A SURVEY

OF

WALDO COUNTY, MAINE:

Historical, Physical, Agricultural.

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PREFACE.

It is with some diffidence I present this work to the public; but trusting to their generosity to overlook its imperfections, and desiring to contribute to the agricultural litorature of the State a bottor knowledge of my county, has led me to undertake this survey. In pursuing the labor and investigation necessary, I have been kindly aided by many citizens of the county, whose names I treasure in memory, but withhold here, and to whom my thanks are due. I am indebted to the Reports on the Geology of Maine, by Dr. C. T. Jackson, Dr. Ezekiel Holmes, and Prof. C. H. Hitchcock; also to data and statistics contained in Maine Register and Year-Book, U. S. Census Reports, Wells' Water-Power of Maine, and other works. I have given considerable space to descriptions of farms, accounts of the leading farmers and farm practices in various towns, as bottor illustrative of our farming than I otherwise should be able to do. I have endeavored to be practical, and think every page contains something of utility to the husbandman and mechanic.

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SURVEY OF WALDO COUNTY.

PART FIRST.

Historical Sketch.

"A high country full of great woods," is the quaint description Martin Pring gave to the islands and shores of Penobscot Bay in 1603. He found good anchorage among these islands, and the best of fishing. Upon one of the islands they saw some foxes, and they gave the name "fox islands" to the whole group; which name they bear to this day. The cod and haddock they found abundant and esteemed them better than those taken at Newfoundland. They were particularly pleased "with the very goodly groves seen, and the sundry beasts they saw." Pring carried back with him, to Bristol, England, the port from whence he sailed, an Indian canoe, as a specimen of the aborigines' skill and ingenuity. Not many Indians were seen; they were probably—as this was in the summer season—in the interior hunting.

The aborigines of the Penobscot were the *Tarratines*, claiming dominion over the contiguous territory from its sources to the sea. Smith called what is now the Camden Heights, the "Penobscot mountains," and says that "they were the natural barriers and fortresses which separated them from their neighbors on the southwest." The Tarratines were one of the three tribes of the Etechemins, and were a numerous and warlike tribe. The other two tribes of Etechemins were Openangos (Quoddy Indians) and the Marachites, who inhabited what is now part of New Brunswick and Nova Scotia. The Tarratines, (Penobscots) were more hardy and brave than their western neighbors, whom they often plundered and killed. They were less troubled by disease, or wasted in their possessions by the whites, and were more reluctant to make war with the English than the other tribes of Maine. They were early supplied with fire-arms by the French, and found trade and traffic were more profitable and pleasant than war.

Baron De Castine appeared among the Indians in 1667, and built a fort and trading post at Pentagoet, Penobscot, Major

Biguyduce, or what is now Castine. Here the English had a trading post as early as 1626, which the French plundered in 1632. About 1636, De Aulney, under authority of the French king, built a fort here, and firmly established himself, where he remained till his death in 1650. Castine rebuilt De Aulney's fort and buildings which had fallen into decay, and remained many years. The Indians became firmly attached to the French. "They lived with them as one family, inter-married, and made the English their common enemy." The French supplied them with powder and guns, and taught them their uses, and bought their furs. They made no effort to enlarge their settlements, while the English were pushing theirs with great vigor, which excited hatred in the breasts of the natives.

The principal villages of the Tarratines were upon the Penobscot river near where Bangor now stands, and above. The Tarratines were neutral in the war of the Revolution, and for this Massachusetts protected them and took their lands only by fair, honorable purchase. Maine latterly has granted them annual aid and assistance. A remnant of the tribe once numerous and powerful, few and fast fading, yet exists at Oldtown. Once they roam'd these forests and hunted their game where fields now bear their annual harvest. These sons of the wildwood, stalwart and brave, this broad land their heritage, now dwindled to a weak, remnant band of hardly more than a score, owning but a small island amid the river which bears their name. The white man—the son of progression—has proved his superiority, and behold the wondrous change! Cities, villages, pleasant farms and homesteads, teeming with abundant products; mills busy with industrious hum, variegate the landscape. White winged vessels dot the bay and river; the steamer plows grandly through its waves; the iron horse with rush and roar drags swiftly on its freight. All this meets the eye and delights the heart where once was but a "high country full of great woods and divers beasts seen." And all this accomplished in so brief a space compared with the history of European nations—a span in contrast. And the past is but a finger post on the road to future possibilities, to future attainments and greatness.

Weymouth discovered Penobscot bay and river in June, 1605. Leaving Pentacost harbor (George's Islands) on the 11th of June, he sailed northward by estimation, sixty miles. They came to anchor abreast the Penobscot Hills, (Camden Heights,) not far

from land and ten of them went on shore to hunt. "The next day," says the record, "We went in our pinnance to that part of the river which inclines more to the westward." [Probably Belfast Bay.] They were highly delighted with the views obtained at this season of the year, with this to them, novel scenery. The woods coming down to the water's edge, dark, green, and luxuriant; the silent stretches of placid water, calm as the forest lake, the blue summer sky of June overhead, the songs of many unknown birds amid the branches, the waters teeming with fish, glassy and resplendant, wide and deep, it is no wonder they put on record: "Many who had been travellers in sundry countries, and in most famous rivers of ye wourlde, affirmed them not comparable with this—the most beautiful, rich, large, secure harbouring river in ye wourlde affordeth." Such were the quaint sentiments and enthusiastic expressions excited by this discovery, and we do not wonder they took their departure reluctantly for St. Georges.

Weymouth's intercourse with the natives was, at first, very friendly; but differences arose, and he has left an indelible blot upon his fair fame by kidnapping five of them which he carried with him to England, three of which he delivered to Sir Ferdinando Gorges, Governor of Plymouth, who kept them in his family three years. This circumstance enlisted his sympathies strongly in the project to colonize the country of these Indians with English.

In 1639 the Province of Maine was chartered to Sir Ferdinando Gorges. In 1652 the County of York was established, and embraced all the present State, or rather what was then settled with jurisdiction over the rest when settled. Massachusetts claimed the whole Province in 1672, and in 1677 purchased the interest of Gorges' heirs. In 1675 the Dutch captured the French garrison at Castine, and were in turn captured by the English. In 1696, Major Church made his third eastern expedition, and ascended the Penobscot.

Thus previous to 1700, we find Penobscot Bay and vicinity had been visited by many, and was regarded as an important section. Among those mentioned, Pring visited it in 1603, De Monts in 1605, Weymouth in 1605, Capt. John Smith in 1614, De Aulney in 1636 to 1650, Castine in 1667 to 1675, Major Church, 1696.

We come now to the era of settlements, and our notice of these must be brief for want of space. We shall attempt to give but a mere outline and regret we are unable to give more extended historical notices for the reason mentioned.

Stockton—First settled in 1750 at Fort Point. The garrison was maintained here till the settlements no longer needed its protection. Fort demolished during the Revolution. Incorporated March 13, 1857—formerly part of Prospect. Population, 2,089; valuation, $800,220.

Prospect—Named for its beautiful views. Incorporated Feb. 24th, 1794. Taken from Hancock and annexed to Waldo in 1827. Comprised Searsport and Stockton. Population, 886; valuation, $184,492.

Islesboro'—Formerly called Long Island. Settlement began by William and Benjamin Thomas in 1769. It was incorporated Jan. 28th, 1789. It is ten miles long, and contains an area of 6,000 acres. Population, 1,232; valuation, $153,702. Its inhabitants are largely engaged in maritime pursuits. It was formerly largely engaged in fisheries.

Belfast—Settled in 1770 by people from Londonderry, N. H., who named it in honor of their native town in Ireland. Incorporated June 22d, 1773. The British broke up the settlement in 1779, when they occupied Castine. Settlement reëstablished in 1786. Invested by the British again in 1815. Parted with territory to half form Searsport, in 1845. Made a city in 1853. Population, 5,278; valuation, $2,660,879.

Frankfort—Settled 1770 and was incorporated June 25th, 1789, embracing what is now Hampden, Prospect, Winterport and parts of Stockton, Searsport, and Belfast. It was 70th town incorporated. Population, 1,152; valuation, $220,645.

Montville—Settled in 1780 and incorporated the 163d town, Feb. 18th, 1807. It was originally called Davistown. Contains 20,200 acres. Population, 1,468; valuation, $389,845.

Northport—Settled 1780, and incorporated February 13th, 1796; a seaboard town. Population, 902; valuation, $180,726.

Unity—Settled 1792, and incorporated June 22d, 1804. Situated in a pleasant farming section. Population, 1,201; valuation, $384,465.

Freedom—Settled in 1794 and incorporated Feb. 11th, 1813, the 197th town. First settled by Messrs. Smith, and called Smithtown; the name was afterward changed to Beaver Hill, then to Freedom. Population, 717; valuation, $191,505.

Brooks—First settled in 1798 by Joseph Roberts. Incorporated the 219th town, Dec. 10th, 1816. Plantation name was Washington. Population, 869; valuation, $200,176. Named for Gov. Brooks of Massachusetts.

Jackson—Settled 1798 and incorporated 229th town, June 12th, 1818. Named for President Jackson. Population, 707; valuation $176,604.

Knox—Named for General Knox. Settled, 1800. Incorporated 231st town, Feb. 12, 1819. Population, 890; valuation, $218,392.

Monroe—Organized under name of Lee Plantation. First settled in 1800. Incorporated Feb. 12th, 1818. Named in honor of President Monroe. Is a good farming town. Population, 1,375; valuation, $326,835.

Belmont—Settled 1800. Was part of the Waldo patent, and part of Green Plantation. Incorporated 202d town, Feb. 5, 1814. Divided in 1855, and north part incorporated under name of Morrill. Population, 629; valuation, $101,708.

Burnham—Incorporated February 24, 1824. Plantation name Twenty-Five-Mile Plantation. On Maine Central and Belfast Branch railroads. Population, 891; valuation, $175,007.

Lincolnville—Incorporated 137th town, June 23d, 1802. Formed from Plantations of Ducktrap and Canaan. Is the most southerly town in the county and upon the shore. Population, 1,900; valuation, $436,956.

Liberty—Incorporated January 31st, 1827. Has a fine water-power. Population, 907; valuation, $193,819.

Palermo—Originally known as Sheepscott, Great Pond Plantation. Incorporated 157th town, June 23d, 1804. Population, 1,224; valuation, $241,433.

Searsmont—Settled 1804, and was a part of Waldo Patent which fell into the hands of Sears, Thorndike and Prescott. Incorporated and named for the first of the above named proprietors, Feb. 5th, 1814. Population, 1,418; valuation, $300,418.

Swanville—Formerly the Plantation called Swan. Incorporated 228th town, February 19th, 1818. Population, 770; valuation, $140,050. Has good water-power.

Thorndike—Named for one of the proprietors, who gave it $500 for a school fund. Originally called Lincoln Plantation.

Incorporated February 15th, 1819. Population, 730; valuation, $264,801. One of our best farming towns.

Troy—The most northerly town in the county. Plantation name Bridgton, and named in honor of Gen. Bridge. Incorporated Feb. 22d, 1812, under name of Kingville. Name since changed to Jay—Montgomery—and Troy. Population, 1,201; valuation, $233,361.

Waldo—Named for Gen. Waldo. Organized a plantation in July, 1821. Enlarged by addition of territory set off from Swanville, in 1824; also by addition of a gore lying between Waldo and Knox, in 1836. Incorporated March 17th, 1845. Population, 648; valuation, $144,218.

Morrill—Set off from Belmont, March 3d, 1855. Named in honor of Governor A. P. Morrill. Population, 523; valuation, $133,099. Has good water-power.

Searsport—Set off from Prospect and Belfast, and incorporated Feb. 13th, 1845. Named in honor of David Sears of Boston, then owner of Brigadier's or Sears' Island. One of our enterprising shore towns, which with Stockton, is largely interested in ship-building. Population, 2,889; valuation, $1,036,823.

Winterport—Set off from Frankfort and incorporated March 12, 1860. Has an open winter port, hence its name. Is the port of Bangor, winters. Is also a fine farming town. Population, 2,744; valuation, $600,300.

Troy and Burnham are the two most northern towns; Prospect the most eastern; Lincolnville the most southern, and Palermo the most western. Thorndike, Unity, Montville, Monroe and Winterport the best farming towns; Brooks is the central town; Knox the most elevated town; Belfast the shire town; Islesboro' is an island.

Waldo county is square in form, with irregular outline. Its extent of shore line gives it great maritime facilities and the proximity of the sea has a visible effect upon its climate. It has valuable quarries of granite and lime, and soon in its north-western corner, slate quarries will be opened. Its lumber is of but secondary value now. Manufacturing is being introduced, and it has much fine water-power capable of being developed. The nearness to tide-water has kept agriculture in the background till recently, in many towns.

GEOGRAPHICAL FEATURES OF THE COUNTY—STATISTICS, &c.

Waldo county was embraced in York county's territory till 1760, when Lincoln county was established, which included it till 1789, when Hancock county was established; this in turn included it till 1827, when it was incorporated as a county. In 1860 it parted with some of its territory to help form Knox county. It embraces twenty-five towns and one city. It was named for Gen. Samuel Waldo. Valuation in 1870, of estates, $10,090,581; population, 34,640.

Waldo county lies upon the waters of Penobscot bay and river, which bound it upon the east and south-east. Knox county lies upon the southern border, and Kennebec upon the western; Somerset upon the north-west and Penobscot upon the north. The Belfast and Moosehead Lake Railroad beginning at Belfast and connecting with the Maine Central at Burnham, runs north-westerly across the county, opening up a fine farming country upon its upper course. This railroad is 33⅓ miles long, and is the only railroad the county boasts at present. Lines of steamers connect Belfast with Bangor, Boston, Portland, Rockland and other ports.

An open winter harbor anywhere on the extended coast line, numerous land-locked secure havens with good depth of water, offer facilities for shipbuilding and shipping unsurpassed. It also affords great facilities for obtaining marine fertilizers at cheap rates. Of these we shall speak of further under the head of manures.

There are no mountains, strictly speaking, in Waldo county, though there are eminences that are dignified by the title. The surface is rugged and broken in many places, while in others the reverse with pleasant hills and dales. There is no town that has not some waste land in it, and also that has not considerable good land. The breadth of tillable land increases as we recede from the shore line. In Prospect and Frankfort are high bald hills, with characteristic scenery. In Monroe we find a continuation of these, ranging to the north-west and extending through Jackson. These high, rounded hills, overlook the surrounding country, except to the northward, where the Dixmont hills in Penobscot county, raise their massy barriers to shut out the view in this direction.

The waters from the county flow in three general directions, forming as many water-sheds. The eastern part of the county drains its

waters into Penobscot bay and river. The south-western portion into the Atlantic ocean by way of George's river; the north-western portion into the Kennebec, by way of the Sebasticook river. The water-divide, or height of land, finds a central point at Aborn Hill in the center of the town of Knox. This hill forms the highest land in the county. The height of land extends northward through Thorndike and Jackson into Penobscot county; west, through Freedom into Kennebec county; south-west, through Montville and Belmont into Knox and Lincoln counties; south, through Waldo, Morrill, Belmont and Lincolnville into Knox county; east, through Brooks, Monroe and Winterport to Penobscot river; thus forming five water-sheds. The eastern shed is drained by Marsh river and its tributaries, which receive the waters of Brooks, Jackson, Monroe, Winterport and Frankfort. General course north of east. The south-east shed is drained by Goose river, rising in Goose pond, Swanville; Passagassawaukeag river rising in a pond of same name in South Brooks, and Quantabacook river rising in a pond of same name in Belmont and Searsmont. The southern shed is drained by the streams forming by their union, George's river. This has its source in several large ponds in Liberty, Searsmont and Montville; it is also drained by Duck river. The south-west shed is drained by the head-waters of Sheepscot river from Montville and Palermo. Several large ponds are in this part of the county. The north-west shed is drained by Half Moon stream which receives the waters of North Knox, Thorndike, Troy and Unity. In Unity a large pond contributes to its volume.

Waldo county embraces 388,794 acres of land, of which 228,842 are improved, 122,874 woodland, and 37,078 are other unimproved lands. The ratio of improved to unimproved is about 23 to 16. But a small portion of the lands reckoned under the head of "improved" are in a high state of cultivation. Low farming with mixed husbandry prevails. In 1870 Waldo county produced:

Hay	81,417 tons.	Butter	876,494 lbs.
Potatoes	680,971 bush.	Cheese	31,386 "
Wheat	17,241 "	Wine	368 gals.
Corn	40,594 "	Tobacco	1,000 lbs.
Oats	146,738 "	Clover seed	80 bush.
Barley	78,791 "	Timothy	168 "
Buckwheat	2,041 "	Hops	3,289 lbs.
Rye	1,085 "	Flax	100 "

Peas and Beans...	19,375 bush.	Maple sugar.....	3,059 lbs.
Wool.....	126,724 lbs.	Maple syrup.....	1,000 gals.
Honey.....	11,863 "	Wax.....	414 lbs.

Waldo county had live stock in 1870, as follows:

Working oxen.....	3,913	Other cattle.....	10,598
Horses.....	5,116	Mules.....	8
Cows.....	8,861	Value of all live stock	
Sheep.....	31,343		$1,690,662
Swine.....	3,064		

Value of orchard products.....		$55,449
" forest "		138,995
" animals slaughtered		339,077
" farms.....		7,058,828
" home manufactures.....		69,658
" market garden produce.....		25,079

Geological Notes.

In the two scientific surveys—or parts of surveys Maine has treated herself so grudgingly to—Waldo county has not come in for that share of attention she deserves. Those scientists who conducted the surveys were content, or obliged for want of opportunity, to cast about her borders a little, and leave the interior a sealed book. Dr. Jackson examined Waldo county along the shore line and upon her south-western border. He thus speaks of the geology of Penobscot river shore. "The shores below Hampden are composed of rough, craggy slate rocks, overhanging the river, alternating with rounded hills composed of sand and various pebbles, which have evidently been transported and deposited in their present localities by diluvial current.

"Approaching Frankfort we come first to regular strata of gneiss, and then to that variety of stratified granite, called granite gneiss.

"The strata run north-east and south-west, and dip 60° north-west. This rock has been wrought to some extent for building stone. It contains black mica arranged in parallel laminæ. Here and there we observed small veins of coarse granite intruded into its mass. Proceeding down river, we next came to coarse granite on which the granite-gneiss rests. At Marsh Bay, this rock forms hills 200 feet above the river.

"We stopped at Marsh river, 15 miles below Bangor, for the purpose of examining the granite mountains near that place. Mr. Pierce and Mr. Kelley joined our party on our excursion to Mt. Waldo, the height of which we proposed to determine by barometrical measurement. The next morning we made the necessary preparations for this purpose. I reached the summit of the mountain at 10 A. M. and found the height to be 964 feet above the river.

