

Scientific American.

ESTABLISHED 1845

MUNN & CO., - - - EDITORS AND PROPRIETORS.

PUBLISHED WEEKLY AT

No. 361 BROADWAY, - - NEW YORK.

TERMS FOR THE SCIENTIFIC AMERICAN.

(Established 1845.)

One copy, one year, for the U. S., Canada or Mexico.....\$3.00
 One copy, six months, for the U. S., Canada or Mexico..... 1.50
 One copy, one year, to any foreign country, postage prepaid, £0 18s. 5d. 4.00
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 MUNN & CO., 361 Broadway, corner Franklin Street, New York.

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(Established 1876)

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NEW YORK, SATURDAY, JULY 9, 1898.

Contents.

(Illustrated articles are marked with an asterisk.)

Acetylene gas hazard, the.....	25
Army and coast defenses.....	18
Anæsthesia, local, electrically induced.....	20
Bicycles, an automatic steering head for*.....	20
Birds, a seminary for teaching singing.....	23
Boiler and furnace, a new steam*.....	20
Books, new.....	29
Bridge, Brooklyn, elevated trains on the.....	20
Cinchona from West Africa.....	24
Climate upon man and animals, the effects of change of.....	24
Corn, a rubber substitute from.....	24
Courage in modern warfare.....	15
Dewey squadron, reinforcement of the*.....	25
Education in Germany and America, technical.....	28
Gas light plant, a typical Pintsch*.....	17, 27
Gate, an improved*.....	24
Genealogical search, how to make a.....	22
Geyser, gardening over a*.....	23
Honey, kussu.....	26
Indian names, war vessels.....	19
Inventions recently patented.....	26
Krypton.....	26
Metric system as applied to textile manufactures.....	22
Names, Indian, war vessels.....	19
Notes and queries.....	29
Petroleum in Maccabees.....	20
Pintsch gas, the manufacture of*.....	17, 27
Preserving meat, a new way of.....	21
Quinine industry in Germany, the.....	26
Rubber man, Morris*.....	26
Science notes.....	22
Therapeutics, gastric juice.....	18
Tire, a novel pneumatic*.....	20
Typewriter and hearing, the.....	23
Warfare, modern, courage in.....	18
Wheels, trying.....	26
Wood-working machines, something new in*.....	21

OUR ARMY AND COAST DEFENSES.

In announcing, some few weeks ago, the publication of our SPECIAL NAVY SUPPLEMENT, we made the following statement: The great demand for information regarding our navy which has arisen from the present crisis has brought out the fact that, although excellent descriptions of the various ships have appeared from time to time, there is yet wanting a concise, accurate and fully illustrated compendium of the United States navy of the kind which the public is demanding.

The favorable reception of the NAVY SUPPLEMENT, as shown by an exceptionally large circulation and the number of congratulatory letters that reached this office, proved that we had detected and supplied another "long-felt want."

In the conviction that there is a similar demand for information regarding the equipment of our army, both for coast defense and operations in the field, we shall issue in a few days THE SCIENTIFIC AMERICAN ARMY AND COAST DEFENCE SUPPLEMENT.

Although in its scope and general "get up" it will follow the lines of its predecessor, the forthcoming special will be, if anything, a superior work, both in the high quality and number of its illustrations and the completeness and detail of the reading matter.

That the demand for such an issue exists is evidenced by the numerous queries that reach the editor's desk, asking for information as to guns, powder, armor, fortifications, submarine defenses and the thousand and one objects that may be classed under the head of war material. The questions relate to a subject with which the average layman has no means of becoming familiar, and while there is a vast amount of well-written information supplied from time to time by the daily press, it is necessarily fragmentary, and, for want of a general system in its presentation, apt to be confusing to the average reader.

In the forthcoming issue we have gathered together, from strictly official sources, the leading facts regarding the manufacture, operation and efficiency of the various weapons of offense and defense possessed by the United States. The opening chapter defines the true meaning of the term coast defense, and emphasizes the necessity for the co-operation of a powerful navy, if the system of defense is to be thoroughly efficient. Following this is an illustrated description of our heavy seacoast guns, their manufacture, carrying and penetrating powers, and method of mounting and firing. The rapid-fire gun is explained and the leading types in use in our service, from the 6-inch to the 6-pounder, are shown, with details of their mounting and breech-mechanism. Then follow the machine guns, with illustrations of the Maxim, Colt and Gatling weapons. There are chapters on projectiles and armor and a timely discussion of the properties and advantages of smokeless powder. The dynamite gun of Zalinski and the pneumatic gun of Sims-Dudley, both of which are doing good work in the present war, will be full of interest, and under the head of Harbor Defense will be found a series of articles on mortar-batteries, range-finders, torpedoes and submarine mines. The service rifles for our regulars, volunteers, and navy, are treated in an exhaustive article and the number closes with a lengthy chapter on the organization, etc., of the army. The issue makes its appearance at an opportune time, when the operations of our army in Cuba and the distant Philippines are at their most active and interesting stage.

COURAGE IN MODERN WARFARE.

The present war has served as a great upsetter of theories. Seagoing Spanish torpedo boat destroyers, that were to have wiped out our mosquito fleet and then proceeded to sink our battleships in detail, have proved helpless against our unarmored cruisers, and Spanish forts that were to have crumbled to dust at the attack of our 13-inch shells have persisted in holding up their heads with a stubborn endurance of which these mediæval heaps of stone and mortar were theoretically quite incapable.

