

spect indicated; either they did not have the nerve or they were lacking in the disposition to be honest, because it is altogether improbable that men of their attainments and experience, in instant touch with all the great powers and great men of our time, were unable to realize that sooner or later their country must be the loser in a fight with this one—the longer the fight the worse for them. Also is it unlikely that they could depend upon assistance elsewhere in the absence of showing ability to sustain themselves for a while at least after having declared war. The trouble is that the Spanish government is democratic in its upholding force and monarchic where no assistance can be derived, the former being intensely feared by the latter. Rather than give the rabble supreme displeasure and thereby jeopardize the continuity of the reigning dynastic figurehead, all hands at headquarters surrendered, as they will assuredly have to do again and from present appearances very soon; that is, the power and skill of the United States were less to be dreaded than a possible uprising of the lawyers and loafers of Madrid with the concomitant departure of Marie Christina for Austria! Very well! they have made their choice and must now take the consequences, hard and humiliating as they will assuredly be.

If Spain would hereafter bestow encouragement and preferment on men who are willing to express themselves as has Silveira, and keep in repression its demagogues and blusterers; if it would cease to coin false promises out of the crucible of falsehood and address itself sternly to the task of dealing honestly with other nations; if it would substitute advanced methods, good examples and widespread education for tyranny, inhumanity and ignorance—then indeed would it have a reliance which might in time enable it to retrieve some of its shattered fortunes. Finding itself wholly in the wrong, unable to continue so unequal a struggle, and having satisfied the visionary despot of honor by making a really good fight (and being unmercifully whipped), one would think it would be glad to stop where it is. But it won't, apparently.

HARNESSING THE NILE.

Considerable interest has been shown lately in the doings of Great Britain in Egypt, more particularly in regard to the utilizing of the venerable river Nile for agricultural and other purposes. Prof. Forbes has recently completed his surveys of the cataracts for the purpose of ascertaining whether they can be used for driving power for the benefit of the Egyptians. Of the labors of the professor the London Standard says:

"Prof. Forbes made a survey of the Nile from Assouan, the site of the first cataract, to a point not far from Abu Hamed, at which the fourth cataract is situated. The country between the fifth cataract, which occurs between Abu Hamed and Berber, and the sixth and last of the famous cataracts, was left alone for the present, at all events, though it is believed that scientific irrigation would make it some of the richest country in the world, being formed of ancient Nile mud. The river between the third and fourth cataracts was merely traversed, or roughly surveyed. The really serious and detailed investigations were made at the first, second and third cataracts. The question which had got to be settled was whether it would be possible to use the force of the waterfall at those three points for driving power.

"First from a picture of this famous river, from half a mile to a mile wide,

flowing through a country mostly mountainous, sterile and sandy on both banks beyond the narrow strip of a few hundred yards on either bank which is cultivated. It was thought (so we understand) that while they were about to construct the reservoirs for supplying the cultivators with a constant supply of water for their crops—sugar, cotton, rice, corn and so on—it might not be unwise at the same time to see if some cheaper means of pumping could not be devised than by steam power. So, if the scheme is adopted, the waterfall will generate the electricity, which will be produced in the usual way—and supplied to pumping engines, factories, work of any sort which requires power, even the railway engine—also in the usual way. The beginning means heavy masonry work, solid foundations, tunnels, shafts on the edge of the cataract, which is thus led into turbines or water wheels, which generate the electricity—and there you have the whole process in all its simplicity. Such works will be costly, it is needless to say. It is the financial aspect which is always the most difficult. Given that all existing means of getting power are hideously dear, as they are, whether by fuel or native labor, can we harness the cataracts at such cost as will render it commercially beneficial? That is the problem. It remains to be seen whether it is capable of solution. One of Prof. Forbes' duties, we believe, was to discover the wants of the cultivators, and already he has tabulated eighteen distinct industries which would be largely and immediately benefitted by harnessing the Nile."

POINTS ON WARFARE.

