

NEW-YORK DAILY TRIBUNE, SUNDAY, JUNE 3, 1906.

JAP AND RUSS FLEETS COULD MANOEUVRE IN OUR NEW RESERVOIR

When New York City taps the Catskills and its aqueducts begin to drain the great reservoirs, whose sites engineers have already surveyed, it will have enough water to drink and cook with, it is said, for everybody in the whole world. It will obtain from all sources a billion gallons a day, or twice its present supply. It will accordingly be able to give two-thirds of a gallon daily to every human being. Of course, the city could not be expected to furnish water for all the needs of humanity. With this average allowance for each man, woman and child there would hardly be enough to sprinkle the streets or extinguish fires. Everybody, too, could not have a private swimming tank. But if all the world simply depended on New York for all the water it needed for sustaining life it could get along most comfortably.

In enlarging its water supply according to the plan to which it has committed itself, New York has undertaken the greatest enterprise of this character ever attempted by a municipality. In fact, it is greater than many tasks which have staggered nations. The extension of New York's water system to the Catskills is estimated to cost \$161,000,000. This is more than thirty times the cost of the Corinth Canal, an achievement which the Roman Empire under Nero undertook, but failed to accomplish, and which was not finished until about thirteen years ago. The great Suez Canal, which had balked human ambition for more than twenty centuries, cost only five-eighths of what the Catskill water scheme is figured at. And even the lock canal at Panama, it is estimated, will cost \$20,000,000 less.

How vast will be the daily supply from New York's new water sheds may be illustrated by letting the imagination turn it loose in Broadway. That not a drop might leak away, suppose that throughout was turned into a water tight trough, the pavements and fronts of the buildings facing it in coated with cement and the side streets dammed up. At the end of twenty-four hours a half billion gallons would have come down from the mountains, filling the street from Bowling Green to 180th street to the depth of twelve feet. In an hour and a half this torrent would fill to the brim every one of the 242,000 bathtubs in Manhattan and The Bronx. If all the 2,465,000 faucets in these two boroughs were turned on, each one on an average would run two hundred gallons a day, or enough to flood the floor of a 6x8 foot room six inches deep. In two hours the aqueducts would flood Madison Square Garden to the roof. And if Manhattan was walled up around its edges so that it resembled a colossal bucket they would in a year inundate the whole island to the depth of thirty-six feet.

EIGHT NEW RESERVOIRS.

Of the eight reservoirs which are to be built, seven in the Catskills and one on the other side of the Hudson River, at Kensico, one alone would be sufficient to fill the water mains of three Boston, or four Cleveland, reservoirs. This will be the Ashokan reservoir, the daily supply from which will be equal to all the seven others combined. It will be six times greater than the new Croton reservoir. It can be drained of 250,000,000 gallons a day. All eight, with a daily flow of 590,000,000 gallons, could supply the needs of Chicago, Boston and Cleveland put together. And when New York's new supply is added to its old, furnishing in all a billion gallons, it will have enough water for two Chicago, one Philadelphia and one Buffalo all united into a single city. Rome, in the Golden Age, with all its massive aqueducts, had only one-twentieth of this supply.

There are many lakes popularly regarded as of considerable size which would appear dwarfed when compared with the reservoir system of New York's new water supply. The Ashokan reservoir, for example, will hold more water than all three of the Lakes of Killarney. The Ashokan will measure twelve miles long, with an average width of one and a half miles, and will contain 170,000,000 gallons. The upper lake of Killarney is two and a half miles long and three-quarters of a mile wide; the middle lake, two miles long and one mile wide, and the lower lake, five miles long and three miles wide.

Niagara Falls Not Nearly So High as the Cataract That Will Leap Over the Mighty Spillway of Ashokan When It Is Completed by New York City.

The three lakes together have an expanse of about eighteen square miles, or only about two square miles more than the Ashokan will have; but they contain so many islands that they hold only about three-quarters the amount of water that will be impounded in the Ashokan. Greenwood Lake, with which most New Yorkers are familiar, is smaller than the Ashokan will be. It is two miles shorter and half a mile narrower.

If the Ashokan reservoir were situated in Manhattan it would occupy all of the island south of 110th street. It would completely cover any one of such cities as Columbus, Ohio; Council Bluffs, Iowa; Houston, Tex., or Memphis. All eight reservoirs, if combined, would have a total area of twenty-seven square miles, and would entirely swamp Kansas City, Mo. If the contents of all eight reservoirs were poured into Manhattan and no drop permitted to run off the island, everybody would be drowned who lived lower than on the sixth floor. The water would rise in the streets to a height of fifty-five feet. If both the old and the new supplies flooded Manhattan, the waters from the Catskills mingling with the waters from the Croton Valley and from all of Brooklyn's, Queens's and Richmond's sources of supply, all buildings less than 110 feet high would be submerged. Supposing that the whole city were flat and that all the people in it were walking in the streets when New York's entire water supply deluged the town, every inhabitant would be drowned. The water would cover all the five boroughs eight feet deep.

