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(Illustrated articles are marked with an asterisk.)

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Table listing sections I through VII, including 'BIOLOGY', 'CHEMISTRY', 'CIVIL ENGINEERING', 'MISCELLANEOUS', 'PHOTOGRAPHY', 'PHYSICS', and 'TECHNOLOGY' with sub-articles and page numbers.

THE PARIS EXPOSITION OF 1889.

The preparations for the great exhibition of the industries of all nations to be held next year at Paris are going on apace. The Eiffel tower has passed the 200 meter mark, and now exceeds in height the Washington monument. All the scraps and waste from its construction are being saved to be made into paper weights and similar memorials.

THE FOOTBALL MALADY.

Tennis and baseball have each their especial form of ailment, or, rather, there is a particular affection which those who indulge too freely in these sports—too freely for their strength—are wont to complain of. Recently an English physician has discovered and formulated an ailment that is peculiar to those who play football.

"MOSQUITO DEFENSE."

Those who have pinned their faith to big ships, big guns, and heavy armor have had cause, more particularly of late, to doubt the efficacy of the system they espouse. For several years the naval party in England that bent its efforts to furnish Britain with the Thunderer and Benbow type of sea-going monsters has been losing ground.

There are others, some of them well known for their knowledge of naval warfare, who have gone even

further; one portion of them taking the ground that a torpedo fleet, for shore defense, would prove as effective as a line of battle ships, thus permitting the dispatch of the big boats to the channel and other uncovered points, while the other portion openly declare that a torpedo fleet should be constructed and maintained for harbor defense because it is likely to be more effective, to say nothing of cheapness, than great armor clads could be.

In a recent paper by Sir George Baden-Powell, M. P., on "Mosquito Defense," he points out, though tardily it must be said, the necessity for a torpedo fleet, and shows how valuable an aid the steam yacht fleet could be made in protecting the coasts from a hostile fleet. In this country we long since discovered this, and, indeed, an attempt was once made to get authority for enrolling them in a naval reserve.

He noticed, as others did, the ease the quick-heeled torpedo boats approached and maneuvered about these Titanic monsters when the night was dark or the weather thick; circling them, dodging in between them, and he might have declared, and reasonably too, that the mere fact they were thus able to approach, though, because engaged in peaceful maneuvering, not permitted to strike, was good circumstantial evidence of their effectiveness.

For us, now engaged in building a navy, these lessons are invaluable. So far we have a new fleet of slow ships that can neither fight nor run away. All naval authorities are agreed that the only types of big ships that can be made effective in war are the ponderous floating battery, slow but heavily armored and armed, and that which can steam at least 18 knots an hour—even then she cannot catch the fast merchant steamers. In our new fleet we have not a ship that can do better than 16 knots, and, strange to say, these slow ships are not heavily armored, so as to be able to stand the shock of battle with ships of other navies which could overhaul them on the high seas.

Situated as we are, the necessity for an effective mosquito fleet seems more urgent than for a fleet of big ships, but if we are to have big ships, let us have fast ones.

Peruvian Whistling Jugs.

The silvadors or musical jugs found among the burial places of Peru are most ingenious specimens of handiwork. A silvio in the William S. Vaux collection at Philadelphia consists of two vases, whose bodies are joined one to the other, with a hole or opening between them. The neck of one of these vases is closed, with the exception of a small opening in which a clay pipe is inserted leading to the body of the whistle.

People Fret too Much about Trifles.

Women find a sea of trouble in their housekeeping. Some one says they often put as much worry and anxiety into a loaf of bread, a pie, a cake, into the weekly washing and ironing as should suffice for much weightier matters. Suppose these things go wrong to-day, the to-morrows are coming in which to try again, and the thing is not worth clouding your own spirit and those around you, injuring yourself and them physically—for the mind affects the body—and for such a trifle. When a thing is beyond repair, waste no useless regrets over it and do no idle fretting. Strive for that serenity of spirit that will enable you to make the best of all things. That means contentment in its best sense.