THE MAKING OF TABLETS

By H. H. LINN, M.D.

In the early days of the practice of medicine drugs were usually dispensed in the form of powders and decoctions, later alcoholic extracts and tinctures were found useful especially to insure keeping qualities in liquid preparations.

About fifty years ago machines were invented whereby medicinal powders could be compressed into small disks whereby accurate dosage could be assured and if properly stored keeping qualities for most drugs was quite satisfactory. Compressed tablets have gained greatest confidence in the United States but as their true worth is more fully understood they are more and more being used by the medical profession in all parts of the world.

There are numerous reasons for the continued increase in the use of compressed tablets, some of them might be listed as follows:

1. When properly prepared they do give accuracy of dosage.

2. They are easily dispensed and as easily taken by the patient.

3. They disintegrate quickly when placed in water or when taken by the patient.

4. They may be enteric-coated so that they do not break up in the stomach but retain their form until they meet the digestive fluids of the small intestine.

5. There need be no other drug given such as alcohol, that might produce injurious effects.

If you were to visit a large pharmaceutical plant you would find many different departments. In the Tablet-manufacturing section you would first meet a group of men in the mixing rooms whose only work was to measure out the exact proportions of different prescriptions and thoroughly mix these ingredients, either by repeated siftings or by placing them in mechanical mixers so that each combination of drugs for a tablet is perfectly mixed. These are labelled and passed on to the granulating room.

In the granulating section certain powders are moistened with a paste made of corn-flour and gum acacia, after which they are passed through sieves, the smaller the tablet is to be the finer the granules are made. Other powders may be moistened with sugar, syrup, alcohol, and some, as salycilic acid, with gelatine solution, but all are passed through sieves to secure a granular form which when dried will easily run through a tablet-compressing machine.

The granulated powders are spread out in trays and placed in drying cabinets, where dry warm air is passed over them, carrying off all moisture, and leaving a perfectly dry granulation.

The dry granulation is passed on to the lubricating section, where corn-flour may be added for disintegrating and talc or certain oils are added, and the granulations resifted and mixed to secure perfect

SIFTING GRANULATIONS AND PREPARING COMPRESSED TABLETS IN A MISSION DISPENSARY

lubrication so that the granulation will run through the compressing machines without sticking to the punches or the cups of the machine. It is then ready for compressing.

The compressing machines are so constructed that different sized punches fit the small die or cup into which the granulation is run, the punches come together or near enough together to compress the granulation between them, thus the tablet is formed and thrown out of the machine; with a single punch machine about ninety tablets are made in a minute, while with a large multiple punch machine as many as four hundred tablets are made per minute. By adjusting the punches the desired weight of any tablet may be determined,

Since most compressed tablets are prepared with the idea that they will disintegrate as soon as they come in contact with the digestive fluids, and since there is often more or less moisture in the atmosphere it is best to keep all compressed tablets in well-closed containers—they should not be left for any long periods of time exposed to the air as they will certainly begin to disintegrate. Some, as potassium iodide, will liquefy within a few hours if left in a damp place.

OUR INDIAN HOSPITALS, No. 15

A Visit to Ludhiana

By A. C. McA. Munro, R.N.

The accompanying snapshot is that of the 1933 graduates of Ludhiana Medical College Hospital, together with Sister L. A. Carleton and Miss Johnson.

It was your Associate Editor's good fortune to spend two days with Sister Carleton at this fine Mission College and Hospital, whose founder and Principal, Dr. Edith Brown, is one of India's best known

GRADUATING CLASS 1933. WOMEN'S CHRISTIAN COLLEGE, LUDHIANA, PUNJAB.

and beloved missionary doctors. This year the Order of the British Empire was conferred upon this gentle, gracious, great lady who nearly forty years ago came and saw India's great need—multitude suffering,—*India's own daughters must be trained as doctors and nurses.*—Overcoming almost insurmountable difficulties she set to work and the years have proved the clearness of her vision. Ludhiana graduates,—doctors, nurses, pharmacists—are to be found carrying on