Ashokan reservoir will be so large that the Battle of Japan could be refought upon it. The fleets of both the Japanese and the Russians being able to manoeuvre without striking the

shores. In no place will it be less than forty feet deep or narrower than a mile. Near the dam it will be 250 feet deep, so that, if such buildings as the Waldorf-Astoria, the Hotel Netherland or Wanamaker's new annex, were dumped in there they would be completely submerged. Were the 250-foot high Flatiron Building stuck down in this part of the reservoir, all that would remain above water would be the upper three stories.

RELATIVE SIZES.

The area and total capacity of the eight dams, showing their relative sizes, are given in the following table:

Dam	Area, Acres	Capacity, Gallons
Ashokan	14,124	170,000,000
Kensico	2,700	40,000,000
Flatiron	1,700	12,250,000
Franklin	376	6,150,000
Tristram	320	5,510,000
Croton Hill	250	4,170,000
East Durham	240	3,660,000
Naransack	440	7,200,000
Total	16,620	257,220,000

In the length of its aqueducts the Catskill extension will surpass anything of the kind which the world has ever seen. From the Franklin, or northernmost, reservoir the water will have to travel 130 miles before it can pour out of the facets of the City Hall, and when it reaches, the washbasins of lower Staten Island, by way of pipes through Brooklyn and under the Narrows, it will have completed a journey of 150 miles—equal to a trip from Albany to New York. The furthest that Rome went for water was thirty-eight miles, when it tapped the Springs of Arno and brought a supply through the magnificent aqueduct known as the Anio Novus, many of whose gigantic arches, one hundred feet in height, still tower above the Campagna. In modern times Manchester, England, broke all

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records when it drained Lake Thirimer, ninety-six miles away. The two main links of this aqueduct system also surpass all other aqueducts in their width and depth. The first will connect the Hill View reservoir back of Yonkers, which will be used merely for storage purposes, with the Kensico reservoir, fifteen miles distant to the northward. The second will connect the Kensico reservoir with the Ashokan, which is ninety miles from the City Hall. It will be somewhat circuitous because of topographical obstacles, and about sixty-five miles in length, running up the Croton Valley for a distance, thence across the ridge northwesterly to New Hamburg, on the Hudson, thence under the Hudson through a deep tunnel, thence it will veer northwesterly to the west of Kingston, and through a broken country to Ashokan. The Lackawack and Napanock reservoirs, in the Roundout watershed to the southwest of Ashokan, will be drained into Ashokan by a smaller aqueduct, about twenty-five miles long, and the Franklin, Preston Hill, Oak Hill and East Durham reservoirs, to the north-

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Women's Lace Ankle Lisle Thiaz Hose, "Rock Dye" fast Black and tan shades, value 50c. pair **25c.**

Women's Lace Ankle Gosamer Lisle Hose, "Rock Dye" fast Black, tans, champagne and white, value 65c. pair **35c.**

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Women's Pure Thread Silk Hose, Black, all silk feet, or double soles of Sea Island Cotton, value \$1.75 and \$2.00 pair **1.15**

Men's silk embroidered Ba. briggan Half Hose, in tans, cadet and grey; also, plain black or fancy striped Lisle Thread, value 35c. pair **19c.**

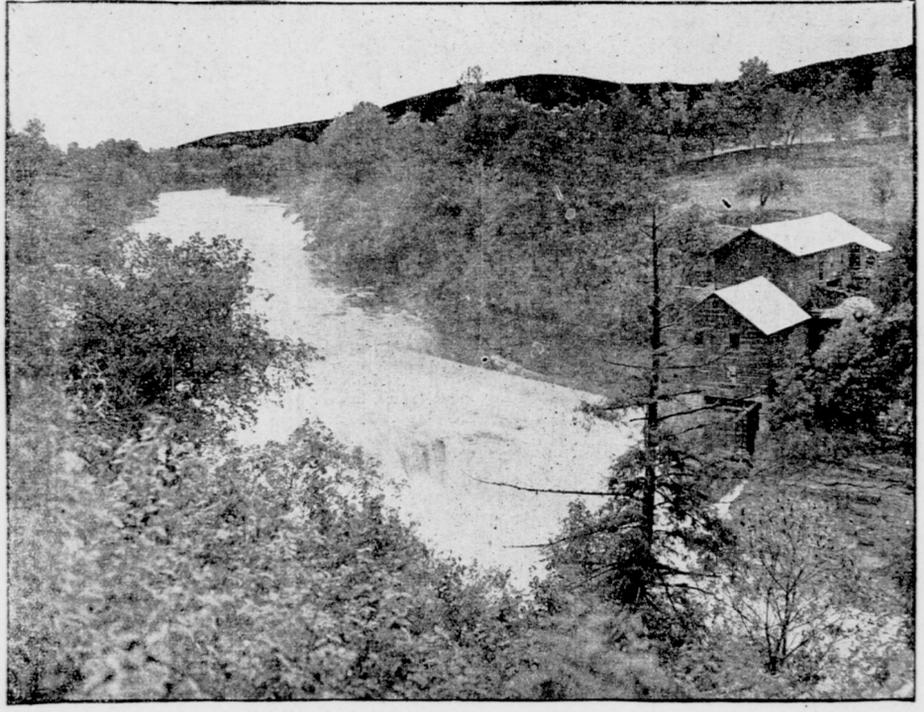
Men's fine Lisle Thread "Rock Dye" Half Hose, Black or tan shades; also silk embroidered Black Ba. briggan, value 40c. pair **25c.**

