

# FLOATING ENGINES OF DESTRUCTION.

A Succinct Sketch of the Different Classes of War Vessels.

Their Character and the Position They Occupy in a Naval Battle Outlined by a Well-Informed Authority.

WITH the game of hide and seek which the navies of the two great belligerents have been playing kept continuously before the eyes of the public, it is no great wonder why people who are not conversant with the armament or real uses of a navy should ask strange questions. They cannot understand why a Spanish admiral does not throw his fleet into a trap and save Sampson and Schley considerable trouble, at the same time presenting them with a halo of Dewey-like glory. The Spaniards have taken up arms against a sea of troubles, which had they been opposed in time might have ended them. The only alternative now, at a late date, is to avoid or rather stare off a decisive defeat. It is in the conduct and manœuvring of the various fleets that generalship and not mere heroic seamanship will be the factor in ultimate success, and in this connection, perhaps the simplest way for the ordinary lay man to keep himself in touch with passing events and be able to understand the causes and reasons for results after some great naval battle has been fought, is to become acquainted with the build, the armor, the speed, the gunning, the draught, and more especially the weight of metal capable of being ejected from the murderous modern gun. The composition of a fleet is very varied, far more so than might be dreamt of at first glance. A naval officer, writing in the New York Herald, without going into technicalities, has given a very able summary of this subject. He says:—

The fleet of a navy when prepared for conducting active warfare comprises a great variety of types of ships; some especially constructed to fight, some improvised to assist in carrying on warlike operations, and some to accompany these others to coal them, water them, keep them in repair, and attend the sick and wounded. There are ships to stand and fight, to scout, to patrol, to skirmish, to mount guard, and there are tugs, colliers, tankers, machine-shops and hospital ships. These many classes and duties are herewith briefly described:

When sixteen years ago the rehabilitation of our navy was begun the type of vessel decided upon was the cruiser. Unquestionably financial reasons had much to do with this determination; on the other hand, it should be said that a war of chase presents many attractive features to an isolated nation like ourselves. To prey on the enemy's commerce and drive it from the sea, to ravage his coast at unprotected points and to wage minor wars in distant waters, appear easy of execution and comparatively safe.

But the true sphere of the cruiser, generally speaking, is far wider and more important than above indicated. She must be able to perform the duties of a scout, of a patrol, of a look out; she must be the eyes of a fleet; she must be the means of keeping squadrons in touch with one another, or ascertaining the movements of the enemy, of preventing surprises, of disseminating information and of insuring the efficiency of a blockade. These multifarious duties can be efficiently performed by many kinds of cruising ships, since certain of them call for certain particular characteristics.

The scout, for instance, needs to be a vessel of the highest order of sea-keeping qualities, to be able to scour the high seas far from land, far from a base and far from succor. Great size is a desideratum, great coal-carrying capacity is a necessity, and highest speed is a sine qua non. Even her armament must be subordinated to these, for her duty is primarily to ascertain where the enemy is, and having done so, to hasten at top-most speed to impart this information to the fighting fleet. How admirably suited to this work are the four American line ships now in our navy is apparent to every one conversant with their size and speed and coal endurance.

### The Patrol Ships.

Patrol ships have a service to perform nearer home, and less exacting, though perhaps more dangerous, since they must watch the safety of our coast. Patrol cruisers must be well armed, and their crews alert and well drilled, for they are expected to give battle to any intruder who might approach their beat. There are many points along a coast that a daring enemy might strike for singly or in couples, to make a sudden raid, throw a few shells into a town, out of merchant shipping, or work mischief of some sort. These descents in force must be stopped by force; hence the need of establishing such a strong cordon along our coast at a distance of 100 miles or so off shore, that it cannot be broken through.

The auxiliary cruiser, together with the navy cruiser, is expected to meet the requirements of the situation, though the former should have the assistance

of the latter, because the auxiliary cruiser, having her boilers and machinery above the water line, is more liable to damage from the enemy's fire. The auxiliary cruiser is the merchant steamer converted for the nonce into a man of war; she is given a good armament and some slight protection along her water line in the wake of the boilers and machinery. How valuable a fighter she will make is problematical, depending perhaps on the skill of her commander and the lack of it in her opponent.

### Cruisers.

It cannot be denied that the regularly designed cruiser is the best kind of ship to perform war duties whether scouting, patrolling, skirmishing, or with the fleet, fighting. Indeed, for some of the services it would not be safe to employ an improvised ship, as, for instance, on the skirmish line or on the fighting line. The skirmisher belongs to the fleet; he is on guard ahead and on the flanks of it, in close touch with it, precisely as the skirmish line in an army belongs to the main body. He must be able to hold his own, bring fighting and eventually falling back on the heavy ships, where he must take his station and continue his aggressiveness.

