

## PART V. STARCHES FROM DIFFERENT VARIETIES OF RICE.

By H. P. Das Gupta.

It is generally known that the percentage of starch in a grain is not an index of the yield of starch that may be expected from it. This is particularly so in the case of rice, the starch content of which, as estimated by a chemical method, gives no idea of the yield which may be actually obtained from it. This is partly due to the inadequacy of the existing chemical methods and partly to the occurrence of interfering substances which do not facilitate the easy separation of starch in the case of certain varieties of rice.

The observations of the present author have shown that irrespective of the variety chosen, clean, broken rice is always cheaper and more convenient to handle than the whole grain. The only important consideration is that the rice should have been obtained from mature grains. 'Hard' grains, though desirable from other points of view, are not so useful for the manufacture of starch as comparatively soft ones. It has been suggested ("Indian Trade Inquiry on Rice," *Imperial Institute Bull.*, 1918, 16, 16) that red skin or even yellowness of the grain are objectionable as they generally yield coloured products. The observations of the present author have shown, however, that the colour of the grain does not appreciably affect the whiteness of the final product.

Six different varieties of rice—including some very cheap and strongly coloured ones—were obtained through the courtesy of the Paddy Specialist to the Government of Madras. The grains were powdered, treated with dilute alkali and the starches prepared according to the method described in the previous part (*Agric. and Livestock in India*, 1934, 4, 645). The results have been presented in the following table (Table I):—

TABLE I.

Name of variety	Percentages	
	Starch in the grain	Yield of starch actually obtained
10368 Tinnevelly <i>Kar</i> (Red)	78.8	70.5
ADT 11	72.5	69.8
GEB 24	80.0	65.0
10375 Gobi <i>Kar</i>	79.7	60.5
CO 4	80.3	56.5
W. Puttu (yellow)	80.6	48.2

From the point of view of starch manufacture, the most satisfactory one is 10368 Tinnevely *Kar*, which, though a red variety, gave the highest yield of white starch. ADT 11, which followed as a close second, contained less starch, but the yield represents a higher percentage of the total than that from any other variety. The other varieties gave distinctly lower yields though they contained more starch than the first two. The variety CO 4 was exceptionally hard and as the yield of starch was also low, it should be regarded as being definitely unsuitable for the manufacture of starch. W. Puttu was very gummy and yielded mostly second grade (glutinous) starch, which is not likely to find much application in the textile industry.

---