

## A MOTHER OF SPAIN.

BY MINNIE LEONA UPTON.

MY little lad! my little lad!  
Would I were by thy side to-day!  
Mother of God! I shall go mad—  
Heart of my heart so far away!  
So far away, o'er cruel seas—  
Earth, sea, and sky seem one red blot!  
I hate, I hate this cool, soft breeze  
That fans me, since he feels it not.

Perchance o'er fever-breeding plains  
He marches, faint, with throbbing head.  
(Would God that I could share those pains!)  
Perchance—no, no, he is not *dead!*  
"T is for the country, for dear Spain?"  
Ay—love of country once I had,  
But something burns so in my brain—  
My little lad! my little lad!

## HOW INDIA HAS SAVED HER FORESTS.

A LESSON TO THE UNITED STATES.

BY E. KAY ROBINSON.



HE mistake which is generally made in estimating the achievements of the Forest Department of the government of India is to suppose that these are the result of any preconceived plan of imperial magnitude, and would therefore be difficult and costly to imitate. As a matter of fact, the Indian Forest Department is the outcome of a tentative and almost trifling experiment. It may be doubted, indeed, whether even the clear evidence of mischief wrought by past neglect of forest preservation would ever have moved the government of India to action on any large scale. Timidity in incurring expenditure has always been the bane of that government, and its greatest and most successful undertakings have generally been forced upon it by necessity. Thus the Indian Forest Department owes its existence to the pinch of difficulty which was experienced, just fifty years ago, in providing timber for building war-ships in the dockyards of Bombay. In the previous year a local bureau had been created in Bombay to control the timber contractors; but the germ of the existing department was sowed farther afield, in Madras, where the discerning eyes of General Frederick Cotton noted, on an official tour, the reckless havoc that was being perpetrated in the dwindling forests of Madras to meet the demands of the contractors for the Bombay dockyard. On his recommendation, the task of evolving a scheme to protect the

Madras forests was intrusted to Lieutenant Michael, who had "seen something of forestry in Switzerland." The lieutenant still lives, as Major-General Michael, near London; and thus we have within the span of one man's active life the whole development in India of the successful effort of civilized man to undo man's uncivilized mischief. This is summarized in the growth and work of the Indian Forest Department; and it is as typical of that department's functions that so large a tree should have grown from a chance seed, as it is characteristic of the ways of the government of India that the man to whom so much is due should still go unrewarded.

For seven years Lieutenant Michael worked in the Madras forests, fixing by his personal experience the healthy and unhealthy seasons for forest operations, and, with "no better company than tame or wild elephants," generally stereotyping the practical lines upon which the protection and development of Indian forests are still carried on. Then, having risen step by step to colonel's rank, having ruined his health by years of exposure to jungle-fever, and having created a solid forest revenue for the Madras government, and secured an immeasurably greater gain in the creation of a preserve of forest resources annually increasing in value both to the government and to the community at large, he retired from his appointment. With Lieutenant Michael must be bracketed, as authors of Indian forestry, Dr. H. Cleghorn and Dr. (later Sir) D. Brandis. If the first was the pioneer

of practical forest work, the second has been described as the father of scientific arboriculture in India, while the third possessed that genius for organization which converted a small bureau in the far south of the country into an imperial department which exercises complete control over one eighth of the entire peninsula, producing a revenue approximating to a million sterling per annum. This sum, moreover, may be regarded merely as the lowest possible rate of interest derived from a growing capital which has been entirely created for the benefit of posterity by the labors of the Forest Department of India, whose guiding principle remains today, as it has been from the beginning, the subordination of current profits to the improvement of state property for the benefit of the people. "Reserved" state forests are marked off, large enough to supply all local and foreign demands upon each district for timber, fuel, and general forest produce, and these are worked so as to supply the largest possible *permanent* yield in the most economical way.

The three great difficulties in the way have been, first, the neglect of forests in the past, causing the denudation of land whose re-afforestation has become a Sisyphean task; secondly, the traditions of the villagers, who had assumed a right of user in the matter of timber, fuel, and grazing to all forest land; and, thirdly, the habits of the people, who conceive that the best way of paying off a grudge against the government, of securing a tender crop of fodder for their cattle next season, or, in the case of jungle tribes, of preparing the ground for agriculture, is to set fire to a forest. Consequently, the preservation of reserved forests from injury by fire has come to be regarded, due allowance being made for the nature of the inhabitants, as the criterion by which successful forest work in India is judged, even more than by the maintenance of seed-bearing trees, the reproduction of valuable timber, or the pecuniary profit accruing to the state.

It is, however, the curse of forestry in India that its large domain of remunerative, scientific, and philanthropic public work should be dragged at the tail of the procession of political functions appertaining to the Home Department. Yet, in spite of this, the Indian forest officers do splendid work over the vast area committed to their charge, in every extreme of climate, from the moist, impenetrable forests of Assam, covering three fourths of the province, to the arid hillsides of Baluchistan.

