

The World's Biggest Reservoir

IN THE SALT RIVER VALLEY.

Special Correspondence.
ST. LOUIS, June 8.—"A dam is being built." The mind, (that is the mind of any one not a civil engineer), at once reverts to some stick and mud dam of its youth that a wonderful river into a limitless ocean, capable of holding at least two ships made of shingles, with the water so deep that the trousers had to be rolled up to the knees of the daring mariner in preventing shipwrecks and collisions, while the dragged dampness of the petticoats similarly engaged legitimately earned for their wearer a well merited spanking.
 What survivor of normal childhood does not have such a memory, snuggled tenderly away, to suggest to his mind that when a dam is being built it is being built?
 In constructing a huge masonry dam, as in all other great civil engineering feats, a vast amount of preliminary work must be done before a single rock can be laid in its bed of Portland cement mortar.
 The government has been actively engaged in "building a dam" at Tonto Basin, 43 miles northeast of Mesa, Arizona, for a year. This is the first work started under the act of congress appropriating \$15,000,000 for the reclamation of arid lands.
 This dam will represent the greatest water storage enterprise in the world as it will produce the largest artificial body of water ever known. Although the Nile reservoir covers a larger area it is only a few feet deep, while the Tonto will be, in places, over 200 feet in depth.
 There are complete relief maps and maps of this great enterprise in the north corner of the government building, at the world's fair. The city of Mesa and the surrounding ranches, with the canal and irrigating ditches, are spread out before the eye in detail. The advantage of this dam to the agricultural interests of that community can be seen at a glance. These relief maps and models are constantly surrounded by an interested crowd.
 The undertaking found its inception in the work of an old blue mare who held an unvarying record of six miles an hour. In 1889 the board of supervisors of Maricopa county, which embraces the wonderfully fertile fields of Salt River valley, voted an appropriation to promote water storage interests. They sent John R. Norton, a practical ranchman and a man of considerable business ability, since a major of rough rider fame, to explore for a reservoir site. They took with them a surveyor, astride of an old blue

mare which could be relied on to travel exactly six miles an hour. Her work was quite accurate enough, to suit the surveyor, and with her aid, the present site was measured and surveyed.
 Since then the flow of the river has been measured, and data gathered that proved, when the appropriation was made, that at Tonto was the best place to make the initial experiment under the act.
 The flow of the river is so variable that it can not be depended on to irrigate the amount of land in the valley, susceptible to cultivation, without water storage.
 While the government is advancing the money to build the dam it will ultimately be repaid by the landowners, who have signed contracts to that effect. Nearly \$1,000,000 has been spent on the preliminary work, if, as is estimated, an additional \$2,000,000 is required for building the dam, this will scarcely be more than \$15 an acre, to be paid in ten yearly installments after the completion of the dam.
 The storage of water will keep pace with the construction so that the great benefits from it will be immediately realized.
 The reservoir will be 30 miles long, 18 miles up Salt River and 12 miles up the Tonto, and four miles wide. It will drain an area of 6,000 square miles of mountains, mainly covered with dense forests.
 The dam site is 600 yards below the mouth of the canyon, outlet at the junction of the rivers. The dam will be built with a crown pointed upstream. It will be 270 feet high, and 225 feet through at the base, tapering to a 16 foot roadway at the top, over which will pass a U. S. mail highway. At the dam site the canyon is only 200 feet wide at the base, and 400 feet where the top of the dam will reach.
 The dam will be built of rocks weighing up to 12 tons, full mortar laid, in Portland cement mortar, and water light. The bed rock strata, upstream, making sliding impossible, while the dam will be on so massive a scale that it will become a veritable scale of the towering mountains that surround the reservoir site, and enduring against any pressure the elements could ever bring against it.
 What will ultimately be the bottom of the reservoir is now studied with beautiful ranches whose purchase was one of the first moves made by the Water Users' association, which, through Frank P. Parker, secretary, is attending to the local business. Their purchase was a matter requiring great diplomacy and was accomplished by Charles P. Mullin before their owners suspected for what they were intended. As Mr. Mullin has large cattle and