"This mountain is a commanding eminence, seen distinctly from Bangor, and for the distance of twenty miles around. It is a huge dome shaped mass of naked rock, which was formerly covered with an abundant growth of small juniper and other forest trees, which have been destroyed by fire. Now a few low birch trees grow here and there on those spots where any soil remains, and on some places there are abundance of blueberry bushes, which struggle for existence in the scanty soil. From the summit of this mountain, we enjoy a magnificent view of the surrounding country. On the north, the beautiful Penobscot river is seen wending its way to Bangor, and coursing by to the sea on the south-east.

"The mountain is composed entirely of a peculiar porphyritic granite, consisting of large crystals of pure white feldspar, block mica, and a little quartz. The average size of the crystals of feldspar, is about one-half of an inch in width, and of variable length, and they are so disposed as to give the rock a porphyritic appearance. The granite is remarkably pure, free from foreign matters, and will resist well the action of the weather. Blocks of any size desired, may easily be obtained, and I observed, that for 200 yards square, that there was not a single crack or fault in its mass. It splits into sheets or huge blocks, when quarried, and will doubtless be wrought for architectural purposes. When hammered, it does not show its porphyritic structure, but is very uniform in color.

"The Pharaohs of Egypt would have have gloried in a mountain like this, for after removing sufficient granite to build a city, the nucleus, if left in a pyramidal form, would be more than twice the magnitude of the Great Pyramid of Egypt, and this mountain has the advantage of being founded upon an immovable basis.

"After having examined Mt. Waldo, we ascended Mosquito mountain, and measured its height. * * * We find the height of Mosquito mountain to be 527 feet above high water mark.

"The mountain is composed of porphyritic granite, entirely, which is quarried extensively for building stones. The rock is certainly a very handsome building material and withstands the action of the weather without changing its color. It is, like the Mt. Waldo stone, composed of feldspar in large proportion, having porphyritic structure. Its mica is black, and the quartz is in small quantity. I could not discover any pyrites, or other material that would cause it to decompose. On examining the weathered surface of the rocks in place, we observed that the mica was the first ingredient that underwent decomposition. When the feldspar decomposes it becomes of a dull earthy white color, and loses its brilliancy, but does not become brown.

"From the workmen at the quarry, I learned that the first operations upon this stone began in the month of May, 1836, since which time, (1838) more than $50,000 worth of granite had been quarried and hammered for the New York market. The Albany Exchange is being constructed of this stone. I measured several blocks, as they were hammered for this building, and found them to average from ten to fifteen feet in length by three feet in width, and one foot in thickness, containing about forty-five cubic feet to each stone. There were a large number of blocks wrought in a beautiful manner, and ready for the market. On examining the loose blocks on the side of the hill, it appeared that many could be obtained upwards of forty feet in length, and free from seams.

"This rock splits perfectly well in the directions required, and is easily wrought. It has a light color when hammered, and will look well in any kind of architecture. I was informed, that no less than $20,000 had been expended by this company, in excavating a canal to the base of the mountain. This canal will enable the proprietors to ship the granite more readily.

"Nearly opposite Bucksport, (in Prospect,) the mica slate is seen cropping out at the river side. The strata runs north-east and south-west, and dip 75° south-east. This rock splits into regular sheets, and will answer for flag-stones, pavements, fences, &c. At Fort Point the argillaceous slate again shows itself, and is highly charged with pyrites, so that the surface is rendered brown by the abundance of per-oxide of iron deposited upon it. The pyrites mixed with the slate cause it to decompose, and sulphate of alumina and sulphate of iron are formed. It is not yet certain whether this rock can be advantageously wrought for alum, but

it certainly works as well as that now undergoing trial on Jewell's Island in Casco bay.

"The rocks of Belfast, consist of various slates, composed of argillaceous and talcose matter, with veins of quartz and laminæ of plumbago or graphite interspersed. In Prospect we observed extensive beds of tertiary clay. The upper beds are yellow and contain remains of siphonæ—while the lower are composed of blue clay, containing many marine shells. The clay is extensively used for the manufacture of bricks. Diluvial sand occurs near the brick-yards, and is used in their manufacture.

"Diluvial blocks of granite occur between Belfast and Frankfort, and were evidently derived from Mt. Waldo and its immediate vicinity. It will be observed that the slates on the Penobscot are highly inclined, and rests, as it were, on their edges, the ends of which are frequently exposed along the river course. Mt. Waldo, Mosquito mountains and Mt. Heagan, are masses of granite which were probably elevated after the deposition of the slate through which the granite forced its way, producing such chemical changes in the strata that rested upon it, as to render them crystalline in structure. Thus we supposed that the mica slate resting on both sides of Mt. Waldo, was formed from sedimentary matter, which was originally in a state resembling—but which, by action of heat, has become, crystalline.

"The hill in Belfast attains an elevation of 178 feet above the sea level. Northport mountain is 486 feet above the sea. This mountain is composed of gneiss, and on its side granite appears protruding through the strata of the rock. The gneiss graduates away on either side in plumbaginous and argillaceous slates. From the summit of this mountain we have a charming view of Penobscot bay, studded with beautiful islands, and skirted on the north and south by picturesque highlands. On its western side are seen some very well characterized diluvial furrows, cut into the slate, which ran directly across its curved strata, showing that the grooves were produced by mechanical violence, and are not the results of disintegration of the rock."

Dr. Jackson is of the opinion that the soils between the Penobscot and Kennebec need liming. This is given as a general rule, and he speaks particularly of this liming as necessary as regards the northern portion of the county.

Pyritiferous slate occurs in Troy, with beds of pyrites which furnish an abundance of copperas and alum. Dr. Jackson says:

"I have rarely seen localities which offered so good material as is found here, the pyrites being so perfectly mixed with the slate, that it will readily undergo chemical changes, when heated and moistened with water in the usual manner. Many absurd speculations have been entertained respecting the nature and value of this locality, some maintaining that the pyrites were gold or silver, and others that the plumbageous covering on the slate, was sure indication of coal."

Belfast, according to Dr. Jackson is 44° 26′ 7″ north. Variation of compass 13° west. He further says: "This town presents but few geological peculiarities, which have not already been described. It is founded upon that variety of argillaceous slate which is impregnated with plumbago, and hence is called plumbageous slate. The strata of this rock have been remarkably disturbed by the upheaving forces which acted during the period of the eruption of the granite. The rock forms by decomposition a blue soil, full of small scales or particles of the rock. But the soil resting on its surface, is all of foreign origin, it being diluvial deposition, and having been swept to its present resting place from the north."

In Liberty is an extensive deposit of granite quartz. Dr. Jackson visited this locality and thus speaks of it: "The granular quartz I found to exist in beds included between strata of mica slate, running north-east and south-west and dipping to the south-east. The widest bed measured eleven feet and it is exposed to view for the distance of thirty-one feet, and can be drained easily to the depth of thirty feet. Besides this there are numerous smaller beds, which it is more difficult to measure as they are quite irregular. Half a mile north-west we come to several other similar beds and veins, one of which is from two to three feet wide and extends fifteen rods in length. It can be drained to the depth of twenty feet easily; from measurements of those beds that are uncovered of soil, it appears that there are about three thousand tons of granular quartz that may be seen. Besides this the great beds evidently run under, and are concealed by the soil, and extend to a much greater distance than we were able to explore. I have no doubt that an ample supply of quartz may be obtained to supply a glass furnace, and that it may be converted into beautiful glass by the usual operations. It is much purer than any sand that can be obtained, being free from oxide of iron, and vegetable matter. When burned in the fire and thrown into water, it

becomes friable, and is more easily crushed than loaf sugar, so that it may be pulverized by an ordinary crushing wheel of iron, turned like those used by tanners in the bark mill, by horse or water-power." Wood is worth less here than on the seaboard, and transportation to tide water is cheap. Belfast is eighteen and Waldoboro' fifteen miles from this deposit. Dr. Jackson recommends the erection of glass works here, and says that the finest grades can be made, and in quality surpassed by none in the world.

Iron ore occurs in several localities. In the town of Liberty there is a deposit of black, resinous heavy ore yielding $41\frac{25}{100}$ per cent. of iron.

The principal deposit of gneiss in Maine is along the shore from Portland eastwardly across Penobscot bay. The southern part of Waldo county has large deposits of this rock. Mica-schist occupies a large area through the whole of the county, occuring in the greatest abundance in the central and northern portions of the county. On Penobscot river alternating with granite and gneiss are deposits of clay slate. In Troy, Palermo, Montville, Liberty, Brooks, Jackson and Searsmont, mica-schists predominate. A belt of rocks of indistinct talcose of micaceous character are found at Belfast, on the north side of the gneiss at Lincolnville and Northport. Andalusite is common in them. Limestone occurs at Lincolnville, Islesboro', where large quantities of quick-lime is manufactured annually. This limestone is azoic in character. Other minor deposts crop out in Searsmont, Liberty and Montville and perhaps other places. Clay slate forms a belt across the northern tiers of towns from Burnham and Unity, to Winterport and Frankfort. In Frankfort the clay slate is underlaid by mica-schist. Clay slate is that kind used for writing tablets and roofing. In Clinton, near Burnham Junction, a quarry has been opened, and soon we hope others will be opened in Waldo county. Granite occurs plentifully in Frankfort, Prospect, Swanville and Northport. Of this rock Waldo county has a great abundance, and numerous quarries are in operation in the three last mentioned towns. It also occurs in some other localities, and forms many of the boulders in every portion of the county.

We subjoin a list of minerals found in Waldo county with their localities :

Belfast.....Marl, Plumbago, Molybdenite.
Brigadier's Island.....Plumbago, Pyrites.

Islesboro' .....Talc.
Frankfort.....Feldspar crystals.
Prospect.....Jasper, Galena, Plumbago.
Brooks .....Plumbago, Pyrites.
Winterport.....Graphite, Pyrites, Asbestus.
Searsmont.....Toumaline, Andalusite.
Stockton.....Pyrites.
Scarsport.....Pyrites, Quartz crystals.
Troy .....Pyrites.
Liberty .....Granular quartz.
Waldo .....Toumaline.
Lincolnville.....Graphite, Phosporent blende, white granular limestone.
Northport .....Gold.

(*Obs.* Gold was found in the crops of ducks killed by Mr. Mark Knowlton, on his farm at Northport, in the fall of 1862. They frequented a ditch recently dug through his field. Mr. Knowlton is an old Californian, and had the gold tested in Belfast.)

Jackson .....Mica crystals.
Thorndike.....Quartz crystals.

Water-Power and Manufactures.

Waldo county possesses abundant water-power, much of which is not yet developed. Much of it is only partially used. The numerous large ponds in the county form vast reservoirs, whose overflow when developed, will be the means of adding millions of dollars to the wealth of the county. Numerous sites abound for factories and mills where an abundant supply of never-failing water would insure driving them the entire year. The bracing climate insures better health to the operatives in manufacturing establishments in Maine than in those of any other State in the Union. Waldo county sends its surplus waters in five directions —east, into the Penobscot river; south-east, into Penobscot bay; south, into the Atlantic; south-west into the same, and north-west into the Sebasticook, thence to the Kennebec. It therefore lies partly in the two great basins of the Kennebec and the Penobscot. Granite for dams and canals, abound in near proximity to all available sites, and lumber exists in sufficient quantities for building purposes. Waldo county is situated on the southern slope of

Maine, which is characterized by its general pitch seaward. The slope is not rapid, but enough to insure good drainage and at the same time easy control of water, and the slope is uniform from its upper limit to the ocean, insuring many available facilities for use along its whole breadth. The brokenness of its surface, the hardness of its rocks and the arrangement of its natural reservoirs, affect favorably the relations of this southern slope to manufacturing needs. Waldo county is situated near the center of this southern slope; a maritime county, and partakes fully of its favorable features. The tidal water-power on the seashore of the county is great, and may be made available for small manufactures. The mean height of tides in Penobscot bay is, at Castine on the eastern side, twelve feet, at Camden on the western side, nine feet eight inches.

Another consideration which we would not here overlook while upon the water-power and facilities for manufacturing offered by the county, which is this,—the proximity to the seaboard and points of shipment. No monopoly of transportation can ever injure the manufacturer in Waldo county, for on its short routes of travel to the seaports competition will ever exist, and when railroads raise freights above a certain point, which is to be determined by actual cost, teams will come in and do the trucking. A case in point: The Belfast Branch, under control of the Maine Central Railroad Company, charges five dollars per ton to transport hay from Brooks to Belfast—twelve miles. The consequence is no hay is sent by rail, for teams will draw it for two dollars per ton. The same coporation only charge $7.90 per ton for hay from Brooks to Boston—$2.90 more than to Belfast—and a difference of 213 miles. So from any point on the railroad, monopoly of transportation can never be had by them, a great advantage to the citizens, and especially to manufacturers.

The heights given in the survey of the Belfast and Moosehead Railroad, make Webb's ledge, Brooks, 350 feet above high tide at Belfast; Jackson, 450 feet; Unity, 400 feet.

Belfast—Ten or more powers. On Goose river, which empties into Belfast bay opposite the whaves of the city, on the eastern side of the harbor. Fall 185 feet in three-fourths of a mile, the river running that distance over a ledge. It flows from Goose pond in Swanville, six miles from Belfast, which pond contains thirteen hundred acres, with a great depth, and a large watershed draining into it. It is also fed by springs from its bottom,

which make a steady supply of water during the entire year. At the outlet of the pond is a solid stone dam, so that there has never been nor can be any freshet upon the river to do damage to buildings or dams, that are or may be erected thereon. About one-half the power upon this river is now used. At the mouth of this river near the bay, wharves are constructed so that vessels drawing fourteen feet of water can load or discharge at the foot of a dam now being built, three hundred feet long and thirty feet high, with a thickness at the bottom of twenty-six feet by twenty on top, founded on the ledge. The power is 185 horse, and is not at present occupied.

The next fall above on the same river has 48 feet head—equal to 850 horse-power. The next fall has 15 feet head, and has a stone dam with grist-mill. The next has 14 feet fall equal to 114 horse-power, and is used to drive a paper-mill; has a stone dam. The next fall has 10 feet head and equal to 62 horse-power; also used for a paper-mill power. The sixth power has 18 feet head, and is equal to 150 horse-power. There is a good stone dam, and is used for paper-mill. The next has 10 feet head, equal to 62 horse-power, and drives an axe manufactory, (Kelley's). The eighth power has some capacity and drives an axe factory, (Whiting's). The next has 13 feet and 92 horse-power, and drives a paper-mill. The tenth and last, has 28 feet fall, equal to 240 horse-power; has a stone dam and is unoccupied. Was formerly a lumber-mill. The paper-mills belong to Russell & Sons, Lawrence, Mass. The grist-mill with all powers below to the outlet, belong to H. E. Pierce, Esq., Belfast. At the outlet of Wescott stream, Jas. Kaler has a plaster-mill, stave and lath mill. The plaster rock is shipped here to be ground from Nova Scotia. Mr. Kaler also manufactures another fertilizer composed principally of marine matter, called "Eagle Island Guano."

At the head of the tide are shingle, lath, and stave mills on the Passagassawaukeag river, and also on the same at Poor's mills. This river furnishes a good amount of water-power, being fed by several ponds situated in South Brooks and East Knox; none however of much size. Altogether Belfast is well supplied with water-power and ought to be much more engaged in manufacturing than it now is. It speaks poorly of its thrift and enterprise when such powers as those mentioned on Goose river lie unoccupied.

A shoe factory has been established in the city, giving employment to a large number of operatives. This was built by the company formed of citizens of the city, and by parties from Lynn, Mass., who run it.

H. McGilvery & Co., C. P. Carter & Co., D. W. Dyer, Carter & Perkins, are ship-builders, and carry on the manufacture of vessels and their repairs to a considerable extent, giving employment to several hundred workmen. No place on our coast has better facilities for shipbuilding than Belfast or turns out a better class of work.

The Belfast Foundry Co., the Howard Manufacturing Co., and Fields & Mathews, carry on the manufacture of castings, agricultural implements, furniture, &c., on quite a large scale. There has seemed to be a better feeling toward introducing manufactures since the building of the railroad, and more enterprise manifested by the citizens in this direction.

Belmont—Three considerable powers are here found. First, upon Tilden stream, the outlet of Tilden pond; fall twenty-four feet in half a mile. Second, on Green stream; fall twenty feet in half a mile. Third, on Cross' stream; fall fifteen feet in one-fourth mile. All are connected with a pond two miles in circumference. Capacity can be increased by dams. Two mills on these streams manufacture lumber, and run about six months of the year.

Brooks—Eight—four on Marsh river, two on Sawyer stream, and two on Ellis stream. Average height of the falls fifteen feet. Power is not all developed; mills usually operate six to seven months in the year. Six saw-mills, one grist-mill, two shingle-mills. Ellis stream is connected with a pond that might be flowed several feet. An artificial reservoir used to be maintained and might now, on the Sawyer stream, by building a dam to flow a large bog. This would benefit all the privileges on Marsh river. Not many forest streams rise and fall suddenly except the Ellis (Passagassawaukeag.) Manufacture of lumber well run down. Saw mills going to decay; considerable short lumber left, such as is fit for laths, shingles, staves, &c.

Burnham—Well supplied with water-power by the Sebasticook river and outlet of Twenty-five-Mile pond, which is two by four miles in extent. The pond has been flowed two feet. The Ferguerson falls have twelve feet head, are occupied by a tannery,

two shingle-mills and a saw-mill; 35,000 sides of leather are here tanned annually, and 500,000 shingles and one million feet of long lumber sawed. In the south-easterly portion of the town, on Bog brook, from 200,000 to 400,000 feet of lumber is annually cut and sawn. In the northerly part of the town on Meadow brook, from 400 to 600 M are annually manufactured. Ferguerson Rips on the Sebasticook, ten feet fall in fifteen rods; 1½ miles from Burnham village, Eel-wier-rips in same river, eight feet fall in eighty rods. Thirty-mile-rips, thirty-five feet fall in 480 rods. All these are unimproved, and offer splendid sites for factories.

Frankfort—On Marsh river at the village, with fifteen feet fall; has a wooden dam on a ledge. Power only partly improved with saw and grist mills. Mills can operate nearly the entire year. Flat-rock falls are one-half miles above; unoccupied; very good location for factories.

Freedom—Stream issues from a pond that covers, when flowed, one square mile. Pond fed by springs. Total fall seventy feet. Sufficient water in droughts to use one hundred square inches under ten feet head ten hours per day. First power, flour mill, twenty-two feet head. Second, corn mill, fourteen feet head; these two mills grind 15,000 bushels of grain annually. Third, saw mill and shingle machine, twelve feet head; production 700 M annually. Fourth, woolen mill, with thirteen feet head. Fifth, tannery, with nine feet head. Freshets harmless; stream very constant; stream empties into Half Moon stream.

Islesboro'—Has six powers. On this island is a pond of twelve acres which could easily be increased to double the size. Pond is one-third of a mile from seashore; from pond to sea line is a fall of sixty feet. Two tide powers; one at the head of Sabbath Day harbor, and one at Gilkey's harbor. These powers are used for sawing lumber and grinding grain.

