the upper Hudson, where 131,000 is being utilized. The State has potentialities, say the engineers, for increasing this power to a total of between 2,000,000 and 2,500,000, this not including the unlimited power possible from Niagara, the use of which is confined to a very small portion, 25,000 cubic feet a second, by low. Three-quarters of this allowance is now in use.

The enormous increase in wealth and comfort in the State that this means is indicated by the fact that 22,000 horsepower in Utah supports 80,000 persons. The surface water supply of the State is second in value only to the land itself. Water power is the only natural resource the State has in not sufficient to operate its existing iron mines, to say nothing of mining the whole of the iron deposit, which is estimated at 200,000,000 tons. And the engineers point out the necessity of the State guarding its natural resources in water at this time, when it is possible, and not leaving it to years to come, when the world's coal supply will be rapidly approaching exhaustion.

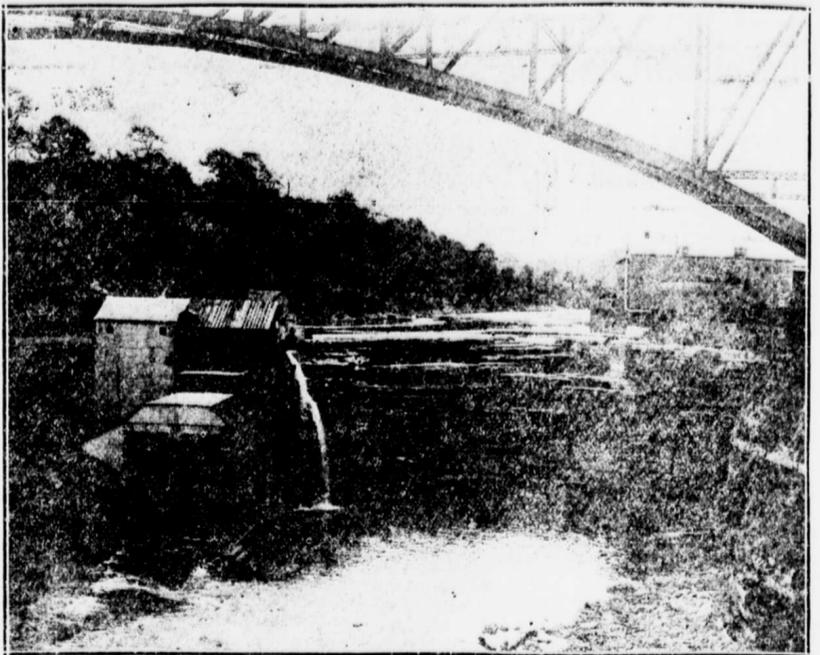
The extremes of the flow are startling. The Hudson has a maximum daily discharge which is 100 times greater than the least daily flow. The Genesee, however, is the most spectacular example. Its maximum is 400 times its minimum daily flow. As an example of the value of storage of the waters in contrast with these streams, there is the flow of the Oswego River. This, which is naturally more or less regulated by the storage in the Finger Lakes, has a maximum discharge which is only about twenty times greater than its minimum. As much as three-fourths of the flow of a great many streams runs off in the floods of the spring and early summer. It is argued that the floods and the consequent damage and destruction of property could be done away with by regulation of the streams. A graphic diagram of the flow of rivers looks like an abnormally jagged mountain range in the case of the Hudson.

Of the total potential water power of the State 90 per cent. is now held in grants by private corporations. If the storage reservoir project is adopted this percentage of water rights held by the State will be increased from 10 per cent. to 25 per cent. Much of these private water rights is now lying idle. Of the present number of plants utilizing water power in the State 30 per cent. are public service corporations, the remainder being manufacturing.