SALT RIVER CANYON ABOVE WHICH THE GREAT DAM WILL BE BUILT.

landed interests in the vicinity his purchases aroused no suspicion, otherwise a prohibitory value might have been placed on hand and complications resulted.
 Actual construction on the dam will be in the early summer. The preliminary work included saw mills, that are now running uncovered, an electric plant and a cement mill that are on the ground ready to be installed, a power canal 15 miles long, 100 miles of difficult mountain roads, telephone lines, piping water three miles for domestic purposes, a cable car line, derricks, blacksmith shops, and many minor industries. A stone quarry has been opened, and lime and brick are being burnt. All material for making first class Portland cement is found within seven miles of the dam site. The line of work extends for 35 miles,

from a point 25 miles east of Mesa to the saw mill sites in the heart of the Sierra Ancha—meaning mountains big. Camps have been established all along this line and the domestic problems are scarcely second in difficulty to those of the engineer and mechanic.
 The supplies for the big camps, near the dam site, are handled from a little commissary tent on the hillside. The commissary clerk leads a busy and exciting life, rushing out doors every few minutes to preserve his life from the rocks from the blasting above, listening to the complaints of the men in charge of the various camps, and herding his gad-a-bout cat home between times. Government supplies plenty but its distribution is sometimes erratic and often slow in coming.
 J. M. Fitzgerald has charge of the wagon road construction in the steep,

narrow canyon below the dam site, where the road building costs \$10,000 a mile. Jack would be an amiable and charming gentleman if his Kentucky temper were not kept in a state of volcanic eruption by the commissary department. He makes periodical visits to the little commissary tent on the hillside and interviews the commissary clerk, while he converses in a voice that bursts the sides of the tent and starts the rocks rolling down the hillside.
 "No, I don't sign for sweet potatoes; my men haven't had anything to eat but sweet potatoes and forequarters for two weeks. Where's those pick huns-

dies? What's the use of sending down picks without handles? Where's that powder? How long do you think a thousand feet runs last? When we use 400 feet a day? And I ordered it five days ago; my men are standing around idle with nothing to work with; the cook's got to have flour before another day and we've no sugar, no butter, no anything. Where's that canvas I ordered to put another flap on that tent? If my men don't have coffee to drink in the morning there's going to be a mutiny. How long do you think a pound of butter lasts 40 men? Don't you show any common sense on me. You fed 'em on us six days for 10 days. If you don't get some ham from headquarters I'll—"
 What he will do will never be known as delivering his speech without punctuation marks exhausts his breath and chance to slip out and immediately hard in the commissary out.
 The managers of the camp are commissary placed men and send at their orders for food supplies, tools, powder and tools in plenty of time, then wait, while the head of the commissary at headquarters, it's down at his table and deliver such a lecture as men should eat, in so many hours, if they use so many feet of fuse, to let off so many pounds of blasting powder, in building so many miles of road, with so many tools, less than a dozen, and so many hours, in a manner that will make his own reports to Washington show the economical footings that will make a fine record for himself and advance him in the civil service.
 Two or three big orders will disorganize the commissary system and a gang of men industrious enough to use up a few extra pounds of powder will endanger the commissary's chances for a promotion in salary.
 The first postoffice to be named Roosevelt, after the chief executive, has been established near the dam site. From there a stage line connects with a branch road leading to the Southern Pacific, the road that burns oil instead of coal, and sprinkles its road bed with oil, this doing away with smoke, cinders and dust, making travel to that country ideal.
 The cities of Mesa, Tempe and Phoenix have voted bonds to construct a wagon road from Mesa to the dam site. When it is completed freight will go over it direct from Mesa to the work.
 Arthur Powell Davis is head of the western branch of the reclamation service.
 Louis C. Hill, formerly of the Golden School of Mines, near Denver, has general supervision over the entire work.
 C. R. Olbery has been in charge of the field work since the government took hold of it. He has prepared most

