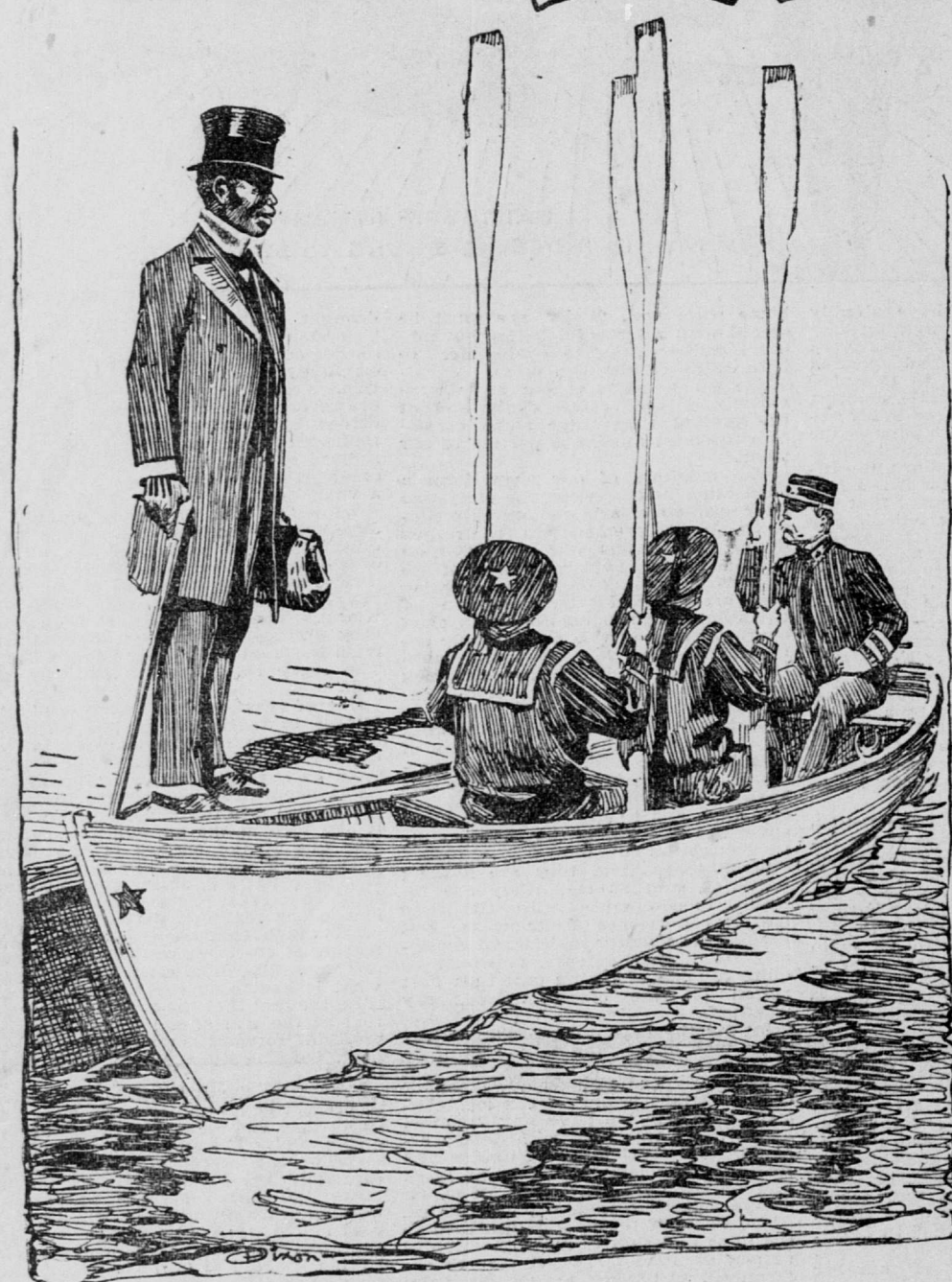
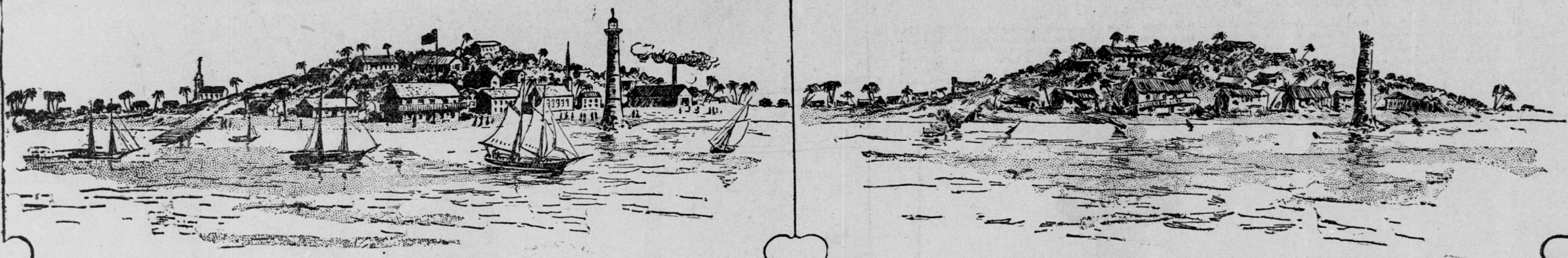