Men's Gosamer Lisle Thread Half Hose, "Rock Dye" Black or tan shades; also black, silk embroidered, value 50c. and 65c. pair **35c.**

Children's fine ribbed Cotton Hose, double knees, "Rock Dye" Black, tans or white, sizes 6 to 9 inches, value 35c. and 40c. pair **25c.**

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VALLEY OF THE ESOPUS AT BISHOP'S FALLS, JUST ABOVE PROPOSED DAM SITE AT OLIVE BRIDGE. The waters of the reservoir will rise above the tops of all the trees shown in this photograph, and will be confined only by the hills in the background.

A COLLEGE FOR THE TRAINING OF PEOPLE WHO ARE ABOUT TO MARRY.

A news editor dozed at his desk when a cable message from London was brought bearing the date of May 23 last, by a messenger. It read: "Bishop of Ripon, speaking at public meeting, advocates a school of matrimony. Regrets that while there is training for law and medicine, fiddling and football, no course of study is provided for engaged couples who face the serious responsibilities of the married state. Besides a matrimony school, he says there ought to be a home of rest for the newly wed."

"Beautifully located on the slope of a flowery valley overlooking the majestic Hudson, the University of Marriage opened its school year to-day with 1,200 attached youths and maidens holding hands on the campus and singing, 'I don't know why I like you, honey, but I do.' The young women wore tissue paper orange blossoms and tulle veils, while the youths tried not to perspire in black frock coats and high hats. The deans, professors and tutors, who are of both sexes, were dressed to resemble clergy at the altar, best men, bridesmaids and schatchens. Post-graduate couples marched three times around the campus, carrying shaves of grocery bills and wads of theatre tickets as symbolical bones of contention. Widows, acting as mothers-in-law, tried vainly to effect a reconciliation, and it was not until the president of the institution handed out sachetfuls of stage greenbacks that the post-grads fell on each other's necks amid the applause of the freshmen. Then to the strains of the wedding march from 'Lohengrin' all couples hurried through a colossal wedding ring, deftly avoiding the inset thorns and a concealed pit just beyond. A spinster who stumbled was caught up by an aged grass widower, which was regarded as a happy omen, but she said she came to be educated, not to be imposed upon. It is thought she prefers the sole bachelor matriculate.

"The ordinary course of study covers six months, but there is no handicap for bright scholars, and some obtain diplomas in six weeks' time. The classical course includes the following subjects: Historical—Orta's 'Art of Love,' 'Romeo and Juliet,' Rousseau and E. P. Dow. Mathematics—Age of Eve's descendants and link on the pocketbook. Chemistry—Mrs. Bonar on ties. How to collect a husband's life insurance. Physics—bleaches and hair dyes. Economics—The cash value of wedding presents. Allometry—'Does He Love Me for Myself?' 'Is She True?' Metaphysics—'When and how to weep. Profanity versus the handkerchief. Applied courtship—fly demonstration. 'A fine collection of books, charts and appliances is at the disposal of the students. All benches, paths, tennis courts and the like are made to accommodate just two persons. The great laboratory of applied science has glass inclosed compartments in which various problems of matrimony are presented experimentally and results noted with the exactitude of Atwater machines for ascertaining food and air consumption of a solitary human being. One set of compartments is a model of a city flat, with microscopic bedrooms, a hall so narrow as to require Indian file progress and steam radiators that chill the fingers. The furniture folds or unfolds from a sofa to a bed and a bookcase, the books being receptacles for napkins and groceries. The gilt, spindle-legged parlor chairs are arranged to collapse under an underbrush of Japanese screens cally clutches at an underbrush of Japanese screens, and bamboo portières, and is thereupon overwhelmed by an avalanche of wall chromos and manted bric-a-brac. This feature always amuses. 'Bells ring and speaking tubes shriek at frequent intervals in this model flat. Just as the bride is trying to pry up a burning omelet in the kitchen the postman rings, whistles and shouts in the hall below. 'George doesn't care for omelet,' says the bride, returning from the postman, and puts on a mutton chop. Then the ice man rings and the grocer yodies in the basement. The bride returns to find the coffee boiled over. The chop has shrunk so that she decides to give George a vegetarian breakfast. She begins to make toast, when the janitor roars up the dumbwaiter shaft. He insolently inquires why the orange peel and the old newspapers are not tied in separate packages.