of the computations and detailed designing for the dam.
 Civil engineers present a somewhat picturesque appearance when their picturesque is not analyzed too closely. Shingle nails would be a luxury as the majority of them have their only claims to propriety on thorns while doing field work.
 Civil engineers, in this line, are divided into two distinct classes, those who wear overalls, and those who wear yellow leggings, while about their work.
 The "leggin" has rather the best of it in personal appearance, with these yellow canvas coats, blue flannel shirts to yellow leggings to the knees, tan shoes and soft felt sombreros. A dark blue or red cotton bandana adds a finishing touch to their attire, and a streak of dye, corresponding in color to the bandkerchief, adorns their throats above it.
 "The overalls" usually have the advantage in salary. It is like a West Pointer and a volunteer officer, the "yellow leggin" having worked up in the service and the "overalls" being recruited from experienced men on the outside. This attire is no expression of skill, however, as nearly all are competent men, but each clings tenaciously to his style of garb.
 Says a "leggin," it is convenient for hard riding and a protection from thorns and snake bites when on foot.
 Says an "overall," "yellow leggin" may be very stylish and all right for snake bites, but I stick to Levi Strauss, guys boot and I can't work for Uncle Sam without turning myself into a yellow-legged chicken I'll get out of the game."
 The girl, who marries a civil engineer, has a better take Punch's historical advice unless she has a philosophical self-sacrificing disposition. She will have her choice of living apart from him, when duty calls him to some unfrequented spot, or going with him into the wilderness, where his life will be scarcely less primitive than that of the savage.
 A girl, who was engaged to a civil engineer, was making brilliant plans for the future.
 "There is no use of you making any such fine plans," said the young man, "if you marry me you are more likely to sleep on the ground, with your head under a cactus bush."
 At the present moment she is following him through the wilds of Arizona, literally sleeping on the promised bed, with its canopy of cactus.

REAL ESTATE MEN wanting deeds, contracts, agreements or other legal blanks, will find the latest forms at the Deseret News Book store.

Rise of Mark Hanna's Successor.

THIS is the day of the young man. George B. Cortelyou is about to step into the shoes worn by Edwin D. Morgan, Zach Chandler, B. F. Jones, Morgan Stanley Quay and Marcus A. Hanna. With the exception of Thomas H. Carter, who was 38 when chairman, he is the youngest man to become chairman of a national committee and the manager of a national campaign.
 Cortelyou is in his 41st year. William F. Harrity was 42 when he took charge of the last successful fight the Democrats made for the presidency in 1892. Edwin D. Morgan of New York was 43 when he managed the first of the three campaigns which he conducted for the Republican party in 1856, 1860 and 1864. All of these men had participated in political affairs as delegates to conventions, and most of them would be regarded as practical politicians.
 Mr. Cortelyou knows politics only as he has seen it from the White House. It ought to be a good school. William McKinley was one of the most astute politicians of his time. Theodore Roosevelt is commonly spoken of as no politician, but the politicians who have crossed swords with him all declare that as a politician he has few equals, only he plays the game differently from most of them.
 Mr. Cortelyou has not been the first private secretary of a president to be a cabinet minister. Daniel La-Font and John Hay have preceded him, but he is the first private secretary who rose to his present position from a subordinate government job and who is to be advanced to the eminence of titular head of his party.
 The New York Herald says that the selection of Mr. Cortelyou for the national chairmanship of the Republican party means that the president himself will have much to do with the campaign. Just as Mr. McKinley took his devoted friend and bosom companion, Mr. Hanna, for his manager, so Mr. Roosevelt takes as the man who will run his canvass one in whom he has the utmost confidence, and one whom he has tested in the most intimate ways and found not wanting.
 The day that the selection of Mr. Cortelyou was known to the public, the President said to a caller:
 "Win or lose, I have determined that my campaign shall be clean and above board. Mr. Cortelyou may not be known as a manipulator of elections, but I have to know that he is a very able politician."
 Mr. Cortelyou is a fine example of the young American who rises by the sheer force of natural ability and application. He was born in New York City and was educated in the Harvard University and in the State Normal School of Westfield, Mass. He had an inclination for music as a career, and pursued several courses in the New England Conservatory of music. He is today a very accomplished musician, but he dropped music and took up the study of stenography. This decided his career. He followed the "short-hand" route to the cabinet.
 Mr. Cortelyou entered the government service as stenographer to the auditor of the port of New York just 12 years ago. He knew his business. He never forgot a thing he heard. Once he attended some medical lectures in the New York hospital and reported them. Nearly 20 years afterward he heard the president of the United States who had been shot down in Buffalo, and, acting on things he had heard then from distinguished physicians, he decided on a course of action which won for him the highest meed of praise. Mr. Cortelyou decided everything on that dreadful day, and apparently he was the only man in the city who had not lost his head.
 When they came for the doctors, with perfect composure, Cortelyou said he, "I do not know one of you. I have sent for Mr. Milburn and will hear what he says."
 Mr. Milburn came. He said the doctors were the best in the city.
 "Well, gentlemen," said Mr. Cortelyou, "go ahead and operate."
 "Now," asked the doctors.
 "Certainly now," replied Mr. Cortelyou. "It is no better to do it at once?"
 "By all means," said the doctors, they went ahead, then and there, and performed the operation.
 Mr. Cortelyou had based his action on