At this time, when the United States is engaged in the greatest naval war of the century so far as it has gone, information regarding such battling is always in demand. The populace generally have some understanding of how land fights are conducted, running all the way from a glimmering one from reading and hearing them spoken of up to and including the most thorough comprehension obtained by intelligent, varied and active experience. But such fighting has not yet had its day so far as the trouble with Spain is concerned, and one or two more victories like that of Dewey may so change the aspect of affairs that infantry will not be much in demand.

The losses by warfare are generally first figured up, the ranking item being that of life. It is observed by a contemporary that "battered battleships can be repaired, but the trained soldiers and sailors killed, in war are losses that hit at the heart of a nation." It is well understood that it takes many bullets to kill one man, and those who have had ample chance to find out claim that shells are least to be feared of all war missiles, on land, but the naval record is not so comforting. Reference is made to the battle between the Chinese and Japanese at Phung-do, on July 25, 1894, in which two shells struck a Japanese boat and exploded without harm; but in the dramatic encounter on the Yalu river, when the Chinese rained shells in the direction of the enemy, their marksmanship was so bad that only 100 struck, but these averaged nearly three men killed each, the exact total number of slain being 298. At the same place ten Japanese were killed by the "vibration of air caused by the firing of their own guns." In some cases shells did severe damage on Japanese ships. One vessel had thirty persons killed and seventy injured by the explosion of one shell. Another had fourteen killed and twenty-seven in-

jured by one shell. Of course the greatest damage was done by shells that burst. The bursting of even small shells did great injury. In one instance four persons were killed and six wounded by the explosion of a very small shell. In the 298 killed or injured, head wounds were most frequent, the ratio being 25.15 per cent of the total number. Next in order came wounds "of the greater part of the body," of the upper limbs, of the lower limbs, of the abdomen and lumbar region, and of the chest and back, while the neck suffered least. In land fighting it is not so, the lower extremities suffering most, the upper ones and head next, then the chest and back, abdomen and lumbar regions, while the neck again escapes oftenest.

It is cited as an interesting and gratifying fact that the wounded in the present war will have the benefit of a body of skilled surgeons and physicians known as the Association of Military Surgeons of the United States. It began as a national guard body in 1891 at the suggestion of Dr. Nicholas Senn of Chicago. In 1893 the medical officers of the Army and Marine Hospital Service became members by invitation. The association makes a specialty of military practice and it is to be hoped that it has a representative or two along with Commodore Dewey. Although there are no reports, it is hardly probable that our squadron escaped without casualties, among which may be a painfully long list of dead and a larger one of wounded.

TOLSTOI AND THE SCIENCES.

Count Tolstoi has recently expressed his views regarding the inadequacy of science when the question is to solve the problems of existence. In a preface to a Russian translation of Edward Carpenter's book on cotemporary science he bequeaths the results of his observations to the public. They are particularly valuable at a time when the tendency of the world is to idolize scientific research and give it an importance far beyond what it claims for itself. A summary of the count's views on the subject is given in the current number of the Literary Digest.

Tolstoi states that in Russia especially the superstitious belief prevails that the only thing necessary for humanity is, not religion or morality, but a knowledge of the experimental sciences. This he characterizes as a fatal error. Then he points out that no science in the whole list, from astronomy to sociology, gives us a true knowledge of reality, and that the so-called laws of those sciences have only an approximate value. The method they follow—explaining phenomena nearest to us by those more remote is erroneous. The sciences, in getting away from reality, get into a field foreign to man and leave the only important problems unanswered. "They act as would a man who, wishing to know the nature of an object, instead of drawing near and holding it, recedes to a point from which color and figure cannot be distinguished. He then attempts to give a complete and exact description. Thus with the experimental sciences: pretending to explain reality, they despoil it of all that makes it real, and then they give us only arbitrary generalizations."

Knowledge of the way we should live was always, Tolstoi says, considered the science of sciences. The laborer supposes that the men who study shall be able to tell him where to find happiness. He expects science should teach him how to live, how to act, how to control his instincts and what to believe. But instead of reply-