Jackson—Has six powers, the first being on Hadley brook; occupied by saw mill, with fall of fourteen feet. Second on same brook, fall twenty feet; unoccupied. Third, fourth, fifth and sixth on Great Farm brook. The four powers last named have a fall of seventy feet in three-fourths of a mile. Two ponds at head of Hadley brook of twenty-five to fifty acres each. Mills cut 1 M shingles, 8 to 12 hundred thousand boards. No grist-mill or other factories.

Knox—Has several powers on Half Moon stream occupied with saw-mills. About 500,000 of lumber is annually sawn. Knox sends its waters into the Penobscot and Kennebec, being the highest point in the county, and hence has no large streams and little water-power.

Liberty—This town is largely supplied with water-power, having more than twenty-five. On the St. George and Sheepscot rivers, the partial development of this power has greatly benefitted the town. There are lumber mills, an axe factory owned by W. Hurd, Knowlton's wool-skin factory and tannery, R. H. Gilman's foundry and machine shop, L. C. Morse's cabinet works, and several others. Water-power can be increased by reservoir dams.

Lincolnville—On Ducktrap stream, at Ducktrap falls, is a good water-power. This stream is fed by several large ponds and furnishes steady supply. This power is about twenty rods above Ducktrap bridge, and only forty rods from tide water. It has a wooden dam built twenty years ago, and thirteen feet high. A dam of much higher proportions could be sustained at small expense, the configuration of the banks being favorable. A canal could be constructed to convey the water to factories below the bridge so that vessels could load and unload at their side and wharves. Vessels drawing twelve feet can be received by the harbor. The power is estimated to be equal to driving 75,000 spindles; 2,800 acres of pond surface is available for reservoir purposes, and all lying within short distance. The power is now occupied by grist-mill.

On the McCobb stream, also at the outlet of Kendall pond are smaller powers; the latter has stave-mill. There is a saw-mill on outlet of Gould pond, also one at Andrews point. On Stetson pond a stave-mill. Formerly 100,000 barrels of lime was made at Lincolnville. Its manufacture is now somewhat less. W. C. Tower is the only manufacturer at present.

Montville—Is not so well supplied with water-power, lying on the divide between George's river and Penobscot river waters. We find but two powers worthy of note, both at True's mills in south-east part of the town. Upper fall, ten feet; lower fall, seven feet. On these are grist-mill, carding-mill, saw, stave, and shingle-mills, which cut 600,000 feet of lumber, card 15,000 pounds of wool and grind 15,000 bushels of grain per annum.

Mills operate all the year, except the carding-mill. Stream uniform, being connected with three ponds which have four square miles of surface. Granite is abundant for building dams, &c.

Morrill—Sacasawakic (Passagassawaukeag) stream furnishes three powers, the fall of two of which is ten feet each; the other is nine feet. Another stream furnishes a power with some head. Saw, shingle, and stave mills are operated which cut annually about 500,000 shingles, 300,000 laths and 200,000 boards. One small pond in this town, and only one power developed as yet. The mills operate about six months of the year. Lime casks are manufactured to some extent for the Rockland market.

Monroe—This large town is crossed by Marsh river, and has several other streams tributary to this, and to Goose pond. Its principal powers are on the Marsh river. First, the "Willis mill" on Marsh river; fall fifteen feet. Wood and stone dam with ledge foundation. Saw, shingle, and grist-mill with four run of stones. A good site for small factory. Saw-mill cuts 400,000 boards and shingle-mill 800,000 shingles annually. Second, half a mile above, with ten feet fall; power used for carding-mill. Third, power half a mile above on same stream; saw and stave-mill, with ten feet head. Wooden dam on ledge. A very good privilege. Fourth, two miles further up. Saw and shingle-mills, with fifteen feet head. Good reservoirs further up the stream. Mills run nine months of the year. Fifth, just below, with fifteen feet fall in ten rods. Not improved. These powers are not liable to be troubled by freshets. Sixth, "Thurlough mill" on outlet of Northern pond, with stone dam eight feet high. Water brought in canal; fall twelve feet. Dam flows back one and a half miles. Pond contains seventy acres; could be flowed to cover thirty more. Another pond and bog of thirty acres might be flowed. Cuts 200,000 feet of lumber yearly. Ten rods below is a chance for a dam twelve feet high but is unimproved, as are powers given below on same stream. At outlet of Thomas-Chase bog, stone dam eight feet high, which flows water over several hundred acres, two hundred of which has right of flowage. This bog has drainage of southern slope of Dixmont hills; unimproved. Half a mile further down; formerly used for saw, lath, shingle and stave mills. One mile farther on formerly a saw-mill. Eleventh, "Mayo mills," twelve feet head; occupied by a first-class grist-mill. Pond and reservoir in town of Swanville. Twelfth, "Emery mills," on

Emery-mills stream near centre of the town. A dam could be built between ledges, cheaply, to raise fifteen feet head of water and flow thirty acres; occupied by saw and stave mills. Thirteenth, thirty rods below; dam could be built to raise head of water fifteen feet. Fourteenth, twenty rods below there is a fall of forty feet, and offers a splendid site for a factory. By flowing a bog half a mile above the falls, it would be very much such a power as Dexter. In a distance of forty rods there is sixty feet fall. Years ago a grist-mill operated here the year round, and since then a pail-factory; unimproved. Fifteenth, at the outlet of Jones' bog, half a mile above the last. A suitable dam would raise a pond to flow 700 acres and give ten feet head. Munroe offers to exempt capital laid out to develop her water-power, and it is one of the few towns in Waldo county that has no town debt. Winterport is another.

Northport—Though not largely endowed, we find four considerable powers here. First, on Little river at head of the tide banks and bed of stream ledge, with average volume of six square feet. Fall fifteen feet; unimproved. On Sucker stream are three powers in north-west part of the town. Fall ten feet, with average volume of three square feet. Occupied with saw and shingle mills.

Palermo—This is one of the largest towns in Waldo county, and is well supplied with water-power. It drains its waters by way of the Sheepscot river, in a south-west direction. Ten good powers exist. First, at "Marden's shingle and stave-mill;" also drives grist-mill and rake manufactory. Operate eight months in the year. Second and third on Little river; unimproved. Fourth, on the main Sheepscot river; fall ten feet; mill in decay; stream fed by ten ponds. This privileges is about one-fourth mile below the outlet of Sheepscot great pond, which is three miles long and one mile wide. Ponds can be flowed easily for reservoirs. Next two powers are on a stream that runs into west branch; occupied by saw and shingle-mills. Rock for dams abounds. The other powers of the town are of less note and are unimproved.

Prospect—Three considerable powers; the first on Grant's stream with head and fall of eight feet. The second and third power also on same stream. Saw-mill on each, but two are decaying. There is also grist-mill. Stream is variable, but has capacity of 300,000 lumber, and to operate mills two-thirds of the time. Plenty of granite and streams are ledgy. Wilbur, Grant & Co. carry on cooperage and stave business.

Searsmont—Well supplied with water-power. The west branch of St. George's river furnishes eight powers, and the east branch and tributaries seven more, making fifteen in all. First, at "Woodman's mills" on West branch; saw and stave-mill, which operates only part of the year on account of flowage of meadow grass-lands. Second, at a point two miles below. Here are two powers known as the "Boynton privileges" both unoccupied. Head of sixteen feet can be raised and large pond flowed. Fourth, one mile further down, and known as the "Muzzy mills." Saw, stave-mill, and tannery. Fifth, just below the last and unoccupied. Sixth, just below the "Hazeltine mills" in Searsmont village; occupied by saw, grist, carding, stave, and shingle mills. This power is steady, and mills operate all the time. A head of eighteen feet can be had. Seventh, two miles below, known as "Dyer mills;" saw, stave and shingle mills. Operate six months of the year. Eighth, half a mile below, known as the "Canal Dam;" unoccupied, and a head of twenty-five feet can be had. Quantabacook pond can be used as a reservoir for the two last named privileges. Pond covers one and one-fourth square miles. Ninth power is found in north part of the town, on east branch, at "Thompson's Mills." Tenth, one mile below at the "Wallace dam" and unoccupied. Flows a large intervale. Eleventh, one hundred rods below at the "Jewett mill;" occupied by saw-mill and stave-mill. Twelfth, in the west part of the town, known as the "Arnold Privilege." Thirteenth, one hundred rods below, occupied by Morse's stave-mill. Fourteenth, half a mile below; occupied by Woodcock's saw, stave, and cabinet mill. Rock abundant for dams. Lime is manufactured in this town by Edward Burgess, and is of a very fine quality. Considerable cooperage is made for the sea-board markets.

Searsport—Has eight powers on Big Meadow and Half-Way streams, and all are small. The power is nearly all improved, by one grist, two flouring, two stave, three shingle, and several stave-mills. Rock for dams abundant and good for building purposes, being granite. A spool factory has recently been established, and is doing a prosperous business; Geo. Merrill is proprietor of the enterprise. Searsport has several ship-yards, and is engaged largely in ship building. Wm. McGilvery and Carver & Lane are the ship-building firms.

Stockton—Is also extensively engaged in ship-building—or has been—and owes much of its wealth to this industry. N. G. Hichborn, H. S. Staples, B. F. Rice, C. S. & O. Fletcher are ship-building firms. Thompson & Griffin manufacture doors, sashes and blinds. Stockton has three powers: First, tide-mill power at the village, with eight feet fall, with saw, shingle, grist-mill, sash and blind and block shop. Second, on "Perkins' stream," Sandy Point. Small but never failing stream, occupied by carding and clothing-mill, with eight feet head. Third, the "Robert's mill," on Seavey stream, with fall of eight feet; a saw and shingle-mill operates eight months of the year.

Swanville—Has three powers. First, "Swanville mills," at outlet of Swan lake, (Goose pond.) Fall ten feet, with stone dam. This is occupied by a saw-mill owned by the Belfast Paper-Mill Company. Worked only when paper-mill wants water, the lake serving as a reservoir to said mills; lake contains three square miles. Second, "Nickerson mills," on Dead brook; fall eleven feet; operates six months of the year. Third, "Marden privilege," on same stream; nine feet fall; unimproved. Two small ponds are connected with this stream.

Thorndike—Three powers, which are small and operate only four months in the year. Two saw-mills and three shingle machines. No other manufacturing in this town worthy of special note.

Troy—Ten powers. First, at outlet of "Carlton bog," which contains about 1,000 acres. Shingle, clapboard, saw, stave and grist-mill; 300 M lumber, 350 M shingles, 30 M clapboards, 1,600 bushels grain are manufactured annually. Has thirteen feet head. Dam in poor condition. Reservoir dam above might, with trifling outlay, flow 3,000 acres. Forty rods below is the second power; nine feet head; unoccupied. Third, one mile below; unoccupied. Fourth, the "Myrick falls," in the south-western part of the town. Occupied by saw-mill that cuts 150 M lumber annually; has head of twelve feet. Hard bottom at all these privileges; water sufficient for nine months of the year. Fifth, twenty rods below; occupied by shingle-machine, which cuts 300 M shingles per annum. Sixth, below; unoccupied. Seventh, on Martin stream; occupied by saw-mill which cuts 150,000 lumber per year; runs three-fourths of the time. Eighth, below; good bottom and head;

unoccupied. Ninth, clover-mill, on "Shaw brook." Hulls ten or twelve tons of seed per year; runs six months of the year, with head and fall of eleven feet. Plenty of stone about for raising dam. Tenth, half a mile below; occupied by shingle-mill which cuts 200 M shingles per year. Good bottom; water sufficient to run mill eight months of the year.

Unity—Four powers. First, "Thompson mill;" grist, saw, shingle, clapboard, picket, lath and stave-mills, all on one dam; on Twenty-Five Mile pond stream. Area of pond four and a half square miles. Mills operate the year round. Second, "Stevens' mills," on Sandy stream; grist, carding and clothing mills. An excellent power, beautiful falls and large flowage. Third, "Conner's mills," on same stream; occupied by a large grist-mill. Fourth, "Small's shingle-mill," a small but nice power; large tanneries used to operate at Unity village, on the stream, but they are now in ruins. Hemlock bark becoming scarce, other and more favored localities could pursue the business at better advantage.

Waldo—Seven powers, the "Hawkins' mill" being first, on a brook fed by three small ponds in the north-west part of the town. Saw and stave-mill, which run from fall to spring. Second, above—Pitman's saw-mill saws three months of the year. Third, on same stream, in south-west corner of the town. Dam remaining; mill burnt some years ago. Fourth, above; about centre of town, known as "Sanborn mill;" on Passagassawaukeag stream, which is fed by three ponds situated in Brooks and six more situated in Waldo, Morrill, Knox and Brooks. Fifth, in north-east part of the town known as "Johnson saw-mill." Fed by a pond of seventy acres; runs six months of the year. Pond fed by Wescott stream; saw, shingle and stave-mill. Sixth, below; known as "Holmes' mills;" in ruins now; fall ten feet; pond of sixty acres. Seventh, below; known as "Ellis Mill Privilege." Saw, shingle, and stave-mill machinery; water sufficient for six months' sawing each year.

Winterport—Seven powers, most of which are on Marsh river, and range from fifteen to twenty-five feet head. At "Plummer's Mills," "Boyd's Mills" and "Tapley's Mills," the power is utilized to drive shingle, saw, stave, lath, grist and carding-mills; the others are unoccupied. On "Cole's brook" at North Winterport, the "Baker mill" has a head of twelve feet, which drives a stave and shingle-mill.

Meteorology.

The meteorology of Waldo county does not differ essentially from that of other seaboard counties of Maine. It lies more interior than Washington, Hancock, Knox, Lincoln, Cumberland and York, yet has extensive seaboard enough to feel the effects of the sea upon its atmosphere. The Bay of Fundy renders our eastern seaboard counties damp and foggy to greater extent than our western. Long spells of prevailing sea-fog are sometimes experienced, and are known by the technical name of "fog-mulls." These occur most frequently in the hot months of July and August, when the east and south winds prevail. But some years are exempt from these. Our snows are affected by proximity to the salt water, and disappear very rapidly in the spring. Our rainfall is also very much influenced by the nearness to the sea.

The air in the spring and fall, is damp and chilly oftentimes, and proves unhealthy for those of weak lungs. Fevers are sometimes induced from our climatic conditions of damp and cold, and wet and heat. North-east winds from the Gulf of St. Lawrence, usually bring cold rains, and are our most disagreeable storms. Neuralgic diseases prevail at certain seasons, due greatly to exposure to raw chilling winds.

From June to September on many nights, the southerly winds will drive in the sea fog about sunset and it will prevail till after sunrise the next morning; when, most likely, it will be driven out again by the north-west wind. Sometimes this night-fog will prevail till nine or ten o'clock in the forenoon. It generally sends in *avaunt couriers*, so that the watchful hay-makers are warned and consequently prepared for the main body, generally, when it comes a few hours later. These out-riders invariably follow up the river channels, and are seen high over the Penobscot and Kennebec rivers as flying scuds.

But I would not cast the impression that Waldo county is more damp, unhealthy, or undesirable in climate than her sister counties. Indeed this would be untrue. I have but presented some of her prominent features in meteorology as they exist. No climate in all this wide world can surpass our Junes and Septembers. Our winters, though severe, are much less so than those of the west. Our summers, though hot, are not enervating. Our climate, though from its sea influences, damp, is peculiarly bracing. And while some parts might perhaps be modified for the

better, on the whole it has fewer objections than most any other county or State. Longevity is maintained fully with other States of the Union, and in this respect ours surpasses very many. We can boast our centenarians in Maine, as often as that of any other place.

But we find ourselves too often at fault when we attempt to be weather-wise. It is a favorite theme upon which to prophesy, and presents a rich field to the careful and patient observer. It is a field needing faithful workers. The weather is an ever new subject. We find it brings up something for remark almost every hour. What a pleasant day! What a cold snap! What a severe storm! What a fierce wind! These and a thousand other expressions are common-place yet never wear out. They are always original and constantly paraded before us. Then again the last storm, or hot, or cold day, was the greatest, the hotest, or the coldest we ever knew. Some peculiarly novel feature about it exceeds, in our estimation, all predecessors. Our memories are short, and we are the creatures of circumstance. So we allow ourselves to be governed by sensations and present impressions.

Yet how dependent are we on the ordinary phenomenon of the elements. Let there be a little excess of heat, of wet, of cold, of frost, of snow, or of dryness, and we suffer. The past winter is in point: when an unusual depth of snow caused delay of trains, impassible highways, and unsafe locomotion, it required the expenditure of thousands of dollars more than usual to keep the wheels of business moving. A scarcity of wood occurred, amounting to almost a famine—wood enough, yet practically out of reach. It was but a natural inference to suppose that following a summer of unusual rain-fall and moisture we would have but a light fall of snow. The reverse has been the fact. Not only an excessive number of snow-storms but of depth of snow; without rain-fall or mild weather to settle it, or harden the roads. Such depth of snow, accompanied, as was the fact this year without any frost in the ground, is very favorable to the succeeding grass crop. Meteorology is, as yet, a broad field in which but few salient points have been made. It is by the aid of tables like the accompanying, the results of carefully conducted observations running through a long term of years, that general rules are deducted.

It is not my purpose to enter upon any lengthy remarks concerning our meteorology. I shall let what I have said suffice and in this connection present several tables from weather records kept within the county by well-known citizens. They are instructive, and their teachings valuable. They will well repay carefully studying and frequent consultation, when we think "this is the coldest day I ever saw," or "this is the hottest we ever had." The tables of snow-fall will settle "the oldest inhabitant" in future, when he observes, "We never had so deep snow since I was a boy."

