

SEA BATTLES IN 1895.

THE DIFFERENCE BETWEEN OLD AND NEW WAR-SHIPS.

going to do when he goes upon the stage. He often improves upon the original teaching in quite a remarkable way. Did you notice that unique little shake of the head he has, something quite different from the bow given by the other performers. That is entirely his own, and always brings down the house. He invented a number of tricks which we caught and worked into our training. We are always on the watch to make the most of any little specialty an animal may show when in training."

"What is your first step in training a horse?"

"First, to make him understand that we are his superiors, and must be obeyed; and next, to teach him his names. Each animal in our troop has two names and answers equally well to either. But one is always kept for the stage; the other is used in the cars and when off duty."

"Denver knows that when he is thus called, he is upon the stage. It is his cue. Off the stage we call him 'Nigger,' and then he understands that no tricks are required."

"The other animals are equally wise. When we call *Sultan*, *Comanche*, *Claude*, or *Fohnnie Sanbourne*, each understands that he is on exhibition, and stands ready for the word of command. When we use the alternative names, they know no tricks are expected."

"How long does it take to train a horse to perform any trick?"

"It depends upon the horse and the trick. Some horses are quicker than others; some tricks are more difficult than others. But after a horse has learned to come when he is called, from six to twelve months training will usually suffice."

"It is not a hard life. You will notice that these are plump, well-conditioned animals, and they have been performing for twelve years, winter and summer. They are disposed to grow too heavy for want of exercise, although we feed them lightly."

"Again, we have to guard their eyes and feet very carefully. The artificial light on the stage, and in their car has a tendency to produce partial blindness, while their feet grow tender, then sore and cracked. We oil them and do all we can, but a run on the grass and dew is the best cure. While road exercise, which they cannot get, is the best preventive."

"One of the cautions needful in training a horse to any trick," said the trainer, presently, "is to make sure that he gets the various movements correctly the first time. If he gets a wrong idea at the beginning, turning to the right instead of the left, rolling on the wrong side, or any other movement, it takes a very long time to correct the mistake."

"A horse holds only one idea at a time, and I often give up a trick, and turn to teaching something else, until the first and incorrect impression is forgotten; then I come back to the trick and begin again to teach it."

We leave *Denver* and *Fohnnie Sanbourne* nosing together, and pass to where *Alphonse*, the clean-limbed bay, and *Comanche*, the snowy Arabian, are standing. We pause to pat the latter and praise him for his clever trick of balancing a narrow see-saw board, with plump ponies at either end. At the trainer's word of command, he mounted a wooden rocker, and rocked away as though he were a veritable nursery charger, bestrode by a merciless five-year-old.

The motion of the nursery rocking-horse is one entirely opposed to the natural equestrian movements, and calculated to produce *mal de mer* in any properly constituted animal.

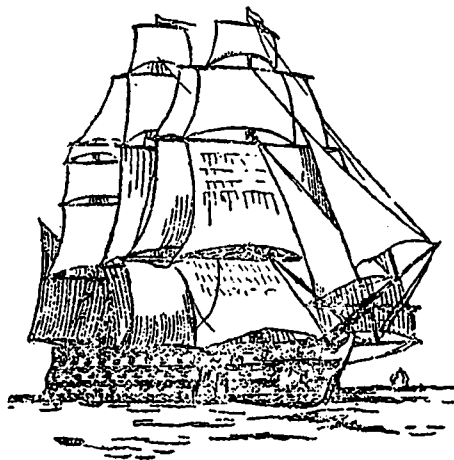
We rewarded the clever fellow with a biscuit; and then in a moment they were nosing all about us, and rubbing their pink damp nostrils against our faces.

They are accustomed to petting, these pretty well-groomed creatures; and each is jealous for his share of praise. But they are equally accustomed to obey; for when they grew too affectionate, a light crack of the attendant's whip sent them promptly back to their places again.

"The last century has probably wrought greater changes in the building and equipping of ships of war than in any other subject one could think of in five minutes," says a writer in an English contemporary.

Their size, shape, lines, means of propulsion, materials for construction, speed, and handiness have all undergone the most wonderful improvements. Heart of oak has given way first to iron and then to steel in building the hulls; the towering sides, pierced for 12 to 68 pounder guns, have been supplanted by a low freeboard, with less than half the number of portholes in a sort of box-battery in the centre part of the ship only; the bell-mouths of carronades and howitzers, and all sizes of smooth bores, from the 9 to the 80 pounder, are replaced by the long muzzles of the 4.7in. and 6in. quick-firers; whilst the frowning muzzles of 81 and 100 ton guns peep out from turrets and barbets at the fore and after ends of the ship.