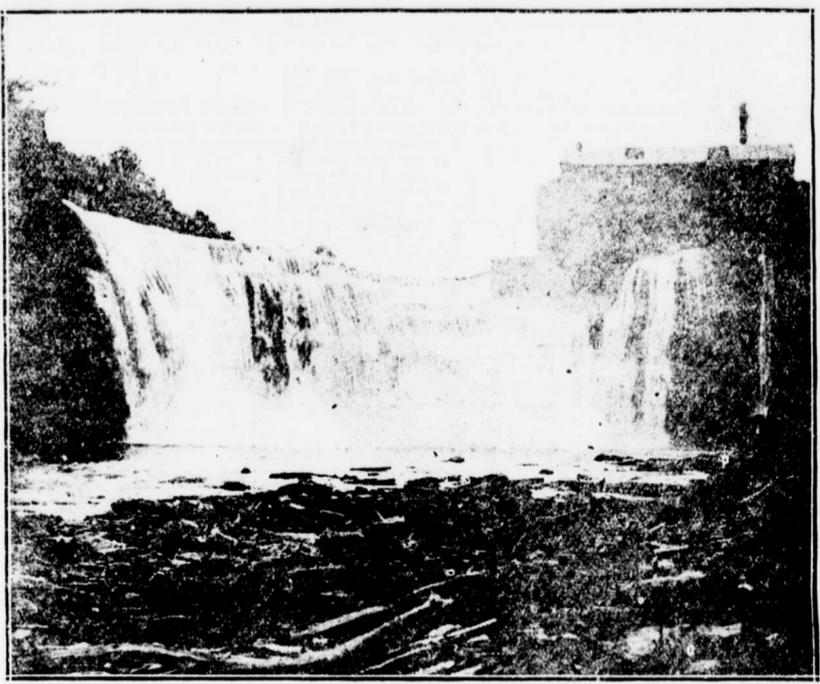
The water storage project in the main contemplates the regulation of these watersheds, the upper Hudson, the Genesee, the St. Lawrence system, including the Raquette and Black rivers, the Oswego, Niagara and the Delaware and Susquehanna.

In the regulation of the waters of the upper Hudson a reservoir twenty miles long and forty-two square miles in area, on the Sacandaga River, a branch of the Hudson at or near Conningville, is proposed as the chief means of water control. It would cost about \$5,000,000. It would have a capacity of about 20,000,000,000 cubic feet of water. By the fall at the foot of this dam there would be created a 30,000-horse-power development, and the release of stored water from it would increase the present power along the Hudson in the principal power districts by about 50,000 horse-power. Twenty-five other sites for possible dams of much smaller capacities are mentioned for the upper Hudson and its tributaries. It is said that the power developed from the increase in this system could be carried down to New York city if there were a surplus beyond local use.

The other large reservoir, with its dam near Portage, N. Y., would be that to control the Genesee. It would be about fifteen miles long and over a mile wide, with a capacity of 18,000,000,000 cubic feet. The most likely outlet for the power gen-



GENESEE RIVER AT ROCHESTER, N. Y. LOW WATER SEASON FLOW.



GENESEE RIVER AT ROCHESTER, N. Y. FLOW AT HIGH WATER SEASON AT SAME PLACE AS IN PICTURE ABOVE.



HUDSON RIVER AT BAKERS FALLS, DRY SEASON AND LOW WATER.



HUDSON RIVER AT BAKERS FALLS, SHOWING FLOOD SEASON FLOW AT SAME PLACE AS IN PICTURE ABOVE.

THE ELEVEN RULE IN AUCTION

THE WISDOM OF USE HAS OFTEN BEEN DISCUSSED.

Question Whether It Doesn't Help the Adversary Too Much Some Illustrative Hands Where Its Use Proved of Great Value—One Curious Play.

There has always been more or less difference of opinion as to the value of the eleven rule in a game like auction, where there is an exposed hand. When bridge first came out Fisher Ames, who used to write controversial articles on whist, took the ground that the eleven rule was of more value to the dealer than to his adversaries, because he could take full advantage of it in his defensive second hand play.

But as the eleven rule is based on the lead of the fourth best card, this argument is equally true of any of the conventional leads. The dealer knows that the 10 is led from K J 10 and can place the A and Q. He knows that in a trump suit the K is led only from three honors, K Q J or K Q 10, so he can place the A J or the A 10 if a small card follows the king lead. The same is true of every conventional high card lead.

It all comes down to the old story, the adversaries giving each other information in a language that is perfectly understood by the dealer; to which there is always the old answer, that if the adversaries did not give each other any such information they would both be completely in the dark, while the dealer would always know that what was not in his own hand or the dummy's was against him. Many widely varying and inaccurate accounts have been written about the origin of the eleven rule, and various persons have been put forward as its inventor. As the facts are frequently asked for and as there is no convention so often referred to at the card table as this eleven rule, it may not be out of place to give its history here.

