THE KENTUCKY.

FORMIDABLE ARMAMENT OF THE NEW BATTLESHIP—DOUBLE DECKED TURRETS.

Few ships in the United States Navy have caused more discussion and given rise to more comment than the Kentucky, which is one of the pair of seagoing battleships built by the Newport News Shipbuilding Company. The ships, for a description of one is a description of the other, are in a class by themselves, not so much by reason of weight of armament or of size, but because they have what are commonly called "double decked" turrets. These turrets, the lower carrying two 13-inch rifles each, and the upper two 8-inch rifles each, are the striking features of their construction, and distinguish them from every other war vessel afloat. Lieutenant Joseph Strauss, then an ensign, is credited with being the originator of the superposed turret plan, and when it was brought to the attention of the authorities by some of his superior officers there arose a storm of discussion which stirred the Navy Department to its depths.

The argument was long and warm, and when at last the Construction Board decided to build the ships with the double turrets there were many who predicted dire and dismal failure. But the ships were built, and those laymen who have seen the Kentucky are not slow in asserting that she is a remarkably powerful vessel. The theory that the fire of two 13 and two 8 inch rifles can be concentrated on one spot from what is practically one turret and work a correspondingly increased destruction over the old style of gun training has not been tested in war, and naval officers are not yet all of one mind regarding its soundness. One of the ideas advanced in objection to the plan was that it would make the ship so topheavy that she would be unsafe, owing to the heavy weight of metal carried so far above the water line. Another was that a well directed shot from an enemy might strike and explode in such a manner as to put both turrets out of action, and so cripple the ship. One of the difficulties found in actual use is that owing to the imperfections of the turret moving machinery it is much more easy to start the ponderous mass of metal on its journey around the circle than it is to stop it. This, however, is being remedied, and will soon cease to be a factor in the problem.

The Kentucky is officially known as a seagoing coast line battleship. She is 368 feet long, 72 feet 2½ inches extreme beam, 23 feet 6 inches draught, her tonnage being 6,831 gross, 5,164 net, and 11,525 displacement, when fully equipped, ready for sea, with all her stores on board and a normal coal supply of 410 tons. Her engines, of the vertical triple expansion type, operate twin screws under a maximum indicated horse power of 10,000 each, and the contract requirements call for a speed of at least sixteen knots.

Her main battery consists of four 13-inch and four 8-inch breech loading rifles, and fourteen 5-inch rapid fire guns, and in her secondary battery are twenty 6-pounder and six 1-pounder rapid fire guns, four Colt machine guns, and two rapid fire field guns, making her one of the most formidable ships afloat so far as throwing metal is concerned. She also carries four torpedo tubes, using the long Whitehead torpedo. Her protection is ample, her side armor being 16½ inches thick, tapering to 13¾ inches at the water line and 9½ inches at the bottom of the belt. She also has a protective deck 2¾ inches thick on the flat, 3 inches on the curves forward and 5 inches aft. The extreme thickness of her turret armor is 17 inches, this protecting the big guns, the smaller ones being within 11 inch walls, the respective barbettes being 15 and 12 inches thick.

The ship will carry a complement of forty officers and 470 men, and on going into commission will be commanded by Captain Colby M. Chester. She was built under an act of Congress passed on March 2, 1895, and the Kentucky and her sister, the Kearsarge, kept along evenly together until the launching, on March 24, 1898. The contract price for the hull and machinery was $2,250,000 for each ship, and when the Kentucky goes into commission she will represent in first cost of hull, machinery, battery, armor, equipment, supplies and other items, an outlay of not far from $5,000,000.

COOKERY IN BOLIVIA.

Sucre (Bolivia) letter to The Chicago Record.

The stoves of the Bolivian Indians are curious things. A hole is dug in the ground about eighteen inches deep and a foot square, and over this is built a roof of clay with holes of different sizes to receive the various cooking pots. Roasting is done on spits passed through the holes, so that the meat comes out very much smoked unless great care is taken to have only live coals at the bottom of the oven.

The national dish, and the common food of the masses, is "chupe," a sort of first cousin to the Irish stew. It is a conglomerate, composed of irregular constituents from the animal and vegetable kingdoms—a mess of mutton and such other meats as are available; chicken, fish, fruits, potatoes, carrots, barley, corn, rice, onions, yams, etc., chopped up, highly seasoned with peppers and herbs, and stewed to a consistency of porridge. What happens to be left from one meal simmers in the pot until the next. If the fire goes out the "chupe" is allowed to cool, but it is warmed up again and a new supply of the ingredients added to the waterlogged and greasy stuff for the next meal. In the cities, at the hotels and restaurants where there are French or Swiss cooks, the "chupe" is savory and palatable, but the further you go from the centres of civilization the worse it gets. One eats it at first under protest, then from necessity, and only to escape starvation; but finally the stomach rebels and you limit your diet to boiled eggs and fruit, which are usually to be obtained; but the experienced traveller always takes canned meat and bread with him.