THE STORY OF LIBERIA

A Republic governed by African negroes.



REV. PAUL BUNGHALOW AS HE ARRIVED AT MONROVIA.

among the neighboring tribes of Africa, even intermarrying with them, and had adopted the old African modes of life.

"Little or no commerce was left and during my two months' stay on the Liberian coast I never saw a single trading vessel.

"Liberia has to-day become an unknown quantity.

"The people that remained had completely degenerated, were unclothed and demoralized.

"Let me tell of an individual case which came immediately under my own observation. In 1847, just about the same time that Liberia was declaring its independence, a Spanish slaver was captured near Havana by a British war vessel, and she had a cargo of three hundred slaves on board, besides the little son, aged about 12 years, of the Chief of Kabenda, a few miles north of the Congo River. The father had given this boy to a missionary, and the Spanish supercargo as payment for the lad's education and he was to be handed over to the Jesuit order for that purpose and returned to his home in Africa in ten years.

"Capture by the English gunboat, however, knocked out all these plans, and upon the arrival of the prize and her captors at Kingston, Jamaica, the boy was turned over to the London Missionary Society. They themselves undertook his education free of charge and prepared him for missionary life.

"After the young fellow, enjoying all the time the benefits of Caucasian schools at Jamaica, he was sent to England, where the finishing touches were put upon him, ending with a three years' college course at Oxford, where he left a full fledged M. A., B. A., D. D., and I don't know what besides.

"Having been ordained a priest of the Anglican Church with much ceremony, he was sent out as a missionary for his own country, where it was hoped he would accomplish great things and especially be able to convert all the slave dealers.

"In due time the Rev. Mr. Paul Bungalow, for that was his name, arrived at Sierra Leone and was met on board the mail steamer by the Right Reverend Bishop of Sierra Leone, who as a guest he remained during the two weeks he had to wait until a vessel

should leave for his part of the coast.

"I was on board the English man-of-war that took the reverend young chief to his home. During the passage of about ten days he performed most zealously the duties of chaplain on board, but the young man had been almost completely spoiled in England, and to us young fellows he appeared about as impudent and overbearing a fellow as ever you would wish to meet.

"Arriving at Kabenda he was taken ashore and with his belongings turned over to the chief, who was an entire stranger to him, his own father having died a short while after the boy was captured by the English gunboat.

"We left him there and took up our regular cruise.

"On returning after two months' absence the first canoe to come alongside with cockles and fruit for sale was paddled by our late acting chaplain.

"He had completely fallen back into the habits of his tribe. He told us his people had no use for a missionary and had advised him to take a tumble to himself and be a good African again.

"He took the advice of his people and parted his raiment among them. He had given away all his clothes and kept only a silk hat for his own wear. He made his appearance in canoe with this 'Oxford' plug hat on and a white shirt for a pair of breeches, buttoned behind, while another of his company wore only the clerical coat and an old nasal cocked hat on his head.

