DISCUSSION

Mr. W. H. Dobson contributed the following notes on the new Australian Flax Mills:

The flax is reaped by an ordinary reaper and binder, and the sheaves stacked until required by the de-seeding process. In the latest de-seeding machines the separate straws are butted level at the bottom end, and gripped in the centre as they are fed through. A set of combs at each side comb from the centre outwards. Those at the one side remove the weeds from the bottom end of the straw, whilst the others remove the seed bolls from the top end. A small belt conveyor removes the seed, and the weeds are discarded. The de-seeded straw immediately drops into a knotting device, and the sheaves are removed by another belt conveyor to stock before retting.

The retting process is described by the C.S.I.R. as follows:— Large underground concrete tanks are filled with de-seeded straw in sheaves, then filled with water at 25° C. After 8 hours this rinse water is run off. The tank is again filled with water at 28° C. After each succeeding 12 hours 10% of this water is run off, and is replaced with hot water to increase the total temperature 1½° C. until 35° C. is reached in approximately 60 hours. The tanks are then drained and the straw removed to stacks. When required this is dried to 11% moisture content before scutching.

The other process of retting in the fields is to expose the straw to the action of the weather, as described in Mr. Kinnear's paper.

The dried straw is then fed into the scutching machine from a table, where a device is fitted to again level up the ends.

The scutching machine consists of four sections. In the first section the straw is gripped in between two travelling belts, the top one of which is fitted with U shaped steel grippers about 1 in. long, and touching each other. As soon as it commences to travel it is first broken by two sets of double vee preliminary breaker rolls, close to the centre. After these come several sets of breaker rolls of differing pitches which crinkle the straw, thus breaking the woody fibre core. The second section is the first beater box. After entering the box, one end of the flax drops vertically whilst the other is held up by a guide plate. As the flax travels, two four-armed beaters, each 9 ft. long and geared to each other, beat the flax so effectively that all the
broken woody fibre is beaten out, leaving the long flax fibres perfectly smooth and even. During this process there are always short pieces of fibre which are broken off and drop with the shives (or woody fibre chips). The short ends of flax are dropped under the machine with the shives, and carried on a wood slat conveyor within a housing to a shaking machine, where the remaining shives are removed. The resultant tow is used for making string, etc.

The shives drop through the slats to a belt conveyor underneath, which feeds to a hopper. A fan removes them to a bin, and the shives form fuel for the boiler supplying hot water for the retting tanks.

The third section is a transfer belt, which changes the position of the grip on the straw before feeding to the second beater box (4th section). In this latter box the previously scutched ends are held up, whilst the remaining ends drop vertically, and are scutched in the same way. After emerging from the machine the flax is gathered into approximately pound lots, and formed by a peculiar twist into neat bundles which do not tangle.

The tow is baled in a press before despatch.

The seed bolls from the de-seeding machine drop to a belt conveyor, and thence to a winnowing machine.

The winnower produces clean seed, which is collected and bagged for planting or for linseed oil production.

In reply to various questions by Messrs. Kneale, McKay, Peakman, and others, the lecturer said that a more perfect method of eliminating shive from tow was being sought by research. The ancient method of pulling the flax crop did not show less waste than the use of reaping machines, for the root itself was of no value, and had later to be discarded with a small amount of stem. From the point of view of applied economy, a reaper and binder if used on a flax crop could also be applied to miscellaneous other crops which the farmer would realise as beneficial in augmenting his income and for balancing the fluctuations in the sowing of suitable crops due to seasonal influences. There was a five-fold increase in seed; the surplus was pressed for linseed oil. The variety grown in Argentine was richer in oil, but the plant was more dwarfed, and it was not suitable for flax production. The Australian grown plant produced fibres forty-two inches long.
The President invited Mr. T. K. Sim to propose a vote of thanks to the lecturer, and Mr. Sim said he had found the lecture of very exceptional interest, and assured Mr. Kinnear that the benefits of his efforts in the industry would be far-reaching.

Mr. W. R. Pollock seconded the vote, which was carried by acclamation.

Mr. Kinnear briefly replied, and the meeting terminated.
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Title: Notes on the new Australian flax mills (Discussion)

Date: 1941

Persistent Link: http://hdl.handle.net/11343/24870

File Description: Notes on the new Australian flax mills (Discussion)