HER CODFISH ORDER.

TROUBLE CAUSED BY THE LACK OF A COMMON STANDARD IN FISH.

When you have been brought much into contact with the Californian colony here, you are obliged to recognize that most things are infinitely better "out on the Coast." In fact, it is just as well to start out with an acknowledgment that it is the case, for it is so very largely true that the minor exceptions may just as well be neglected. There is only one thing for which the Californian in New-York will not claim superiority, and that is the climate of San Francisco. All will acknowledge that to be the most wretched of the whole assortment in all the drawers of the Weather Bureau, but that does not really matter so long as it is possible to get an ideal climate merely by going to Milpitas or Petaluma.

In some things California does not pretend to any competition with the East, and in such instances California can just as well be generous.

THE BOW OF THE KENTUCKY.

Such an instance is codfish, which has until very recently been known on the Pacific Slope only in its shredded and salted form ready for fishballs or to be "picked up." The absence of a common standard led to a domestic comedy in one of the homes in the California colony.

"The fish man came around the other morning," so the victim recounts the occurrence at her own expense, "and asked me did I want any fish. It was Friday, and of course I did. But I never know what to order of these Eastern fish. There's no pompano, and you can't get any tenderloin of sole, and the salmon costs so much and has to be ordered so long ahead, and the shrimps and these wretched little crabs don't look grown up, and altogether I never do know what to get. So the man said, 'Porgies?' with a rising inflection; and I said, 'No porgies,' with the falling inflection, because we'd had porgies last Friday and we ought to have a change. Then the man said, 'Weakfish?' But I don't like weakfish. Then he suggested that I try some cod. So I said I would, because I thought that picked up codfish would do well at dinner as a change, and I told him he could give me two of the little boxes.

"'This ain't desecrated, 'm, it's fresh cod just caught. How much will you have?'

"I was just a little put out at my small mistake, so I said with great dignity, 'You may bring me a large one and a small one.' Now, how was I to know? Out home whenever I wanted cod I always got it in little pasteboard boxes, and I had no means of knowing how big the animal is. And then he'd just been talking about porgies and weakfish, and I thought they must all be about the same size.

"The fish man went out to his cart and staggered back into the basement with two monstrous fish, one over each shoulder, and it was all he could do to carry them. He slammed them down on the tubs and said, 'There's your large one and your small one, mum.'

"Of course, I was just ready to cry. I must have seemed so very green. But the fish man was very good about it; he turned it all into a merry joke, and when he cut off the steaks he said that I ought to have wholesale rates on such a large order."

A WITCHCRAFT SCHOOL IN PARIS.

THREE YEARS REQUIRED TO LEARN THE SECRETS OF THE BLACK ART.

Paris correspondence of The Pall Mall Gazette.

A school of a very curious order is to be opened in Paris to-day. Its founders offer to initiate whoever is possessed of the necessary dose of patience, and perhaps of credulity, into the mysteries of occultism, into the arcana of black magic. There are persons, they opine, even in these latter and sceptical days, who would like to follow in the footsteps of a Paracelsus or a Trismegistus, and for the benefit of these inquiring souls they have started a complete course of sorcery and witchcraft, of astrology and the other hermetic "sciences." It must be admitted that the advantages held out as the reward of those who attain to complete initiation are considerable. An inscription on the wall of the occultist school—4 Rue de Savoie—sets forth that "the initiated, in virtue of the powers transmitted them by the masters, reign in heaven, command on earth and are feared in Hades." A magician of this calibre would certainly occupy an enviable position, and be entitled to have no mean opinion of himself, so that it would not be just to scoff at the occultist professors unless by any chance they should fail to keep their promises.

Nobody will be surprised to learn that a magician is not made in a moment. Still, though the process of initiation extends over three years, the time expended will be allowed to be short when the results arrived at are considered. The programme of studies at the occultist school, which has thoughtfully been forwarded to me, gives full details of the three years' course. During the first year the student is made to acquire as much Hebrew as "will enable him to understand the books of the old alchemists." He begins, too, the study "of the constitution of man and of his hidden forces." This is not all, but I am compelled to abridge. In his second year he dips into Sanscrit, exercises himself in hypnotism and somnambulism, takes a close look at spirit phenomena, and learns, doubtless with growing interest and profit, "the practical adaptations of the various arts of divination." Finally, in his third year, he studies "the action of human thought on the invisible," and many other obscure matters, his comprehension of which is aided, it may be presumed, by his previous training. These successive stages accomplished, it is his own fault if he is not a full fledged wizard. As the world might otherwise be ignorant of its greatest magicians, it must be mentioned that the founders of the occultist school are MM. Barlet, Papus and Sédir.

THE THEORY OF HEARING.

From The London Daily News.