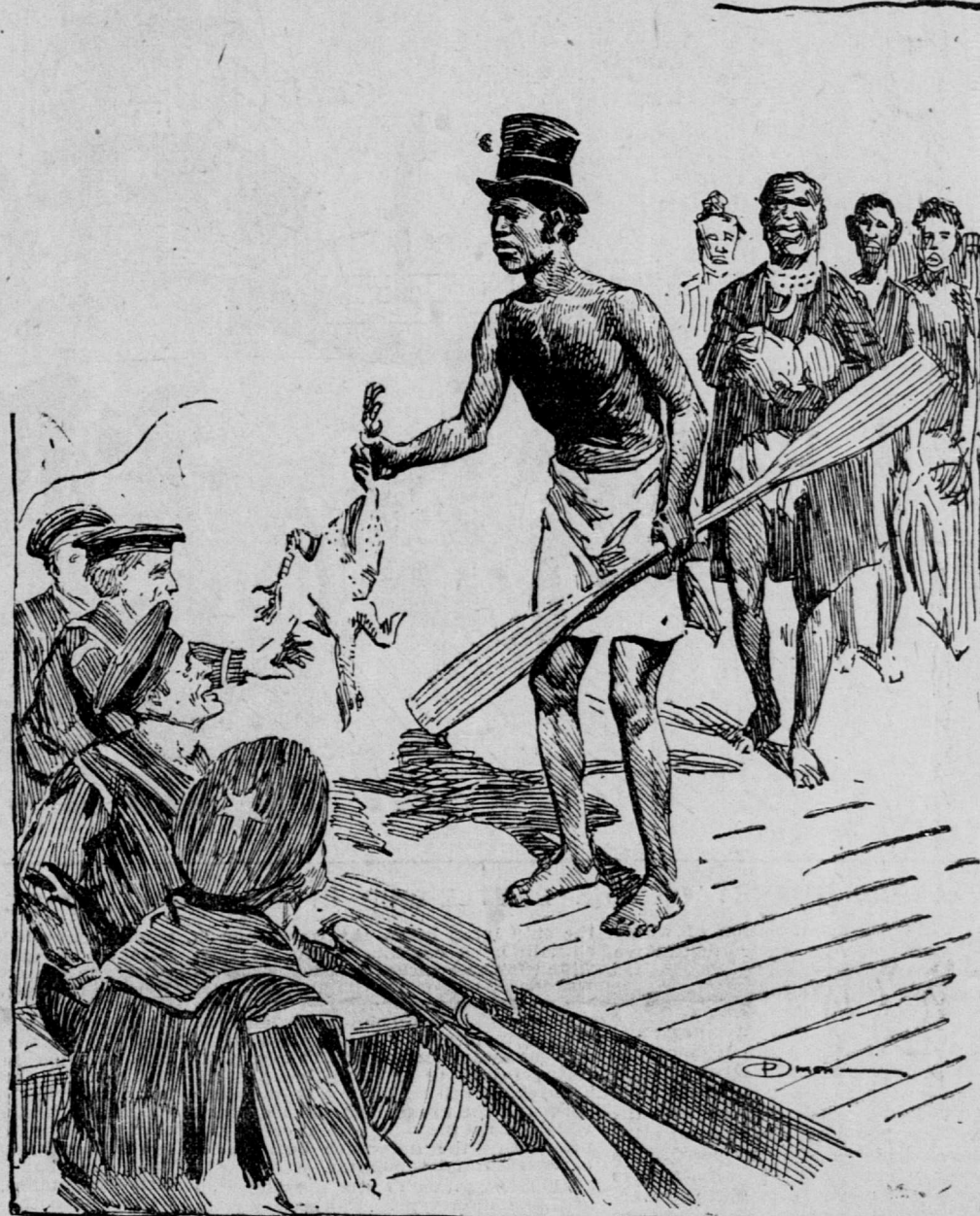
"Poor Bungalow never got anything more from his English friends, as they gave him up for a bad job.