Turning from the material to the personnel of modern warfare, we find that some pet theories will have to be renounced, if the earlier operations of the present struggle are a sure indication. Conspicuous among them is the oft-repeated statement that warfare has become such an exact science as to leave little room for the exercise of mere courage and daring, and that the moral and physical qualities which have carried the dominant races to their present commanding position will be largely discounted in all future conflicts. The dash and audacity which enabled the Anglo-Saxon to sweep the fleets of the Latin races from the seas at St. Vincent, Trafalgar, and the Nile, were to prove a snare and a delusion in these later days of the torpedo, the rapid-fire gun and the high-powered breech-loading rifle. War, at the close of the nineteenth century, was to be strictly scientific. The delicacy, complication and deadly accuracy of its modern instruments, the long range at which its operations would be carried out, the forethought and subtlety which are necessary in its tactics, would place the advantage of a latter-day conflict altogether with

the races which had hitherto been obliged to bow to inevitable defeat.

The present conflict has proved that the theorists were altogether wrong—at least, so far as they discounted the value of the personal equation. Daring, dogged endurance, indomitable pluck, forehanded aggressiveness, self-possession in the critical moment—all the qualities, indeed, that went to make the ideal soldier in the days of the three-decker and the muzzle-loading rifle are as much a decisive factor now as then.

Though our war with Spain is but a few weeks old, it has been waged long enough to prove that under the changed conditions of modern warfare there is the same call for brave men and the same success awaiting their deeds. Manila, Cardenas, Cienfuegos, Santiago and Siboney bear eloquent witness to the fact that, peace-loving people that we are, the heroic qualities of the soldier lie dormant in the blood, and only need the call of duty and the opportunity of the moment to display their splendid force.

The swift descent of Dewey upon Manila, his audacious, but well considered dash through the entrance channels, his deliberate defiling to and fro before the combined fire of the fleet and shore batteries, undeterred by the explosion of two submarine mines directly in his path, the call of time by the American commander that his crew might breakfast before completing the rout of the enemy—all the thrilling incidents of that brilliant 1st of May are redolent of the spirit of Farragut, Decatur and Paul Jones, or of Drake, that naval hero of an earlier age, who, with unparalleled audacity, ran into Cadiz to "sing the beard" of the Spanish king.

Next in order of time, but equal in honor, was the rescue of our sorely beset little torpedo-boat "Winslow" by the unarmored craft "Hudson." It will be remembered that the Spanish gunners, who, for once, had got the range of our boats, were pouring a murderous fire into the "Winslow" when the "Hudson" steamed into the zone of fire, made fast a line and proceeded to tow the crippled torpedo boat out of range. The tow line parted and the "Hudson" backed in and made fast again with all the deliberation that would mark an ordinary landing at a friendly wharf.

Cienfuegos will be remembered for the cool nerve of our volunteer crews, who sat for hours in small boats, exposed to a galling fire, while engaged in the prosaic work of pulling up and cutting the telegraphic cables. Separated from their ships, with nothing of the enthusiasm of numbers to help them, these brave fellows, it seems to us, typify the very highest form of courage, and the readiness with which the volunteer list was filled shows that, whether duty calls at Manila or Cuba, our navy stands ready to answer.

But what shall we say of Santiago and the magnificent feat of Hobson and his associates? Death, which at Cienfuegos was a possibility, became here a certainty—for while it is true that provision was made for the rescue of the crew of the "Merrimac" after the ship was sunk, it is certain that no one expected to see a single soul return alive. This was self-sacrifice of the most absolute and unquestioned kind; a voluntary offering of eight young lives on the altar of their country's need—an offering for which there could be no possible expectation of a personal benefit to be reaped. In all ancient and modern history there may have been deeds which in heroic self-sacrifice have equaled this episode—but to have excelled it would have been, and forever will be, impossible.

We close with a brief reference to the latest exhibition of courage by our forces—this time on shore. The fight between the Spanish regulars and the volunteer troops, known as the "Rough Riders," was the first actual test of the fighting qualities of our "raw recruits," and, as everyone knows, it proved that they are possessed of the pluck and staying qualities which win battles and snatch victory out of the very jaws of defeat. It must have been a remarkable sight to see that motley group of young Americans, gathered only a few weeks before from a dozen different walks in life, fresh from the pursuits of peace and pleasure, when suddenly confronted by as appalling a situation as ever tried the nerve of veteran troops, settling down to fight it out with as cool a nerve as if they were still upon the cattle range or the polo ground.

There is nothing more trying for troops than to be suddenly attacked by the withering fire of a hidden and inaccessible enemy. That they should have not only stood their ground, but driven the Spaniards from their strong position, is a feat the full significance of which is only apparent when we look at the list of dead and wounded.

Gastric Juice in Therapeutics.

A case of acute enteritis and one of cholera morbus were alike cured in a few hours by administration of fresh gastric juice taken from the stomach of a dog. The remedy was very effective in la grippe with gastro-intestinal complications, in gastro-intestinal dyspepsia and enlargement of the liver with progressive emaciation, in typhoid with severe emaciation, dilatation of stomach, and in deficient assimilation.—Fremont, Gazette Médicale de Paris.