HOUSE-HOLD HINTS

In sounding the keynote for simpler living, especially in the summer, a good place to begin, where service and strength are limited, is with the table. There must be plenty of nourishing and satisfying food, in order to keep up the strength too often undermined by the heat and "mugginess." But the simpler in preparation the better. It is a fine time to hark back to the natural foods—fruits, vegetables and milk galore.

A few years ago preserves, heavy puddings and pies ruled the day for each meal in turn. Now, in most families the fruits, in their season, just as they come from tree and bush, are preferred to made dishes. This saves a lot of work for the digestion as well as the cook. If, however, pater familias has a yearning for an occasional shortcake, pudding or pie, such as "mother used to make," try and gratify him. If the children dote on ices and creams, and are willing to lend a hand in the freezing, let them have it. No dessert is cheaper or easier to make, with willing hands to turn the crank.

At the same time the provident housewife finds herself more than busy putting up the fruits, now timely for future reference. There is a return to popular favor of the old-time fruit drinks of our grandmother's day, and now is the time to make the various shrubs of currant and berry that are so refreshing in sickness as well as on picnics and at garden parties.

So here are the recipes! May you find them as satisfactory as they have proved to others:

Currant Jelly—This comes first, in case you have not already attended to it, for if the currants get overripe they will not jell, and you have had your labor for naught. Be sure your currants are dry when gathered if you wish clean, firm jelly. Select, also, a bright, sunshiny day for their doing up. Have your kitchen and all utensils scientifically clean; the jars, glasses and covers well sterilized with boiling water before using. Pick over the currants carefully, but do not remove the little green berries. They will help to make your jelly stiff. Nor is it necessary to stem the currants unless there have been currant worms on the bushes. Then wash carefully and drain. Put the currants in a stone jar or preserving kettle and set this in another larger vessel of hot water.

As it begins to heat, mash with a wooden pestle or potato masher until reduced to a pulp. Take from the range, pour the pulp into a jelly bag to drain. It is a good plan to do this the night before the jelly making proper begins, and leave the bag suspended over night. The jelly will be clearer than if pressed. When the juice is all extracted, measure out by pints and return to the kettle. Take as many pounds of sugar as there are pints of juice and place on shallow tins in the oven to heat, taking care that they do not get hot enough to discolor the sugar. Boil the juice just twenty minutes from the time it begins to boil, then throw the heated sugar in, stirring rapidly all the time. As soon as it is all dissolved, remove the spoon, let it just come to a boil again, then take at once from the fire. Roll the jelly glasses in hot water, then fill with the scalding liquid. They may then be coated with melted paraffin or one-third paraffin to two-thirds wax, or sealed with white of eggs or sterilized cotton.

When white currants are used for jelly less sugar will be required; three-quarters of a pound of sugar sufficing for a pint of juice.

When Paraffin is used.—When paraffin is used for covering jellies the jelly should be cold before the paraffin is added. Melt in a hot-water bath, then dip out with a teaspoon over the cold jelly. It may require two or even more spoonfuls to make sure that the entire surface is protected.

Black Currant Jelly.—This is one of the best household remedies for sore throat if used early in the game. Stem large ripe black currants, and after washing put into the preserving kettle, allowing a cup of water to each quart of fruit. This is necessary because the black currants are a drier fruit than the red or white. Mash with a wooden spoon or pestle, then cover and cook until the currants have reached the boiling point, drain. To each pint of juice allow a half a pound of loaf sugar. Stir until well mixed, then cook just ten minutes from the time it begins to boil. Overcooking will make it tough and stringy. Pour in sterilized glasses and cover with paraffin when cold.

Black currant jelly is delicious served with venison, while a teaspoonful of it dissolved in a glass of cold water is a most refreshing sick room drink.

Black Currant Ice Cream.—This delicious cream is little known here, but is considered the banner cream for state occasions in England, and from there come these directions for its making. Stew one cup of fine black currants over the fire five minutes, then mash and put through a sieve. Mix one-half pint of syrup made rich with sugar and water, and one-half pint rich cream with the currant puree, beat well, then freeze. When stiff pack in a fluted mold, cover close and pack in ice and salt. When ready to serve turn out on a low fancy dish and decorate with crystallized cherries and candied angelica. Garnish with preserved apples or pears, and set back on the ice a few moments until needed.

Black Currant Fool.—This is also an English recipe, but much more simple. Steam and wash the currants and put in a pan with sugar to sweeten. Stir over the fire until the sugar is dissolved, then put through a fine wire sieve. Return to the pan and cook until reduced to the consistency of thick cream. Set on the ice until cold. Turn in a glass dish and serve with whipped cream.

Currant Marmalade.—This may be made of either the red or black currants. Strip from the stems, wash and drain, then put in kettle and cook and mash. Rub through a fine sieve that will prevent the seeds from going through; then for every pound of the pulp allow a pound of sugar for red currants, or three-quarters of a pound for the white or black. Cook the pulp twenty-five minutes, add the sugar, stir and cook until a drop on a cool saucer retains its shape and does not spread. Put into pots and cover when cool.