"Once away from civilized influences and surroundings, he had quickly degenerated back to the savage state. Had he remained in Sierra Leone he would perhaps have done fairly well, but he was too young and inexperienced to be let loose all alone in this fashion.

"I know of another instance where an African had been sent from England under somewhat similar conditions, but bringing with him a highly cultured white lady (charmed with the prospects of missionary life) as his wife. In two years she saw his complete demoralization and return to complete heathenism.

"To save herself she was compelled to return to England, where she died of a broken heart. This man was also a clergyman and a graduate of Cambridge University."

RUINS OF MONROVIA TWO YEARS AFTER IT WAS FOUNDED.



REV. PAUL BUNGHALOW TWO MONTHS AFTER HIS ARRIVAL IN MONROVIA.

HIGH EXPLOSIVES.

INVENTOR EDISON

Writes About Their Terrible Use in Times of War.

SEVERAL societies in the Southern States are trying their best to start colonies of negroes in Mexico, but thus far they have not met with very flattering success.

In discussing the recent abandonment of one of the colonies the society overhauled the reports and the experiences of the men who struggled their mightiest less than fifty years ago to found a great negro republic in Liberia and gradually bring all of Africa under its influence.

The republic of Liberia on the west coast of Africa must be considered as one of the greatest philanthropic movements in the history of the world. The members of the Episcopal church, both in the United States and England, poured millions of dollars into the scheme. Negro youths of both sexes were taught trades and also the arts and sciences. Houses, stores, schools and churches were built for them. In fact, a city was brought into existence in a fertile country for their benefit. They were supplied with all needed utensils and machinery.

For a few years the projectors of the enterprise maintained a white people there to train the negroes for their new duties. During this preparatory training and building up things went splendidly.

When the day came for the negroes to assume the direction of affairs and start out as a nation the English Government loaned them \$500,000 and guaranteed independence to the new republic. It seemed as if everything must go well with the venture.

Concerning the result of the experiment after a fair trial the conservative Encyclopedia Britannica in substance says:

"The experiment can hardly be called a success. The \$500,000 England lent the republic of Liberia is still lent. Not a penny of either principal or interest has been paid. The people have not improved their conditions in the least and in many instances have returned to savagery."

Perhaps the only man in San Francisco who visited the community during its brilliant rise and pathetic lapse is Captain George Jackson. Of the details of the experiment Captain Jackson is fully conversant, for he was in the British navy at the time, and did a great deal of special work aiding the new republic.

In discussing the problem, Captain Jackson said: "To tell all about the African colony it is necessary to go back to the time when a number of people in the United States and England were interested in the humane cause of freeing the black man and giving him a chance to do something for himself. About 1817 the American Colonization Society was organized. In 1823 a tract of country in Western Africa was secured, and the first batch of colored emigrants was sent from the United States to a point near Cape Monrovia. They left America under the most favorable circumstances and auspices and with everything needful for a starting in colonial life.

"But the story of Liberia has an altogether different ending. The new colonists inhabited a country of boundless extent with a soil rich in all the most valuable productions of the country, and they could have controlled the resources of a commerce of immense value to the other nations. They had

churches and schools and the opportunities of social intercourse and the means of intellectual improvement.

"I visited Monrovia in 1857, just two years after the establishment of the republic and found the people fast retreating. Their once neat and well built homes were uncared for and fast falling into decay and ruin for the lack of care; the churches were nearly all closed and the school houses were used as barns. Many of the people had left Monrovia and had scattered away

It seems very odd to me that in all this talk of war and battles and military equipments, there should be so little said of what might be called the familiar performance of high explosives. I do not believe these prospective volunteers, who are so anx-

ious to go to war, realize the nature of the compounds which will be used for ammunition in the battles of the future. I have seen some of the compounds, very wonderful things when carefully handled. What will they do during the rush and bustle of an engagement?

Why, some of them cannot be used for practical purposes, they are so very powerful. That is one trouble in making an explosive for use in guns.