In the early '80s a little whist coterie met at one another's houses in Baltimore to study the scientific aspects of the game. One of these was E. C. Howell, now widely known as the inventor of the Howell Pairs System, used at all the big tournaments. Another was Thomas Whelan, who has since played on many a championship team in the matches for the A. W. L. trophies. A third was R. F. Foster, a writer on cards. And the fourth man in the rubber was usually one of

three doctors, Wanstall, Conlin or Walls. These players were so impressed by the value of Whelan's technical knowledge of the leads and second hand plays that they all fell to studying them. Howell spent a great deal of time in trying out inferences, to see how many cards could be placed for the last five tricks, a system which was afterward adopted by the American Whist Club of Boston as a training exercise for their players and which was a large factor in their success in winning matches against all comers.

Foster turned his attention to the small card leads and the inferences from them, and upon the wall of his room was hung a long strip of paper upon which was pasted all the combinations of cards that could be held against a player who led any card that was not one of the regular high card combinations.

As all the high card leads were started with the A K Q J or 10, any smaller card followed Drayson's rule of the penultimate or ante-penultimate, afterward christened by Trist "the fourth best." The first inference from this invariable lead of the fourth best was that the dealer always indicated exactly four in suit in the leader's hand and no combination from which a high card would be led. Higher cards limited the number led in less degree, but it was when the intermediate cards were reached that the eleven rule developed, and many authorities to-day advise one not to bother with it on any card below a seven.

When the higher cards that must be out against the leader were posted on the wall opposite the leads of such cards as the 7, 8 and 9, the high cards in the leader's hand were limited, or they would come under the regular high card leads. For instance, here are a few of the suits from which the eight would invariably be led as a fourth best by any good player:

- 8 led from Q J 8 4, leaves A K 10,
- 8 led from K J 8 5, leaves A Q 10,
- 8 led from A J 8 6, leaves K Q 10,
- 8 led from A 10 8 3, leaves K Q J,
- 8 led from K 10 8 2, leaves A Q J,
- 8 led from Q 10 8 5, leaves A K J.

This process was worked out for every possible lead of a 7, 6 and 5, and the thing that immediately impressed Foster was that the number of cards higher than the one led, not in the leader's hand, was always the same.

When an 8 was led there were always three higher cards against the leader; when a 7 was led there were always four, and when a 6 was led, always five. In other words the difference between the

number of spots on the card led and the number of cards higher than the one led, which were not in the leader's hand, was always the difference between the number of spots on the card led and 11.

The reason that this must be invariably true can be proved by assuming that there are no high card leads and that the fourth best must be led from all suits. If we number the cards on up beyond the 10 we get 11 for the jack, 12 for the queen, 13 for the king and 14 for the ace, in this order:

14 13 12 11 10 9 8 7 6 5 4 3 2

Card A K Q J 10 9 8 7 6 5 4 3 2

If the leader held all the highest cards in the suit and led his fourth best it would be the jack, or No. 11, and as 11 from 11 leaves nothing, there are no higher cards than the jack out against him. Take away any two of the honors and his fourth best will be the 9, which from 11 leaves 2, the number of the honors you have taken away, and so on for as many cards as you like to take from the leader's hand.

From this was evolved the rule, "If the spots on the card led are deducted from eleven it will always show how many cards higher than the one led are out against the leader."

Strange to say, Howell, even with his keen mathematical mind, did not appreciate this rule when it was first shown him, because there was no means of telling what the cards were. A seven being led, the four higher cards might be any one of the combinations, taken four at a time, of the seven cards higher than

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the seven, which are thirty-five in number. Howell thought that was too vague to be of any practical use.

In 1889 Foster taught this rule to his classes in New York city and it may be interesting to note that the first persons to whom the eleven rule was explained after Howell turned it down were Mrs. Arthur Dodge, Mrs. Forbes-Leith, now Lady Leith, Mrs. W. E. Dodge, Jr., Miss J. W. Parish and Mrs. Thomas Sturgis.

When the rule was explained to Cavendish, card editor of the London Field, he saw its value at once and when it was finally given to the public in "Foster's Whist Manual," in 1890 it was adopted by what players all over the world and is now given in every text book on whist, bridge or auction, as one of the standard conventions of the game.