TABLE I.—*Mean Temperature of each Month and each year, from* 1852 *to* 1873, *by* J. F. BLAKE, *Winterport.*

YEAR.	January.	Februa'y	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Whole Year.
1852	14⅔	19⅓	27⅔	40	53½	60½	69	64	58¼	44⅓	34	26	43⅔
1853	18¾	20⅓	31	40⅓	53½	62½	67⅓	66⅓	58⅓	40	33 1-5	21¼	43⅓
1854	12½	13	26⅔	37	54¾	63⅔	71⅔	65½	57½	48½	38	17¼	42
1855	22⅔	14½	27¼	39	51 1-6	62	69⅔	64⅓	58½	51⅓	36	25	43¼
1856	12¾	17¼	24 1-6	42¾	51½	65½	71½	67⅔	59⅓	50	36⅔	20¼	43¼
1857	11¾	27⅓	29¼	41⅔	54	62½	71⅓	67½	61	49½	39	27	45
1858	22¾	16⅔	30½	40⅔	49⅔	64⅓	65½	64½	58⅔	46⅓	29¾	15¾	42
1859	14¼	19 1-5	31½	37⅔	53¼	59	65½	65	55⅔	42¼	34⅔	14¼	41
1860	19	17 1-6	32⅔	38¼	52½	62¾	64½	66⅔	55 1-6	47 1-5	40¼	20½	43
1861	11⅔	23⅔	27	39⅔	49⅔	60½	68	67	58	49½	36	23	43
1862	14 1-5	16⅓	32¼	37⅔	53¼	60	65	65⅔	58¾	48	36⅔	21⅔	42½
1863	26	23	23⅔	41	52⅓	58¾	66½	66½	56	48⅔	39	20 1-5	43⅓
1864	21¾	25¾	32	40¾	54	61⅓	67	66½	55⅔	45¾	37⅓	24⅔	44¼
1865	16⅔	23½	34 1-6	43⅓	52⅔	63⅔	65¼	65⅓	62	45	37½	24⅔	44½
1866	15¼	23⅓	28¼	44	51¼	61¼	68⅔	66 1-6	59	47	39	25½	44
1867	14	26½	28⅓	40	49⅔	62¾	65⅔	67¾	56⅔	47¾	34⅔	16	42½
1868	15⅔	15¼	30⅓	37⅓	50⅓	61	67½	66⅔	55⅔	42¾	32½	20⅛	41¼
1869	21½	24½	25½	40¼	51	59⅓	66⅓	63⅔	61	47	34	25¾	43⅛
1870	25⅓	22¼	30⅓	44¼	51⅔	65⅛	68¼	66⅛	59½	49¼	37½	26⅔	45⅓
1871	17	22	36 1-6	42¾	51⅓	62	67⅓	66⅓	55⅔	49½	31½	20¾	43½
1872	20⅓	21⅓	22¾	41½	52	64	68⅛	67⅓	59⅔	47	35⅓	16	43

TABLE II.—*Showing the extremes and range of Temperature of each Month and Year, from* 1852 *to* 1872, *by* J. F. BLAKE, *Winterport.*

YEAR.	January.			February.			March.			April.			May.			June.			July			August.			Sept.			Oct.			Nov.			Dec.			YEAR.		
	Heat.	Cold.	Range.	Heat	Cold.	Range.	Heat	Cold.	Range.	Heat.	Cold.	Range.	Heat.	Cold.	Range.	Heat.	Cold.	Range.	Heat.	Cold.	Range.	Heat.	Cold.	Range.	Heat	Cold.	Range.	Heat	Cold.	Range.	Heat.	Cold.	Range.	Heat.	Cold.	Range.	Heat.	Cold.	Range.
1852	40	−30	70	50	−34	84	59	−8	67	62	17	45	85	25	60	90	28	62	100	39	61	93	38	45	89	21	68	66	16	50	54	12	42	55	−13	68	100	−30	130
1853	43	−24	67	48	−13	61	53	−4	57	62	15	47	85	24	61	85	32	53	92	43	49	100	37	63	92	32	60	72	18	52	55	−1	56	49	−28	77	100	−28	128
1854	40	−31	71	48	−34	82	50	−7	57	71	2	69	88	30	48	93	30	63	96	48	48	92	40	52	92	31	61	71	24	47	65	3	62	42	−30	72	96	−30	126
1855	46	−6	52	40	−31	71	50	4	46	74	10	64	79	28	48	95	38	55	95	42	53	92	39	38	90	31	58	72	30	42	59	5	54	50	−18	68	95	−31	126
1856	36	−18	54	46	−20	66	56	−27	83	63	9	54	74	26	48	98	40	58	99	45	54	92	39	53	88	38	50	82	27	55	64	13	51	45	−18	63	99	−27	126
1857	36	−45	81	60	−28	88	56	−17	73	62	12	50	89	26	65	88	37	54	98	48	50	92	44	48	89	34	56	76	19	47	62	2	60	44	−3	47	98	−45	143
1858	46	−4	50	42	−23	65	54	−6	50	68	20	48	74	26	48	98	35	63	92	40	52	90	33	37	92	26	66	76	20	56	58	6	52	42	−20	62	98	−23	121
1859	46	−38	84	43	−22	65	52	−9	61	60	13	47	87	26	58	87	30	57	92	39	51	88	37	51	76	25	31	70	10	60	55	11	44	45	−38	83	92	−38	130
1860	46	−24	70	52	−30	82	56	3	53	66	2	64	88	23	65	90	38	52	90	38	52	91	42	49	82	22	60	68	22	46	70	16	54	43	−24	67	91	−30	121
1861	38	−30	68	50	36	86	50	−18	68	64	10	54	78	21	57	83	33	50	92	44	48	88	37	51	86	30	56	74	22	48	54	22	32	44	−14	58	92	−30	122
1862	35	−20	55	39	−22	61	52	−10	42	62	10	52	86	26	60	90	32	58	92	38	54	92	38	54	84	35	49	88	25	63	60	10	50	44	−20	64	92	−22	114
1863	46	−12	58	43	−22	65	46	−19	65	70	8	62	78	30	48	88	32	58	89	45	54	92	44	48	87	28	49	74	16	58	57	12	45	45	−12	57	92	−22	114
1864	42	−14	56	46	−26	72	55	1	54	65	20	45	82	34	48	92	36	56	92	41	53	85	47	38	76	32	44	68	24	44	55	16	39	48	−15	63	92	−26	118
1865	35	−26	61	42	−17	59	50	8	42	62	20	42	86	32	54	90	33	57	88	40	48	90	42	48	90	28	56	72	19	53	64	4	60	53	−5	58	90	−26	116
1866	42	−22	64	48	−12	60	48	5	43	70	22	48	77	28	49	88	36	52	96	46	60	80	44	36	82	34	48	72	17	57	61	8	53	51	−13	64	96	−22	118
1867	42	−14	56	50	1	49	50	−8	58	60	22	38	72	30	42	84	36	48	90	47	43	85	40	45	76	25	51	67	25	42	63	6	57	42	−17	57	90	−17	107
1868	38	−16	54	46	−16	62	51	−10	61	60	8	52	75	25	50	88	38	50	94	44	50	90	38	52	82	31	51	70	14	56	56	8	48	38	−8	46	90	−16	106
1869	45	−10	55	50	−10	60	52	−20	72	60	19	41	80	22	58	86	34	52	90	41	49	86	42	48	80	35	45	78	20	58	52	18	34	42	−2	44	90	−10	100
1870	46	−10	56	48	−14	62	52	−8	60	72	22	50	82	30	52	93	46	47	97	46	51	88	41	49	84	33	51	72	17	55	58	17	41	45	−8	53	97	−14	111
1871	45	−17	62	48	−12	60	54	16	38	68	20	48	92	30	62	92	40	52	88	43	51	86	38	48	82	26	56	70	25	58	58	4	54	46	−8	54	92	−17	100
1872	43	−12	55	45	−10	55	48	−8	56	70	25	45	73	32	41	96	44	52	93	45	48	95	46	49	88	38	50	66	21	45	48	10	38	40	−22	62	96	−22	118

TABLE III.—*Showing the time Ice left the Penobscot river from* 1818 *to* 1873.

1818	May 1	1846	March 29
1819	April 19	1847	April 23
1820	" 18	1848	" 12
1821	" 15	1849	" 1
1822	" 10	1850	" 12
1823	" 19	1851	" 8
1824	" 10	1852	" 21
1825	" 11	1853	" 5
1826	" 5	1854	" 27
1827	" 2	1855	" 15
1828	" 1	1856	" 16
1829	" 14	1857	" 6
1830	" 9	1858	" 11
1831	" 9	1859	March 30
1832	" 19	1860	April 16
1833	" 9	1861	" 11
1834	" 8	1862	" 18
1835	" 17	1863	" 19
1836	" 12	1864	" 8
1837	" 15	1865	March 31
1838	" 21	1866	April 1
1839	" 17	1867	" 18
1840	" 1	1868	" 18
1841	" 17	1869	" 11
1842	March 21	1870	" 8
1843	April 21	1871	March 13
1844	" 12	1872	April 20
1845	" 21	1873	" 20

TABLE IV.—*Amount of Snow-fall, from records kept by* JOHN BRYANT, Esq., *Montville.*

YEAR.	MONTH.	Number of Snows.	Inches.
1857	December	5	12
1858	January	4	12½
"	February	2	9
"	March	2	12
"	April*	4	31
"	November	4	15
"	December	5	20
1859	January	3	20
"	February	4	16
"	March	7	43
"	April	4	7
"	November	3	10
"	December	8	52
1860	January	4	10
"	February	4	15
"	March	5	16
"	April	3	5
"	December	5	23
1861	January	8	53
"	February	6	26
"	March	7	34
"	April	3	5
"	November	4	14
"	December	5	15

* These snows were from 21st to the 28th ; each one being a heavy fall.

TABLE IV.—*Amount of Snow-fall*—Continued.

YEAR.	MONTH.	Number of Snows.	Inches.
1862	January	10	28
"	February	9	32
"	March	7	31
"	April	1	7
"	November	3	10
"	December	4	24
1863	January	6	23
"	February	3	6
"	March	10	39
"	April*	4	23
"	November	3	5
"	December	5	12
1864	January	6	18
"	February	3	15
"	March	3	4
"	April	2	11
"	November	2	8
"	December	6	22
1865	January	8	42
"	February	6	21
"	March	3	3
"	April	2	6
"	October	1	2
"	November	4	10
"	December	6	15
1866	January	3	24
"	February	4	12
"	March	5	14
"	November	1	3
"	December	3	15
1867	January	5	37
"	February	2	6
"	March	5	32
"	April	3	5
"	September	1	2
"	November	2	8
"	December	6	18
1868	January	8	20
"	February	7	27
"	March	5	20
"	April	2	8
"	May	1	8
"	October	2	5
"	November	4	12
"	December	4	13
1869	January	0	0
"	February	8	43
"	March	5	17
"	April	2	2
"	May	2	3
"	October	2	14
"	November	4	8
"	December	4	19
1870	January	6	16
"	February	4	19
"	March	5	20
"	April	1	3
"	October	1	2
"	November	3	8
"	December	5	16

* April, 1863, snowed 7th, 8th and 9th ; 15 inches fell.

TABLE IV.—*Amount of Snow-fall*—Concluded.

YEAR.	Month.	Number of Snows.	Inches.
1871	January	4	9
"	February	4	12
"	March	2	10
"	April	2	2
"	May	2	4
"	November	4	25
"	December	7	23
1872	January	4	13
"	February	2	13
"	March	8	26
"	April	2	3
"	November	5	14
"	December	12	46
1873	January	9	18
"	February	7	32
"	March	7	23
"	April	6	12
"	May	1	6

RECAPITULATION.—*Showing the amount of Snow-fall per year.*

YEAR.	Feet.	Inches.	YEAR.	Feet.	Inches.
1858	9	3½	1866	5	8
1859	12	4	1867	9	5
1860	5	9	1868	9	5
1861	12	3	1869	8	10
1862	11	0	1870	6	10
1863	9	0	1871	7	1
1864	6	6	1872	9	6
1865	8	3	1873*	6	9

* Only 5 months of 1873 are included.

TABLE V.—*Summary of Meteorological Observations, made at Belfast, Waldo County, Maine, from January* 1, 1859, *to July* 1, 1873, *by* Lucius H. Murch.

1859.

Observations for this and all the following years were made three times each day, as follows: 7½ A. M., 1 P. M., and 6 P. M. Thermometer in the shade in the open air.

MONTHS.	Mean of warmest day.		Mean of coldest day.		Highest temperature.		Lowest temperature.		Mean of 3 daily observations.
	Day.	Temp.	Day.	Temp.	Day.	Temp.	Day.	Temp	
January	21	°41	10	−°18.7	21	°43	10	−°24	°17.70
February	20	36.3	26	7	20	41	26	2	22.58
March	30	44.7	2	10	30	47	2	5	34.52
April	30	53.7	9	30	30	57	9	29	40.79
May	8	69.3	9	44.3	7 & 8	72	12	42	56 22
June	28 & 29	75.7	5	44	28 & 29	79	5	42	62.17
July	13	79.7	4	61	13	83	4	57	69 95
August	5	76.3	31	59.7	26	79	31	56	68.72
September	12	69	21	45.3	12	74	15 & 21	45	58.25
October	4	63	26	30.7	4	68	26	30	44.76
November	13	53	29	22.3	13	56	21	18	37.41
December	7	46	29	−4	7	50	25	−10	18.16
Year	July 13	79.7	Jan. 10	−18.7	July 13	83	Jan. 10	−24	44.27

1860.

January	11	37	2	−1	25	41	2	−10	22.63
February	23	42.3	1	−6.3	23	46	2	−10	21.28
March	31	51.7	10	25.7	31	57	10	21	35.48
April	23	57	2	22.3	23	60	2	21	42.83
May	12	69.7	16	44.3	13	76	1, 16 & 22	43	56.83
June	30	81	20	49.3	14	83	20	49	64.49
July	3	76.7	9	63	26	82	30	58	70.47
August	7	77.3	20 & 21	64	6, 7 & 26	80	15	59	69.63
September	6	76	29	41.3	6	79	29	38	59.20
October	11	57.7	28	37.7	11 & 30	61	28	35	48.10
November	1	57.7	25	25	1	64	29	21	41.65
December	1	38.3	19	4	1	40	19	−5	22.33
Year	June 30	81	Feb. 1	6.3	June 14	83	Jan. 2 and Feb. 2	−10	46 24

1861.

January	25	29.3	12	−5	25	34	13	−10	14.58
February	28	43.3	8	19.3	28	47	8	−22	25.60
March	30	43	18	7	4	47	18	2	29.75
April	22	52.3	1	25.7	22 & 25	58	1	18	42.89
May	31	72.3	2	33	31	77	2	31	54.40
June	27	76.7	3	52.7	10, 27, 28 & 30	79	3	46	65.65
July	5	79.3	2	58.7	5	86	2	57	70.98
August	3	83.3	14	58.7	3	87	14	52	68 36
September	14 & 15	70	30	49.7	7	78	30	45	61.45
October	3	64.3	25 & 28	38.3	7	68	28	33	50.73
November	4	50.3	20	28.7	4	55	21 & 23	26	37.15
December	8	44.3	21	8.3	8	49	21 & 29	4	26.16
Year	Aug. 3	83.3	Feb. 8	−19.3	Aug. 3	87	Feb. 8	−22	45.64

TABLE V.—*Summary of Meteorological Observations*—Continued.

1862.

MONTHS.	Mean of warmest day.		Mean of coldest day.		Higbest temperature.		Lowest temperature.		Mean of 3 daily observations.
	Day.	Temp.	Day.	Temp.	Day.	Temp.	Day.	Temp.	
January	10	°32.3	14	°1.3	10	°38	14	-°5	°17.81
February.....	24	33	10	9.3	13	37	11	2	20.18
March.....	25	42.3	15	22	25	47	15	20	33 67
April.....	30	54.3	7	29.7	18	60	8	25	42.86
May	23	71.7	2	44.7	18	76	2	42	57.42
June	28	75.3	8	47	28	82	8	44	63 96
July.....	6	80	3	57.3	6	85	3 & 23	56	68.59
August.....	3	77.7	24	60	23	83	24	56	68.25
September	9	69.7	30	50.7	12	75	14	47	61.22
October.....	9	75	26	35	9	82	16, 20, 21 & 26	32	49.04
November	1 & 3	51.7	16	20	1	59	16	14	36.36
December	16	45.7	20	-4	16	49	20	-5	22.48
Year	July 6	80	Dec. 20	-4	July 6	85	Jan. 14 and Dec. 20	-5	45.15

1863.

January.....	16	43.7	18	5	16	49	9	-2	26.38
February.....	20	41.3	4	-11.7	20	45	4	-14	23.91
March	26	40.7	13	6	25	45	14	-2	26.35
April.....	23	61	8	24.3	23	67	8	18	43.29
May.....	22	81	15	37	22	87	8	34	55.64
June	28	79.3	8	52	28	83	6 & 8	50	64 64
July.....	28	79	14	56.7	27	84	4	54	69 24
August	3	84.7	26	58	3	90	26	57	70 71
September.....	16	76.3	26	45.3	16	83	23 & 27	44	58.54
October	1	63.3	26	33	1	69	26 & 28	28	49.84
November.....	17	54.3	30	17.3	17	56	30	14	39.35
December	14	41.3	10	6	4	44	11 & 21	2	22.24
Year.....	Aug. 3	84.7	Feb. 4	-11.7	Aug 3	90	Feb. 4	-14	45.84

1864.

January	25	37.7	7	-3.3	25	42	7	-10	22.28
February.....	24	38 7	18	-2	24	45	18	-10	26 08
March.....	27	43.7	22	22	27	49	23	16	33.54
April.....	29	56.7	12	30.3	30	62	3, 4 & 11	28	43.10
May	6	70	3	40.3	31	76	3	39	54 92
June	26	84.7	10	54.3	26	92	10	53	68 30
July	15	78 7	2	57	10	86	2	56	72.84
August.....	14	78.7	3	59	24	81	4	57	69.48
September.....	1	69.7	26	47.7	1	74	27	45	58.33
October	7	60.7	30	37	7	66	30	30	46.70
November	10	56.3	24	26	10	58	24	24	38 29
December.....	1	41.7	23	-7.7	1	45	23	-10	24.54
Year.....	June 26	84.7	Dec. 23	-7.7	June 26	92	Jan. 7, Feb. 18 Dec. 23	-10	46 53

TABLE V.—*Summary of Meteorological Observations*—Continued.

1865.

MONTHS.	Mean of warmest day.		Mean of coldest day.		Highest temperature.		Lowest temperature.		Mean of 3 daily observations.
	Day.	Temp.	Day.	Temp.	Day.	Temp.	Day.	Temp.	
January.....	10	°29.7	16 & 17	°4	6, 9, 13 14 & 31	°33	17	-°10	°16.87
February	26	35 7	12	2.3	8, 23 & 26	39	12	-4	23.85
March..	30	45	6	18.7	16 & 20	49	6	12	35.45
April.....	30	54.3	21	36	28	60	1	34	46.02
May.....	31	71.7	3	41.3	17	84	7	37	55.34
June	30	84.3	6	58.7	30	88	6	54	68.57
July.....	28	81.3	7	59	21	86	7, 13 & 17	58	70.97
August	22	77	24	61.7	22	89	25 & 29	56	70.41
September.....	1 & 12	79	18	48.3	1	86	19	44	66.15
October	2	58.3	28	28.7	2	68	28	26	45.83
November	17	53	11	20.3	17	61	11 & 12	18	37.88
December	27	48	23	3.3	27	50	31	. ....	25.98
Year.....	June 30	84 3	Feb. 12	2.3	Aug. 22	89	Jan. 17	-10	46.93

1866.

January	1	35.3	7	-12.3	1 & 20	38	7	-20	16 53
February.....	24	46.7	7	1.7	23	50	7	-7	24.12
March.....	16	39.3	10	18	16 & 28	44	8	11	29 24
April.	19	62.7	9	40.3	19	71	22	35	46.93
May.....	29	66.3	3	47	13	73	17	40	54.91
June	26	84.7	4	52.3	26	86	2	50	65.37
July	8	86	23	61.7	8	91	19	57	74.06
August	3 & 12	72.7	16	57.3	4	78	17 & 21	52	65.62
September.....	3	71.3	20	50.7	3	76	24	45	61.34
October.....	1 & 8	62 3	29	32.7	1 & 8	68	29	26	49.37
November.....	29	56.3	25	22.3	8	59	25	18	40.66
December	24	49.7	21	6.3	24	51	21	.....	27.88
Year.....	July 81	86	Jan. 7	-12.3	July 8	91	Jan. 7	-20	46.34

1867.

