

present boast of Sweden, begging of him to institute observations (similar to those here proposed) upon the great lakes of his country; I have also written to the United States, on the same, and circulars have been addressed, officially, to the Engineer Officers stationed at the several great lakes of Russia, as far as the Baikal, for the same purpose. If, as I trust, we shall by these means obtain a mass of well-authenticated information, we shall have one fact more to add to our knowledge of the earth, and one fact often leads to many. I sincerely hope the Royal Geographical Society will not consider the subject unworthy their notice.

To the above I may add that self-registering indicators would be very desirable, because the phenomenon is one which happens only occasionally, and that suddenly, giving no previous warning. These indicators would show what had taken place in the absence of the observer, and if, after a time, the phenomenon was observed to be more frequent than is supposed, or to happen at stated times, then the observers might, so to say, be in wait for them, and notice all the facts of the case.

T. JACKSON.

The Narcotics we Indulge In.*

In ministering fully to his natural wants, man passes through three successive stages. First, the necessities of his material existence are provided for; next, his cares are assuaged and for the time banished; and lastly, his employments, intellectual and animal, are multiplied, and for the time exalted. Beef and bread represent the means by which, in every country, the first end is attained; fermented liquors help us to the second; and the third we reach by the aid of narcotics.

When we examine, in a chemical sense, the animal and vegetable productions which in a thousand varied forms, among various nations, take the place of the beef and pudding of the Englishman in supplying the first necessities of our nature, we are struck with the remarkable general similarity which prevails among them naturally, or which they are made to assume by the artifices of cookery, before they are conveyed into the stomach. And we exclaim, in irrepressible wonder, "by what universal instinct is it that under so many varied conditions of climate and of natural vegetation, the experience of man has led him everywhere so nicely to adjust the chemical constitution of the staple forms of his diet to the chemical wants of his living body?" Nor is the lightening of care less widely and extensively attained. Savage and civilised tribes, near and remote—the houseless barbarian wanderer, the settled peasant, and the skilled citizen—all have found, without intercommunion, through some common and instinctive process, the art of preparing fermented drinks, and of procuring for themselves the enjoyments and miseries of intoxication. The juice of the cocoa-nut tree yields its *toddy* wherever this valuable palm can be made to grow. Another palm affords a fermented wine on the Andean slopes of Chili—the sugar palm intoxicates in the Indian Archipelago, and among the Moluccas and Philippines—while the best palm wine of all is prepared from the sap of the oil-palms of the African coast. In Mexico the American aloe (*Agave Americana*), gave its much-loved *pulque*, and probably also its ardent brandy, long before Cortez invaded the ancient monarchy of the Aztecs. Fruits supply the cider, the perry, and the wine, of many civilized regions—barley and the cereal grains the beer and brandy of others; while the milk of their breeding mares supplies at will to the wandering Tartar, either a mild exhilarating drink, or an ardently intoxicating spirit. And to our wonder at the wide prevalence of this taste, and our surprise at the success with which, in so many different ways, mankind has been able to

gratify it, the chemist adds a new wonder and surprise when he tells us, that, as in the case of his food, so in preparing his intoxicating drinks, man has everywhere come to the same result. His fermented liquors, wherever and from whatever substances prepared, all contain the same exciting alcohol, producing everywhere upon every human being, the same exhilarating effects!

It is somewhat different as regards the next stage of human wants—the exalted stage which we arrive at by the aid of narcotics. Of these narcotics it is remarkable that almost every country or tribe has its own—either aboriginal or imported—so that the universal instinct has led somehow or other to the universal supply of this want also.

The aborigines of Central America rolled up the Tobacco leaf, and dreamt away their lives in smoky reveries, ages before Columbus was born, or the colonists of Sir Walter Raleigh brought it within the chaste precincts of the Elizabethan court. The cocoa leaf, now the comfort and strength of the Peruvian muletero, was chewed as he does it, in far remote times, and among the same mountains, by the Indian natives whose blood he inherits. The use of opium and hemp, and the betel nut, among eastern Asiatics, mounts up to the times of most fabulous antiquity, as probably does that of the pepper tribe in the South Sea Islands and the Indian Archipelago; while in northern Europe the hop, and in Tartary the narcotic fungus, have been in use from time immemorial. In all these countries the wished for end has been attained, as in the case of intoxicating drinks, by different means; but the precise effect upon the system, by the use of each substance, has not, in this case been the same. On the contrary, tobacco, and cocoa, and opium, and hemp, and the hop, and *Cocculus indicus*, and the toadstool, each exercises an influence upon the human frame, which is peculiar to itself, and which in many respects is full of interest, and deserving of profound study. These differences we so far know to arise from the active substance they severally contain being chemically different.

I. TOBACCO.—Of all the narcotics we have mentioned, tobacco is in use over the largest area, and by the greatest number of people. Opium comes next to it; and the hemp plant occupies the third place.

The tobacco plant is indigenous to tropical America, whence it was introduced into Spain and France in the beginning of the sixteenth century by the Spaniards, and into England half a century later (1586) by Sir Francis Drake. Since that time, both the use and the cultivation of the plant have spread over a large portion of the globe. Besides the different parts of America, including Canada, New Brunswick, the United States, Mexico, the Western coast, the Spanish main, Brazil, Cuba, St. Domingo, Trinidad, &c., it has spread in the East into Turkey, Persia, India, China, Australia, the Philippine Islands, and Japan. It has been raised with success also in nearly every country of Europe; while in Africa it is cultivated in Egypt, Algeria, in the Canaries, on the Western coast, and at the Cape of Good Hope. It is, indeed, among narcotics, what the potato is among food-plants—the most extensively cultivated, the most hardy, and the most tolerant of changes in temperature, altitude, and general climate.

We need scarcely remark, that the use of the plant has become not less universal than its cultivation. In America it is met with everywhere, and the consumption is enormous. In Europe, from the plains of sunny Castile to the frozen Archangel, the pipe and the cigar are a common solace among all ranks and conditions. In vain was the use of it prohibited in Russia, and the knout threatened for the first offence, and death for the second. In vain Pope Urban VIII. thundered out his bull against it. In vain our own James I. wrote his "Counterblaste to Tobacco." Op-

* Abridged from Blackwood—August 1853.