

lumps of earth are broken down. Both are irrigated. When the shoots are six inches high, weeding is performed; a week after weeding is finished a watering is given, and afterwards waterings are given at intervals of ten or twelve days till the harvest is ripe. The crop is weeded again when the ears begin to form. The average outturn is fivefold. Both crops are sometimes, but rarely, attacked by a disease which blackens the ears and grain.

"In sowing the pebbles are first cleared out of the soil: then manure is applied: then the land is ploughed and the seed sown, and the soil levelled with a roller.

The seed now sent was grown in *Keirdang* and *Gookir* villages.

#### "NOTE ON CULTIVATION OF WHEAT AND BARLEY IN THE SPITI VALLEY.

The average altitude above the sea of the cultivated land in Spiti is 11,000 feet. The fields are irrigated by channels fed by the Mountain torrents. Both wheat and barley are sown in April; if the snow lies late earth is thrown upon it to make it melt quickly. Both crops are manured plentifully with cattle, goat and sheep dung. The first watering is given 40 days after sowing, and thereafter waterings are given at regular intervals till the crop ripens. The harvest is reaped in August.

"The Nono (Governor of Spiti) puts down the outturn as 20 fold but Major Hay's estimate is probably more correct, i. e., 14 to 1 for barley and 10 to 12 to 1 for wheat. The crop is liable to be injured by frost, but seems to be subject to no kind of disease.

#### NOTE ON CULTIVATION OF WHEAT AND BARLEY IN KULU.

The grain sent was produced at an elevation of 7,000 feet above the sea, about 100 miles to the North of the Village from which the Seoraj grain was obtained, in the Bias Valley.

"The barley is sown between 5th and 25th September, and reaped from 15th June to 15th July; wheat sowings go on during the whole of September, the harvest is reaped at the same time as that of barley. Manure is thrown on the soil, and also sheep and goats are penned on the field before sowing, for both crops. The soil is not irrigated. A too heavy snowfall is fatal to the crop; heavy rain causes the disease called *Kungi*, before described; and in case of drought in April or May a green insect (here called *Mangnū*) attacks the ear. The outturn of wheat averages from 5 fold in bad seasons to 10 fold in good; and of barley 8 fold to 16 fold.

#### NOTE ON CULTIVATION OF WHEAT AND BARLEY IN SEORAJ.

"The grain sent was produced at an elevation of about 7,000 feet above the sea, in the Sutlej Valley.

##### *Wheat.*

"Ploughing commences about August 15th. The seed is sown between 5th and 25th September, and the harvest reaped in July. A comparatively poor soil is preferred. The land is manured before sowing commences, generally by sheep being penned on it for some nights. No irrigation is used. The outturn is reported as 4 fold but is probably greater. The crop is subject to a disease called *Kungi* described as a red dust gathering on the ear, due to excessive moisture in the soil at sowing time.

##### *Barley*

"Ploughing commences about 15th August. Sowing goes on from the end of September to the beginning of November. Reaping begins generally about the end of June. A rich soil is necessary. No manure is given till the young shoots are 5 or 6 inches high, when manure that has been collected and kept is thrown on the field as a top dressing. No irrigation is used. The outturn is reported 6 fold but is probably greater. *Kungi* (described above) is the only disease to which it is liable.

True copy.

PESTOUJI, *Superintendent.*"

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