the united opinion of the eminent surgeons, and he was not to be deceived, before that in cases of that kind the operation should not be delayed an unnecessary minute.
 It is this coolheadedness and attention to detail that have made Mr. Cortelyou a man to be depended upon in all emergencies. No one could have been more shocked than he to see his chief shot down before his eyes. Yet he was a man of iron. He was asked

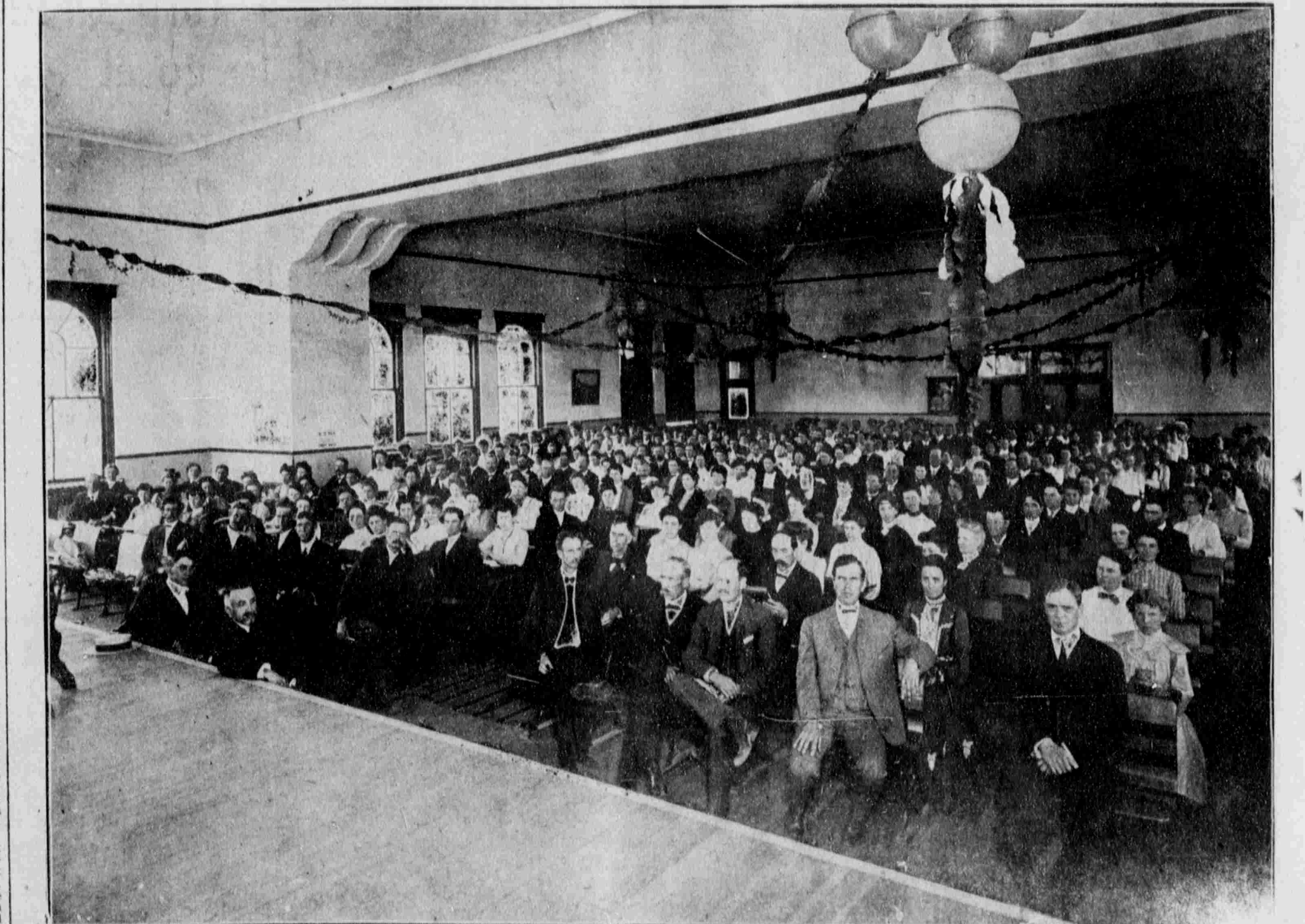
tention to detail which had marked his work in his former positions.
 The day after President Roosevelt's party was run into in Pittsfield, Mass., its members badly hurt and the president's guard, Craig, killed, Mr. Cortelyou was on duty as usual, although so badly bruised that he should have gone to the hospital for a week. But that was all in the day's work. His way of sticking to his post wins the admiration of the clan of anti-quitters. He is the

abilities. Cornelius N. Bliss of New York came to serve as treasurer of the National committee only when told that Mr. Cortelyou would be chairman.
 Mr. Cortelyou had a very fine offer to go into business a short time before President McKinley was shot. The salary was large—several times what he was receiving as secretary to the president—but he declined. When Mr. McKinley's body had been laid in the tomb in Canton, Mr. Cortelyou expressed the satisfaction he felt that he had remained at his post.
 Mr. Cortelyou is a great organizer. He works so easily and quietly that he never seems to be busy. But he

Russia's Cumbersome Bureaucracy.

AN INSIGHT into the conditions which have produced the unpreparedness that brought disaster to Russia in the early stages of the present war with Japan is afforded by a contemplation of the cumbersome system of Russian naval administration. It is a system which bears evidence on its face of abundant opportunities for corruption, misrep-