Currant Shrub.—This is a refreshing drink, especially beneficial to persons suffering with liver trouble. Stem red currants or a mixture of red and white, set in a dish of hot water and cook until the juice is well extracted. Put into a flannel bag and drain. For every pint of clear juice allow a pound of granulated sugar, and cook five or six minutes. Remove, stir until cold and bottle. Many cooks prefer to add a gill of the best brandy to each pint of the liquid before bottling. To prepare it as a beverage, fill a glass half-full of chipped ice, if you know your ice is pure; add two tablespoonfuls of the shrub and fill with cold water. If there are any doubts about the ice forswear it, but chill the water by filling bottles and laying next the ice. This is much the safer plan, anyway.

Tie Up Your Currant Bushes.—It is a good idea when you have your own bushes to save some of the fruit for late July picking for the table. To do this simply tie the bush and contents up in muslin cloth after the currants have ripened. To be able to pick your own currants from the bush is one of the dear delights of the old-fashioned kitchen garden.

Raspberry Shrub.—This is even more delectable than the currant, and one of the most wholesome of summer drinks. Select only the best and ripest of blackcap raspberries and pour over them just enough of pure cider vinegar to cover. Let the fruit stand in this for a day or more in a cool place, then strain through a cheesecloth bag, squeezing hard to extract every bit of juice. Measure and to every pint of juice allow a pound of sugar. Boil five minutes, skim carefully, then bottle, sealing tightly. When ready to serve add two tablespoonfuls of the shrub to each glass of cold water.

Raspberry and Currant Frappe.—Red raspberries combine best with the currants, but black ones are also delicious. Mash a quart of berries with half as many currants, sweeten with two and a half cups of sugar and let the mixture stand in a cool place for several hours. Strain through a fine sieve and freeze to a mush. When ready to serve, fill glasses half full of the frappe, then heap with whipped cream and garnish with a few fresh red berries.

Raspberry Bavarian Cream.—Press a quart of ripe red raspberries through a sieve, mix with a cup of sugar and stand in a cold place for a couple of hours. Meanwhile soak for the same length of time half a box of gelatine in a half cup of cold water. Whip a pint of cream to a stiff froth. When the gelatine has soaked its alloted time, pour a half cup of boiling water over it, add to the raspberry pulp and juice and place in a bowl set in a pan of crushed ice. When cold and beginning to thicken fold the whipped cream through the mixture and pour into a pretty mold to form. Pack in ice and salt until ready to serve. Turn out and garnish with whipped cream.

Raspberry Charlotte.—This is a nice way to dispose of stale sponge cake or macaroons. Line the bottom of a mold with pieces of the cake, moisten with a little raspberry juice and spread a layer of whole sweetened berries over it. Add more cake, then berries until the dish is a little more than half full. Pour over the cake and berries a pint of boiled custard, roll a few macaroons and spread over the top and set on the ice to chill.

Compote of Cherries.—Cook together one cup of sugar and three-fourths of a cup of water until a thick syrup. Drop into the syrup three cups pitted cherries, tart ones preferred, and let them just come to a boil. Take from the fire, let them stand twenty minutes, then return and simmer gently until tender but not broken. With a skimmer remove and put into a compote dish. Pour into the syrup remaining in the kettle a half cup currant juice or the same amount of pineapple juice that has been drained from a can of fruit. Cook until thick, pour over the cherries, then stand in a cold place until ready to serve.

Cherry Shortcake.—Pit the cherries, mash slightly and sweeten to taste. Have ready a rich soft biscuit dough, roll out about an inch thick, put in round, well-greased pan and bake in a hot oven. When done split, butter both halves, and, having placed the lower half on a large plate, spread thick with the cherries and cover with the upper crust. Spread the remaining cherries on top, sprinkle with sugar and serve at once.

Cherry Salad.—The large tart cherries are best for salad, but the sweet are not to be despised. Stone a half pound of cherries, saving all the juice. Select a nice head of lettuce, and arrange the heart leaves in the salad bowl. Arrange the cherries on the leaves, with or without a few slices of cucumber, and dress with French dressing or a dressing made as follows: Pour one gill of sherry over four tablespoonfuls of sugar. Add one tablespoonful of lemon juice and one of Maraschina and stir until the sugar is dissolved.

Range of Bees for Nectar.

From the Milwaukee Free Press.

"The range of honey bees is but little understood," said F. Frank Kilbourn. "Many suppose that bees go for miles in quest of nectar, while others think they go only for a short distance. It may be curious to many to understand how any one can tell how far the bees may fly, but this is simple when understood. Years ago, when the Italian bees were first introduced in the United States, these bees, having marks different to the common bees already here, were easily distinguished, and after any beekeeper had obtained the Italian bees they could be observed and their range easily noticed. If bloom is plentiful close where bees are located, they will not go very far, perhaps a mile in range, but if bloom is scarce they may go five miles. Usually about three miles is as far as they may go profitably. Bees have been known to go as far as eight miles in a straight line, crossing a body of water that distance to land."

