AGRICULTURAL IMPLEMENTS*—II

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THE BLADE HARROW

THE blade harrow is one of the most important implements the Indian cultivator possesses, and on it he chiefly depends in his tillage operations. This implement consists of five parts, the head-piece, the draught pole, the two prongs, the blade and the stilt. A fairly heavy rectangular piece of log forms the head-piece, to which is attached the draught pole at such an angle that, when it rests easily on the yoke of bullocks used for drawing it, the upper surface of the head-piece will remain horizontal. Two cylindrical pieces of wood about 12 inches long and 2 to 2½ inches in diameter, driven into the lower surface of the head-piece four to five inches away from the ends, serve as prongs. These are fixed pointing downwards and forwards at an angle of about 10° with the vertical. The efficiency of the implement depends largely upon the angle at which the prongs are fixed to the head-piece. Prongs with an inclination in the direction of its motion tend to penetrate more deeply in the ground than vertical prongs of similar weight and sharpness. The tendency to penetrate increases as the prongs move further from the vertical until the position of 45° is reached. Thereafter the power to penetrate gradually diminishes.

The blade consists of a flat iron about 2 to 2½ inches wide and partially sharpened on the lower edge. This is the principal working part which enters the soil. The ends of the blade are turned up so that it may be easily fitted into the wooden prongs which carry it, and secured firmly with two iron rings. A small piece of wood fixed in the middle of the upper surface of

* This series of articles describe a number of simple implements used in India and Ceylon which are suitable for general adoption by the village agriculturist.—*Editor, T.A.*

the head-piece serves as the stilt or handle. The stilt serves two purposes: to lift the implement when the head lines are reached and to press the head-piece down when the implement is required to work deeper. This completes the implement. The cost of making one of these implements should not exceed Rs. 5·00; it may be less if jungle timber is readily available.

The whole implement looks like a scraper or a large hoe. When the soil is hard or where there are mild impediments to the working of this implement through the soil, a heavy stone is kept on the head-piece to add to the weight, or the driver himself may stand on the head-piece. It is quite a common sight in Western India to see a row of four or five of these blade harrows, each with its driver skilfully balancing himself on the head-piece, working together in one field. When the implement is required for work, the head-piece and the draught pole are braced by a rope and then fastened to the yoke. It is further strengthened by means of two pieces of wood fixed so as to brace the head-piece and the draught pole together.

The blade harrow is drawn by one pair of bullocks driven by one man. After a land is ploughed and cross ploughed the blade harrow is worked three or four times according to the nature of the soil. Harrowing is necessary in addition to ploughing for the formation of a good seed bed. It pulverises, levels, and brings the soil into a favourable condition for the reception and even distribution of seed. It eradicates surface weeds and forms a good surface mulch. The harrow can be used for covering the seed after sowing. It can be used as a leveller, by passing a rope several times over the two prongs or by tying a plank to the prongs. This prevents the soil from falling over the blade, and the collected soil can be dumped in the lower places.

The size of this implement may vary according to the purpose for which it is used. At the Wariyapola Farm a two feet harrow was used for intercultivating the tobacco and chillie crops, and a three feet harrow for wider spaced crops like coffee, croton, and fruit plots. Nine inch harrows could be used for intercultivating maize and sorghums, etc. One man and a pair of bullocks working an 8-hour day could harrow 2 to 2½ acres. To work the harrow as an interculturing implement,

the bullocks should first be trained, or they will tread carelessly on the rows of plants and cause much damage. The bullocks should be well muzzled to prevent them from attempting to pick up bits of green leaf when they are working. This is of especial importance when sorghum crops are intercultivated. Owing to the presence of hydrocyanic acid in the plants before they flower, these crops are poisonous as cattle food. The selection of proper sized yokes for intercultural operations is important. The size of the yoke depends on the distance between the rows of plants to be intercultivated. If the crop is sown in rows 3 feet apart, then the yoke should be 6 feet from the centre of the neck of one animal to that of the other. Allowing six inches on each side, the yoke should be 7 feet long. If the crop is sown two feet apart, then the yoke should be 5 feet. A convenient formula to find out the appropriate length of the yoke in inches is to multiply the width of the row by 2 and add 12. One long yoke with several sets of holes drilled will serve for intercultivating different crops.