can hardly fail to produce in its operation, enough to these various bureaus to furnish soft billets to a swarm of favored ones, and it is a notorious fact that St. Petersburg and Cronstadt, not to mention other large naval stations, are now of favoritism, the favored ones being generally men who owe their lofty rank and agreeable places more to noble birth and favor with the powers that be than to sheer ability.
 The admiralty board is the most notable of the bureaus. It is composed of the general-admiral himself, the minister of marine, four full admirals, five vice-admirals or rear-admirals, and a lieutenant-general of the army. It is the duty of this board to review estimates for submission to the council of the empire, to five and change all general rules and regulations for the guidance of the rest of the naval establishment, to inspect vessels and all naval depots, and to make recommendations to the general-admiral.
 The general staff is composed of an admiral, a vice-admiral, the chief and the assistant chief of staff of the navy, a rear-admiral, 21 other naval officers and four civilians. The general staff is responsible for the efficiency of the personnel and of the fleet, originates all orders for movements of fleets or vessels in time of peace and of war, prepares mobilization plans, plans of action and campaign, annual cruising programs, and, in general, is responsible for the distribution of the vessels of the navy.
 With such divided authority and responsibility, it is not wonderful that confusion, mistakes and inefficiency have manifested themselves. Scattering of responsibilities and authorities, likewise duplication and multiplication of labor, are among the products of the Russian naval system. For example, it is not surprising that conflict exists between the Technical and the Scientific committees, which like most of the other bureaus often trench upon one another's territory. The technical committee deals with improvements in navigation, hydrography, naval tactics and many other professional details, notwithstanding the fact that there is also the hydrographic bureau which, curiously enough, includes a major-general of the army. In fact, army officers and civilians are extensively represented among all the naval bureaus.
 The Russian navy suffers from too much rank. It is a method of soft snare and excited position to people with a pull at court, with little regard for competency. While the United States navy, which is a greater one than that of Russia, has but one admiral, no vice-admirals and twenty-seven rear-admirals, the Russian navy has twenty admirals, twenty-one vice-admirals and twenty-three rear-admirals. The Russian navy has over three hundred captains and commanders, against only two hundred in the American navy.
 Officers for the line are taken from the Naval school at St. Petersburg, where the course is six years. Admission to this school is open only to sons of noblemen, of naval and military officers, and of hereditary honorary citizens. Young men are annually admitted to the school free of all charge for the education, which makes provision for poor but well-born candidates. Twenty-seven of these are educated at the expense of the government, and thirteen have scholarships.
 The enlisted force of the Russian navy is composed almost exclusively of the downtrodden moujik class or the peasantry.
 The subject lesson is now being furnished in Oriental waters of the effects of the Russian administrative system. Some valuable lessons are being taught.



SCENE IN THE UTAH UNIVERSITY SOMMER SCHOOL NOW IN SESSION IS, THIS CITY.

The Utah State Normal Institute now in session at the University of Utah, is proving itself like many similar local movements of recent years—of infinite benefit to our educational interests. The course opened brilliantly on Monday morning last and readers of the Deseret News are already cognizant of the strong lectures that were delivered by Dr. Vincent and of those that are yet in store by Miss Nowlin, Mrs. Norton and others. Dr. Vincent left an impression that will be long remembered for the good that he accomplished. He demonstrated that he was an educator of ability and a lecturer of unusual force and ease of utterance. During the afternoon of the last day that he spoke to the teachers in attendance upon the Summer School the "News" photographer was permitted to take a snapshot of the assemblage, and with the result shown in the half-tone printed above.

afterward how it was that he was able to keep his nerve.
 "There was nothing else to do," he replied. "If a man lost his head he would have been of no use."
 Mr. Cortelyou is of slight, wiry physique, which is re-enforced by an indomitable will. He has never been known to yield to fatigue. There have been many times when after he was tired out, he has forced himself to go ahead with his work four, five, six hours, always with the same close at-

head of the clan.
 Mr. Cortelyou has a clear eye, which looks at you with the steady light of a fixed star. There is not a diplomat in Washington more adroit. He could give many an ambassador points in fact. No one ever heard him boast.
 Mr. Cortelyou has the distinction of never having been a business man, but of being remarkably well equipped to handle business questions. Many of the brightest business men of the United States have a very high opinion of his

does a tremendous lot of work for all presentation and ultimate collapse, not that.

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him of subordinates. His acquaintance with true conditions is superficial and limited to what his underlings choose to allow him. As a matter of fact, the czar delegates his authority to an official, usually the grand duke, whom he appoints with the title of general-admiral. The incumbent is the Grand Duke Alexis Alexandrovich. This general-admiral is virtually the supreme commander of the navy, and there is also a minister of marine, appointed by the czar. The minister of marine may be anybody. He