

TOP-SOIL DEPLETION.

(By CAPT. E. V. SANDERSON.)

Some pages in human history reflect no credit upon mankind. First in importance is that page which describes man's treatment of the soil. Man was placed in a garden. He has transformed vast areas of it into desert. He has destroyed the cover on thousands of acres; he has laid waste wide stretches of pleasant country; he has made human life all but impossible in many places. The world is full of examples. Mediterranean nations now eke out a bare existence where once they maintained a flourishing civilisation. China periodically suffers from famine brought about by man's own destructive hand, says Mr. Arthur M. Hyde, Secretary of Agriculture, in "American Forests."

In New Zealand, where we have an extremely mountainous and hilly formation, the evils following deforestation are very pronounced even in the comparatively few years which have elapsed since the forest was destroyed. European authorities assert that it takes 400 years on an average for a forest to build one inch of top-soil, while agricultural and pastoral pursuits destroy an inch in from 10 to 50 years, according to the steepness of the country and the intensity of the destruction of tree and shrub growth. In New Zealand the loss of top-soil through over-grazing of steep country is probably much more than 1 inch in 10 years. When it is remembered that it is the top-soil which supplies us with our food and clothing per medium of the growing of wool, butter, meat, etc., such facts should make us pause and think. If the forest is removed from steep country, it is not only that area which is affected, but the water rushing down the forest-denuded slopes carries all manner of debris into the streams and rivers, filling their beds, causing them to spread over adjoining fertile lower lands, while the richest and finest material is that which reaches the sea, as is plainly shown by the discolouration during floods. Well might we learn from the experiences of older civilised lands such as in America, where it is estimated that 21,000,000 acres—an area exceeding the total area of arable land in Japan has gone entirely out of use owing to destructive erosion. China, however, can always provide the best instances of the results of erosion owing to deforestation, due it is said to the old-time belief that to plant trees would disturb the spirits of the soil.

In China some of the large rivers have in the course of hundreds of years brought down such gigantic amounts of