A cruiser, properly speaking, is an unarmored vessel which, from the nature of the duties assigned her, must be fast, must have a good coal supply and must be well armed. Like all fighting vessels, she should be divided up into several water-tight compartments, should have a double bottom, and should be protected with a steel deck at the water line, covering her vitals and magazines. Her main battery should be composed of guns of the rapid fire type, so mounted that clear fire ahead and astern is secured. The smaller rapid fire pieces should be numerous, to protect her against the personnel and exposed parts of a larger antagonist. The armament, however, must largely be determined by the displacement, and this, in turn, is dependent on the work demanded.

### Protected and Armored Cruisers.

A cruiser, often spoken of as a protected cruiser, is not an armored ship, this term signifying that a ship has vertical armor, but the protection of the cruiser is horizontal, in the form of a steel deck covering over the interior of the ship at her water line, and curved down at the sides. It is often five or six inches thick on this slope, and decreases to two or three inches on the crown. All recently constructed cruisers are protected. The unprotected cruiser is a cruiser without this steel deck, and the partially protected cruiser has the steel deck over only engines, boilers and magazines.

An armored cruiser, always so designated in contradistinction to a cruiser, is a type of ship midway between the cruiser and the battleship. Sometimes she inclines more to the one than to the other, or to state the same fact differently, often the cruiser, with turrets and armored gun positions, is virtually an armored cruiser, and frequently the battleship, with diminished armor and increased speed, is practically an armored cruiser. The title armored cruiser indicates quite well what is expected of this type of warship—to cruise and to fight. She must, therefore, have good speed, large coal capacity, moderately thick armor and an excellent battery.

### Armor and Armament.

The greatest divergence of opinions exists concerning the two last. Our armored cruisers, the Brooklyn and the New York, have side armor of three and four inch thickness; the Spanish armored cruisers have belts of twelve inches thickness. Our largest guns are of eight inches; the Spaniards carry guns of eleven inches. The ships of both nations have a cruising radius of approximately 10,000 miles when steaming economically at about a ten-knot gait, and a full speed under forced draught of over twenty knots.

In endeavoring to make an efficient warship for distant service, one that can move with great celerity and at the same time be possessed of admirable fighting qualities, some qualifications eminently suited to secure the one have to be sacrificed to secure measurably the other. Hence the high speed of the armored cruiser is not so high as that of the fastest cruisers, a certain portion of the weight of the machinery and boilers being given up to securing other desiderata. On the other hand, the armor and armament are not so powerful as on the battleship, the sacrifice here being made for the benefit of the coal capacity and speed. Yet when once on the ground the armored cruiser must fight, for that is her function. Perhaps she may be likened to the advance guard of an army, which must meet the enemy, fight him and hold him in check, if he cannot beat him, until the main body—the battleships—comes.

### The Battleship.

The great fighting unit in a fleet action is the battleship. She is designed to stand to her work, to give and take the hardest of blows, and to overcome any ship that may oppose her. Her armor is the most invulnerable, her guns are the heaviest, and the qualities of the cruiser and the armored cruiser are subordinated to secure this preponderance of protection and armament. Speed is rarely sought and coal capacity is of secondary importance, though, to be sure, both these matters receive a certain amount of attention.

Not unlike the battleship in essential characteristics is the monitor, but it must be remembered that in the monitor both speed and coal capacity are of still less consequence than in the battleship, for the monitor is to do her work near a base and in comparatively smooth water, whereas the battleship can operate at some distance, and quite as effectively blow high or blow low. The latter is a sea-keeping vessel, the former is not; the one belongs to the off shore line of defence, the other to the coast defence; the battleship is common to all navies the world over, the monitor is found only in the United States.

A study of the development of battleships will show that the monitor is her prototype; though as the two appear to-day, the one high up above the water,

bristling with guns, the other almost awash, with two conspicuous turrets, there is little to suggest how the one was evolved from the other.

### Torpedo Craft and Sentries.

From battleship to torpedo boat is a long jump, the one being the most powerful, the other the weakest of warships; nevertheless the torpedo boat was designed with the object of destroying the former.

So much has recently been told of torpedo boats and torpedo boat destroyers that little remains to be said. The boat is a good enough craft for coast defence work, and in smooth water on a dark night she may shoot her bolt with effect, but she is of no account in heavy weather; and further since the torpedo boat destroyer—merely an immense torpedo boat—has been pitted against her, the sphere of usefulness of the boat has been much restricted. The destroyer can keep the sea, can go like lightning and can work with the fleet. She is a most valuable adjunct to the fighting efficiency of a squadron, and one we would gladly add to ours.

