## A MODERN BATTLESHIP.

**The Quantity and Intricacy of the Machinery It Contains.**

Even after a visit to and a thorough inspection of a modern battleship in port one carries away but a faint idea of the intricacy and quantity of the contained machinery, and none at all of the absolutely requisite amount of labor and material that is continually being expended in order to keep the ship in a state of readiness and efficiency. Just as the great enterprises in commercial life indicate but little to the general public the details of the toil and study which preserves them in permanently successful operation, so here it is not in line with the attitude of prowess to parade the anxious oversight and the incessant exertions demanded by the internal requirements of a man-of-war in service.

A battleship is not only a floating fortress, but is also a steam power plant of the largest size, with a greater variety and number of engines or machines than is ever dreamed of by the uninitiated. Of all this combination there is no portion that can be permitted to remain in a state of repose for any length of time without endangering its effective action when the emergency arises for which it was designed. It is only by constant use that they can be kept perfectly efficient, and at the same time this continued practice is equally necessary in order to familiarize the men with the details of the operation of every part and thus secure that prompt and certain response in time of action without which success is jeopardized to a degree difficult to overestimate. Of course it is not difficult to understand that all this involves constant wear and tear, which can be compensated for only by as constant repair.

On an armored cruiser, like the Brooklyn of the United States navy, taking her as a sample of an up to date warship between a battleship and an ordinary cruiser, there are altogether 81 separate engines having a total of 156 steam cylinders.

Add in imagination to this number, imposing in itself, the vast quantity and extent of steam, exhaust and water piping needed to connect all these engines to the boilers, condensers and water systems—the thousands of valves to be kept workable and efficient. Then include the seven great boilers, capable of evaporating into steam under forced draft 185 tons of water an hour, and one can begin to comprehend the vastness of the steam plant of a modern ship.—Chief Engineer A. B. Willits, U. S. N., in Cassier's Magazine For September.

## CHOOSE THE BETTER PART.

**Extract From a Letter Written by Thomas Carlyle to His Sister Jenny.**

Understand always, my dear sister, that I love you well and am very glad to see and hear that you conduct yourself as you ought, writes Thomas Carlyle to his sister Jenny in The Atlantic for September. To you also, my little lassie, it is of infinite importance how you behave. Were you to get a kingdom or 20 kingdoms it were but a pitiful trifle compared with this, whether you walked as God commands you and did your duty to God and to all men. You have a whole life before you to make much of or to make little of. See you choose the better part, my dear little sister, and make yourself and all of us pleased with you. I will add no more, but commend you from the heart (as we should all do one another) to God's keeping. May he ever bless you. I am too late and must not wait another minute. We have this instant had a long letter from Mrs. Welsh, full of kindness to our mother and all of you. The cheese, etc., is faithfully commemorated as a "noble" one Mary is also made kind mention of. You did all very right on that occasion. Mrs. Welsh says she must come down to Scotsbrig and see you all. What will you think of that? Her father in the meantime is very ill and gives her incessant labor and anxiety.

**Colonial Expansion and Sugar.**

The largest single source of revenue under the tariff is sugar, and about $80,000,000 a year is to be obtained under existing rates. But the sugar product of Cuba, Porto Rico and the Philippines and Hawaii will be admitted free of duty into the United States. What this means, even when the figures are taken from previous years, a little estimate will show. The average importation of foreign sugars into the United States each year is 4,000,000,000 pounds. Of this quantity Cuba alone has in the past supplied more than one-half, and from the other islands named, Hawaii excepted, enough sugar can be obtained to bring the quantity to 8,500,000,000 pounds, or five-eighths of the whole importation. This means the wiping out of five-eighths of the sugar revenue, or some $50,000,000, which must be made up from other sources. A still further reduction must be made for other products imported from these islands, such as tobacco, hemp and fruits, making the prospect of heavier taxation at home still more probable as well as assuring the permanency of the internal taxes now imposed.—Worthington C. Ford in Harper's Magazine For September.