AT THE CHARITY SCHOOL.

From the Tattler.

First Girl (proudly)—"My face was a lot dirtier than wot yours was."
Second Girl—"Yes; well, you're older."

BLACK FRIDAY.

BY FREDERIC S. ISHAM,

Author of Under the Rose, The Strollers.

(Copyright, 1904, the Bobbs-Merrill Company.)

BOOK III.

CHAPTER I.

An Interrupted Song.

"Are you sure we have been wise in coming to Paris, papa?"

"Why not, my dear? Peace has been ratified. The German troops have left the city. Do you see any indications of grim-visaged war or the terrible siege? No; no! Paris is quite herself again."

And leaning complacently back in the carriage, the speaker gazed, not without pleasure, upon the fete-like scene up and down the animated boulevards.

"You see," he went on, "everybody is out and—everybody is happy. That is why I wanted to come to Paris—to feel young again!"

Her glance lighted with ready sympathy, and, following his, lingered curiously upon the stream of people in bright-colored dresses and fresh spring bonnets.

On the sidewalk many in the promenading throng found likewise a source for speculation in the occupants of the public conveyance, and turned to gaze after them.

The gentleman had snow-white hair, a pale, refined face, an aristocratic bearing. The girl was young, beautiful and, obviously, his daughter. But whereas his face was weak, sensitive, almost childish in its irresponsibility, hers was serious, earnest, yet proudly self-reliant. That they had just entered the city was apparent from the trunks before them.

Turning into a quiet thoroughfare, the carriage drove up before a four-story dwelling, one of the older structures of the street, antedating the mansion-building period of the late emperor. The old gentleman regarded the house almost eagerly, when from the unpretentious entrance emerged a thick-set, phlegmatic looking woman.

"You are looking for rooms, monsieur?" she said, standing with arms akimbo and turning her eyes from one to the other.

"Yes; does Madame Fracard live here?"

An expression of surprise crossed the woman's face. "She has been dead these ten years!"

"Dear! Dear!" exclaimed the old gentleman. "And Monsieur Fracard?"

"Alas!"—stolidly—"he followed madame."

The gentleman's face fell. Both gone!" he said. "I am disappointed; I might have expected it, yet"—regarding the girl—"it makes me feel like Rip Van Winkle."

"I was afraid you would be disappointed," she said gently.

"Monsieur knew Madame Fracard?" asked the woman.

"For a good many years I lived in Paris—here. In this house! That was long ago! Long ago!"

Some of the animation faded from his face; he sank into momentary reverie.

"If you wish to see rooms——"

He brightened at once. "Good! By all means! only"—with a whimsical look—"they must not be so high up as they used to be."

Half an hour thereafter Mr. Rossiter and his daughter were seated in a little private sitting room into which streamed the warm sunshine, revealing the well-worn carpet and heavy, though faded, hangings. Mr. Rossiter peered about with unabated interest, examining the bric-a-brac and then gazing down the street, while Elinor quietly began to open some letters that they had brought with them from the bank, where they had stopped on their way.

"Here is a letter from Posie **Stanton I** haven't read yet."

Mr. Rossiter, with an air of comfort, drew a cigar from his pocket. "Read your mother's letter again, my dear; I only half heard it."

"She thinks she will stay a little longer at the baths—the Reverend Doctor Clement is there—it is not at all dull—she doesn't think she will come to Paris, but will join us later in London—when the season is fairly begun there. But look at it yourself"—handing him the missive—"and I will glance over the others."

Deliberately he began to peruse the epistle, a message long in paper, if short in matter, for a page of stationery could contain but a few words of the large impressive handwriting of the good lady. He had reached the last page of the letter, when an exclamation caused him to glance up.

"What is it, my dear?"

"Nothing."

"Not bad news from home?"

"Not at all," she answered with constraint.

"You didn't hear from—any one else?" he said, gazing at her half-wistfully and then at the letters. She professed not to understand.

"Yes," she answered gaily, at the same time rising quickly; "I have really quite a voluminous correspondence. But how would you like to go out? You can show me the sights, you know. That is, if it won't tire you."

"Tire me?" He got up with alacrity. "Not a bit! The winter at the baths has made quite a new man of me."

She gazed at him searchingly—his white face had a spot of color on each cheek; his eyes an almost unnatural gleam—then gravely took up his hat and handed him his gloves and cane.

"You are very good to me, my dear," he observed. "I don't know what I should do without you."

The shining brown hair just brushed the white hair. "We always have understood each other very well, haven't we?"

"What?" he laughed. "Understand a woman? Even though she is your own daughter!"

Her hand fell from his shoulder, and, turning, she drew on her gloves.

"I am all ready if you are, papa."