Torpedo craft make excellent pickets, especially when large ships wish to lie snugly at anchor. So, too, for that matter, do tugs, these improved sentries which we have lately added in great numbers to our fleet. They steam about within five or ten miles of a squadron, watching carefully for night attacks from torpedo boats and other night hawks, and as they are well armed with small rapid fire and automatic machine guns, can deliver a perfect rain of bullets that would swiftly annihilate any willfully-dashing pigmy antagonist.

These armed tugs are often called gunboats, but this is a misnomer. The regularly constructed gunboat is a larger craft, partaking of the nature of a cruiser. Indeed, the gunboat proper is but a small cruiser in which speed and coal capacity are slightly sacrificed in order to permit of the mounting of a strong battery. The duties of gunboats are quite like those of cruisers, though not so extensive, since their range of operations is necessarily restricted by their limited steaming radius.

### Auxiliary Vessels.

When fleets go to war they must be accompanied by many auxiliary vessels, non-combatants but none the less indispensable to the welfare of the squadron. For instance, the boilers of modern men-of-war should be fed with fresh water. On the blockade and away from bases, cruising, this is not obtainable; the time and coal needed to condense water can not be spared, hence distilling vessels are a component part of a thoroughly well-equipped war fleet. Such auxiliaries mount but a couple of small guns to repel boat attacks. A repair ship is another important adjunct. Such a ship is fitted up like a machine shop, carrying spare plates, tools and extra portions of machinery. She has forges, punching machines and other appliances for repairing damages, and carries a crew composed to a large extent of machinists and iron shovellers.

With our fleet there is also a hospital ship, fitted with wards, operating rooms, modern appliances for surgical operations and for caring for the sick and carrying a large corps of trained nurses. This ship is painted white and flies the Red Cross flag, so that the foe may know her mission is sacred. She is absolutely unarmed.

Most important, however, of all these auxiliaries is the collier. Indeed, the limit of offensive sea operations is the limit of the fleet. Stop the supply of coal and the fleet must give over fighting on the sea and return home. A collier carries nothing but coal, everything being sacrificed to make room for bunkers and the machinery to take in and whip out coal most expeditiously.

Still another adjunct is the refrigerating ship, with an ice manufactory on board and immense cold storage rooms for carrying fresh food.

So it is seen that to move a great fleet of ships is an undertaking akin to moving an army, and requires elaborate preparations in order that the fighting element of it may be adequate to meet every emergency that can possibly arise.

### GREAT TRADE FIGURES.

In the month of April the United States exported nearly \$100,000,000 worth of merchandise and imported but \$56,000,000. Compared with April of last year exports increased nearly \$22,000,000, imports decreased \$15,000,000. Where in the month of 1917 our purchases from abroad were \$23,500,000 greater than our exports, this year the month shows exports \$43,500,000 greater than imports, a net comparative gain on the balance of foreign merchandise trade in our favor of \$19,000,000. For the first four months of 1918 our exports have increased by \$75,000,000, while imports have fallen off by \$67,000,000; net gain in our favor in four months, \$118,000,000; net gain in the first ten months of the current fiscal year, \$214,500,000.

In April this year we received \$31,500,000 net gold from abroad, in the month last year we lost \$6,000,000 net on

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the gold movement; in the ten months we have received net \$84,500,000 gold, or \$27,000,000 more than last year in the same period. These are remarkable figures, and go far towards proving, were proof necessary, the reason why, with a foreign war on hand, we are prospering in general business and continuing the great revival of industry; why stocks are almost as high as before the war scare and much higher than when the war began; why Western grain-carrying railways keep on increasing earnings and promising early increase in dividends. With this country selling the world \$43,500,000 worth more of stuff than it buys in one month, \$194,000,000 worth in four months and \$514,000,000 worth more in ten months, the reason why gold comes this way is plain.—American paper.

## THE SELFISHNESS OF MAN.

Some of Its Features Outlined in a Practical Manner.

The Fictitious Flights of Self-denial That Are Indulged in at Intervals and Their Results.

A contributor to the columns of the Prison Mirror, of Stillwater, Minn., in dealing with the subject of man's selfishness, says:—

Ingratitude is looked upon as a most unreasonable and uncalled for vice; yet if we take the trouble to diagnose the past, it will be found that the larger portion of the human family shows no due gratefulness for the happiness it is enabled to enjoy. We journey along while all is smooth sailing without a thought as to who or what has been the promoter of our serene tranquillity; but let the slightest wave impede our onward progress and immediately we begin to fume and fret. A conscious self-sufficiency delects to one's self all thanks for the smooth sailing on the easy stages of life, but when a choppy sea is met we are desirous that the blame therefor shall be charged to something or someone else.