## THE GREAT EVENT.

**What Elisee Reclus Considers the Century's Most Important Step.**

One might certainly have ventured to predict that in the eastern portion of the Asian continent, says Elisee Reclus in the September Atlantic, populations long crushed by civil and military oppression would one day lay claim to the rights of freemen, but it could never have been foreseen under what amazingly dramatic conditions the claim would be asserted. Our ancestors, at the beginning of the nineteenth century, would never have harbored in their wildest dreams the fantastic notion that Japan, the empire of the rising sun, would spontaneously transform itself into a "European power," European at least, if not in language, history and traditions, in the complete recasting of its administration, institutions, customs and theories, in its devotion to science, and its entire and unreserved acceptance of a policy based on observation and experience.

This is the great event of the century—one which casts into the shade all the other occurrences of an epoch which has nevertheless been rich in memorable events. And it will be no solitary avatar, for there are unmistakable signs that others of the same character are about to take place in the vast empire of China, and in all those countries where inhabitants of different race, yellow, red or black are brought into close contact with the men of our own Aryano-Greco-Latin civilization. So vanishes that oft repeated assertion of the ethnologists that race is a final and irreducible fact, and that no possible progress in the perception of scientific or moral truths can ever prevail against it. It is from this point of view that the recent history of the far east presents phenomena to which it behooves us to devote our most serious attention.

**The Benefactor of Childhood.**

Froebel devoted himself to the rights of children. To free the way for the most complete development of the senses, faculties and sensibilities and thus to attain happiness without directly striving for it was their self appointed task. He considered not only childhood, but the whole child, and strove to waken the latent energies, to use the spontaneous powers, to call forth the unconscious forces of the soul to the child's own upbuilding and uplifting. He saw the little stranger open his eyes on an unknown world and brought its treasures close to him, that he might not only see, but observe, perceive and be filled with beauty. He recognized in the tiny "image of God" a new creator and opened a channel in which his creative need should have full play by giving the little hands something to do. He penetrated the personality of the child and invited it to reveal its own individuality through personal exertion.—Sadie American in Woman's Home Companion For September.

## STEAM ENGINE DESIGNS.

**Their Diversity Is Particularly Noticeable In England and America.**

For the difference between building machinery and manufacturing it probably few better illustrations can be found than those afforded by the steam engine industries of Europe and the United States. American steam engines, and water wheels, too, are turned out in quantity, like shelf hardware, and can be bought at almost a moment's notice, much as one would buy barrels of flour, with large range of sizes available for choice, while the preponderating rule in Great Britain and on the continent is to build them to order and after special designs, so that there is a marked absence of uniformity of product. One reason for this variety of designs, which we do not remember having ever seen stated before, is that for British mills and factories, for example, often of venerable age, new engines, when required, must be built to fit in particular places—places previously occupied by engines of earlier and mayhap historic make—and curious shapes and combinations are therefore made compulsory to the builder of the new outfit.

Out of 20 mill engines, for example, recently ordered in the Lancashire district only two, it was stated, were intended for new mill buildings. All the others were to replace engines of past generations and had to be fitted into the old quarters of these. That with such conditions there cannot well be an underlying standard of design is obvious, and odd features of construction will doubtless therefore continue indefinitely. In the United States the factory, one might almost say, is built with special reference to the engines kept in stock. Designs of extraordinary character are not often needed, nor are they wanted, and with a study of a comparatively few types one is fairly familiar with the current steam engine practice of the country.—Cassier's Magazine For September.

## CAUGHT IN A CREVASSE.

**One of the Dangers Encountered In Getting Around In the Arctic Region.**

On more than one occasion we nearly lost our pony down crevasses when toiling over the high glacier land.

One day last spring I was leading as usual with her, and Mr. Armitage was following in my tracks with the dog team. On the even surface of the snow there is nothing whatever to indicate the yawning dark chasms, hundreds of feet in depth, which lie concealed around us by light bridges of snow only a few inches in thickness. The snow covered surface of the glacier looks as firm and stable as Piccadilly, not even a slight depression in the snow marks the hideous pitfall below, and the inexperienced traveler would probably tramp on with a feeling of perfect secur-