From ships of the largest class of between five and six thousand tons, such as the old *Victor Emanuel*—now depot ship at Hong Kong—we have advanced to 14,900 in the recently-launched *Majestic*. These huge factories, instead of being dependent for propulsion in a given direction on the tricky caprices of the wind, can now be pushed against both wind and sea at a speed equal to that made by the old craft bowl ing along before a whole-sail breeze on their "best points"—which the old sailor loved to talk so much about. Instead of a graceful, towering pyramid of white canvas, making a shapely hull "walk the water like a thing of life," our huge leviathan monsters are thrashed through a lumping sea, in showers of spray,



OLD STYLE—NELSON'S FLAGSHIP, "VICTORY."

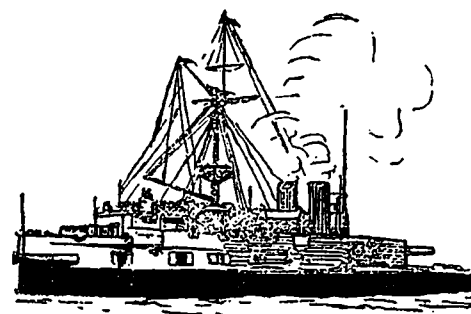
looking the very embodiment of tenacity, power, and bellicose stability.

Their construction is as different as their outward appearance. In lieu of thick 12in. outside, and 4in. inside, wooden planks of seasoned oak and teak, we find the thin, flexible ½in. steel plates that will bend and give with the elasticity of a young sapling, whilst the massive oak beams and stout frames have given way to steel ribs and light girders, whose strength, weight for weight, is out of all proportion to those of the old "wooden walls."

The armament, too, is vastly changed from the day of Trafalgar. Nelson's flagship, the *Victory* (now lying in Portsmouth Harbour, and flying the flag of Admiral Sir Nowell Salmon, Commander-in-Chief at Portsmouth), was armed with one hundred long 32, 24, and 12 pounders, and two 68-pounder carronade smooth-bore guns—the monsters of those days—and threw a broadside, when the guns were single-shotted, of less weight than a single shot (weighing

1,250lb.) from one of the four 13½in. 67-ton breechloading guns of the present flagship of the Channel Squadron, the *Royal Sovereign*.

The weight of the whole broadside of the *Royal Sovereign*, including the light 6-pounder and 3-pounder quick-firing guns, totals up to the enormous mass of about 5,578lb., to say nothing of 2,000 rounds of ball cartridge that could be poured in each minute from four Maxim guns mounted in commanding positions. When it is remembered how disastrous to England was the comparatively insignificant firing of the bullets of a few sharpshooters in the tops of the *Redoubtable*—that laid brave Nelson low—it will be seen that such a hail of bullets from opposing ships nowadays must quickly render any exposed position untenable on a modern ship of war.

PRESENT STYLE—H. M. S. "VICTORIA"
Sunk in collision with the "Camperdown," June 23, 1893.

The rapidity of fire is not less startling, by comparison; for whereas even the lighter guns in Nelson's days would be well worked to fire two rounds a minute, and then only discharge a 12lb. or 18lb. round-shot, our present 6in. quick-firing gun could fire at least eight rounds per minute, at moderate ranges, each with a pointed armour-piercing projectile weighing 100lb. The actual difference between the blow delivered by the *Victory's* broadside and that of the *Royal Sovereign* is, of course, not only to be measured by the addition of weight actually thrown, but also by the increased velocity at which it is travelling when it strikes; and this is enormously in favor of the modern ship, on account of the rifled guns, improved powders, and better shaped projectiles.

Other outward changes are the substitution of the iron masts—with the so-called military top, in which are mounted light, quick-firing and machine (i.e. rifle-fire) guns—for the graceful, towering masts, and square, tapering spars that adorned and beautified the wooden ships of the old days. Wire has also taken the place of rigging for stays and all permanent rigging; chain has been substituted for rope cables during the last century; while anchors are of a totally different build from those with which the British fleet would have been held had Nelson's last order, "Anchor, Hardy; anchor!" been obeyed.

For the springing, tilting bowsprit, jib, and flying jibbooms, that projected at a sharp and symmetrical angle over the prow of the old line-of-battle ship, we now have the terrible, death-dealing ram, which projects with such a sharp point under water that it will rip up a ship's bottom as easily as a butcher's knife will score the side of a sheep, or, driven direct in by a set of powerful engines, will fix itself into the vitals of the enemy with the appalling result of the *Camperdown* and *Victoria* collision.

These are a few of the changes that have occurred during the comparatively recent naval transition, which is still going on apace.

Yet these huge leviathans, full of the most delicate and intricate machinery, are manipulated by a crew of not more than two-thirds the number that comprised the crew of the *Victory* on the day of Trafalgar!