

advance. Perhaps in another session the real profiteers in professional crime may not fare so well as they have fared so far.

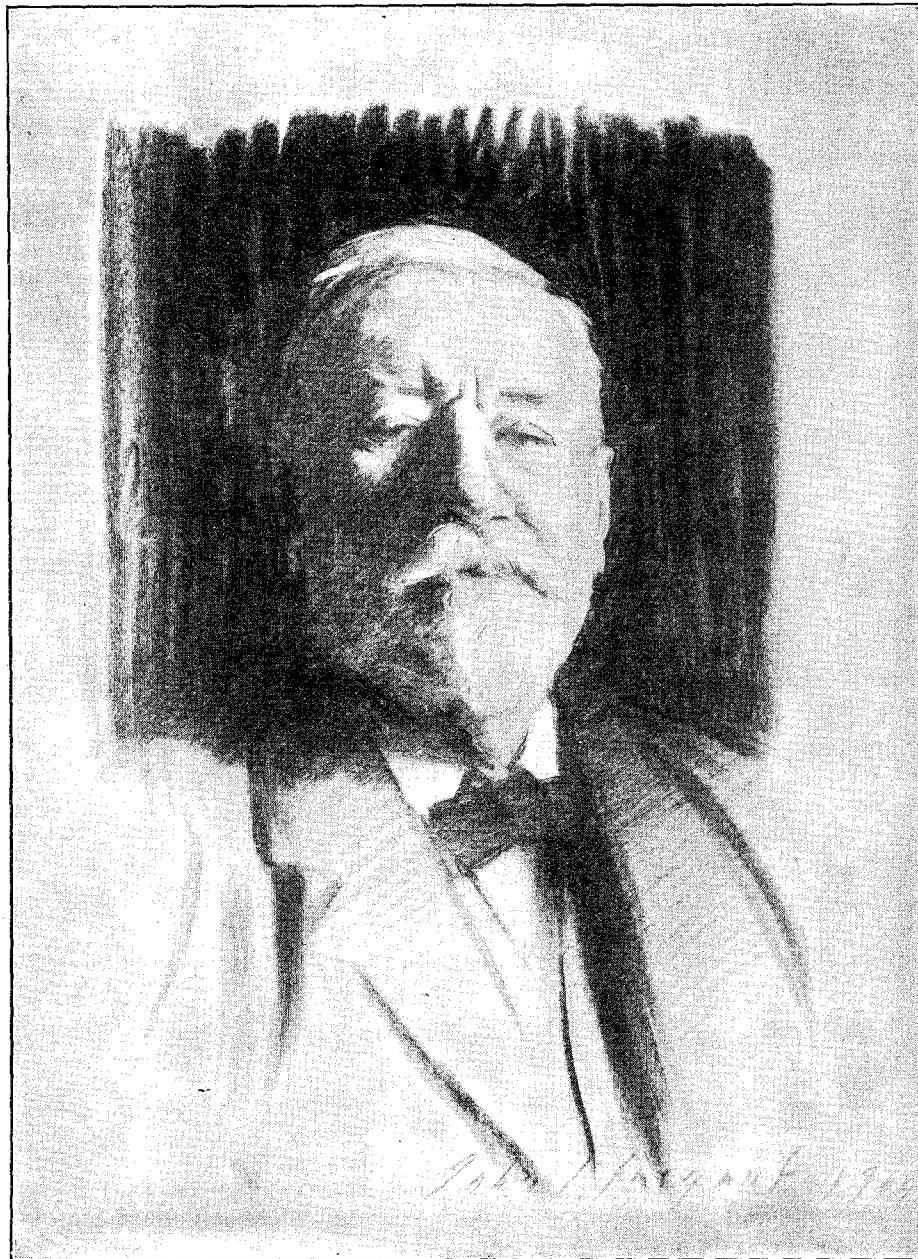
Power from Sea Water

SCIENTISTS and engineers have heard a great deal of late about an ambitious plan announced by the French scientist Georges Claude, who proposes to generate immense amounts of energy by taking advantage of the fact that in the tropics the surface water of the sea is warm and the bottom water is practically ice water. The plan has received considerable newspaper publicity, and the response of the average reader seems to vary all the way from serious acceptance to smiling dismissal. Yet it is, in our opinion, neither economical, on the one hand, nor chimerical, on the other.