Their footsteps resounded loudly as they descended. The house had a solitary, gloomy aspect. Save for a porter and the woman, they had seen no one. The latter now stood at the door.

"You will return for supper, monsieur?"

"Yes, madame. You can prepare something light, with one of those fine salads Madame Fracard used to make—an entree, perhaps, and—something from the patisserie. You can serve the meal in our sitting room at half-past six."

"Have you many guests now?" asked Elinor, as they were leaving.

"There are no others, madame," answered the woman, soberly. "Strangers have not yet begun to return to Paris."

"Well, well," said Mr. Rossiter, soothingly, "the city will soon fill up."

But on the sidewalk he sighed.

"How unlike Madame Fracard!" Then he paused with amused expression before a flaming proclamation posted on one of the walls: "Death and bombs!—Daggers for the traitors of the government!"

"What does it mean, papa?"

"Words! Just words!" he said lightly. "A call of the patriots to arms; to overthrow the government. These gentlemen, having finished a war with the enemy, now think they would like an opportunity to kill one another. But come, my dear, what do you say to a drive in the park?"

She offered no demur and soon they were driving toward the Arc de Triomphe. When they returned, the day was drawing to a close. Through the mist, all golden lay the city; in the distance trees and shrubbery were suspended in magical light. A brooding peace lay over sward and pavement. With knitted brows the girl looked out; violence, bloodshed—what had they in common with the fairy-like city? Soothingly the breeze, redolent with flowers, fanned her cheek. How beautiful was nature, and yet life—how complex!

Slowly sank the sun; upon the retina of her eyes yet remained an outline of the last segment of the glowing circle; then that, too, vanished, and the incoming shadows fell mysteriously.

"Here we are! And I've brought back a capital appetite with me."

She looked up with a start. "Are we home so soon?"

The candles threw a bright glow upon the snowy cover of the table that was spread in their sitting room when they re-entered that apartment.

"There! This is what I call nice and cozy!" said Mr. Rossiter. "A dainty repast, a bottle of light claret, and—last, but not least—you, my dear, to grace the board. How do you like Paris, Elinor?" he added.

"It is very beautiful, but"—she paused.

"What?"

"Nothing. I suppose I was thinking of that proclamation. I won't any more. Don't you think we might as well use all the candles?" she added, with a change of tone.

He smiled indulgently. "What extravagance! But go ahead."

"There!" she said a few moments later. "It makes quite an illumination, doesn't it?"

And the meal passed merrily enough. Mr. Rossiter was profuse in his praise of the dishes; the salad was mixed just right; the wine suited his taste. He became vivacious, anecdotal, and tales of the empire, stories of the court, pictures of the people he had seen and known in those early days followed in quick succession. Elinor noted, however, that despite his assertion when they had returned and his compliments on the cooking, he ate even more sparingly than usual. The flush on his face had deepened, although he had taken but little of the wine, and, leaning her head on her elbow, the girl watched him, occasionally nodding assent. Silently the woman moved in or out of the room; then placing the dishes on a tray, she vanished with a curt good night.

Mr. Rossiter waved his cigar back and forth as he talked, the past seeming to crowd upon him—the gay, heedless past! His manner perplexed her; in the silent house, perhaps by contrast, it affected her, as she thought of the long, dark corridors, the guests who had gone, the empty rooms.

He had been talking about the opera—the old opera—and now he arose and approached the piano to exemplify his theme. "Ah, they had real melodies in those days—the good old days," said he, as he half turned toward her. "Then a prima donna was likened to a nightingale! A concert was a charming occasion, not a bombardment."

She pressed her hands together tightly.

"Don't you think it is getting late, papa?"

He shook his head, his fingers continuing to run over the keys, when—boom! boom!—two loud detonations afar were followed by a distant volley of deep rumbling sounds. The melody died on the singer's lips.

"Why, what was that?" he said.

Elinor went to the window, drew back the curtain and looked out.

"Do you see anything?" he asked querulously.

"Nothing!"

He went to the bell rope and pulled it. No one answered. Again he strove to summon the woman or the porter.

"You stay here, papa," said the girl, after an interval. "I'll go down and find her."

Mr. Rossiter looked at the piano. He was vexed; put out. His song had been interrupted, and no singer, great or small, likes to be stopped in the middle of a cadenza.

In the dark entrance of the house Elinor discovered the woman and the porter, looking down the street.

"What has happened?" she asked quietly.

But even as she spoke a number of boys ran shouting down the thoroughfare: "Vive la commune! Vive la commune!"

The woman's glance turned. "The commune have pledged themselves to overthrow the government, and"—folding her arms—"they have begun."

A moment Elinor looked down thoughtfully, then retraced her steps to the sitting room, where Mr. Rossiter was pacing up and down.

"Well, my dear, well?" he asked with a certain impatience.

She did not wish needlessly to alarm him, so made light of what she had learned, but added: "Perhaps, though, it may become unpleasant here and we had better leave tomorrow."