A gun is an engine, just as much as is a steam engine, and you have to work it on an economical principle. You

must save your powder just as you must save your coal in the steam engine. Hence, these gun powders are so composed that, when ignited, they will drive the bullet along the gun barrel, gaining in power as it goes, but so nicely balanced in explosive action that the small speck of powder is not utilized until the bullet has reached the muzzle and is about to leave the gun.

Thus a gun is really a heat engine. But, as I have intimated, the rending power of some of these explosives is so great that the bullet cannot, so to speak, keep ahead of it. Before the bullet reaches the muzzle of the gun the accumulated gases behind it have increased so much in volume as to overcome the lateral resistance of the barrel, and the gun bursts.

You hear people talking of the dangers arising from the handling of dynamite. I never could see that it was very dangerous to handle, in the ordinary sense of the word at least. I remember once taking a quantity of dynamite out in the woods near my iron mine up the State and trying to explode it by such means as might enter into an accident likely to occur in general handling. We did it as an object lesson to the men as much as for anything else. We burned it, threw big rocks at it and tried other ways of exploding it, but we couldn't make it go off. We use lots of it for blasting purposes, but we never have had an accident. Of course, it produces frightful effects when exploded in conjunction with some other high explosive.

Nitro-glycerine, on the other hand, is to be feared at all times. I have heard of a blacksmith who placed one drop of it on an anvil and then struck it with a hammer. It must have been a hard blow. It blew out the side of the shop and made a big hole under where the anvil had stood, and the blacksmith did not even need burial. But even this is not to be compared to iodide of nitrogen. Its explosive power is equal to 4000 feet a second. That is, if you laid a train of it 4000 feet long and exploded one end of the train, the explosion would be transmitted to the other end of the train in one second. I don't know but that under these conditions the cumulative character of the effect would cause the other end of the train to become ignited even sooner than in one second. That speed is greater than the accredited velocity of sound, which travels at the rate of 1400 feet a second.

In fact, there are explosives of such tremendous power that no one dare make but a very small quantity at a time, and I doubt if they have ever been seen outside of laboratories. I have made them, a drop at a time. But, oh, how unstable they are! Actually, I have made explosives of this nature which have gone off when I yawned at them. I simply placed a small drop on a table and shouted at it. It exploded instantly. You see, the thing is in a state of very delicate equilibrium. It is a question depending on surrounding conditions as to which it will do—remain a liquid or turn into a gas.

When, as in the case just mentioned, this balance is about equal, it takes very little to incline it toward a gaseous form, so that even the sound of the voice will cause the change. A violent fit of coughing will produce the effect, and so would a heavy weight dropped on the floor.

Speaking of this explosive reminds me how I got rid of some ministers who once insisted on boring me in my laboratory, when I had some important experiments on hand. I treated them courteously as long as I could, but they grew more interested as the day wore on, and seemed to have no intention of going home. Finally, as a last resort, I told them I was going to make some highly explosive material. This made them only the more interested, and they got in my way as much as they possibly could. I do not suppose they knew much of the nature and appearance of high explosives, for when I placed a number of drops of the material in various parts of the room, so as to scatter any accidental explosions, they seemed not to notice it.

At last, when they got crowding almost between me and the workbench, I very carefully pushed a board off onto the floor. Well, it was worse than I had intended it to be. It nearly shattered the window glass and jostled things around generally. The ministers seemed scared half to death, and from the way they held their ears you would have supposed some one had bumped their heads together. When I told them how it had happened, and discussed the possibility of more accidents taking place, they said it really was quite wonderful, but they guessed they had better be going. I urged them to stay and see more fireworks, but they all had very important engagements, and hurried off.

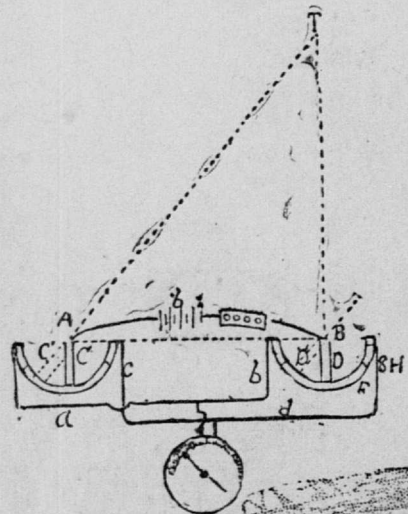
But to return to the subject in hand, the science of explosives is a very interesting one, and if some way is found to utilize the tremendous forces which are engendered when the chemicals are properly combined and exploded, we may yet come to respect them more than we do at present. Our knowledge of the very high explosives dates back but a few years.

