

LIME

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UP TILL lately my only acquaintance with lime was made standing on a trailer behind a caterpillar tractor and emptying 1 cwt. bags of lime into a hopper which dribbled it out relentlessly on to the paddocks. When your eyes are sore with lime, your hair and clothes stiff with it, and your back takes five minutes to get straight, you don't care where lime comes from or where it goes to.

But when New Zealand produces 7,000,000 tons annually of agricultural lime alone, one can't by-pass the limeworks. Anyhow, it's just another aspect of this production business; it helps make New Zealand lamb, wheat, wool, and flax what they are.

Lime began long ago . . . when the shells of dead sea creatures accumulated on the ocean-bed. The mass solidified and was brought forth out of the sea when New Zealand first saw the light. It is now limestone hills, but under the microscope the remains of marine life can still be detected.

We take this work of ages and use it; in some cases put it back where it first came from—into bone.

Limestone outcrops are fairly plentiful. White or yellow rock, often grimy as if it were smoke-blackened. Nothing grows on it. Scrape the surface, and it is white beneath. Some day there will be a "lime-works" there.

At the quarry stone is blasted out of ledges about 8 ft. deep by pneumatic drills and electric detonators and conveyed by chute, conveyor, or small railway to the works. It may even be trucked some miles. If the "works" are not at the quarry, a crusher is there on the job breaking the rock into fist-sized lumps. At the works these are carried up a bucket elevator to a wooden storage bin, perhaps 10 ft. square and



20 ft. high. If it's fine weather and lime is being carried faster than it can be "worked" (10 tons an hour), this bin will hold the accumulated surplus.

Slowly it is taken from the bottom of the bin by another elevator to a brick smoke-box, which feeds the crusher and drier. Inside the works this huge mechanism is the first thing your eye sees. A cylinder, about 50 ft. long and big enough to walk through, is turning over steadily. In two places round it are great cog-toothed rings, and into them work electrically-driven pinions—electricity is specially suitable for this work because it has a "steady" drive and because a small motor can be put up anywhere in the building. If steam were used, there would have to be a mainshaft and the power applied, where wanted, through elaborate systems of bevel gears.

Right angles of iron bolted inside the cylinder carry the broken lumps up until,