"Tomorrow?" his face expressed emphatic dissent. "Leave Paris! We have just come! Besides, there won't be any serious trouble——"

She did not answer at once. To persuade her father to go without unduly exciting him might require diplomacy.

"But if I'm afraid, papa?"

"Tut! tut! You don't know the Parisians, my dear. They are like children—fond of proclamations and——"

"Won't you go—for my sake?" she pleaded.

Lightly he stroked her hair.

"Of course, if you really wish——"

She put her arms about his neck.

"Very well, my dear!"

"Good!" she exclaimed, almost gaily. "And now"—her arms loosening—"go on with your song."

(To be continued tomorrow.)

WITHIN THE EVERGLADES.

Luxuriant Growth of Plant and Animal Life.

From the Century.

The islands of the Everglades are covered with luxuriant virgin forests. The liveoaks and the bays are present in large numbers, interspersed with wild cucumbers, wild lemon and wild orange. The papaya, the custard apple and the prickly ash are of very frequent occurrence, and here and there, governed by the size and elevation of the islands, are the cabbage palmetto and the pine. Wild rubber trees are also found in some localities, growing to enormous size. Throughout the region there is a phenomenal growth of vines. The morning glory and honeysuckle attain great size and are almost everywhere. The wild fig, which fastens itself about a massive trunk of liveoak or bay, lives its cannibal life until the supporting tree trunk has been destroyed. Wherever the land is dry enough the coontie plant flourishes. This plant is really the Florida arrowroot. It is the mainstay of the Seminole. From its root he extracts flour and starch, both of which are delicate and digestible.

There is a remarkable variety and profusion of wild flowers. Water lilies and spider lilies abound. Orchids are found in great numbers and are of great beauty. On many of the islands grow giant ferns, the fronds of which measure ten feet in length.

The shores of the streams by which the Glades are entered are covered with rank growths of the cocoa plum. The same tree grows all about the edge of the Glades, producing blue fruit on the eastern edge and white fruit toward the west. The flora of the whole region is unique and unstudied, and contains, no doubt, scores of plants unknown and unclassified.

The Everglades are not a sportsman's paradise, in the usual sense of the term. Nevertheless, animal life is fairly abundant in that portion of the area where the larger islands lie. Deer are found on both the eastern and western edges, and now and then a bear is seen. The panther has not entirely disappeared, an occasional one finding its way into the explorer's camp. Otters are plentiful, and the Seminoles, who hunt both the otter and the alligator for their skins, derive a considerable revenue from otter trapping. The alligator is often seen, and his gentle roar is by no means unmusical. On the southeastern edge the crocodile (Crocodilus Americus) is found in small numbers, though his more favorite haunts are among the mangrove fastnesses between the Glades and the bays and sounds about Cape Sable.

Wind Versus Steam.

From the Philadelphia Inquirer.

Those who think that sails are entirely old-fashioned are requested to note that the average rate of sailing by the victorious Atlantic across the ocean of her own name was faster than most of the steamers which plow its waters. We do not refer to the fast liners, which make six, seven or eight day voyages, but to the great mass of vessels which come and go over the seas by means of steam. The Atlantic made the voyage in a little over twelve days, actually reaching land within twelve days, but handicapped at crossing the line by a calm. The average speed was over twelve knots an hour, while on one day she averaged nearly fifteen, or more than sixteen statute miles an hour. The sails which carried these yachts over were specially designed, the craft were not laden, and there was as much sacrificed to speed as safety would allow. It is much to be doubted whether the result will be an immediate increase in sailing clippers, but one thing is certain, that there is always a safe reliance to be placed on sails when there is occasion. Perhaps we are drifting away from all sorts of wind-driven craft, though it must be with a feeling of sadness if such proves the case. There are lots of us who remember the days when the American clippers were unrivaled, and when our sails whitened every sea and were the admiration of the world.

SCIENCE OF SLAUGHTER

To Be Taught Aboard Unique Naval Vessel.

THE OLD VESUVIUS

CONVERTED INTO A MODERN TORPEDO TRAINING SHIP.

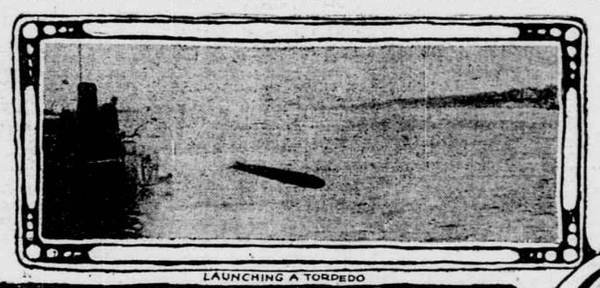
Will Be Used for the Instruction of Officers and Men in How to Operate Torpedoes.

(Copyright, 1905, by John Elfreth Watkins.)