A man will continue chewing, eating and drinking all sorts of trash without any regard to his health, but if a slight toothache comes on as a result of his carelessness then there is a hue and cry and general condemnation of anything and everything but himself. This disaster could not be of his own making—no, no; to himself man is infallible and incapable of doing wrong. That, at least, is the private opinion of a great many of us, though we would not publicly advertise it, for the very good reason that we know it is not so, although we are desirous to persist in believing that it really is so, and will so continue to believe regardless of facts to the contrary.

Nearly every mother's son of us leads a double life to the extent that we try to make ourselves believe that we are what we know we really are not. It is purely animal selfishness of the order that the king (one's self) can do no wrong—not while there is the 'kingly' opportunity of charging the wrong to some other source.

While we are always prone to charge up our failures and wrongdoings to others, is it not strange that we should never think of acknowledging the debt we owe to others for much of the brighter side of life that we have enjoyed?

It is true that upon occasion when a wave of enthusiasm sweeps over one he will pay a wordy tribute to parents, and Providence, and sometimes to other persons and agencies that have assisted in making life pleasant. A 'wordy tribute' to one is at best but a poor acknowledgment; but even that is usually given at a time when the parents or 'creditors of honor' are no longer living. But very few of us here are in a position to deny the direct allegation that man as an individual is an ungrateful being.

Our lives prove it, for, had we been sufficiently thoughtful to give full outward expression to the debt we owed parents, that act of itself might have been the means of avoiding present conditions. It would have inspired us with a more comprehensive idea of the debt we owed them, and, mayhap, have bestowed our energies to an honorable payment of the debt. And the boy or man who entertains an honorable purpose never seeks dishonorable means of fulfilling it.

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We should school our ears to know the voices that are genuine, our thoughts to take the truth when it is spoken, our spirits to feel the zest of the day. It is within our choice to be with mean com-

pany or with great, to consort with the wise or with the foolish, now that the great world has spoken to us in the literature of all tongues and voices. The best selected human nature will tell in the making of the future, and the art of being human is the art of freedom and of force.—Woodrow Wilson.

## ADVICE TO MOTHERS.

THE HEALTH OF THEIR DAUGHTERS SHOULD BE CAREFULLY WATCHED.

YOUNG GIRLS SENSITIVE TO TROUBLES THAT MAY RESULT IN DEBILITY—PALE FACES, HEADACHES AND PICKLE APPETITE THE SYMPTOMS OF EARLY DEBILITY.

From the Sun-Orangeville, Ont.

Some months ago Margie, the fifteen-year-old daughter of Mr. and Mrs. J. Sweeney, of John street, of this town, began to fail both in health and spirits. Her face was almost as white as chalk, her appetite very fickle, and her limbs began to swell. Notwithstanding her growing weakness she persisted in attending school until one day her teacher advised her to go home and not to return until she felt better. At the same time the teacher, who knew the value of Dr. Williams' Pink Pills in such cases, advised her to take them. The advice was followed and Mrs. Sweeney told our reporter that almost from the onset there was an improvement in her daughter's condition. Her appetite became better, the color returned to her face, and the severe headaches that had made her so miserable vanished, and she is now feeling better than she has done for many months.

It is quite evident that this young maiden was suffering from a lack of blood, as do so many young girls who are just at a critical point in life, and it is quite as apparent that there is no other remedy than the equal of Dr. Williams' Pink Pills in such cases. They enrich the blood, stimulate the nerves and build up the entire system, and mothers will act prudently if they insist upon their daughters taking an occasional box. We know from experience that Dr. Williams' Pink Pills have done great good in Orangeville and vicinity, and there is scarcely a day that our reporter does not come in contact with some one who has a good word to say for this wonderful medicine.

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## PATENT REPORT.

Messrs. Marion & Marion, solicitors of patents and experts, New York Life Building, Montreal, furnish us the following list of patents recently granted to their clients:

- 59,947—Daniel A. McKay, South Bay, N.S., car coupler.
- 59,980—P. Parkinson, Roland, Man., vehicle seat.
- 59,992—Fortier and Morin, Montreal, compound.
- 60,006—C. V. Wood, Port Phillip, clothes powder.
- 60,014—E. Normancut, Montreal, sewing machine.

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'Papa' said the youthful student of history, 'is an ultimatum the last word?' 'No, no, not exactly; that is, not always,' replied the old gentleman, thoughtfully. 'You see, there are circumstances under which a man may give an ultimatum to a woman—his wife, for instance—but, of course, that doesn't mean that he will have the last word; not by a good deal.'—Chicago Evening Post.

Never think that God's delays are God's denials. Hold on! hold fast! hold out! Patience is genius.

Adversity, like wintry weather, is of use to kill those vermin which the summer of prosperity is apt to produce and nourish.

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