In the Physiological Section of the British Association yesterday Dr. Albert Gray (Glasgow) read a paper on "The Theory of Hearing." His view of the function of the cochlea, as set forth in his paper, is like that of Helmholtz, that sound is analyzed into its simple constituent tones by the basilar membrane. The result of this analysis is that variations in pressure on the nerve terminations will occur, and that these pressure variations are analyzed in the central nervous system. In support of the theory he put forward he cited the close analogy which it shows between the sense of hearing and that of touch. It further explains the existence of noise as distinguished from musical sounds, and the fact that under certain circumstances the ear is able to perceive differences of phase.

SIEGE TRAINS.

AN ELABORATE EQUIPMENT FOR REDUCING FORTIFICATIONS.

ENGLAND'S PREPARATIONS FOR THEIR OPERATION IN SOUTH AFRICA—BIG GUNS AND HOW THEY ARE MOVED AND MOUNTED.

The average civilian in this country may well be pardoned for not knowing that a siege train is an outfit of guns specially designed for battering strong fortifications. In Germany the well informed lawyer or merchant is just as likely to know about siege trains as to know about cavalry brigades, because there the siege train is a permanent part of the empire's military organization, and has been so for—to insure safety by vagueness—many generations. But both in this country and in the Queen's dominions, outside of India, the scraping together of a siege train when the occasion calls for it is one of those practical difficulties of a great war which tend to make the personnel of war offices individually averse to "a vigorous foreign policy."

It is not that either Uncle Sam or his friend John Bull is short of siege guns with brown prismatic powder, smokeless veriform ditto, cast iron and steel shells, lyddite, thorite, dynamite and all kinds of disintegrating chemical and mechanical contrivances. These things are kept on hand, like the harmless necessary ipecac in the closets of large and well regulated families. But whereas the German siege train is as much a standing organization of specially trained men as any regiment of Uhlans or Jägers, the personnel of the British siege train in times of peace—or of the chronic small wars which serve to maintain the "Pax Britannica"—exists in a skeleton form, being merely a body of specially instructed officers and non-commissioned officers qualified to instruct others at comparatively short notice; and the same is true of this country. This is why the British War Office has to ask the people to give it time for the preparation of that siege train with which the Boer capital is, or, it may be presumed, soon will be, threatened.

According to the dispatches, the train in question is to employ altogether about a thousand men. Little or nothing has been reported as to what these numbers mean in the way of horses, guns and other material. It has only recently been reported that the principal weapon will be the 6-inch howitzer, and that the allowance of horses will be twelve to a gun. It is, however, interesting just now to consider the regulations in that case made and provided for the United States Army. The regulation field train of the latter is made up in regard to its battering equipment, of 5-inch rifles, 7-inch howitzers and a certain number of 7-inch mortars. Of these the first mentioned is the regulation "B. L. R.," or breechloading rifle, which the American public learned to know by name during the late war.

GUNS AND MORTARS.

The difference between an ordinary gun, such as the "B. L. R.," and a mortar is that the mortar is made to fire very heavy projectiles at a low velocity, the range being increased by elevation. As the school text books of kinematics say, "the propelling force, weight and volume of a projectile being constants, the range increases with the angle of elevation up to an angle of 45 degrees." At this angle the range attains its maximum, and any further elevation reduces the range. Fired at this maximum elevation, a projectile will strike the earth with a velocity very little more than it would have if simply dropped from a height equal to that which it attained in its trajectory. But the object in firing shells in siege operations often is, not to penetrate, but simply to get to a given spot and then explode. Hence the utility of mortars, which are mounted so that their least elevation cannot be less than 15 degrees. A howitzer is a piece of ordnance somewhat longer, and therefore of higher propelling power, than a mortar, but shorter in proportion to its length than the ordinary gun of the same calibre.

As to the usage in the United States, the 5-inch B. L. R. carries a shell weighing 55 pounds, the 7-inch howitzer's shell weighs 105 pounds, and that of the 7-inch mortar 125 pounds. The charges of powder for a given projectile vary, first, with the range desired, and, secondly, with the character of the powder used. In issuing ammunition it is customary in the United States Army to estimate the average charge of powder as three-fourths of the maximum. For the 5-inch rifle the charge of smokeless powder varies from 5 pounds to 10 pounds. For the 7-inch howitzer the average charge of the same powder is 3½ pounds; for the 7-inch mortar, 1¾ pounds. If brown prismatic powder is used, these figures must be multiplied by about 3½. Every shell, with its charge of high explosives, costs the Department at the rate of 3¾ cents per pound; smokeless powder, 85 cents per pound; brown prismatic, 33½ cents. So the average cost of firing a shell from the 5-inch rifle may be taken at $7 44, from the 7-inch howitzer, $6 92, from the 7-inch mortar, $6 18. It is assumed here that the smokeless powder is used, as would almost certainly be the case where a siege train has to be transported a long distance.

New-Yorkers who observed the United States artillery section of the Dewey parade need hardly be told that the guns of a siege train are not mounted on carriages like those of the field batteries. Much the same sort of mountings is used for guns, howitzers and mortars, due re-