The present war spirit may provoke enough activity in the line of explosives to cause their development not merely as agents of destruction but, what is better, in industrial lines. Here, then, is a chance for budding inventors.

Mr. Edison's joke on the minister—is in the same line with one he has played several times on obnoxious callers. For instance, a reporter from a paper whose methods do not entirely agree with the inventor's ideas of fair dealing, recently called to interview him. Mr. Edison was rude to him, Mr. Edison asked him if he objected to his continuing his experiments while he talked. Of course the newspaper man was delighted. It really added the spice of human interest to the affair.

He conducted his caller into a little room where he had a certain form of oxygen apparatus which charges the surrounding atmosphere in a manner very unpleasant to one not used to it. Mr. Edison did not mind it in the least, but his visitor could not ask questions for choking and coughing. He shortly excused himself in a most embarrassed way and left without asking a question; all of which was rendered still more ludicrous by the apparently offended manner with which the inventor regarded the reporter's actions. Probably that reporter does not even yet know a trick was played on him, but he is not likely to revisit the laboratory.

HOW GUNNERS ON A BATTLE-SHIP FIGURE OUT THE DISTANCE OF THE ENEMY.



DIAGRAM

THE accuracy of modern rifled guns is one of the wonders of engineering. Two experimental shots fired a few years ago at the same elevation from the same gun fell within thirty yards of each other, after traversing a distance of twelve miles. If a modern rifle is laid upon the target, with proper elevation and allowance for windage, it is safe to say the shot will find the mark.

The correct elevation of the gun can only be determined if the distance of the target is known, and the exact determination of the distance of a moving object is a problem that has worried the gunner ever since the day when round shot was first thrown from the sides of the wooden fighting ship.

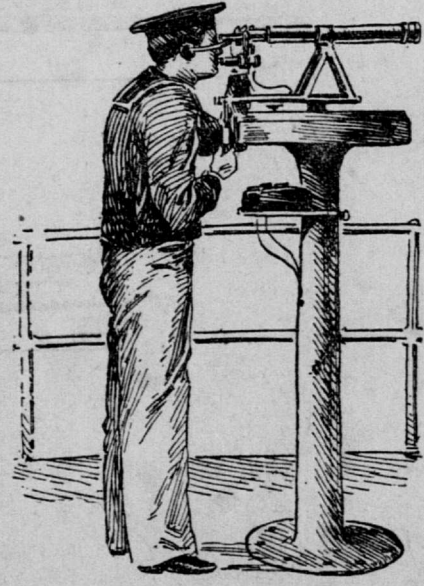
In the early days the determination of the range was a matter of guesswork.