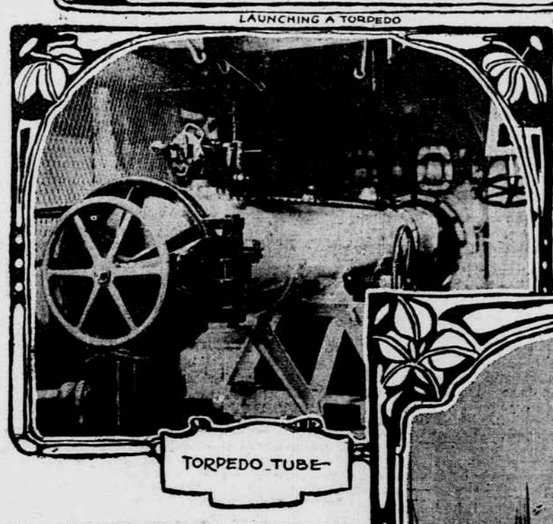
Distinctly unique in our navy is the "torpedo training ship" just put in commission for use at the naval war college and torpedo station, Coaster's Island, Newport.

Aboard of her elaborate experiments will be made by the naval ordnance department, demonstrations will be given for the benefit of classes of officers detailed at the war college in the warm "flirtation season," and drills will be held for those seamen sent regularly to the torpedo station to qualify for the grade of seaman gunner.

Strollers along the cliffs of the billionaires' Mecca will not recognize this novel drill ship as a once famous Yankee man-of-war made over; will not perceive that she is the ci-devant demon of the deep "Vesuvius"—that floating volcano, far-famed in the days of Santiago, when the Spaniards broke out in goose flesh at her approach. As the dynamite cruiser Vesuvius she has these seven years languished in dock, and been known as the "white elephant of the navy." Brought into being as the fad of a naval officer, she was designed to sow concentrated hades on land and sea, to clear mined harbors at $90,000 per square mile, and to plant earthquakes on terra firma, wherever she might design. Fated from the first to be unique, she was the only dynamite boat in any navy. But today, after an expenditure of $200,000, about all that remains of her old self are her hull and engines, and even these are entirely new in many parts.



LAUNCHING A TORPEDO



TORPEDO TUBE

NAVAL WAR COLLEGE NEW PORT

U.S. TORPEDO TRAINING SHIP.

Course in Infernal Machinery.

The science of slaughter, par excellence, will be devised and taught above and below her decks. Small wonder that our delegates to The Hague convention sniffed at the pledge to refrain from balloon bomb-throwing and refused to sign on grounds that such a swearing off would be gross inconsistency so long as nations still plotted to open below their foes the flood gates of a fiery hell! The torpedo is indeed the most terrible of all legal infernal machines devised by man and compared therewith the anarchist's bomb is a mere devil chaser of Fourth of July.

The government has two distinct schools of this infernal machine engineering—the offensive and defensive. The former belongs to the navy and the torpedo training ship will be the floating university thereof. But our "defensive" dynamitards wear upon their caps the brass castles of the army Engineer Corps. Their infernal machines are only sprung in national defense, wherefore they trust that at the pearly gates St. Peter will be more merciful to them than to their fellow infernal machinists of the navy.

The Vesuvius is equipped with torpedo tubes firing from both sides. Instruction will be given with automobile torpedoes only and these of the Whitehead pattern, now used almost exclusively by every great naval power of the world. No engine of destruction has wrought such a radical change in the fighting machinery of nations as has this invention first perfected by Robert Whitehead, a superintending engineer employed at certain iron works in Fiume, Austria. Since its advent the armament of ships has undergone a radical change and all fighting leviathans have had to be equipped with secondary batteries of rapid-fire guns prepared to hurl from ten to fifteen shots per minute at approaching torpedo boats. Since we first purchased the right to use the Whitehead torpedo it has been improved from year to year until it stands today as the most ingenious piece of machinery ever devised by human brains.

Machine That Thinks.

In fact, one of these automobile bombs is not only a complete warship in miniature, but it might be said to have brains of its own, sufficient to carry out the designs of the commander unchaining it. Of late years it has been so greatly improved that its speed has increased from six to thirty knots, and its accuracy has improved from an uncertain hit or miss chance to a surety that it will strike within a few yards of the mark aimed at, and this regardless of the eternal restlessness of the waves and currents of the deep. Even today skilled engineers are burning the midnight oil to further perfect it, and their improvements are being periodically announced.

In the compartments of the torpedo instruction ship many of these automobile infernal machines will be stored. They will be regularly used in practice drills, and the greatest care will be taken of them, for they are expensive playthings, costing anywhere from $3,000 to $4,000 apiece. Thus, any one of them represents the money which the average citizen toils for a lifetime to invest in a home for himself and his posterity.

Automobile Infernal Machines.