January	22	31.7	30	-1.3	22	34	20	-6	16.13
February.....	14	46.7	20	7.3	14	52	20	2	27.76
March.....	31	47.3	3	12.7	31	48	3	10	30.27
April.....	16	55	13	31	16	58	13	26	43.61
May.....	28	66 7	5	42.7	27	70	5	40	51.99
June	29	75.7	3	60.3	23 & 28	80	3	57	68.91
July.....	24	82.7	6	57.7	24	86	13	50	70.26
August	21	76.7	31	59.7	19 & 29	80	21	54	69.66
Septembor.....	2	67	30	37.3	2	71	30	34	58.88
October	18	62.7	23	39	19	70	26	34	48.14
November.....	4	51.3	19	13.3	2	58	19	12	33.90
December	26	38.7	9 & 12	-3.3	28	40	9 & 12	-10	15.33
Year.....	July 24	82.7	Dec. 9 & 12	-3.3	July 24	86	Dec. 9 & 12	-10	44.57

TABLE V.—*Summary of Meteorological Observations*—Continued.

1868.

MONTHS.	Mean of warmest day.		Mean of coldest day.		Highest temperature.		Lowest temperature.		Mean of 3 daily observations.
	Day.	Temp.	Day.	Temp.	Day.	Temp.	Day.	Temp.	
January	24	°32.3	12	°2.7	24	°35	5	-°2	°15 52
February.....	20	33	3	2.3	21	42	12	-6	16.18
Maroh	14	47	2	-1	14	48	2	-2	31 55
April.....	16	53.7	10	26.2	16	59	13	20	40.21
May.....	27	62.7	8	36	27 & 31	66	8	34	51 88
June.....	26	77.3	7	54	27	82	12	51	65.00
July.....	11	76.3	24	59.3	71	30	25	57	68.77
August	24	74.3	28	63.7	15	78	28	59	68.94
September.....	1	68.7	17	47.7	1	72	17 & 22	45	57.08
Ootober	8	64	30	31.3	8	68	30	26	44.03
November	1	52.7	17	21.3	1	54	17	17	33.79
December.....	8	36.7	27	8.7	8	39	27	-2	22 10
Year.....	June 26	77.3	Mar. 2	-1	June 27	82	Feb. 12	-6	42.92

1869.

January	8	40.7	22	1.3	8	47	22	-2	22.85
February.....	13	40	2	16	13	44	2	10	26.92
Mareh	28	48	5	7.7	27 & 29	50	5	3	29.17
April.....	26	56 3	4	34	28	60	4	31	45.80
May	26	71 7	2	38.3	26	77	2	36	55.22
June	3	74 3	11	55.3	3	80	1	51	64.42
July.....	11	81.3	21	59.3	11	83	1 & 21	59	70.87
August.....	3	73.3	31	59.3	3 & 20	78	17, 29 & 31	58	67.13
September.....	9	71.7	28	48	8	76	28	45	62.56
Octobor.....	1 & 3	66	28	30.3	1 & 3	71	28	26	48.87
November.....	6	50	25	25 3	4,5&21	54	26	20	36 34
December	1	46.3	6	8.7	1	53	4	3	27.68
Year.....	July 11	81.3	Jan. 22	1.3	July 11	83	Jan. 22	-2	46.50

1870.

January	23	42.7	14	-3 3	23	45	14	-7	27.76
February.....	15	41	4	2.7	15 & 19	46	4	-5	23.67
March	30	44 7	12	15	30	49	12	7	31.73
April.....	27	60.7	4	33.7	27	69	4	31	47.15
May	20	72.7	10 & 24	41.3	20	80	10	39	56 21
June	25	79	10	55	25 & 28	83	10	51	67.98
July.....	24	87.7	5	61.3	24	92	5	58	73.01
August	10	79.7	27	64	10	84	27 & 30	60	70.87
September.....	1	72	12	53.7	1 & 4	76	12	51	62 12
October	2	63.3	27	34.7	2	68	27	30	51.23
November	3	55.3	30	26.3	3	57	30	21	39.22
December.....	2	40	25	6.7	2	45	25	0	27.36
Year.....	July 24	87.7	Jan 14	-3.3	July 24	92	Jan. 14	-7	48.16

TABLE V.—*Summary of Meteorological Observations*—Conoluded.

1871.

MONTHS.	Mean of warmest day.		Mean of coldest day.		Highest temperature.		Lowest temperature.		Mean of 3 daily observations.
	Day.	Temp.	Day.	Temp.	Day.	Temp.	Day.	Temp.	
January	16	°42	26	-°8	16	°45	26	-°14	°18.23
February	25	44.3	5	-1	25	47	5	-10	23.91
March	12	49.7	24	29	11	56	20	24	38.24
April	21	58	2	36	21	64	2	32	44.90
May	30	83.3	5	27.3	30	88	5 & 6	36	56.75
June	3	84.3	16	59 3	3	89	16	55	67.37
July	13	79.7	26	62.7	9	83	23 & 26	60	70.96
August	7	75.3	21	11	12	79	31	56	68.98
September	3	72.7	15 & 22	49	3	76	15 & 22	46	58.08
October	11	64.3	21	37.7	11	68	21	32	50.48
November	1	51	30	9.7	1	54	28 & 30	6	32.92
December	4	41	21	-6	4	43	21	-9	21.23
Year	June 3	84.3	Jan. 26	-8	June 3	89	Jan. 26	-14	46.00

1872.

January	73	35.3	7	2	13 & 23	39	7	4	21.18
February	21	35.3	23	8.7	21	41	1 & 23	1	23.48
March	28	39	6	-3	21 & 28	43	6	-8	24.24
April	30	56.7	1	30.7	30	64	1	26	44.93
May	26	33.3	5	44.3	19	71	5	40	55.10
June	30	84.3	5	52	30	87	5	49	66.42
July	1	83.3	24	61	1	87	27	57	71.29
August	9	79.7	30	55	9	83	30	53	68.43
September	8	72.3	29	55	8	78	29	51	60.16
October	7	60.7	28	36.7	7	64	28	33	47.89
November	7	45.3	30	24.3	7 & 13	48	21	18	36.15
December	3	37	25	-7.7	3	38	25	-17	17.80
Year	June 30	84.3	Dec. 25	-7.7	June 30 and July 1	87	Dec. 25	-17	44.75

1873.

January	17	40.7	29	4.3	17	43	30	-6	20.40
February	8	33.3	2	1.7	7 & 27	38	2	-2	21.08
March	30	39.3	24	20.7	16	45	25	15	31.50
April	28	53.7	2	35	25, 26, 27, 29 & 30	56	2	33	43.24
May	29	72.3	3	35	29	74	3	35	55.85
June	27	77	4	48.3	27	82	5	46	62.98

TABLE VI.—*Showing the mean temperature of the different seasons in each year from* 1859 *to* 1873.

YEARS	Springs.	Summers.	Autumns.	Winters.*
1859	43.84	66.95	46.81	20.69
1860	45.05	68.20	49.65	20.83
1861	43.68	68.33	49.78	21 38
1862	44.65	66.90	48.86	24.26
1863	41.76	68 20	49.24	23 53
1864	43.85	70.21	47.77	21.72
1865	45 60	69.98	49.95	22.21
1866	43 69	68.35	50.46	23.92
1867	41.96	69.61	46.97	15.68
1868	41.21	67 57	44.97	23.96
1869	43.38	67.47	49.26	26.44
1870	45.03	70.62	50.86	23.17
1871	46.63	69.10	47.16	21.96
1872	41.42	68.71	48.07	19.76
1873	43.53	.....	.....	.....
Average temperature, 14 years	43.70	68.59	48.56	22.11

* The mean temperature given for the winters is for the December of the year named, and the January and February of the following year ; so that the figures in the line for 1859, under the head of " Winters," are for the winter of 1859 and '60, and so on for each succeeding year.

TABLE VII.—*Showing the average temperature for* 14 *years of each of the months.*

MONTHS.	Temperature.	MONTHS.	Temperature.
January	°19.74	July	°70.88
February	23.54	August	68.94
March	31.66	September	60 24
April	43.95	October	48.21
May	55.20	November	37.22
June	65.95	December	22.96

Grass Production.

Maine is noted as a grazing State ; it is largely engaged in hay production, and not only produces what is consumed within its own borders, but exports largely this material pressed in bales of two to four hundred weight. Waldo county, in proportion to its area, has shipped more hay west and south, than any other sister county; and this alone has been vastly damaging to its soil. There are very many farms that have paid for themselves, over and over again, with the sale of this one item of farm products. In addition to the sale of hay in bulk, various other products have been extensively sold off, such as potatoes, oats, barley, and even straw, and these once teeming fields that bore bounteous havests, now show a deplorable state of deterioration.

Many of our farmers started in life with no other capital than strong wills and stout hands, and trained to habits of economy and industry. After working out a few years, as farm hands in summer, in the woods as lumbermen in winter, laying by a few hundred dollars, they bought farms, paying in what they had, going into debt for the balance. The annual payments, interest and taxes, were to be met with sales of hay. Often a contract was made between the purchaser and seller, the latter to receive so many tons of hay per annum, "such as the place cuts," at so much per ton, till the debt was paid. The usual contract was ten tons of hay per year for ten dollars per ton. This was delivered at some shipping point by the man who furnished it. Year after year the bulky products of hay and potatoes, the latter sold to buy western corn and flour and groceries, have been sold off from many of the farms in Waldo county. Many have sold in addition to these, various grains, more or less extensively as they happened to raise. Very often the farm when paid for by hay selling, would be sold to some other man who would repeat the skinning practice. Other farms have spared yearly a portion of their hay, and potatoes have been largely produced as a market crop.

We believe a turn of the current is to be experienced, and a new departure taken. We trust with the awakened interest in establishing manufactures, developing our natural resources, introducing associated dairying, the establishment of Farmers' Clubs, and the better diffusion of intelligence and education among the masses, a new impulse will be given toward the better state of things so much needed; that means adequate to ends to be accomplished will be used. We are not behind our sister counties in thrift, vigor or enterprise; we are not lacking in natural resources or a desire to develop them. We have many facilities not enjoyed by other counties, and equalled by none. We have the foundation for a higher system of farming than now prevails. It only remains for us to put forth our best efforts in the right direction, use present knowledge to the best ability, and pursue that liberal course of policy adapted to secure coöperation and prosperity. *We must abandon low farming.*

The grasses most cultivated for forage crops are, with us, Timothy or herds-grass, red-top and foul meadow. There are various other grasses, both wild and tame, which are useful both for grazing and hay, but not in sufficient repute to warrant extended notice here. The forage plants of the clover family are

largely produced; the red and white varieties principally for forage purposes. We have yet to adopt the practice of summer tilling with clover; thus adopting an easy means of fertilizing and one in long use with the thrifty farmers of other States. The Alsike clover is working its way into favor, especially with bee-keepers. We believe it to be adapted to nearly all our soils and a valuable addition to our forage crops. It should be sown with herds-grass, as alone it has a habit of falling down which renders it bad to harvest. One fault with farmers of Waldo county, is the using of too few varieties in seeding down to grass. One of the effects is a poor "catch" and consequent thin sod, and general unproductiveness. Moist soils, either flat lying or moderately inclined, are best adapted to grass culture. Of these we have a great abundance. Our high hills and short ridges are exposed to deep freezing occasioned by snow being blown off, and are unfit for the production of grasses for hay, or for culture of hoed or grain crops. These lands, however, make tolerable pastures, especially for sheep. They should be seeded with hardy, strong-rooted grasses, many kinds of which are at home in such situations. The lowlands, and lower lying parts of the farm, will receive the waste wash of these, and be benefitted thereby. Another use for the high bald hills of our county would be, (and we believe it the best use to which they could be put,) to reclothe them with forest growth of which they were denuded years ago. These protecting wood-capped hills would then afford profit by growth of wood, and protection to fields as wind-breaks. Perhaps no purpose to which they could be put, would yield a greater per centage of profit. They would attract moisture, afford rich washings to the fields and pastures below, temper the fierce blasts of winter and the heats of summer, shelter insect destroying birds, and afford beauty to the landscape. We believe scarcity of wood and intelligent culture will, not far in the future, accomplish this.

Lumbering was the leading branch of industry, formerly, in Waldo county. Early in the history of New England, Penobscot Bay was a resort for fishermen and traders. Trading posts were early established at Castine and Fort Point. The excellence of its lumber became known and attracted lumbermen, and after them the pioneer settlers. Farming was secondary so long as her magnificent forests continued to yield their profitable harvest. As the shores became settled, there sprung up a new industry—ship-building. The forest furnished the lumber and the sea a pathway

for transportation. Vessels were needed for carrying surplus lumber to market, and to return with articles of comfort and luxury. Vessels were also needed for fishing. And here began a new occupation for the shore inhabitant—the manning of the vessels built. Not until lumbering failed did farming come to the front. Having no lumber to sell, the settler then produced hay, grain and potatoes, for export and sale. This became necessary more especially after wheat raising was nearly abandoned, in consequence of depletion of soil and the ravages of the midge; and it has helped to place some of the best farms, naturally, where it will take years of judicious management, recuperation and considerable outlay, to restore them again to where they once were in the scale of fertility. This selling hay is not a thing of the past, as any one will see who visits our seaport towns, or passes over our railroad. The amount shipped gradually decreases, from the very fact that less and less is produced, except in those exceptional years, when under favorable circumstances Nature puts forth, as it were, spasmodical efforts to give luxuriance to her abused and depleted fields. The general average will be found lessening from year to year, and not only in quantity but quality also, and soon a limit will be reached, and when we see an increase of acreage each year that does not pay for harvesting, the poor stand of grass obtained upon newly seeded pieces, and the increase of weeds, wild grasses and bushes in our fields, we cannot assign that limit to the far future under the present and past farming programme. Where our hay is sold away from the farm, our potatoes shipped away, and even most of the small grains produced sold too; while the straw, poor hay, and refuse materials only animalized and made into manure, we may expect poor stock, scant manure heaps, and those of poor quality. We may also expect a down-hill move in all that pertains to agriculture, for these are no part of good husbandry. We have spoken in a general way, and are glad to note there are many noble exceptions, but candor compels us to say that the general aspect is not what is desirable, possible, or what we hope it may shortly be. We also hope the tide is at its lowest ebb in this matter, and that a reaction is about to be experienced by the introduction of new forms of industry and new branches of farming. Manufactures will create home markets, give employment to our young men and women at home, and make a demand for many products easily cultivated, but not now of paying value.

Waldo county has much interval land of character to produce excellent hay. Many of its streams and ponds are bordered with large extents of meadow and interval land. There are many swales, low lands, sites of former swamps, and moist hill lands, that are fine grass lands; some of which need draining, while many are cheaply drained from their situation and composition. Some are not needing to be drained, but want clearing and seeding. Lands of this character—natural grass lands—are being sought for and appreciated more and more each year. Marsh river is bordered nearly from its source to its mouth by intervals and meadows,—thousands of acres in the aggregate; so are many of its tributaries. The Passagassawaukeag has some fine grass lands on its course. The southern and south-western portions of the county have considerable low meadows beside the streams. Considerable is also found in Unity, Burnham, Palermo and Freedom. Knox has but little, being the most elevated town; while Thorndike and Troy also have but little land of this kind.

Fruit Culture.

Waldo county has many fine orchards, yet is not so largely engaged in this branch as Kennebec, Franklin or Oxford counties. It has the soil and situation to warrant more extended operations in fruit culture than has yet been entered upon. The rocky hillsides and uplands afford sites for orchards, and are adapted to little else except pasturage. These have strong soils, and produce strong healthy trees. It is evident, even to the casual observer, that one of the most neglected things upon the farm is the orchard, taking the county as a whole. The old pioneers who settled in the then wilderness fifty to seventy-five years ago, and began to hew out farms for themselves, started nurseries upon their first clearings, and transplanted in due season to grounds newly cleared for the future orchard. Many of the original orchards yet remain, some vigorous, others declining; but generally are found either wholly dead and decayed, or nearly so. Young orchards are of frequent occurrence,—some in bearing, others beginning, and still more that have been set but one, two or three years.

There seems to have been neglect in starting orchards after the first ones came into bearing, till they began to show signs of failing, or were too far gone toward unproductiveness, consequently

we see comparatively few orchards of twenty or thirty years of age—those in the height of maturity and vigor of ample bearing. This neglect reduces what might be the full production of apples in the county. Recently, however, stimulated by better knowledge, a better endeavor to improve, and failure of the old orchards, together with appreciation of profitableness, attention has been turned to setting out young trees for future orchards, and thousands have been planted out yearly in every town.

Perhaps the indefatigable "tree agent" should come in for his share of praise—or blame—as the trees prove good or bad, as an aid toward the largely increased breadth of trees put out. New York nurserymen, through their agents, canvass each town, and supply all the people can be coaxed to subscribe and pay for. Each town spends from $300 to $500, and sometimes as high as $1,000 or $2,000 annually for Western trees. This is an item of expense that well might be saved at home, and, to say the least, just as good trees secured. It will be seen that an enormous amount of money is usually and annually carried out of the State, a large percentage of which goes to pay for packing, transportation, and agents' commissions; and even after paying the high prices, often only refuse trees are secured.

We have taken some pains to see how Western trees were doing that had been put out in Maine. In the investigation of this subject we have found that where set out with care, in a good suitable soil, and well tended, that they thrive quite well, but as a whole are not as hardy as native trees. Considerable fault is found by purchasers, who find upon their fruiting, many of them are anything but what they ordered, or what they were labeled.

There are several nurseries in the county conducted by honorable, upright men, where trees can be purchased true to name, and every way reliable, and where for the price of Western trees, one can have his choice from thousands,—an advantage to the experienced of no small account. We hope the day is not distant when Waldo county will supply to her farmers all the trees needed, and save at home the money now sent abroad. With proper precaution against the snows of winter, which sometimes break down the little trees, there are but few drawbacks to successful and profitable nursery raising.

The borer is not found in very great abundance in Waldo county, except in a few localities. Far less trouble is experienced with this pest than in the western part of the State. This is an

advantage of no small importance. A successful orchardist related to me his method of drawing out this "varmint." He bores into the trunk of the tree infested, near the ground, with a bit proportioned to the size of tree, and puts in a spoonfull of sulphur. This should be done when the sap is in circulation. He always drives him out, and sometimes finds him dead at the mouth of his hole where he entered. After putting in the sulphur the bit-hole should be closed with a cork or pine plug. This is certainly a cheap mode of exterminating Mr. Pod-Augur, and one easily tried.

The tent caterpillar is a cause of serious annoyance in the spring, in some sections. The quickest and best way is to go over the trees in the morning or just at night, and as soon as the tents appear, crush tent and inmates with the thumb and finger. Going over the trees in March and cutting off those limbs that have deposits of eggs upon them, is a good plan. The coddling moth is also another and perhaps the worst enemy we have to the apple crop. Where the wind-falls, which are generally wormy apples, are eaten by swine or sheep as soon as they fall, this nuisance, from destruction of the larvæ becomes greatly abated in a few years.