This was all very well in a day when the guns were too feeble to do much

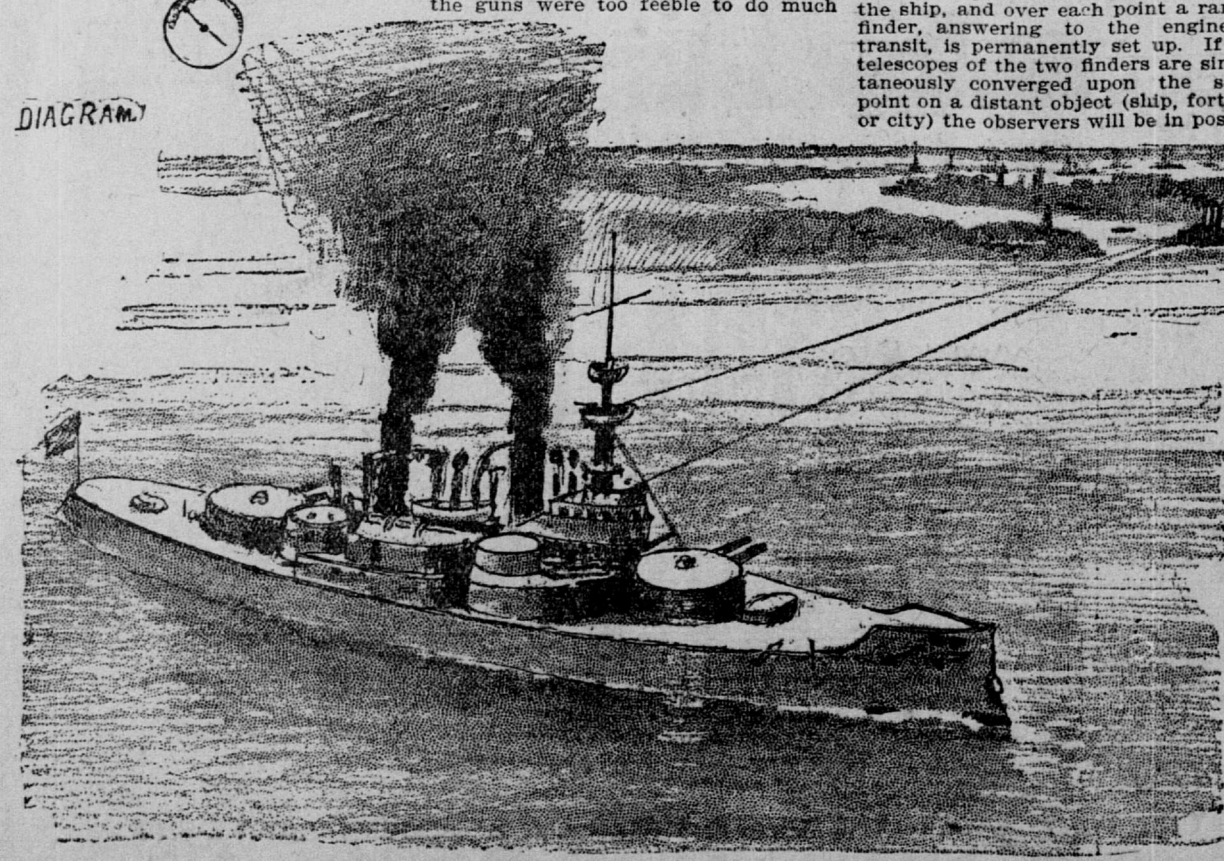
execution except at close range, and a few dozen shots thrown away made little impression on a ship's magazines. With the advent of modern ordnance, however, with sixty-ton guns and costly charges, the necessity of accurate experts set about devising some scientific method of finding the range at sea.

The Fiske range-finder is based upon the well-known principles of land surveying with the transit and engineer's chain. If the surveying party come to a broad river whose width has to be determined, a base line is measured along the bank, and the angles which this line makes with a mark on the opposite bank are measured by the transit. Then, knowing the length of the base line and the two angles, the distance across the river can be determined by trigonometry.

Applying this to the range-finder, a base line is carefully measured between two points near opposite ends of the ship, and over each point a range-finder, answering to the engineer's transit, is permanently set up. If the telescopes of the two finders are simultaneously converged upon the same point on a distant object (ship, fortress or city) the observers will be in posses-



Taking an Observation.



sion of the trigonometrical data necessary to compute the distance, namely, the base and the two base angles.

The range-finder consists of a powerful telescope, which is mounted on a standard and is capable of horizontal rotation above a graduated disk. Upon the disk, and extending an equal distance on each side of the zero point on the graduation, is a metallic contact arc. Fixed to the telescope standards is a contact strip, which rotates with the telescope and slides over the contact arc.

It will be seen from the illustration that the operator, on applying his eye to the telescope, has opposite to his mouth a telephone transmitter, a receiver being clamped to his ear.

By this means the two operators are kept in constant communication, and the errors are avoided that would be caused by the reading of a deflection produced before one or other of the telescopes is well directed toward the point to be observed.