If there are any blowholes in Amer-

Signature of the control of the cont



solitary victims, and that he always stantly reported. Quite a number of

SUILDING UP BIG GUNS. Changes in the Method of Making Can-non and Armor.

E. B. Rogers, of the United States Navy, has an article in St. Nicholas on "Big Guns and Armor of Our Navy." Mr. Rogers says:

Not so very long ago all guns were cast by pouring moulten iron into a mould and then letting it cool slowly; but it was found that guns made in that way were not strong enough to stand the tremendous strain of the large charges of powder required to send a shot fast enough to enable it to pierce the steel armor of a modern ship of war; so the old method of casting was abandoned as the armor became stronger, and now nearly all modern cannon are what is called "built up."

First a long steel tube of the fines and strongest metal is made, and around this are placed, or "shrunk on," successive cylinders or rings, one over the other, with the greatest care and nicety, first the "jacket" and then the "hoops." So nowadays a great gun, instead of being one piece, as it used to be, is composed of many parts. The process above described is called "assembling" a gun, and in the place of the short cast-iron cannon of former days shaped something like a big bottle we have the long, graceful steel rifles, which look not unlike gigantic watch-keys. They vary in size from the small rapid-fire guns a few hundred pounds in weight, to the great thirteen-inch "Peacemaker," as it was fondly called, which tips the scales at sixty tons—120,000 pounds. All these modern guns are breechoalers, and after the shot and powder have been placed in the powder-chamber, the breech is closed by a steel "breech-plug," which is shoved into the gun and by a short turn is screwed tight into the breech.

The shot or shell has alsc undergone a change. The round cannonball most of us are familiar with has given way to the "projectile," which is made of steel, hardened according to the work it has to do, and in those which are intended to pierce armored ships the metal must be so hard that the projectile can be fired through steel armor of a thickness equal to one-eighth more than its diameter, without its being broken or mater

## POPULAR SCIENCE.

It has been estimated that the heat of comets is about 2000 times fiercer than red-hot iron.

If the weight of the body be divided into eleven parts, eight of these parts will be pure water.

Air in its pure state is composed thats: Nitrogen, seventy-seven per cent.; oxygen, twenty-one per cent.; other compounds, two per cent.

The most wonderful astronomical

The most wonderful astronomical photograph in the world has been prepared by London, Berlin and Parisian astronomers. It shows at least 68,000,000 stars.

astronomers. It shows at least 68,000,000 stars.

An argillaceous earth named "tfol,"
which contains free gelatinous silica,
is largely used in Northern Africa by
the Arabs as a substitute for soap in
washing linen.

Every ton of Atlantic water when
evaporated yields eighty-one pounds
of salt; a ton of Pacific water, seventy-nne pounds; Arctic and Antarctic
waters yield eighty-five pounds to the
ton, and Dead Sea water, 187 pounds.

M. A. Mouneyat has found that a
mixture of acetylene and chlorine, exposed to diffused light, always combines
to form acetylene tetrachloride without explosion, in the absence of free
oxygen or any gas that might produce
oxygen.

Naval Cadets.

Naval Cadets.

The number of naval cadets is limited according to the following rule: Each member of the House of Representatives is entitled to name on candidate to represent his district until he graduates, resigns or is discharged. In addition the President has the privilege of appointing one and ten annually at large. The examinations for admission are held each year, one in May and the other in September. The requirements of each endidate are: He must be between fifteen and nineteen years of age; he must be physically sound and able to pass a creditable examination in English grammar, United States history, geography, arithmetic and algebra, as far as the theory of quadratic equations and their practice. The pay of a naval cadet is \$500 a year, beginning with the date of admission.

A Battle For a Bucket.

A battle in which a bucket was the only prize was fought at Bologna in 1325. The people of Modena had made a raid upon that city and had carried away, as a trophy of victory the bucket belonging to the public well. The expedition of the Bolognese to recover this bucket forms the basis of the famous poem of Tassoni, "The Rape of the Bucket."

"Their captain, who no worther spoil could show Than the same bucket conquered from the Carged It in form of traphy to advance.

foe, Caused it in form of trophy to advance Before the troops, sublime upon a lance —Detroit Free Press.

# The Unabashed Bride.

A Boston minister was once performing the marriage ceremony for a couple in his church. The bridegroom was manifestly scared and his or groom was manifestly scared and his responses were scarcely audible, while those of the bride, who was perfectly self-possessed, were clear and distinct. In the middle of the ceremony the bride gave the bridegroom a sharp nudge with her elbow and said-in a shrill whisper:

"Louder, man, louder!"—Detroit Free Press.