The visitor observing one of these practice drills will see the "automobile Whitehead" with all improvements up to date. Hauled out in position for launching, it occupies on deck as much space as a man-carrying canoe of good size, being sixteen and a half feet long by a foot and a half in diameter. The visitor sees only a cigar-shaped shell of steel, with a complicated propeller at the rear of the tapering point, or stern. In wartime there is screwed to the blunt head or bow the "war head" of bronze, containing from 120 to 200 pounds of gun cotton. Projecting out from this explosive chamber and ending in a sort of burr is the "war nose," carrying a firing pin extending back into the center of the charge. Immediately behind this pin and within the "war head" aforesaid is the "primer," which explodes the gun cotton upon the instant the burr comes in contact with the ship's bottom or other object of attack. So it would seem, at first blush, that such a cumbersome infernal machine—for it weighs 1,250 pounds—would be a very dangerous device to launch or have lying about where men move; but the fact is that its mechanical brains hold it in due restraint and render it as gentle as a lamb until after it has leaped out upon the splashing waves and gone part way on its mission of destruction. A safety appliance of ingenious design prevents the firing pin from becoming operative until a certain number of rockings to and fro in the waves have turned a screw a certain number of times and set the exploding mechanism.

Dummy Noses for Drill.

During the drills on board the torpedo training ship only "exercise heads" or "dummy noses" filled with water will be used, the war heads not being in evidence save when our officers at the war college may wish to blow something to splinteren by way of testing some new and diabolical brand of concentrated hell-fire.

The course of instruction will include an explanation of the inner mechanism, secretly guarded for many years. No doubt the popular mind will be interested by a brief peep into these long-hidden mysteries. In the broadest part of the cigar-like shell of steel—that part behind the war or practice head—is a chamber of twelve cubic feet capacity filled with air reduced to a pressure of from 1,500 pounds to a ton per square inch and weighing more than ninety pounds. This stored-up energy rushes through the pneumatic engines behind and propels the steel fish at a speed of twenty-eight knots for nearly a half mile. The tubes of the Vesuvius will project such a torpedo either under or above water, and it will be given a start by exploding several ounces of powder or discharging compressed air in the rear of the tube. As it leaves the tube a latch will trip a valve admitting the compressed air to its engines and thus setting its little propellers in motion.

The marvel of it all is how such a mechanical fish can be trained, before starting, to run at high or low speed, to stop at any distance and there dive or rise, as needs be, to continue along the surface of the water or at any desired depth up to twenty feet, how, even, if accidentally deflected from its intended path, it immediately brings itself back to this original direction or turns itself through any desired angle, to the right or left, before resuming this straight path.

The "Secret Chamber."

A peep into "the secret chamber"—into which none but the eyes of the very elect could penetrate until very lately—reveals the most original and ingenious device of all—that which keeps the steel fish at a constant depth beneath the surface. In a nutshell—almost literally speaking—this consists of a spring and piston, whose tension is equal to the pressure of the water at the depth where the torpedo is intended to run. If it sink below this level the greater pressure of the water there forces the spring and piston until they raise a horizontal rudder, and so, vice versa, if the torpedo goes above the required level the less water pressure there lowers the rudder. But a newer and more wonderful device, hidden in this secret chamber, renders the accuracy of the steel fish's aim, from side to side, so great that after it has buffeted the billows for a half mile it is almost sure to strike within eleven yards of the central point upon the hostile hull aimed at. To explain this device it need be simply said that it has the same properties as the fascinating gyroscopic spinning top which you played with when a child, and you well remember that peculiar top within a ring, which would spin out sidewise when the point was balanced on a little upright. Just as the top always restored its equilibrium, this steering attachment—the invention of one Obrey, an Austrian—has the power of restoring the torpedo to a straight course. Its perfection has recently made the automobile torpedo well nigh an instrument of precision. It automatically turns valves which throw the vertical propeller over until the torpedo is brought back to the original line of fire.

Receiving Practice Torpedoes.

The torpedo tubes of the training ship revolve on circular tracks, so that their automobile projectiles can be discharged into the water in any direction, from well forward to well abaft the beam. The ship is also equipped with davits for reholsting aboard those torpedoes with "dummy noses," used in the practice drills. When one of these swimming shuttles is launched from its tube its weight is about that of sea water, but as its compressed air discharges through its engines the steel shell becomes more buoyant, and when its run is finished it floats until recovered, recharged and refired.

The employment of this odd ship means that our navy is studying the automobile torpedo with increasing interest, and intends that all seaman gunners shall be well drilled in its bloody science. The Navy Department has collected statistics showing that before the Russo-Japanese war broke out there were nine attacks by torpedo boats using Whitehead torpedoes. Of twenty-seven torpedo boats employed in these attacks, sixteen got under fire and used the torpedoes, while two were lost. Of the 500 men engaged in this warfare less than 2 per cent were killed. In these nine attacks the torpedo boats sank eight vessels, including one battleship, two armored cruisers, three protected cruisers, one tug and one schooner. According to these statistics the chances for a torpedo boat's destruction when under fire are one out of eight, and, considering the fact that four vessels were sunk to each torpedo boat lost, this means of warfare would seem to be successful, especially in view of the fact that three of the vessels stung by these wasps were heavily armored leviathans of the battleship and armored cruiser types.