As an illustration of how the eleven rule works in practice, take this hand:

♠	A K 7 5 2				
♥	K 10 8 5				
♦	—				
♣	J 6 4 3				
♠	10 9	♣	6 4 3		
♥	7 6 2	♦	A K 8 5 2		
♠	A J 7 4	♣	10 8 5 2		
♥	6 2	♦	8 5		
♣	8	♠	8		
♥	J	♣	7 6		
♦	9 6 3	♠	10 8 5 2		
♠	A K 4 9 7	♣	8 5		

Z dealt and started with two spades to show his strength in that particular suit. Many players would have risked a no trump at once probably, as the hand is much above average, but Y went no trumps for him. B bid a diamond, which had not been familiar with the hand. Z doubled the diamond to show he had that suit stopped.

B led the five of diamonds, Z played the ten and A put the eleven rule in operation. If the 5 is B's fourth best there are exactly six cards higher than the 5 out against him. A has three of these himself, the A, J, and he sees it was more in the dummy, the Q, 9, 6. As this accounts for the rule 6-11-6, the declarer cannot beat the card led, so A passes it up, playing the four. Y discards a spade.

B continues with the 10 and it does not matter what Z does, five diamond tricks and the ace of clubs set the contract.

Had A not been familiar with the eleven rule and played the ace or even the jack on the first lead, Z must have made a trick with the queen or the 9 and Y-Z would have gone game in hearts and spades, probably shutting out the ace of clubs as well.

When the declarer is alive to the importance of this rule, his adversaries are not so naturally gets the best of it but he always play on the assumption

that they know as much as he does. Take this hand:

♠	J 8 6 3				
♥	9 8 4				
♦	9 8				
♣	10 9 3 2				
♠	Q 9 7 2	Y	♣	A 10 4	
♥	10 5 3	♠	J 2		
♦	10 4 3	A	B	♣	K J 7 6
♠	4	♣	8 7 6 5		
♣	5	♠	A Q J 7 6		
♥	A 5 3	♣	8 7 6		
♠	A K 6 5	♣	A 8 7 6		

Z dealt and bid no trumps at once. All passed, B imagining that he had a better chance to set the contract than to accomplish anything in diamonds.

A led the seven of hearts, Z figured by the eleven rule that as there were two higher than the 7, and if third hand had a smaller card he would duck the 7 unless dummy covered it, so Z put on the 8 from Y's hand, not that he can accomplish much by it, as all the hearts must make, but it is a good habit to cover this way.

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Trade in Wooden Shoes.

From Consul and Trade Reports.

Last year was unfortunate to the wooden shoe manufacturers in Holland owing to the keen competition of the Belgians and a decided overproduction here. This year's prospects are somewhat brighter.

The scarcity of willow wood, from which these shoes were formerly made, has caused the market to steady up a little. Poplar and some Russian woods are also being used more extensively than heretofore.

The cost of the wood from which the shoes are made is about \$6 per cubic meter, out of which 100 pairs of ordinary size can be made. The wholesale price of these shoes is 12 cents. One workman is able to make twelve to fifteen pairs in a day, from which it can be inferred how narrow is the margin of profit in the industry.

Relatively few wooden shoes are produced by machinery for export, but with this exception all the wooden shoes are made by hand in Holland. About twenty different tools are required in the operation. A year or so ago several German capitalists started factories in this country to make wooden shoes by machinery, but failed. Machine made shoes, it is said, are not well finished, and some handwork is always necessary to make them satisfactory.

GERMAN WOMEN IN POLITICS

Increased Activity Follows Repeal of Absurd Laws.

One of the most striking features in the development of modern Germany is the number of societies which have been organized and the conferences which are held on all subjects directly or indirectly contributing to the welfare of the nation; and it is little realized how large a share women are taking in them.

It is natural that this should be so, for every year sees an increase in the number of women who are entering the trades and professions and taking part in public life. While the employment of men has increased 20 per cent. during the last twelve years in Germany the employment of women has increased 57 per cent. in the same time.

According to the Queen, a full third of the executive labor of the German Empire is at present carried on by women. Statistics show that there are 9,500,000 wage earning women in Germany, which means that a very large proportion are contributing to the rapidly increasing wealth of the country.

The repeal of the law forbidding women to attend political meetings, or to join political societies, which had been in operation in Prussia and Bavaria, has increased the political spirit among women and has done much to advance their aims.

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After this period of the law all political societies made haste to solicit women's support and cooperation; they were nominated to responsible official posts, as members of executive committees of political associations, and they were entrusted with difficult work, while questions of special importance to women are now dealt with in speeches and important publications. It is, however, a significant fact that the majority have held aloof from men's societies, and under the leadership of brilliant women of strengthening and consolidating their own.