

II. EXPERIMENT WITH "BARI" (ALKALI) SOIL OF THE PUNJAB

Next a naturally alkaline soil like the "Bari" soil of the Punjab was similarly tried. This soil is very impervious to water due to the presence of considerable quantities of sodium carbonate and sodium sulphate. Experience showed that care is necessary in packing the "Bari" soil so that breaks in the column do not occur on wetting. This is ensured by loosely packing the soil in the tubes. Tables 3 and 4 give the values for capillary rise in and percolation through the "Bari" soil.

TABLE 3
 Capillary rise in "Bari" soil (in cms.)

| Time (Hours) | Water | 5% Sodium chloride |
|--------------|-------|--------------------|
| 1 | 2.4 | 8.2 |
| 2 | 3.4 | 14.0 |
| 3 | 4.0 | 17.2 |
| 4 | 4.4 | 21.2 |
| 22 | 10.3 | 46.7 |
| 28 | 11.2 | 51.3 |
| 48 | 12.7 | 61.0 |

It is clear from Tables 3 and 4 that the movement of a 5 per cent. solution of sodium

chloride is much faster than that of water in the "Bari" soil.

TABLE 4
 Percolation in c.c.s. through a 10 cm. column of "Bari" soil

| Time (Hours) | Water | 5% sodium chloride |
|--------------|-------|--------------------|
| 1 | 0 | 0 |
| 2 | 0 | 1.0 |
| 3 | 0 | 3.0 |
| 21 | 0 | 16.5 |
| 27 | 0.5 | 21.0 |
| 48 | 1.0 | 48.0 |
| 71 | 2.5 | 74.5 |
| 96 | 3.0 | 121.5 |

The applications of the above findings to the leaching out of the salts from alkali soils are being investigated. Similar experiments with other salts are in progress, and the results will be reported in a later communication.

1. Ramdas, I. A., and Mallik, A. K., *Proc. Ind. Acad. Sci.*, 1942, **16** A, 1. 2. —, *Ibid.*, 1942, **16**, 16.
3. — and Pandit, U. P., *Curr. Sci.*, 1942, **11**, 288.
4. Ramdas, I. A., and Mallik, A. K., *Curr. Sci.* 1942, **13**, 42-288.

Note.—The cost of printing this article has been met from a generous grant-in-aid from the Imperial Council of Agricultural Research, New Delhi.

THE PROCESSING OF MAIZE TO IMPROVE ITS VALUE AS AN ARTICLE OF HUMAN FOOD

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MAIZE is one of the more important millet crops of India. It is also grown quite extensively in other parts of the world and very large quantities have been imported into India in recent years. It is used as an everyday article of diet in certain parts of the country, while, in other parts, its use is rather unfamiliar or unpopular. Persons accustomed to rice, wheat, tapioca and such other food materials do not like maize because of its hard and fibrous coat, the bitter principle usually associated with the skin and the oil present in its germ. The latter also tends to turn rancid on long storage and renders the grain unpleas-

ant as an article of food. The position will be very different if the grain can be processed to remove the undesirable constituents and then supplied to the public as an article of food.

THE 'AMERICAN FLOUR'

A few decades ago, processed maize flour was introduced into India, the supplies coming chiefly from America. The product soon became very popular so much so that it found application in a variety of food preparations. In South India, it became very popular as 'American flour' and there was a very great demand for it, though only a few people knew what it was made of.

PROCESSED MAIZE PRODUCTS AND THEIR USES

In Europe and America, processed maize flour is finding extensive application. It is the basis for the usual thickeners of soups, breakfast cereals, various types of sweets as well as meat puddings, ice-cream and so forth. Other preparations like spaghetti and macaroni which are also familiar to the Indian consumers are prepared out of maize flour.

Considering all available evidence, it would appear to be extremely important that maize should be first processed and preferably converted into a clean, attractive flour before it could find general, popular favour in India. The husk and the germ can be separated, the former being used as an animal feed, while the latter can be crushed and used for preparing

WHOLE-MAIZE IS NOT POPULAR OVER A LARGE PART OF THE COUNTRY

During recent years, several attempts have been made by the Central and Provincial Governments and also by the States to popularise the use of maize as an article of food. These efforts have met with only moderate success because the average consumer, say, of rice, prefers to go on a reduced ration of his favourite cereal, rather than have extra food in the form of maize which he does not like and which he finds to be coarse and difficult to digest. This is chiefly due to the fact that the maize is supplied to him either as a whole-grain or as whole-flour (coarsely ground), neither of which he is able to utilise satisfac-