Enumeration of the timber wealth of India would give no idea of the variety of factors with which forest officers have to deal. In Sind, for instance, it is no unusual detail of a year's forest work that an officer in charge of a district should report, as in 1894, the acquisition of ten thousand acres of treeless waste, and the loss of six thousand acres of forest, through the vagaries of the river Indus, which annually shifts its bed to right or left, often wiping out villages and threatening cities in its course. It all comes in the day's work of the forest officer in the Punjab, also, that he should ride for miles over the coarse pasturage of treeless *rukh* land (coarse pasturage classified as "forest"), and personally impound the herds of half-wild buffaloes of neighboring villagers trespassing thereon. If he should have to encounter villagers sallying out with iron-shod bamboo staves, and offering forcible resistance—why, that comes into the day's work, too.

The task of the forest officer naturally divides itself under these heads: *settlement*, by the adjustment of legal rights to the ground; *demarcation*, by the definition of boundaries to the land appropriated as "forest" by the state; *survey*, to determine the suitability of the land for the produce of timber, fuel, fodder, pasturage, etc., for the neighboring population or for export; preparation of *working-plans*, whereby the resources of the land in these several respects may be best developed; provision of *communications*, whereby the produce of the forests may be brought within reach of the people, and of *buildings* for the accommodation of the staff and establishment; of *protection* of the forests from fire, trespass, encroachment, and injury, and *improvement* by means of felling, reproduction, and other operations of forestry; *working*, whereby the largest annual output of forest produce compatible with the preservation of the undiminished fertility of the forest area may be secured; *finance*, whereby the working of the department in each of its subsections, whether divided latitudinally as regards operations, or longitudinally as regards locality, may be shown to possess a satisfactory balance-sheet; maintenance of *establishment*, to secure efficiency in every detail of the work; conduct of *experiments* in the utilization of indigenous resources, and the acclimatization of exotic methods or material; regulation of the *export* of forest produce to other provinces or foreign lands; technical *education* and *recruitment* of men and subordinate officers suitable for forest work; and, lastly, *record*

of work done. From this brief and imperfect summary it will be seen that the work of the Forest Department demands legal ability, geometric skill, botanical knowledge, administrative talent, engineering faculty, scientific experience, police ability, and economic science, besides all the qualities required for success in the financial, educational, commercial, organizing, and record work.

In spite of its limitations and its difficulties, the aggregate work of the Forest Department of India has produced a result which has been rightly described by Sir Richard Temple as one of the greatest achievements of the Victorian era; and it has been a work, too, which, as another authority, Sir George Birdwood, has shown, was begun only in the nick of time. "A few more years' delay," he says, "would have resulted in the total loss of half the forests of India," of which now the "reserved" portions alone, where the state declares and maintains its right to the entire produce, cover more than seventy thousand square miles, a total to which large additions have yet to be made in Madras and Burma. These reserves, moreover, increase annually in value. Land which was once denuded of trees by the unrestricted grazing of cattle, especially of goats, which browse by choice

upon the topmost-growing shoots of young saplings, is covered once more with forests which annually yield a richer output of timber and fuel. Valuable trees have replaced more worthless kinds. Carefully guarded, the rubber-tree grows more numerous and more productive; and in a country like India, where the mortality from fever largely exceeds that from all other causes combined, the cheap supply of quinine, dispensed in *picce* packets throughout the villages by government agency, would alone more than repay the labors of the Forest Department. Yet its most striking and important achievement has been the acclimatization of valuable foreign trees. Already many Indian landscapes have been completely altered by the Casuarina and Eucalyptus (beefwood and blue-gum) of Australia, while the introduction of the apple and chestnut in the Himalayas has brought new and important food-supplies within reach of the people. The Buddhists, the Arabs, and the Portuguese each added somewhat to the flora of India, partly from religious motives, and partly for luxury. To the British has been reserved the honor of surpassing their combined efforts by the exercise of a statesmanlike philanthropy which preserves and enriches the vegetable wealth of the land for the good of its population.

## THE AUSTRIAN EDISON KEEPING SCHOOL AGAIN.

BY MARK TWAIN.

BY a paragraph in the "Freie Presse" it appears that Jan Szczepanik, the youthful inventor of the "teleelectroscope" [for seeing at great distances] and some other scientific marvels, has been having an odd adventure, by help of the state.

Vienna is hospitably ready to smile whenever there is an opportunity, and this seems to be a fair one. Three or four years ago, when Szczepanik was nineteen or twenty years old, he was a schoolmaster in a Moravian village, on a salary of—I forget the amount, but no matter; there was not enough of it to remember. His head was full of inventions, and in his odd hours he began to plan them out. He soon perfected an ingenious invention for applying photography to pattern-designing as used in the textile industries, whereby he proposed to reduce the customary outlay of time, labor, and money

expended on that department of loom-work to next to nothing. He wanted to carry his project to Vienna and market it, and as he could not get leave of absence, he made his trip without leave. This lost him his place, but did not gain him his market. When his money ran out he went back home, and was presently reinstated. By and by he deserted once more, and went to Vienna, and this time he made some friends who assisted him, and his invention was sold to England and Germany for a great sum. During the past three years he has been experimenting and investigating in velvety comfort. His most picturesque achievement is his teleelectroscope, a device which a number of able men—including Mr. Edison, I think—had already tried their hands at, with prospects of eventual success. A Frenchman came near to solving the difficult and intricate problem