

Since lantana bush is highly prolific and large numbers of berries are eaten by birds it would follow therefore that the seeds get well disseminated in a very short space of time.

It will be seen from the above that there

is a grave danger of lantana rapidly spreading throughout Hyderabad State. The method of destroying the Cactus through the agency of cochineal insect has already been discovered but the problem of eliminating lantana is still awaiting solution.

Biology : its Importance in Modern Education.

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ONE of the most important and remarkable developments of modern times has been in the study of Biology. Educated men have only very recently recognised the fact that this science is in a large sense the foundation of nearly all forms of human progress.

In the past few years vast advances have been made in all the sciences, and in the realm of the Physical Sciences particularly, investigations and discoveries and their practical application to production have resulted in an immense increase of material wealth. This increase, however, is swallowed up by the drain due to the destructive activities of animals and plants which as parasites, carriers of disease germs, and destroyers of crops, are slowly gaining a dominance in the world. Their activities are a menace which unless checked may lead ultimately to the degeneration of the human race. We are awakening to the fact that human efforts in checking this colossal drain on the wealth of nations can only be successful if undertaken on a national basis. A nation's health and efficiency is the health and efficiency of its citizens, and unless this is of a high standard national wealth and prosperity will suffer.

The first step in this great campaign is the education of the general public in the fundamental principles governing life—the laws of health, the functions of the body in health and disease, the chief types of animals and plants beneficial or dangerous to human health, the rôle of animals and plants in the spread of disease and the dangers of uncontrolled human reproduction, especially in the undesirable classes of humanity. Mass ignorance in these respects has undermined the health of nations, incapacitated millions and endangered the health of the fit.

The two main channels for the drain of the world's wealth are through human disease and animal and plant pests, and the progress made hitherto by experts has been

almost entirely in the field of cure rather than prevention.

In the problem of disease we have left the task to the medical fraternity. It is impossible for medical men and other scientists alone, with all their knowledge, experience and willingness to serve, to combat disease brought about through ignorance. For every individual cured through the corporate knowledge of doctors and other scientists, there are tens of others who contract disease through that arch enemy, ignorance. The need for more doctors and more money to heal the ever-increasing numbers of suffering humanity will obtain scant relief as long as we fail to change our methods of approaching the problem. A nation's knowledge of the means of preventing disease is probably the biggest and most important step in man's warfare with disease.

In the problem of animal and plant pests similar conditions prevail. Crores of rupees are annually lost in India through the devastating depredations of insects alone. Add to this the wealth lost by other animal and plant pests and the figure far outstrips the wealth that can be accumulated through the combined achievements of all modern science.

The world can never be adequately grateful to the workers in the physical sciences whose achievements and discoveries have contributed much to the progress and prosperity of the world. Admirable as the progress and effect of these achievements may be, the world has not yet found an effective check to the drain of human life and wealth. Indeed we owe it as a tribute to these silent workers to specialise and concentrate on a study of the comparatively neglected Biological Sciences; a knowledge of which is absolutely essential for conserving the health and prosperity that the Physical Sciences have won for us.

Such development in the medical and

economic aspects of Biology may give rise to a new problem—the dangerous increase in human population. Over-production in any commodity is to-day recognised as a major economic problem, and over-production in the human race is perhaps one of the biggest obstacles to human progress. Hence the need for scientific control of human reproduction so that the quality and quantity of human offspring may be such as would promote the health of the race, and as could be supported by the material resources of the country. Unintelligent and uncontrolled reproduction, especially in the undesirable classes of humanity so far, has resulted in a dangerous increase of unwanted and uncared for children, defectives, insane, feeble-minded, habitual criminals and paupers, constituting a big financial burden on the honest citizen and on the nation as a whole. The decrease in the undesirable classes does not necessarily involve the increase of the better stocks. Even legislation will be of no avail unless there is a wide-spread appreciation of the problem; and a study of Social Biology, impressing on man the need for selective breeding so as to eliminate those defects as would hinder man in his struggle for existence, is as imperative as the other aspects of Biology.

The need for the universal study of Biology has been felt in the countries of the West, but the need in India is even more imperative. Even among the literate population of this country how many know that—

(a) Malaria, in spite of our knowledge of its cause, means of transmission and methods of prevention, destroys, directly or indirectly, millions of people every year, more or less incapacitates several millions more, and is probably the cause of over one-half the entire mortality of the human race.

(b) The average annual cost of Malaria in Bombay City alone exceeds fifty lakhs of rupees.

(c) Plague in India takes a toll of several hundred thousand lives every year.

(d) Over half a billion people in the world are infected with Hookworm, which feeds on blood from the walls of the intestine, sapping the vitality, poisoning the system, stunting the mental and physical growth of man, and causing that general laziness, stupidity and anæmic condition so characteristic of the Indian labourer.

(e) In India a very large proportion of the diseases is due to the wrong habits

and customs of the people, coupled with an ignorance of the main sources of contamination; inasmuch as pools, tanks, wells and rivers in India are very important sources of contagion where hundreds of people use unsuspectingly the water for domestic and other purposes, ignorant of the fact that one diseased person could contaminate the whole tank and spread disease to several hundreds of healthy persons.

(f) Syphilis is yet one of the principal causes of insanity, paralysis, still-births and barrenness in the civilized world. A great deal of time, money and energy is wasted by well-meaning people in trying to lessen these social diseases by appealing to the higher instincts in man. Admirable as these methods may be, morally, they can only influence the very few, being impracticable in stemming, generally, those urges for which life exists. It is time we recognised human instincts and human cravings as rising even above the highest moral and spiritual instincts man is capable of, and worked for a practical means of solving the problem of disease even through life's strongest urges.

The importance of these diseases is due to their rapid transmission and consequently wide prevalence, and where lakhs of rupees would hardly suffice to merely keep those diseases in check, it would mean an extraordinarily small expenditure to educate the people in the essentials regarding the origin, spread and prevention of these diseases.

There is no doubt that such a dreaded disease as syphilis, which causes untold misery to mankind, is probably one of the easiest diseases to prevent. If humanity were aware that the syphilis spirochæte takes some time to get into the blood stream, and can easily be killed by disinfectants while still on the outer surface of the skin, nine-tenths of human misery and financial loss caused by this disease would disappear. What is true of syphilis is equally true of many diseases, the means of prevention being very simple and requiring only a well organised system of teaching the essentials for living a healthy life in a disease-ridden world.

It is only a thorough knowledge of the dangers of these diseases and a knowledge of the methods of prevention that can materially lessen the terrible destruction to human life and the enormous waste of man's financial resources.

(To be continued.)