What Dr. Claude proposes to do is to erect an immense power plant on some tropical shore and extend large conduits to the bottom of the sea, reaching cold water at a few thousand feet depth. Through these conduits he would draw up water and use it to chill a mammoth steam condenser. This condensation of the contained steam would constantly create a vacuum, and in a vacuum water boils at ordinary room temperatures. Warm surface water would therefore be turned to steam or vapor. The steam produced would drive large turbines, and would then be condensed to maintain the vacuum as mentioned above. Thus the cycle would go on continuously. In theory the plan is utterly simple, and any physicist knows it would work. Claude himself is a distinguished physicist and already has to his credit several highly important industrial inventions.

But Would It Pay?

SOME of us may find it hard to believe that water can be boiled at such a low temperature (80° to 85° as an average for surface water in the tropics). This difficulty, however, exists only because we are so accustomed to think of water boiling in teakettles at 212° (at ordinary sea-level atmospheric pressure). Yet on a mountain water boils at a considerably lower temperature, which explains why cooking takes place so slowly there. Carry the reduction of atmospheric pressure much further, and we reach Dr. Claude's figures: steam at eighty-odd degrees. This steam would, however, have a pressure of only one-half pound per square inch, compared with, say, 250 pounds in modern locomotive boilers. Therefore, to make up for this low pressure, a correspondingly greater volume of water must be converted to steam; and there, if anywhere,



From original drawing by John Singer Sargent

Professor Charles Sprague Sargent, internationally famed for his horticultural achievements

is the rub—the required installation would have to be very many times greater than those we now have, and the investment would be equally increased. Every second, in order to produce half a million horse-power—the capacity of a great steam power plant at the present day—about 30,000 cubic feet of water would have to be boiled away into steam. Any engineer would consider that a staggering volume of water to evaporate each second; any engineer would whistle when told of it.

Yet, given the money, there is nothing to prevent its being accomplished. But would it pay? Many are doubtful whether it would pay so long as we have coal. Yet Dr. Claude, who is now in this country, has never been the kind of man to propose half-baked ideas. Certain it is, at any rate, that the energy stored in sea water in the form of heat is almost unbelievably stupendous. To give a rough idea of the order of magnitude involved, it is known that the sun

while it shines sheds more than 2,000,000 horse-power on each square mile of the earth and sea. Only a fraction is absorbed by the water; yet when we begin to multiply this by the available areas in square miles the potentialities mount up into rows of ciphers like those that are handled only by astronomers and modern ministers of finance. Perhaps our grandchildren will hear more of the Claude plan.

Charles Sprague Sargent

CHARLES SPRAGUE SARGENT, for fifty-six years director of the Arnold Arboretum of Harvard, is dead. Some time soon a movement will be launched to erect to him a suitable monument. It will be a movement futile except in so far as it may enable those who loved him to feel that they have done something to honor the memory of a great man. His monuments are builded, numerous and enduring.

The Arnold Arboretum is his monu-

ment. He took an inadequate fund, a worn-out farm, a willing spirit, and "in a few years," as it seemed to him, transformed them into the greatest arboretum on earth. That it is the greatest is indicated by the fact that a few years ago a Chinese came there to make an exhaustive study of the trees of China.

"The Silva of North America" is his monument. John Muir read it as he would have read a novel, and regretted that there was not more of it. It consists of only fourteen volumes!

Thousands of gardens in America and in Europe are his monuments. They have been made lovely by the trees and plants which he searched the world for and propagated.

The wooded sides of the Adirondacks are his monuments. He laid the foundation of the New York State forestry work and saved the mountain woods.

The redwood forests of the Pacific coast are his monument. His was the leading spirit in the movement which saved the giant trees.

Glacier National Park is his monument. He made the first proposal for the setting aside of that region as a park—thirty years before it was actually set aside.

The multiplied millions of acres of National Forests are his monument. Establishment of the National Forest policy resulted from the study of the National Academy of Science Commission, of which he was chairman. He took the leading part in inducing President Cleveland to make the first reservation of 21,000,000 acres. Later, when pressure against the policy was heavy and President McKinley was ready to turn the Forest Reserves back into the public domain, he took the leading part in inducing the Chief Executive to change his mind.