But the great and vital point of failure in making our orchards what those of the best sections are, and what they well might become, is want of care. "Eternal vigilance is the price of good fruit," said a successful farmer to one who sought information of him. We set out enough trees, pay high price enough for them, *mean* to do well by them—to fence and prune and cultivate them—but fail of so doing as we ought. The dead stubs of starved trees, or those hooked to death by cattle, too often dot the fields near our homesteads. Too often, also, trees are planted out in heavy soil and die of suffocation or stagnation; sometimes in a poor soil and their vitality becomes so reduced that they fall an easy prey to insects and severity of winter. But these are only exceptional cases, as a better state of things prevails generally.

The Baldwin is the leading variety of apple with us. Its many fine qualities give it rank and preference over others in the markets, and have made it the standard for quality. The Rhode Island Greening, Roxbury Russet, Naked Limbed Greening, Porter, Alexander, Killham-hill and Early Harvest are well-known varieties among many others that are prominently known. Mr. B. B Stevens of Montville, exhibited above sixty varieties at our

county fair; George Swett of Belfast, thirty-six varieties; H. S. Webber of Monroe, forty varieties; W. G. Sibley of Freedom, a large number, which will give the idea that we are not without a large list of choice apples adapted to our soil and situation. Orchards do well in our shore towns, and some of the best fruit in the country is raised therein. It is a prevailing custom to use rock-weed as a mulch and we have seen it hung in the branches of the trees, but for what particular object we were unable to see, unless it was to dry it! As a mulch, however, it proves to be very good, and of much utility. We are inclined to the opinion that our shore farmers give better attention to their orchards than the generality of those in the interior towns. This may be only an opinion.

Limb-grafting prevails and gives better satisfaction than stock-grafting. Both saddle and cleft-grafting are practiced; the great fault of all grafting seems to be the practice of cutting off the limb to be grafted too near the tree. It should be left a foot long, if possible, which will give greater flexibility to the branch, and consequently a stronger limb. It also allows recutting lower down the following year, and regrafting should the first one fail. It is not unfrequent to see orchards whose ungrafted branches are bearing natural fruits, much of it unfit for other purposes than cider, or feed for stock. But good fruit only pays, and our farmers, those who did not realize it before, are now learning it.

Waldo county has great adaptability to the production of small fruits, and has much first-rate cranberry land. The currant, gooseberry, and various kinds of plums, do well, as also strawberries, raspberries and blackberries, which have been enough cultivated to test their productiveness. Hitherto the abundance of the wild vines and cones has precluded their cultivation, except in cities and villages. But a gradual failure of the supply, and an increasing demand for them in the markets, have had a tendency to turn attention somewhat to their cultivation. The grape, which formerly was almost unknown, now has a site upon nearly every freehold, and twines beside the door or window of almost every home. It only wants the demand and stimulus to be furnished by development of our water power, creating home markets, to cause a largely increased production of all kinds of fruits, more especially the smaller kinds, which are so healthful and luxurious.

The cultivation of the cranberry is beginning to receive some

attention. Probably no use to which our swampy lands could be put would repay half as well as this. The cost of the cultivation is during the first few years, when the vines are planted and growing, and annually thereafter at the picking season. The high price cranberries bear in the markets, the demand for them increasing with each year, admonishes the planting and culture of this delicious berry.

Wheat.

In the early days of the agriculture of this county, wheat was one of the staple crops. On the burnt lands it grew rank and yielded heavily. It was reaped, bound and stacked, and threshed by hand with the flail. Later the depletion of soil and ravages of the midge, almost drove it from cultivation. Some few, however, have adhered to its culture and produced more or less every year. The high price of flour, combined with the stimulus given by State bounty, and a desire of our leading farmers to be independent of western wheat fields as much as possible, has led, recently, to a very great increase in the production of wheat. The midge has almost entirely disappeared—and the introduction of the "Lost Nation" wheat has been a God-send to this branch of farming.

Sufficient care is not exercised by our farmers in the selection and improvement of seed wheat. It is the universal practice to take the seed out of the bin, year after year, and the standard of its excellenee is thus yearly lowered instead of being improved, as would be the case if before harvest the best heads were selected out for seed, and a *breeding up by careful selection* practiced. This is a subject to which we would call particular attention, and a point we would forcibly impress. The farmers of Waldo county could double the value and product of their wheat in ten years, by strict, judicious attention to this one vital point.

Washing in brine, lye and lime water, prevails to some extent. The grain is usually dried by mixing with it air slaked lime, dry ashes, or plaster. Grass seed is often mixed in and thoroughly incorporated in the mass, and thus becomes sown with the wheat and saves time; it also can be sown more evenly by this method. Wheat is considered our best grain with which to sow down land to grass. Better catches are obtained than when grass seed is sown with oats or barley. One reason is that wheat is never sown on *poor* land; another is that it admits the sunshine and circulation of air about its stalks that other grains exclude to

greater extent. Wheat and corn necessitate high fertilization of the soil and clean culture; hence, with them we generally have good farming. The straw of wheat fed with shorts obtained from the grain, equals in nutritive value the hay that the same ground would have produced, leaving the flour obtained as a profit to the husbandman.

The tide is strongly setting in favor of home production of bread stuffs in Waldo county. It is an indication of reform in farm practice, and a healthy symptom. In order to show the practical workings of the increased attention to wheat production, we will cite some examples of the past few years, and feel confident that no county can show a better record. But before passing to this part of our subject, we wish to drop the remark that without plenty of lime in the soil wheat culture will be a failure. Dr. Jackson says "all the soils between the Kennebec and the Penobscot need liming." With the generous, and practically inexhaustible deposits on our southern border, this liming can be cheaply done. The lime should be applied broadcast in a pulverized or slaked state. If slaked with a brine made by dissolving as much salt in the water as will saturate it, the compound will be all the more valuable agriculturally. This salt and lime mixture is a cheap fertilizer, and one easily applied to the wheat field. It should be applied previous to sowing. I extract from a letter written by Mr. Elijah Clements of Monroe: "Fifty-nine years ago my father sowed wheat for the first time on this farm, on burnt land. He invariably got good wheat on a burn, while clearing land. When he began to plow, he sowed his wheat on broke-up land, and one year while I was a boy, he raised one hundred and forty-four bushels of nice wheat. The smallest crop he ever raised was five bushels to the one sown. I have been working the farm for the last seven years, and I have sown four bushels of wheat yearly, and my smallest yield was eight bushels to the bushel sown. That time heels-over-head took place with my stacks of grain, in a south-easter, and wasted, I know not how much. That was the Java seed. I left that for the Scotch Fife, which was a good exchange. I swapped that for the 'Lost Nation,' and that gives me about twelve bushels to the one sown. Last spring I sowed four bushels on rather poor soil, and raised forty-six bushels of nice wheat, that Robert Mayo's mill makes into the best of flour, and from five bushels of wheat he fills me a barrel of flour, and leaves me quite a lot of No. 2 flour. One year with

another my wheat crop is as sure a crop as I can raise. If farmers would dress their land, and sow wheat, and let potatoes alone, they would improve their farms greatly."

We are going to have better times in the near future for farmers. Now is the time to prepare for it and help it along by judicious attention to wheat culture. Get the land ready; make it clean; have it gaining in fertility, so that it can be worked with reasonable prospect of producing a good crop.

There was harvested in 1872, in the town of Troy, on the road leading from Dixmont Corner to Elias Seavey's, in three-fourths of a mile, including four farms, three hundred and sixty-five bushels of good wheat; average ninety-one and one-fouth bushels to each farm. C. Y. Kimball of Jackson, raised in 1872, from eight bushels sowing, ninety-eight bushels of as nice "Lost Nation" wheat as can be grown anywhere. Elisha Edwards of Jackson, raised from three and a half bushels sowing of the same variety, in 1872, seventy-three bushels of nice grain. Near Knox Station, in the towns of Thorndike and Knox, on five farms in 1872, over five hundred bushels of choice "Lost Nation" wheat were produced. This was all in one neighborhood and embraced in less than one square mile of territory. The farms were those of Mr. Gardner, Darius Philbrick, Mark Shibles, Albert Palmer, and Herbert Rateliffe. In Brooks, Mr. Ashael Rich raised on one and three-fourths acres of land, in 1872, fifty-three bushels of the same variety of wheat; Mr. W. N. Crosby, raised on two and three-fourths acres from four bushels sowing, seventy-five bushels. From these examples it looks as though Waldo county might, with a little effort, raise her own bread and thus avoid going out West to mill.

Indian Corn.

This noble grain, America's best indigenous plant, is grown to considerable extent in Waldo county. It is one of the signs of a good farmer when we see his corn cribs well filled. Corn is reckoned a sure crop though its production and success varies with different years. If planted from May 20th, to June 5th, there is little to apprehend, other things being equal, its doing well. From the 20th to the 25th of May is the better time experience has taught, for planting. Corn is planted on inverted sod and also on stubble land. It is not definitely settled which is preferable, though it is easier handling the crop on old land if

previous culture left it clean from weeds. The prevailing method of planting is to spread on from fifteen to twenty cart-loads of barn dressing per acre and harrow in well; then furrow out four feet apart and dress in hills with old yard manure, hay manure or superphosphate—the two latter being preferred. The manure is generally covered before dropping the seed. Often a crop of beans and pumpkins are planted with it. Hills are from three and a half to four feet apart. Various methods are adapted to scare away marauding crows, who often pull it up by the roots as soon as it breaks ground and thereafter till its roots resist their efforts. Stakes placed about the margin of the piece, six feet high, with white twine stretched between them, and encircling the piece, is one of the prevailing cheapest and most effectual modes. Some put a handfull of unleached ashes about the hill when the corn is about three inches high, and previous to the first hoeing. This on most old field land where potatoes have been grown previously, proves a good investment. The cultivator is run between the rows previous to each hoeing, of which it generally receives two, and sometimes after haying the piece is gone over and the weeds hard pulled. They should be carried to the edge of the piece and placed in piles and burned when dry to destroy seeds.

Topping the stalks above the ear allowing the rest to stand some weeks later, formerly prevailed, but now is about obsolete. It is now regarded as unnecessary labor. The same time devoted to this will cut up the whole stalk, bundle it and place all in shooks where it cures well, safe from storms. Visions of old-fashioned huskings rise up as we view the rustling acres of corn, and of the huge pumpkin pies as we see their golden globes dotting the field. When the farmer's corn cribs are well filled he will have fat hogs, sleek cattle and laying hens. He wears a happy contented look and the world goes well with him then. But let the crop fail and all is changed.

One of the good effects of corn culture is that it necessitates heavy manuring. This paves the way for successful wheat raising and good grass crops. Wheat is usually sown on corn land as a succeeding crop. The culture of wheat and corn are not attended with the heavy and disagreeable labor consequent upon potatoe raising. But it is clean and neat in comparison. The "King Philip" or Brown corn, is raised to some extent, but is not quite early enough for our seasons, and hence gets nipped by frost frequently. The Eight-rowed Canada, improved by judicious

selection and crosses, proves the best we have. The "Dutton Corn" is also a good variety. By selecting from year to year the best and earliest ripened ears, and those of most excellence of growth and form, much improvement can be made and much direct profit experienced.

The growing of sweet corn for canning, in connection with dairying, the stalks forming a good feed for milch cows, could be profitably introduced now that we are embarking in cheese factories to considerable extent. It would lengthen out our stores of forage, enabling the keeping of more cows; the money received from sales of the corn would pay for the commercial fertilizers used and labor of culture. We regard this as a point worthy of thought from all dairymen. Corn always commands a good price, and not one-half of that consumed in Waldo county is raised within her borders, but is shipped from the West. If it pays to to buy it and feed it, certainly it ought to pay to raise it and save freight. More attention is given to corn culture as well as that of wheat, within the past ten years; and the long strings of ripe, golden corn at our fairs and in granaries, attest our ability to raise a superior quality of this grain.

Barley.

This grain is quite extensively grown, but not so much as ten years ago. Barley succeeded oats as a general grain crop, and is in turn giving place to wheat, which was displaced by oats. Farmers have learned that they can grow as many bushels of wheat per acre on the same land as they can of barley, and all know that wheat is the far more valuable crop. Barley is a grain that can be sown late with good results, and sometimes comes into good account in backward seasons. We have sown it late as June 24th and succeeded well. It appreciates good land, and bears high manuring as well as any crop we know. It is of little use to sow it on poor land, and it is considered poor grain with which to seed to grass. If grass-seed is sown with it the barley should be sown thin, else a failure to secure a "catch" will often be the result. As food for animals it seems well adapted to fattening swine, and gives good results when fed to milch cows, but should always be ground before feeding. It is poor feed for horses, and positively injurious to some; and while it makes but

an indifferently good bread when bolted and baked, it does well for a change. That is to change *from*. The villainous use to which most of the barley sold from the farm is put—converted into whiskey—is an argument against it production for sale by all who desire to see the streams of intemperance diminished. Its lesser value, as a feed, than wheat or corn, is another reason for supplanting it with them; while the straw is inferior to that of oats or wheat, or corn stalks for stock. We believe the breadth cultivated in barley is annually diminishing for sound reasons of unprofitableness, based upon experience. No crop should be grown that could be replaced by a better—at least not to any large extent. The kind cultivated most in Waldo county is the Canada two-rowed. In countries where the atmosphere is dry and hot we learn barley is largely used as feed for horses, as for instance, California, Nevada, Arabia, &c. But our climate does not admit of its use with impunity. We are glad to state that it is gradually becoming superseded by wheat and corn—the two best grains known.

Oats.

This grain was formerly raised in great abundance, and is still considerably grown. It is a rank feeder, and rapidly exhausts lands upon which it grows, and is poor grain with which to sow grass seed. These facts have engendered considerable prejudice against its culture. Oats should never be put on poor land. They should receive special fertilization, and will repay attention as well as any crop grown. Nothing else seems so specially adapted to colts, horses, calves, sheep, and most kinds of stock,—especially horses. Nothing will make a "horse laugh" like a dish of plump oats. They are both hay and grain; their hulls acting as wadding while the kernel is full of the best nutriment. They do not lay heavy in the stomach, sour, or cause the ill effects corn, barley or wheat sometimes do when eaten too freely by animals.

It is necessary to sow oats early, and they are not injured by the spring frosts. Seed should be renewed from a northern, rather than a southern section. The oats that do best with us are those brought from Aroostook or Canada. Oats are generally sown on newly broken sod, but sometimes on old or stubble land. They luxuriate in deep, rich soil, or well manured uplands.

Rye and Buckwheat

Are not extensively grown. On burnt land rye used to be a very profitable crop, and was considerably sown. It does well on plowed land if well enriched, and properly sown. The winter variety succeeds best in this county. On the new farms of half a century ago, "rye and indian" formed the chief staple of bread, and when made half and half, and baked in a brick or "Dutch oven," formed a truly healthy, hearty and luxurious article of food to the hard working farmer.

Buckwheat is grown to some extent, and does well upon plowed lands. When ground it furnishes flour that makes a good food, either in the shape of "hot cakes or flap-jacks," which, when eaten with maple syrup, form a dish fit for anybody, from a king up to the farmer. There are two kinds of buckwheat, known as "rough" and "smooth." The "rough" is also known by the name of "India," or "Indian wheat," and is the greater yielder. From twenty to forty bushels could be raised on ordinary land, and with manuring might be increased to double that amount. It formed a good feed for hens, and when ground for fattening swine. Fifteen pounds of bolted flour per bushel is the average amount it yields. The hulls, separated in grinding, make a nice bedding for swine or horses.

It should be cut and raked into small wind-rows immediately, when the outer kernels have turned black. Care must be had in handling as it shatters out easily. As soon as wilted it should be put into small heaps, the size of an inverted bushel basket, and left out till it becomes dried through. We have seen it left out till snow came without being greatly injured. Some dry day, carefully turn over the heap, by putting a fork underneath, so that the bottom may air and dry. The rack in which it is hauled should have a tight bottom, or cloth spread over it. When pitched on carefully and not trodden, but little will be lost, if care is exercised. It is usually threshed by hand, and beats out very easily. One man may easily thresh fifty bushels a day. The straw is eaten by horses and cattle, but is better used as a bedding. If ten or fifteen ox-cart loads of manure is applied broadcast and harrowed in, we have no land so poor as not to give a fair crop of this grain. It forms, next after clover, one of the best crops for green manuring or plowing under; two crops per year may easily be applied to land, if desired. It is the more easily and quickly grown of the two. Plaster acts beneficially upon buckwheat; also lime and

ashes. It can be sown any time up to July 15th, with good prospect of ripening, and many prefer to sow it late rather than early. It deserves more attention than is at present accorded it.

Stock.

Neat Cattle.—There can be no good farming without stock. It is one of the indispensables. Yet there is a great deal of farming without *good* stock. Our animals are the machines with which we convert our bulky products of vegetable growth into milk, beef, wool and mutton; and with which we do our labor. If that machine is poor, runs with too much friction, yields a poor manufactured product, we are at a loss. It costs no more to keep good stock and keep it well, than poor stock and keep it poor; growing poor ourselves by the operation as compared with the profits to the good keeping of the choice stock.

The stock of Waldo county, especially its horned cattle, may be called "grades;" but of what, it would puzzle the most astute lawyer of Philadelphia, or any other man to tell. From time to time there has been an infusion of thoroughbred blood, but this has quickly lost its force and markings, though it crops out now and then in unmistakable points. Durham, Hereford, Devon, Jersey and Dutch, with others, perhaps, have been more or less mingled together and modified the stock of old "native" cattle that the early settlers introduced.

Col. Thorndike's importation of Durhams, one of which was sent to the "Great farm" in Jackson, first brought this blood into notice and repute among our farmers. While many soon turned against it, some few preserved it, and we see representatives of that strain on the farms of P. W. Ayer, Freedom, Isaac Coffin, Thorndike, as well as elsewhere. "Damon 3d," bought by David Sears, and put on his farm at Sears' Island, near Searsport, about 1860, was obtained from Obadiah Whittier of Vienna, in this State. Mr. Whittier bought him in New York. It is not known to a certainty that "Damon 3d" was full thoroughbred, but it is presumed he was, He has left a strain of stock that has been carefully preserved by some of our best farmers.

Recently, Mr. Ayer of Freedom, has brought into the county two thoroughbred Durham shorthorns of undoubted purity of blood, and is breeding from them some good stock. The blood from this source is also rapidly diffusing itself over the county.

His bull, three years old, "Knight of Geneva," is a fine specimen of the breed, and the cow "Flora" also maintains well its reputation.

From time to time, by various means, other strains of blood have been brought into the county. Mr. Burrill of Waldo, has a yearling Dutch bull, not a full blood, we believe, but a high grade. We have seen some of his calves lately which show his markings and points very well. Mr. Ellis of Northport, has several full blood Jerseys; his bull, "Butter Boy," is a fine specimen. At our County Fair, two years ago, thirteen head of Jerseys were exhibited, beside a large number of grade Jerseys. The Hereford exists only in grades. We think there are no Ayrshires at present except a bull owned by Hon. A. G. Jewett of Belfast.