The Bishop of Ripon, England, said recently there ought to be such an institution—he evidently had not heard of the one on the Hudson. George rushes in, sees the breakfast ruins in the kitchen, says he would rather have a cocktail and goes to business without kissing. Bride weeps. 'This is an object lesson in the misfortunes of the uneducated. It is all the worse where there is a servant girl. But the educated bride fakes up a breakfast without difficulty, discards the postman, replies to the janitor in a way that forever silences him, and bills and coos about George so that he asks which theatre she would prefer. Of course it is not strictly scientific to broach amusements or hats around breakfast time, after dinner, with a good clear in his teeth, man is apt to be less mean and stingy. 'A cardinal principle,' said Dean Link, 'is inculcated for both brides and bridegrooms—concede all the little points and you can gain the big ones. Verbal bouquets cost nothing, and kisses do not appreciably wear out the lips. If your partner is jealous, make believe that you are a perfect Othello. If your husband thinks he has brains, ask him to get a haircut that will reveal his beautiful forehead. Too much confidence destroys respect and lessens interest. Marriage is, after all, a copartnership instead of a merger, and there are bound to be differences of interests and points of view. A little honest deception on both sides is a wonderful aid to happiness. Is it possible that couples who have lived together fifty years without exchanging a harsh word are telling the truth? No, but they have learned the beautiful secret of bliss. They have hung garlands of amiable fancy over the rugged peaks of experience. 'It is recognized that young men, except those blessed with sisters, are deficient in knowledge of the most elementary feminine matters. They have no idea of shades, confuse points d'Alencon with openwork stockings and think that corage is the same as colture. The language of flowers is unknown to them, so that when they want to present a bouquet they sneakingly ask the advice of the florist. They have to ask the candy man about a box of chocolates and the jeweller about rings. These tradesmen, especially the jeweller, make important inquiries—how old is she, what color of hair, condition of teeth, and whether you want to spell the name Charles or Charles. Instruction is given in all such matters. A speaking knowledge of at least three colors—lavender, magenta and

ward, will be linked together and made to contribute their waters into the Ashokan by means of a smaller aqueduct, about forty miles in length. MIGHTY AQUEDUCT. Some idea of the vast size of the largest sections of the aqueduct system can be obtained from the fact that two trolley coaches could meet and pass at any point in them, with a clearance of three feet between. In the smaller sections the largest automobile truck made could travel with plenty of room on either side. The largest links of the aqueduct system will be about fifteen feet wide and eighteen feet high. The new Croton aqueduct is 13.5 feet wide and 12.6 feet high. The former will have a capacity of 500,000,000 gallons a day. The latter disposes daily of 318,000,000 gallons. The great dam of the Ashokan reservoir, which is to be built of earth at Bishop's Falls, according to the plan which the engineers most favor, will far surpass in size any dam in existence. It will consist of a main buttress, together with a series of dykes which will stretch three miles across the valley, and be so wide on top that eight wagons could be driven abreast on it. From one edge to the other it will measure fifty

feet. At the bottom it will have a maximum width of half a mile. Its height will be about three hundred feet. Were this vast mass of earth, rock and cement laid down crosswise on Manhattan so that its southern edge ran along 23d street, it would cover all the ground as far north as 33d street and reach clear across the island and the Hudson River besides. It would tower above all the buildings of this part of the city, with the exception of Madison Square Garden, whose tower would reach only thirty-two feet above it. It will exceed the height of the new Croton dam, which is the highest masonry dam in the world, about nine feet; and it will be just about twice as long as the Tansa dam of India, which at the present time is the longest masonry dam in existence. The largest earth dams of the present time fall far short of the proposed one for the Ashokan reservoir in every particular. The spillway of the Bishop's Falls dam will resemble Niagara. It will be a waterfall one thousand feet long and three hundred feet high, and in times of heavy rainfall the water will pour over this part of the dam to the depth of six feet. At Niagara the water drops over the brink from an average height of 158 feet.