

HONEYCOMBING

By Lieut. F. A. SANDALL

WE DON'T see much honey on the table these days—no; but the bees of New Zealand, of course, are as busy as ever. And literally as busy as the bees is the honey extraction and packing plant at Leeston, near Christchurch, for not only does it extract in the "season" all the honey the bees have made, but in the winter it is busy making frames in which bees may build next season's comb.

Every one knows the sections and stories of a beehive. Inside each story are many frames, about 15 in. long, 7 in. deep, and over an inch thick. These the bees have filled with honeycomb.

Sections full of frames are received at the plant. Now the comb in each frame has been sealed with wax by the bees. To get out the honey the wax must be removed. It can be cut off with a large knife, but the wax gets sticky and holds back the knife, particularly in cold weather. So this factory use a "steam-knife." A copper jacket is soldered on to one side of the knife. A kettle is boiled over a primus stove and steam passes up a tube through the jacket and into a can of water. This hot-bladed knife cuts off the wax very quickly. The frames are then placed in rotors in two large vats. Each rotor will hold about fifty frames, and they are driven like everything else except the steam-knife, by electricity. As they rotate, centrifugal force draws the honey from the comb and throws it on to the side of the vat. As the comb empties, the rotor is spun faster—by a simple device—a pulley gives the drive by pressing on the face of a disk like a gramophone turn-table. The pulley is movable, and as it is slid towards the centre of the disk, the rotor speeds up.

Some honey, of course, comes off with the wax sealing the comb. This mixture is put in a can and separated later. Meanwhile the extracted honey is flowing from the vats through the floor into a straining-

tank in the lower storey of the plant. Here any wax present collects on the top, and the honey, now pure, runs into the tank proper. This is a large affair and must hold many gallons. From a shutter at the bottom you can "take off" honey—60 lb. in twenty seconds.

All the honey, however, is not packed in such large quantities. Much of it is in 1 lb. cartons. A special automatic electric machine packs these, filling and sealing the cartons in quick succession. And so to the breakfast table—if you're lucky.

But all that bees give is not honey. Much of it is wax. All of it can be used. It is melted and solidified in ingots—about twice the size most of us imagine a gold ingot to be. As time allows, these in turn are reduced to strips less than an inch thick and longer than a comb frame. Rollers, or "embossers," reduce this to a sheet as thick as very thin cardboard and marked or embossed all over with hexagonal impressions. On to these the bee will build its comb. This sheet has to be held firmly in the frame, and here another cunningly modern trick is used. Three thin wires are stretched across the frame. The frame is then laid on the sheet so that the wires touch it. Wires from the positive and negative terminals of a battery are touched on the extremities of each frame-wire. Instantly the wires warm up and sink into the softened wax—and there they are, embedded in the wax sheet, reinforcing it like wires in splinter-proof glass.

Off with the frames to the hives, and the rest can safely be left to the bees.