Among our cattle are found some of the most excellent milkers, good workers, and fine beef animals. But there is no predicting where the strain will end, or what will crop out any time from such a mixed up stock as our old "native" cattle are. There is a desire to improve our stock and a growing faith in the thoroughbreds for breeding purposes. Now that cheese factories have been started among us, dairy animals, especially those noted as large producers of milk, will be sought after. Here we must lay aside Jerseys, except for butter-making, and take the Ayrshire, Dutch or some other breed. We are of the opinion that a cross of the Ayrshire upon our best milking "native" strain will be found about what is wanted.

Horses—We have in large numbers. Most farm labor is now done by them, and on those farms that have been smoothed down they accomplish more work at less expense than oxen. They are in demand from the beginning to the close of the year. They plow, harrow, cultivate, mow, rake, draw in and thresh. They take the crops to market, and bring home the groceries bought in exchange. They take us to church, school and circus, and in short are indispensable.

The breeds are as numerous as the catalogue. Too many light horses are bred, and this comes of too much straining to get a "fast" horse. This when attained, when the "trotter" has after years of waiting and watching been secured, when out of the thousand this *one* appears, it proves the ruination of the unlucky man who owns him, unless he sells out quickly. If more attention were paid to breeding draft and farm horses, we are of the

opinion it would result more profitably to the masses. Good heavy work horses are always in demand, and sell at good prices. There is less risk run in beeding them than the smaller and faster breeds, and they are more useful as a whole. We well know there must always be a class of driving horses, but this is only a portion needed. There must be work horses to help produce before there are needed pleasure horses to drive. Lately there has been brought into our county stallions of the larger draft breeds, and we think the quality of our horses are soon to show an improvement through these sources. Horses are, just now, more largely kept, in proportion, than any other stock. We think however their numbers are on the decline somewhat while those of other animals are gaining.

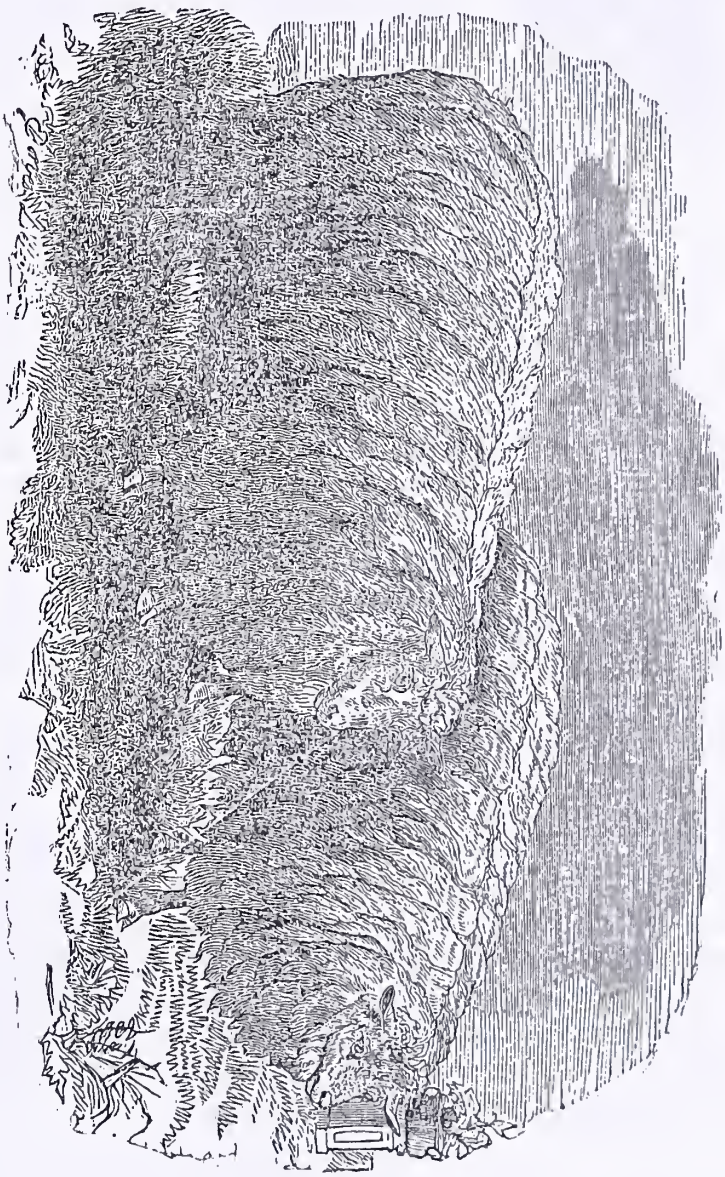
Sheep are our corner-stone of good husbandry, as they are elsewhere. Our flocks find the best of pasturage on our high lands and hills. There the sweet nutritious grasses on which they thrive, abound.

There are, here and there, a few pure bloods of several of the leading breeds; Cotswolds, Liecester, South and Oxford Downs, and Merinos. But the bulk of the sheep are grades and low down at that. The high price of wool during the war operated to largely increase the flocks. But since then there has been an ebb that has carried our flocks as far the other way. They are now increasing slowly in numbers, but are found only in small flocks except in rare instances. Many farmers have none at all, many only six, eight or ten. There are but few flocks of one hundred in the county. The town of Brooks, for example, by the assessors' books, shows only 865 sheep for 1873. There ought and might easily be kept five times that number. This is about a fair average of the state of sheep husbandry in Waldo county. That animal which is said to be "golden footed" which pays three times per year—wool, lambs and *pelt!*—is not receiving the attention that it is for the interest of the farmers to give it.

Mutton must be the first quality in the breed of sheep kept in our county; wool secondary,—and the breed that combines the two in greatest perfection is the breed for us to keep.

Were the hay and grain sold, now kept at home for consumption on the farm, Waldo county might very largely increase her flocks and herds, and *afford* to have some better animals than are now found in most towns. This may not be true of our whole

seaboard as a State, but we know it to be true of this county. It does not pay to raise small poor stock of any kind. The sooner our farmers fully adopt this maxim the sooner they will be on the road to profit and wealth. They had better pay high prices for good than accept the poor as a gift, for there is loss, not only of profit, but of food consumed and time spent attending them.



Leicester Ram and Ewe.

Domestic Fowl, Bees, &c.

In this branch of agricultural industry, Waldo county is not above the average. The great bulk of our fowls are grades of almost all known breeds. Our enterprising friend, Mr. Fred. Atwood of Winterport, and a few others, are introducing pure blood fowls of several leading varieties, and we expect to see good improvement result to this interest, thereby.

The egg trade is immense. Thousands of dozens are shipped to Boston every year by every country store; and during the autumn large lots of poultry are gathered up and sent to the same market. The keeping of fowls for poultry has not been practiced to any large extent or been universal. It is rather a secondary matter so far as hens are concerned—eggs being the first and leading object, and the best paying. Poultry, hitherto, has not brought the raiser per pound, prices that left much margin for profit, if we except occasional years. Turkeys are raised with profit by many of our good farmers and their wives. Geese and ducks are not largely kept. From diligent inquiry and observation, we are satisfied a flock of good hens properly cared for, will pay a net profit of one dollar per head, per annum.

Bees suffered greatly the season of 1871, there being few flowers, and followed by a severe winter. Three-fourths of the bees of Waldo county have perished since 1870. Probably no branch of our agriculture pays better in proportionate to the outlay than the keeping of bees. We could refer to instances of great profit, but these are always where proper care is bestowed. Hardly any of our farmers who keep bees prepare any pasture for them. They are left, too often, to themselves, to find food where it may chance to be and little thought or care is bestowed on them; except at swarming time and then this is clumsily done. Buckwheat, alsike clover, and other honey plants are easy of cultivation, and pastures for the bees might be sown at convenient places, with profit to the owner. The strong, full colony is the one that survives, and the one that pays.

PART SECOND.

Fences.

We build fences for two objects: first, to keep cattle in; second, to keep them out. Our highways are not public pasturage ground, and we are glad to know that the custom that obtained quite extensively years ago of pasturing highways, is almost obsolete. The custom was founded in error and wrong. It has had the tendency to make road fencing a common practice, and this still is in force in nearly every part of the county.

We have all sorts of fences—good, bad and indifferent—and made of various materials, and in various styles. Stone wall is largely in excess in some localities, both single and double. It is a convenient way to dispose of the surplus rocks, and a good double wall will last the longest of any fence we construct. Though costly, it is permanent. It is too common a sight to see long ricks of rocks tumbled up where it was convenient at the time to leave them, and where, perhaps, it is designed "at some convenient season" to build a wall. They not only encumber much ground, but harbor bushes, weeds, and vermin, all of which are injurious to the farmer's interests. It is also too common a sight to see fields dotted up with stone heaps, small and near together, with now and then a big stack, the accumulation of years from adjoining grounds. Instead of cumbering the surface with their unsightly presence, how much benefit they might confer if put into underdrains, the only proper place for cobble stones on the farm.

Wall makes a good fence for all kinds of stock except sheep; it can be made "sheep proof" by proper top-poling or by being built to sufficient height. Wall is the most expensive farm fence we have, in construction, and it is a rare sight to see it where it has been properly built. Poor wall, that is continually toppling over and which has to be rebuilt occasionally, is poor fencing. Wall, properly built, ought to be good for centuries; and only such will it pay to construct.

Our fencing ought to be wholly confined to our pastures. If this was done, we should have only one-half or less that we now

have, and consequently with the same outlay could have much better. Field fences, and road fences against fields, only have two uses, and these uses are damaging to the farmer's best interest. The first is, they enable him to feed his fields, spring and fall. The second is, they cause drifted roads, which causes him unnecessary labor and taxation, as well as poor roads. The cost of useless fences is a great argument for abolishing them. If the extra expense of their construction, together with cost of breaking roads in winter were saved, it would stop a great leak in farm economy. In the whole United States, it would soon pay the national debt.

Cedar fence, constructed with foot-pieces for holding stakes and a cap through which the stakes project, and under the top rail, is one of the best of fences, and is largely predominant in the towns of Unity, Troy, Thorndike and some others. This fence, well built of good material is good for a life time. Post and board fence is largely built in some sections. On land naturally dry where frost will not heave the posts out too rapidly, this is a profitable fence where good cedar, ash, or hacmetac posts are used.

On the seaboard a wire fence is coming into use, is cheaply built and proves very satisfactory. Posts are set ten feet apart and No. 9 wire fastened to them a foot apart, by staples made of the same wire, driven into the post clasping the wire. This fence, of all others, has the merit of not causing snow to drift, and is very appropriate and pretty for road fencing, where it is necessary to fence on the road. For sheep the lower wires may be placed nearer together than a foot while the upper ones may be farther apart. It is getting to be a serious question on many farms how to maintain the usual number and variety of fences, as materials are getting scarce. The true way is to abolish all but pasture fences and make those better. Road fences have bred up isolation and exclusiveness among farmers. "What is fenced in is mine, what is outside *is* outside." This has grown up part and parcel of themselves, and tends to bar out improvements. Like the soldiers behind breastworks, too often the farmer behind isolated exclusiveness defies all attacks, and views every approach with distrust.

Hedges have not come into use in this county except in a few localities, for wind-breaks, and near villages for ornament. Good fences upon the farm, and neat, tasty fences about the buildings,

are signs of practical economy and thrift. They indicate a thriving, enterprising, energetic man at the helm of affairs. It is a duty to state that one may see in passing over the county, miles of poor fences without a relieving good length,—brush fences, decayed log and pole fences, and all the other kinds nondescript, uncomely and costly by reason of ineffectiveness, and constant outlay for repairs. These fences are the nurseries of breachy and unruly cattle, where they receive a thorough education.

Farm Buildings.

In the matter of farm buildings, Waldo county will be found fully up to the average of her sister counties in good, commodious, even tasteful farm buildings. It is true there is no uniformity, for in a ride of a few miles all classes will be seen, from the humble one-story cottage, ancient and moss-grown perhaps, to the modern villa with its neat, prim air, and pert out-buildings. As elsewhere no section presents an unbroken average of good buildings, but certain districts average nearer equality in this respect than others. No log houses are seen, the remnants of the olden days of forest clearings, but the next class of dwellings which in turn followed them—low, wide, and roomy, with narrow, low windows and massive roofs, through which protrudes the giant chimney which takes up nearly half of the inside room below and which have sheltered more than one generation under their ample roof trees—are yet seen here and there.

Our farm-houses are too often planned after those of our city relatives, and thus are found inconvenient and expensive, while the general adaptability was overlooked, and comfort driven out. Too many content themselves to live cooped up in the ell, while the main house is used only for company and sleeping purposes. The ell usually occupies some back position, where pleasant views are cut off, and sunshine and light excluded by the overreaching expanse of the main structure. We often find the parlor—opened but little oftener than the family tomb—occupying the best position in the house, shut up and darkened to exclude dust and flies, chilly with loneliness, stiff and starched in its scrupulous neatness, and as useless towards giving comfort as the opposite side of the moon. Why, sensible people on other subjects, will follow this absurb practice, is inexplicable. Why they will scrimp and scrape and furnish a room in princely elegance to be kept as the

holy of holies, and sink hundreds of dollars in its furnishing, is incomprehensible. Why not fit up a jolly good sitting-room, whose walls shall hang thick with maps and pictures, and whose shelves shall bear treasures of books and papers, where comfort, solid, genuine, free and every day, may be enjoyed? Away with your sepulchral *parlors;* live in a common sense manner, and be happy.

As necessary to every farm-house as a situation, is the first great room of all—the kitchen. Here is the general culinary workshop, and here the good housewife must spend a large portion of her time. It should be the first room planned in the erection of a house, and should command as extensive a view as possible. It should be no gloomy den,—no dark corner,—but the sun of heaven should send its cheering light full into it and around it. The fields should be in sight with their carpet of green and waving crops; the outlook should be such that it reflects no pain to the sensitive soul. The kitchen should be fitted up with every labor-saving appliance and step-saving arrangement possible. It is too often the reverse, and the small cost of such conveniences are too often grudgingly withheld.

The plan of having the buildings connected is a good one in everything except in case of fire. But the risk is so small in this particular, that it fails to have weight. Convenience, protection from wind and storms, all go to help the arguments for connection. As necessary to comfort and profit, good out-buildings for hogs, hens and the storage of farm tools, carriages and fuel, are needed, though it is better to have as many under one roof as is practicable and convenient. The large extent of roofing on many farm buildings, is an item of serious expense. The less roofing we have that will cover the room we need the better. Better to gain room by height than by breadth in a country like ours, where buildings properly made and kept in repair, seldom or never blow down. We have very many good barns. The good barn is one evidence of a good farm and farmer; and it was a truthful remark of one of our rising young farmers: "A man is known by his barn." It has more truth than poetry, and well might pass into an adage. The barns of Mr. Palmer, and Mr. Coffin of Thorndike, Mr. Forbes and Mr. Reynolds of Brooks, Mr. Atwood and Mr. Cates of Munroe, Mr. Ayer and Mr. Sibley of Freedom, Mr. Foss of Jackson, may serve as models for imitation, and are especially worthy of

mention. These and others will be spoken of more fully under a subsequent head of this report.

We cannot leave this subject without speaking against the too common practice of letting the hens run loose about the barn, having no well defined quarters. They should be provided with suitable room and kept there as a home. A range of the barn and grounds about the buildings should be allowed days when proper, but they should come to their proper place for roosting and feeding and laying. If the proper precautions are taken to save and utilize their droppings their profit in this direction will be considerable, as no fertilizer made about the farm, or away from it, except night-soil, equals it in value. But in very many instances both are wasted—or even worse than that—allowed to be a nuisance and source of contagion. The privy should be so arranged that its contents will go into the manure cellar and be incorporated with other dressing, or weekly—or better—daily, mixed with absorbents, such as dry earth, muck, plaster and charcoal.

A word of caution to those contemplating the erection of farm buildings—never imitate, if you can plan out what you want. Build for convenience and comfort first, then work in the ornamental; build of only good materials, in a good location, and upon a solid foundation. Attention to these points would save thousands of dollars annually to each town. The first cost may be a little greater, but repairs will ever be smaller. Paint pays good interest in more ways than one.

Dairying.

Waldo county has facilities for this branch of agricultural industry surpassed by no other county in the State. Good grazing lands,—a good diversity of soil, plenty of timber and fencing materials,—a rolling, or hilly surface, with rich valleys and pure, abundant water, warrant us in making this statement. Yet private dairying, except in a few instances, has never attained a high degree of excellence. The easy and quick transportation enjoyed, and the markets opened, both home and foreign, point to the advantages dairying would have. Cheese has been manufactured by many farmers' households for their own consumption—more formerly than now, owing to the scarcity of female labor on the farm—and butter has, and now is, manufactured to considerable

extent for the markets; hardly any of it, however, attaining to the "gilt-edged" standard. Private dairying, owing to causes that are hard to remedy at present, among which is scarcity of farm labor, both for the house and the field, cannot largely increase. This is an accepted fact by our farmers, and has led to the introduction of associated dairying, which gives promise of gradual increase, and of working great good to the farming community.

It may be interesting, however, before we leave private dairying, to give a statement of one of our leading farmers, Mr. R. W. Ellis of Northport, regarding winter butter-making:

"I believe a majority of the farmers in this section think it will not, but I have long been convinced that it does not pay to let cows dry up in fall or early winter, and eat up the most, and in many cases, all the profit you get from them in summer. This winter, I have made an experiment to see whether there is an actual profit to be made in making butter in winter, and here is the result; it comes in the hardest part of the year, commencing the first of December. I have milked four cows, three Jerseys and one native; had two calves last spring and two last fall. They have had the best of care, kept in a warm stable where the manure has hardly frozen for the winter; their water warmed in the coldest of the weather, and care taken that they should drink twice every day. Their feed has been:

60 pounds hay per day at $25 per ton	$90 00
8 quarts corn meal per day, 80 cents per bushel	24 00
12 pounds shorts per day, 1¾ cents per pound	25 20
Total cost keeping four months	$139 20

They have made in the time:

425 pounds of butter, ⅝ of which sold at 40 cents per pound	$106 40
The other ⅜ at 35 cents per pound	55 65
Sold $2.75 worth of sour milk per week	49 00
Total receipts	$211 05
Less cost	139 20
Net profit	$71 85

This we have made, beside using all the new milk we needed in a family of seven, which was not less than one quart per day, and often much more, and giving considerable sour milk to a pig; in the first part of the winter keeping a pig wholly on milk which I did not have sale for.

One of the above cows, a Jersey, five years old last spring, calved one year ago the first of this month; calves again next

September; was kept by Rev. Gilbert Ellis of Belfast, last summer, and by myself this winter; has made in one year the amount ascertained, by trying her by herself one week in the middle of each month and averaging the month by it.

