

FLAX AND HEMP.

PER-CENTAGE COMPOSITION.

Water	63.852	Dry
Organic matters	34.732	96.08
Ash	1.416	3.92
Total	100.000	100.00

August 25th.—The pulling of the crop was begun. A plant was taken and examined; weight of entire plant, 62.40 grains; weight of capsules, 22.50.

PER-CENTAGE COMPOSITION OF STEM.

	In fresh plant.	Dry.
Water.....	53.64	
Organic matters	41.97	96.89
Ash	1.39	3.11
Total	100.00	100.00

Water in straw of plants as sent to the steeping works, after 14 days' exposure to the air in stooks, 12.2 per cent.; water in air-dried capsules, 11.84 per cent.; weight of the air dried flax, with bolls produced on the experimental field, 7.770 lb.

COMPOSITION OF THE CROP.

One hundred parts of the ash of the dry straw and capsules had respectively the following composition:—

	Ash of Straw.	Of Capsules.
Potash.	20.32	16.38
Soda	2.07	6.25
Chloride of sodium	9.27	12.98
Lime	19.88	13.95
Magnesia	4.05	3.91
Oxide of iron	2.83	0.38
Sulphuric acid	7.13	14.51
Phosphoric acid.....	10.24	23.26
Carbonic acid.....	10.72	6.37
Silica	12.80	0.67
Total	99.31	99.66

The proportion of nitrogen contained in the straw and capsules was ascertained to be as follows, per cent.:—

1. In the straw dried at 212°	0.53
2. In the capsules or bolls, &c.	1.26

The general results of the examination of a specimen of flax straw taken from the experimental crop, are as follows:—"The presence of a volatile oil having been indicated, a quantity of the stems of the plant carefully deprived of the seed capsules, were distilled with water containing common salt; and from the distillate which was without action on litmus, I obtained an oil of a yellow color. Five pounds of the stems afforded about ten grains of this oil, which had an agreeable, penetrating odour, and the distillate of the stems suggested the peculiar smell which is remarked on entering a room where flax is stored. The solutions obtained on examination were found to contain wax; traces of chlorophyll; a peculiar green resin; a bright brown gum resin, which presented some of the characters of the principle which Pagenstecher termed *linen*, but could not be identified with it; a modification of tannic acid which afforded a gray precipitate with perchloride of iron, but was not affected by solutions of isinglass or tartar emetic; gum, not affected by