But the Navy Department is waiting for reliable reports from our naval attaches detailed to watch the naval battles between Russia and Japan before making any definite deductions.

JOHN ELFRETH WATKINS.

BENEFIT OF COLD BATHS.

Effect of Frigid Water on the Health—London Doctor's Opinion.

From the London Chronicle.

With the approach of milder mornings those person whose state of health does not permit of indulgence in the matutinal bath at the temperature of the winter and early spring atmosphere gradually abandon the dash of hot water in their "tubs," and take the water as they find it. Young people also are tempted to make a beginning at the cultivation of the regular cold bath habit, so as to accustom themselves gradually to the rigorous joys of late autumn and winter tubing. It is therefore an appropriate season for discussing the alleged merits and demerits of the cold bath, so that those who are likely to derive benefit therefrom may be encouraged to persevere with it, and those who will probably derive more harm than good may be warned in time against its injurious influence. Seeing that no two persons are constituted exactly alike, it is highly improbable that the practice of the cold bath will have similar effects on all and sundry.

The cold bath is as a rule beneficial to the robust, to young men and to men in the prime of life; it is, however, generally unsuitable for early childhood, for women, for the delicate and for the aged. Since, nevertheless, there are exceptions to every rule, each adult is able to discover the suitability or unsuitability of the cold bath for his or her individual constitution by giving it a trial. On taking a cold bath; that is, a bath in which the water is below the temperature of 70 degrees—the first effect experienced is a sensation of cold, with perhaps slight shivering and a gasp or two for breath. The system, in short, receives a shock. The skin becomes pale and shrunken, owing to the blood being driven out of the surface capillary vessels by their sudden contraction, and the tiny elevations of the skin, called papillae, become distinct, causing a roughness of the cutaneous surface, called "goose-skin;" the cutaneous exhalations are checked, and the senses dulled; the action of the entire nervous system is depressed, and the pulse falls ten or twenty beats per minute, if the water is very cold.

So far the action of the bath has been sedative. If the bath is continued for more than two or three minutes there is a diminution in the temperature of the skin. On leaving the bath, however, in the case of one with whom the cold bath agrees, a different set of symptoms succeeds; a sensation of glow soon comes on, with increased circulation in the capillaries of the skin. This is called the "reaction," and it is generally a sign that the bath has agreed with the subject. On the other hand, in the case of the weakly and delicate, the glow is slow in being established, and, indeed, may be barely established at all, while the feeling of cold and the state of nervous depression may persist so long as to be distinctly harmful. Such persons may find their fingers and toes numbed, and the cutaneous surface blue for a long time afterward, and they are obviously not fit subjects for the cold tub. Injudicious friends sometimes encourage the unfit to persevere in the use of the cold bath in the hope that they may become accustomed to its rigors and so derive ultimate benefit, but such a course can only be productive of mischief.

The cold bath is best taken in the morning before breakfast, and never should be taken after the system has been fatigued by considerable exertion, as quick walking, running, cycling, dancing, and so forth, when the skin is unusually active. Persons who have weak, fatty hearts, or a tendency to apoplexy, should avoid cold baths, and very cold baths should not be taken by persons suffering from varicose veins. Such baths are also bad for persons with a tendency to congestion of any of the internal organs.

On the robust the action of the cold bath is chiefly tonic and bracing, its cleansing or detergent properties being of the slightest. Thoroughly to cleanse the skin warm water is necessary. In the ordinary morning tub the water is mainly employed as a vehicle for the application to the surface of the body of that powerful form of energy we call cold. Under its influence the rate of oxidation of the tissues is increased. Tissue change is accelerated, the excretion of carbonic acid and urea from the system augmented, and appetite consequently increased. The susceptibility of the cutaneous nerves, and through them, of the cutaneous envelope as a whole to the influence of cold, damp air is very much lessened, and the liability to chill is reduced almost to vanishing point.

There are, of course, gradations of the cold bath. Persons to whom the plunge bath, in which the whole body is immersed at once, is too formidable a shock, may take it by easy stages, bathing the head, neck and shoulders before getting into the bath, and the feet and legs before undergoing complete immersion. In this way the nervous and arterial systems are prepared for eventualities, and the "shock" to the system (which is of the essence of the cold tub) correspondingly minimized. The mildest form of the cold bath is the cold sponge down, and this may be recommended to the less robust as a satisfactory tonic.

Glamour of the Footlights.

From Grant Duff's "Notes From a Diary."

Mary Anderson Navarro talked also a good deal about the stage, and told me that no one who had not lived behind the scenes could have any idea how utterly, hopelessly wearisome it was to live in a world where all things from the sun and the moon downward were shams.

Progressing Slowly.

From the London Daily News.

"I am sixty-five years of age," said Sir Hiram Maxim to an interviewer yesterday, "and I remember distinctly that my father told me that his grandfather had said that England was evidently going to the dogs."