

WATER

By MATAKITE.

OF man's domestic requirements water is the most essential. Without it mankind could not survive for many days, and failure of the usual supplies would overnight bring about a change in the method of living of every person. All else would be forgotten in the search for water and prompt action would be necessary while strength remained. Towns would be abandoned, and a nomadic race would come into being while the search continued. Food, electricity, fuel, shelter and clothing would become insignificant matters compared with the precious liquid. While all people know the general use of water, it is doubtful whether many fully appreciate its value in this land of plenty. Little attempt is made to conserve supplies and the habit of extravagance is more pronounced, thus accentuating the difficulty of short supply when it occurs. Without water, there would be no crops, no trees, no vegetation, and the land would be a desert unable to support living things. During hot weather, the water supply decreases and the fire risk increases. Fire-damage is likely to be unduly high owing to low pressure or short supply of water. When water is in short supply for driving turbines, electricity is in short supply for pumping water a hundred miles away, to quote only a simple instance of a vicious circle. Most of the large towns and cities in New Zealand have experienced shortage of water in varying degrees, and it will scarcely be disputed that the supply conditions are becoming progressively more severe. One instance known to the writer is that of a town supply which failed to overflow the dam during last summer, and as far as is known, it was the first time in 45 years, the condition being due to failure of the spring and not due to increase in population. A perusal of newspaper reports over the last few years indicates that similar conditions existed elsewhere. This may be due to two causes — failure of supply and increased demand due to increased population. The situation can be met by increase in supply or control of demand. The latter is of only limited application as increase in population will eventually overtake the supply. Increase in supply is the only permanent solution and can be accomplished by increase in reservoir capacity, increase in flow of water, or both. In the final analysis it will be found that increase in flow is very desirable if not necessary.

The high natural reservoirs of underground water in forest-clad hills, valleys, flat and swamp areas are the common sources of supply and the man-made reservoirs are dependent on

these sources of water before townspeople receive and benefit. There is ample evidence that the natural reservoirs cannot always supply the needs of the people, and the logical conclusion is that reservoirs and catchment areas be increased. But with the continual cutting of timber and draining of swamps, the catchment areas are being decreased or reduced in usefulness, and unless effective measures are taken to meet the situation, the time will come when disaster will force a recognition of the need. Fires in the Taupo area provide a grim warning. Trees that are milled provide only temporary relief in the demand for housing, yet their removal constitutes a permanent set-back to water supply which is the more essential need. It may be argued that trees are not within a catchment area, but adjacent areas are equally important, and removal of some sources of supply creates a demand on the remaining ones.

Moisture forms a small but extremely important constituent of the atmosphere, while water distributes the sun's heat, and shields the soil from excessive temperatures. As soil moisture decreases, desert conditions increase. Trees tend to break the force of winds, and large areas of forest have an important bearing on the climate of adjacent areas. From certain observations, the writer is of the opinion that the coming summer will see a general shortage of water for electricity and domestic purposes, and will force the attention of the people to this most important matter. Removal of trees has allowed the sun's heat to penetrate the soil with consequent increase in capillarity and evaporation. It is not too soon for serious thought to be given to the preservation of all existing forests and to replanting other selected areas with native trees.

During the last ten years there is evidence of a climatic change, shown by the lowering of ice on the Tasman glacier by fifty to a hundred feet, and the receding of the Franz Josef glacier by half a mile. Removal of timber has been the only serious alteration in geographical features since the advent of the pakeha and it is not beyond the bounds of possibility that timber cutting has indirectly affected the enormous alpine reservoirs. The largest and most stable reservoir in New Zealand under wholly natural conditions has become reduced in capacity by fifty feet over many square miles, and directs attention to the possible and far-reaching conditions likely to affect the rivers and domestic water supply in all parts of the country not very many years hence.