No monument that can be erected will equal the least of these, for, as commemorating the achievements of such a man,

Marble is dust,
Cold and repellent,
And iron is rust.

A Libeler of Religion

A MAN in Toronto, in a paper which he ironically called "Christian Inquirer," published an attack on the "God of the Bible." A reader found the language so offensive that he made complaint to the King's attorney, on the ground that the publication was in violation of a law against blasphemous libels. The accused was tried, convicted, and sentenced to imprisonment, with deportation recommended.

As thus stated in its barest outline,

this incident seems like a reversion to the sixteenth century. So accustomed have we become to the principle of freedom of speech that we assume that any one is free to say anything on any subject he pleases. This, however, is not strictly true. The law everywhere holds men responsible for abuse of their freedom if they libel the character and reputation of others. In Canada the law holds that to be libel which brings religious faith to contempt or ridicule; but it distinctly provides "that no one is guilty of a blasphemous libel for expressing in good faith and in decent language, or attempting to establish by arguments used in good faith and conveyed in decent language, any opinion whatever upon any religious subject." The question in this case, therefore, was one of fact—whether the language was decent or not.

That the publisher of this statement was guilty of using vulgar and offensive terms there can be no doubt. Whether a man who offends in this way, however, can best be dealt with by law is a serious question. The attempt to deal with it by law is open to grave abuses. In any community of self-respecting and decent people an offender of this sort can most safely be left to the obscurity to which public opinion will relegate him.

Drowned Towns

FIVE towns and villages in the central part of Massachusetts are leisurely planning to yield to an artificial flood which will completely drown them and will submerge important parts of other towns, all to insure continued health and prosperity to a distant but far larger population. Boston must have more water for drinking and for manufacturing. Investigations have determined that the best source is the Swift and Ware Rivers. To make this supply available a lake of approximately 40,000 acres will be created. Two thousand people are to be dispossessed; 1,000 buildings will be razed; the purity and quantity of water will be insured; the bill will be \$60,000,000.

A study is now being made of the equities involved. Compensation for personal property and for consequential damages to the town tradesmen and others who will suffer loss of livelihood must be determined; even the removal of cemeteries must be arranged for. Furthermore, the 1,800,000 people of the metropolitan district of Boston may well expect to pay the town and county taxes upon the property submerged, in order that the town and county taxable assets may not be unduly depleted; and

so on through the complicated details of preparing for the lake, even to the utmost personal minutiae.

But a more complicated question is whether municipalities, and even other States, are entitled to compensation for the diversion of water which has habitually been regarded by them as of value chiefly to "flush the sewage" dumped into the natural watercourses, not because that is the best means of disposal but because, up to the present, it is the "cheapest" method. Representative O'Connor, of the town of Palmer, Massachusetts, has asked for "protection against the cost of a sewer system in case the loss of water may require its construction." It has even been seriously suggested in Connecticut that the proposed diversion of tributary waters may menace the public health. Officials of the State assert that "the flood waters of the Connecticut River are depended upon to flush the bed of the river" of the accumulated sewage sludge and debris of civilization.

The answer is, not to attempt to interfere with the machinery which seeks to allocate the public waters to their highest use, but to modify as speedily as possible such existing practices of waste and sewage disposal as are likely to complicate life.

Joseph Lister's Centennial

THE fifth of April is the centennial of the birth of Joseph Lister, whose introduction of antiseptic methods to surgery had "saved more lives by the end of the nineteenth century than all the losses of life through war in the eighteenth century." Yet the celebration of this hundredth anniversary, which is engaging the Royal College of Surgeons in England for two or three days, is inconsequential in comparison with the triumphal recognition which Baron Lister received for more than thirty years prior to his death in 1912.

It was at the time of the American Civil War that Joseph Lister began his work of defeating the infection that accompanied a frightfully large proportion of wounds and surgical operations. Then, as still a young man, he had laid the brilliant foundations of his career as a surgeon. He was Professor of Surgery at the University of Glasgow. But even the most accomplished surgical practice was nearly futile, for "blood poisoning," or gangrene, or erysipelas, or tetanus, followed frequently and could not be stayed. After the surgeons' skill had done its utmost, recovery depended, without antiseptics, entirely on chance.

As house surgeon of the University College Hospital in London Joseph Lis-