April,	12	quarts	milk	per day,	13	pounds	butter	per week..... 56
May,	13	"	"	"	14	"	"	" 62
June,	14	"	"	"	13	"	"	" 56
July,	12	"	"	"	12	"	"	" 53
August,	10	"	"	"	10	"	"	" 44
September,	9	"	"	"	10	"	"	" 43
October.	8	"	"	"	9	"	"	" 40
November,	7	"	"	"	8	"	"	" 34
December,	7	"	"	"	8	"	"	" 35
January,	6	"	"	"	7	"	"	" 31
February,	5	"	"	"	7	"	"	" 29
March,	5	"	"	"	7	"	"	" 31
							Total	514

Average quarts per day, 9; total in year, 3,825; average butter per week, little over 9 pounds 14 ounces; average quarts of milk to a pound of butter, 6½.

384 pounds of the butter has been sold for 40 cents per pound	$153 60
The other 130 pounds at 35 cents per pound	45 50
Reckon sour milk at 500 gallons, 12 cents per gallon	60 00
Total	$259 10
Cost of keeping for two months last spring, 20 pounds hay per day for 60 days.	12 00
2 quarts per day of barley, oats and corn meal, each 15 cents per day for 60 days	9 00
For pasturing 5 months in summer and an average of 1½ quarts meal per day ..	11 75
For 5 months this winter, 15 pounds hay per day, 1¼ per feed	28 12
3 pounds shorts per day for 150 days, 450	7 88
2 quarts corn meal per day	7 56
Total	$76 31
Income	$259 10
Expense	76 31
Profit	$182 79"

Mr. Ellis has quite a number of pure blood Jersey, and grades, which are well known to be an excellent butter breed.

Associated dairying was inaugurated in this county by an enterprising company of farmers in Northport, who organized in the summer of 1872, and made preparations for commencing operations in the spring of 1873. Up to this time, they have since the first of May been making cheese which finds ready sale in Belfast at fifteen cents per pound.

The factory at Monroe built and equipped this spring (1873,) is now in operation. There are organized companies at Searsmont,

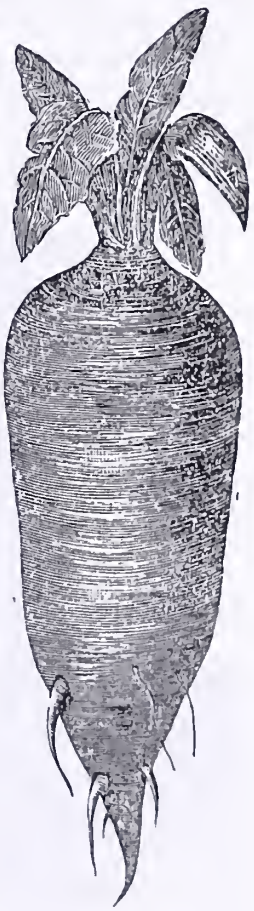
Montville and Brooks, that are erecting factories buthave not as yet begun manufacture. Unity, Freedom, Jackson, Winterport, and other towns are talking up the advantages of associated dairying, and will, ere long we hope, be found among those that have begun manufacturing on the associated plan.

Among the obstacles to establishing these associated factories, are found the prejudice of some against "company business." They urge that the end will result as did the "Union stores," some few will secure all the profit and benefit at the cost of the others. The gathering in of the milk is another objection. There is also prejudice against capital in some instances, that is, that the stockholders get more than their proportional part. Also that the management of the factory may not be as it should. These and other objections obtain with many, and though of small weight, and very many of them groundless, militate against the establishing of factories. Many want their neighbors to go in and prove it to be a good thing, and then they will be willing to come in and share its benefits, without incuring risk at first, or bearing any burdens.

Among the benefits associated dairying will confer is first and foremost, taking the burden of the care of milk from the women, whose duties are now too multifarious and wearing. Second, it will enable the keeping of cows more largely than now, and be a means of consuming all the forage crops on the farm, at home; leaving increased manure heaps which means increased fertility. Having plenty of whey, hogs can be kept in greater numbers than now, and they in turn help increase the manure heap. With the increased manure, more wheat and corn can be grown for family use, and to better feed the cows and hogs. The sales of cheese will furnish ready money, and wheat and corn being largely raised will preclude the necessity of buying. Flour, corn, cheese, milk and pork being largely produced, ready money received monthly from sales of cheese, with farms yearly improving—are we wrong in saying associated dairying will work great good to the county? Now all this looks well on paper, and we call attention to it to prove that it is not, or is true. If true then, it befits us to work for its extension now that it is introduced. If it may be a means of so happily benefitting us, it is well that we speedily engage in it. It is beyond dispute that it has been successful wherever it has heretofore prevailed since its first inauguration by Jessie Williams of Rome, N. Y.

The markets of the world are open to every good article of food. Cheese is no more perishable than flour, sugar, tea, coffee, or meat. These are shipped around the world—their surplus going to any and every quarter where there is deficiency, and consequently a good demand. Dairying must always be confined to comparatively limited areas for obvious reasons of climate and soil suitable to its wants. Hence, taking this broad, true and comprehensive view, we may be sure that over-production of cheese is as much a myth, as the over-production of wheat, corn, or sugar.

Root Culture



Is not pursued to that extent it is in some of the western counties, but considerable quantities are annually raised by thrifty farmers in each town. The culture of roots for feeding purposes is not at all general, nor does it obtain as it should. We think the practice of selling hay and keeping small numbers of cattle tends to this result. With better farm practices, more attention to stock raising and dairying, their culture will become more general. No better crop can be grown, nor will expense laid out be more fully returned than that bestowed upon the growth of carrots, beets and turnips, for feeding purposes. Almost every farmer has some apology for a garden, though candor compels us to say there are some who make no attempt, and their farming is usually of that style not to be followed after; but only the few, as yet, make the growing of roots for feeding their stock, part and parcel of their husbandry.

We wish to call the attention of our farmers to the great value and productiveness of "Lane's Improved Imperial Sugar Beet," an illustration of which is herewith given.* We have raised and fed this beet with the most satisfactory results. It is specially adapted as a feeding root for

* We are indebted to Messrs. B. K. Bliss & Co., Seedsmen, 23 Park Place, N. Y., for the accompanying illustration.

milch cows, and we have no hesitation in commending it to our dairymen. It yields in good soil, when planted early, enormous crops. Its history is as follows: In 1858, Mr. Henry Lane of Cornwall, Vt., received from Washington three varieties of sugar beets. They were carefully grown, and the variety called "Imperial Sugar Beet" was found to be much superior to the others, and to any other beet that had been seen in the region. It at once supplanted all other varieties in use among his neighbors, and it has been so much improved by Mr. Lane that he claims that it yields "with greater certainty, a greater amount of food per acre than any other root, at less cost, of better quality than the turnip, nearly as good as the carrot for young stock, and better for milk; ready to feed by the first or middle of October, and keeping sound through the winter until late in the spring."

No part of the farm pays better or is productive of more pleasure as well as profit, than the garden. It is incumbent upon every farmer to provide a well-stocked garden for the luxury and health it contributes to his family. If well managed, it is a source of profit that contributes toward a good living to a great extent, compared with its cost. Who would be without sweet corn, green peas and beans, for the little care they require, or cucumbers, melons, onions, strawberries, raspberries, blueberries, turnips, and so on to the end of the list of garden possibilities? It would seem to be a deprivation none would forego voluntarily.

CELERY.—Boston Market.

We may be aiding those of less experience, and perhaps help forward gardening in the places where it is now neglected, by giving a short and

plain description of the hot-bed and also of the cold frame. If there is need of fostering and encouraging any one thing, it is gardening ; and the hot-bed lies properly at the very foundation or starting point of a good garden.

"Sow in heat—Sow in a hot-bed," are directions so commonly to be found that we feel we shall be materially aiding those who are their own gardeners if we give a few simple directions on the subject of a hot-bed, composed of stable manure, the most frequent and useful form in which it is to be found.

The preparation of the dung is a matter of great importance, and if the bed be expected to retain its usefulness for any length of time, it should be well worked previous to being used. If obtained fresh from the stable-yard, and found to be too dry, it should be well watered and thrown lightly together to ferment; this will take place in the course of a few days, and three or four days afterwards it should be completely turned, well shaken and mixed, keeping the more littery portion to the interior of the heap ; a second turning and watering may be necessary, although one will be generally found to be sufficient ; when thus cleaned of its rankness the *bed* may be made.

The situation for this should be dry underneath, sheltered from the north as much as possible and fully exposed to the sun ; it should be built up from two feet six inches to four feet high, and wider by six inches every way than the frame to be placed upon it. The dung should be well shaken and mixed while being put together, and firmly pressed by the feet. The frame should be kept close until the heat rises, and three or four inches of sifted sand or ashes should be placed on the surface of the bed ; in a few days it will be ready for use ; but air should be given night and day while there is any danger from the rank steam, and if the sand or ashes are drawn away from the side of the bed, they should be replaced.

When the hot-bed is used for seeds only, nothing further is necessary; they are to be sown in pots or pans, placed or plunged in the bed, the heat of which will soon cause them to germinate. As this will, after some time, decline, what are called linings should be added—that is, fresh, hot, fermenting (but not rank) dung applied about a foot in width all round the bed ; this renews its strength, and will greatly aid its successful management.

A cold frame is formed by placing the ordinary hot-bed frame

upon a bed of light, rich soil in some place in the garden where it will be protected from cold winds. They should both be shaded from the sun by mats during the middle of the day.

Potatoes.

It would be interesting if we could give the exact statistics regarding the sale and export of potatoes from our county. It would not only be interesting, but also alarming, to see what quantities of potash—that costly ingredient of our soils, and which it costs so much to restore—we are annually drawing forth.

We regard potatoes as an exhausting crop for our soils, and as generally managed, perhaps the most so of any we cultivate. With us potatoes constitute an important article of sale, being shipped to Boston and all along the coast west and south. Maine produces first quality of potatoes, and they are eagerly sought for seed purposes in Massachusetts and the west. Dr. Loring says: "I would always renew my seed potatoes from Maine;" a compliment from a high source.

The favorites most cultivated in our county are the Orono, the Early Rose, the Davis Seedling and the Harrison. The Orono is our great market potato, yields well, is a superior table potato, keeps well and is not specially affected by rot. No potato yet introduced stands so well as the Orono with us. It is medium for earliness, white, has medium top and is prolific in blossoms and seed balls, eyes sunk, flattened, oblong and handsome.

The Early Rose we regard only of utility as an early potato; does not hold its good qualities till spring, with us.

The Early White or Blue, is also used for early use, also the Early Sebec. Both of these are excellent varieties for the table, keep well and retain their good qualities. The White is a small yielder, but the Sebec is very prolific—more so than the Rose, and about the same as the Orono.

The Harrison is a smooth oval white potato, the whitest variety we know, yields well, and of good table qualities generally, has a very small top, seldom flowers late, and is medium for earliness; should not be grown on clayey land.

The Davis Seedling is a bright red potato, very attractive in appearance, round, medium set eyes, large top and yields largely. It is an excellent late winter and spring potato and profitable

to grow for stock. This is the highest colored potato with which we are acquainted. We have grown it for several years.

The California Red and White are largely grown for feeding. We prefer the White variety, it is a larger yielder and a handsomer potato than the red mottled. The rust never affects the California, but some years it dry rots in the cellar after storing.

The Shaker Russet is a prolific potato, yielding immense crops, but is fit only for feeding purposes; it somewhat resembles the Garnet Chili, but is a better yielder.

We are pleased to record the decrease in breadth planted in potatoes this year and the corresponding increase in the acres of wheat. Potato culture, from the time the seed is taken from the cellar, is hard, dirty, disagreeable and laborious. It has but few redeeming features. It rapidly exhausts land unless highly manured, which militates against their soundness, as thousands and thousands of acres in Waldo county bear solemn witness. We believe the true policy is never to sell off any potatoes and raise only enough for use on the farm. Other crops can be grown that require less labor, at greater profit; and we should look to other sources for a market product, than to the potato field.

Manures.

Barn manure is the leading kind used, but with all the great needs for saving all its value and quantity, our farmers, as a class, are too careless in so doing. Only now and then one provides any shelter for it, and still less uses bedding or absorbents for animals regularly. Under most of the new barns built within ten years, and also under the better class of old barns, are generally cellars for saving manure. Hogs are usually employed to "fork this over," being encouraged by their natural propensity to "root," and a few grains of corn scattered amongst it. Horse manure strewn under cattle serves to make a bedding, is somewhat of an absorbent, and helps "fine" the dung. It also prevents itself becoming fine-fanged.

"Manures," says Prof. Wm. H. Bruckner in his *American Manures*, "are substances added or applied to soils, to supply the wants of the different plants intended for the use of man and animals. That certain vegetable, animal and mineral substances, applied to soils, will quicken the growth of vegetation and increase the amount of production, are facts that have been known

from the earliest period. But the nature and properties of these substances, called manures; the manner in which they act; the best modes of applying them; and their relative value and durability, are subjects still open to inquiry."

The method of application which obtains with a portion of the farmers of Waldo county, is to harrow in on the furrow. Another portion plow in shallow, plowing deeper the succeeding year to throw up the manure plowed under, to the surface. It is not usual to apply manure in the hill, except old decomposed manure, in the garden, or for corn or early potatoes. It is generally conceded that manure loses by exposure and that it should be incorporated with the soil, in some form, to insure retention of its valuable ingredients. It is also the general experience that the time to apply manure as top-dressing to grass lands, is in the autumn. If the manure is decomposed and fine, the sooner after haying it is put on the better, provided the weather is not too dry.

Plaster is used to considerable extent on potatoes, corn, grain, and as top-dressing for grass lands. The usual time of application is, for grass, just as the snow is going off in the spring. For potatoes and corn, when they first appear above the ground; and for grain, it is sown broadcast at time of sowing grain, or when it is coming up. The best results obtained for grass are upon those pieces that are rough of bottom, or those full of "cradle-knolls," to use the common parlance. These unplowed lands are often made to produce luxuriant crops of hay by the application of from 100 to 300 pounds plaster per acre.

Plaster (sulphate of lime) or gypsum contains in every 100 lbs., 46.51 lbs. sulphuric acid, 32.56 lbs. lime, and 20.93 lbs. chemically combined water. Its benefit to soils and crops may be due to either sulphuric acid, or lime, as the wants may be. One hundred parts of plaster will absorb only one part of water in twelve hours, showing its small absorbent capacity. This is the limit of its absorbing capacity for moisture—1 in 100. Probably on most soils its fertilizing value lies in its sulphuric acid. With carbonate of ammonia it forms sulphate of ammonia. The low cost of plaster to the farmers of Waldo county induces a free use of it whenever found beneficial. It is usually from five to eight dollars per ton. Plaster is ground from the rock obtained in Nova Scotia. Mr. J. H. Kaler of Belfast, manufactures large amounts at his mill. The plaster ground at "Red Beech" mill in eastern Maine, near

Calais, is also shipped to our ports in large quantities. Plaster is a good absorbent of gases, and may be freely used in stables, privies, compost heaps, and scattered over manure piles frequently with good paying results. It forms one of the best ingredients to mix with the droppings of fowls. It may be used in equal parts and the compound thus formed is one of the best fertilizers for potatoes, common garden vegetables, &c., that can be made at the same cost.

Lime is found in abundance in the southern part of the county. Smaller deposits, suited for agricultural purposes are found in some of the interior towns. It is burned only in the towns of Islesboro', Lincolnville and Searsmont. Our soils generally, need liming, and this fortunately can be done cheaply.

Oxide of calcium, or quick-lime, is composed of twenty parts of calcium with eight parts of oxygen, these figures equaling one equivalent of each. Carbonate of lime, or limestone, is composed of oxide of calcium combined with carbonic acid. When pure, every 100 lbs. of limestone contain 44 lbs. of carbonic acid, and 56 lbs. of oxide of calcium ; or when burnt, an equivalent amount of quick-lime. Limestones generally contain more or less impurities, such as silica, magnesium, alumina and oxide of iron—sometimes potash, and organic matter. When limestone is burned, the carbonic acid is expelled, and the lime is left in a caustic state, as quick-lime. Lime quickly absorbs water, generating heat, and swells over three times its bulk in slaking. When combined with water, or slaked, it becomes hydrate of lime, and consists of 75.68 lbs. of lime, 24.32 lbs. of water chemically combined. Lime should be slaked before applying to the soil.

The office of lime is to cause decomposition of vegetable matter in the soil, thereby fitting it for plant food ; the liberation of nitrogen, as ammonia, from organic substances. As nitrogen is an element necessary to the healthy growth of grains and plants used as food, its value is very great. Lime also acts beneficially on the inorganic particles of soil, liberating their sulphur, potash, and soda, and rendering them light and friable if heavy, and more compact if loose and sandy. On soils where sorrel or pine trees grow spontaneously, lime is greatly needed, and such soils can seldom be cultivated beneficially and profitably without it. Lime should be applied as near the surface as possible. Broadcast on the surface is the best way as its action is greater when in contact with the air and moisture. Lime is a great stimulant to the soil.

Not less than forty to fifty bushels per acre should be applied. On heavy clay double this amount will be needed; this amount will be sufficient for several years.

Potash can be the cheapest supplied to soils in the form of wood ashes. Cultivated plants need more potash than those growing spontaneously. The value of ashes as a manure has been known and appreciated far back into dim antiquity. Both the leached and unleached ashes are valuable, the unleached much more so for most soils, as they contain more potash than the leached. At Green's Corner in Troy, are large potash works, and the farmers of the vicinity and neighboring towns use the leached ashes largely on their lands. They are also shipped in from Canada by way of the railroad. Ashes command about twenty cents per bushel when unleached. They are easily applied, either broadcast or in the hill. Many practice putting them about the young sprouts of corn when coming up; half a cup-full of unleached to the hill, previous to the first hoeing, being used. Ashes form a valuable top-dressing for upland grass fields, and may be spread in autumn to the best advantage.

Salt is not much used as a manure by the farmers of the county, if we except those who use it as contained in marine manures of the coast. There is no doubt of its good effects when used in the interior towns, as these are not so favored by salt breezes and sea air as the shore towns. Salt (chloride of sodium) contains in every 100 parts, 60.68 of chlorine and 39.32 of sodium. It has been used as a manure in all countries and ages, and there has been much controversey as to its value. It exists in most soils in small quantities. It assists in decomposing vegetable and animal matters present. In large quantities it is extremely injurious; land may be made completely sterile by applying it too largely. It acts as an exterminator of some kinds of insects in the soil, such as the wire worm, and has a tendency to prevent mildew and rust. It should not be applied at the rate of but two or three bushels per acre.

The following tables will be found useful and instructive, showing the comparative food value of plants, their component parts and their percentage of moisture. The component parts of manures, and the adaptibility of manure to crop, and crop to manure, Tables I, II, III, IV and V, are from "American Manures," by Wm. H. Bruckner, Ph. D.

TABLE I.—*Showing percentoge of moisture, glutinous compounds, starch, gum, sugar, woody fibre, ash and nitrogen, of useful Plants.*

PLANT.	Moisture.	Albuminous and glutinous compounds.	Starch, gum, sugar and woody fibre.	Ash.	Total.	Nitrogen.	Equivalent of ammonia.
Grass	48.60	2.6	47.74	2.20	100.00	0.33	0.40
Clover	16.00	8.12	68 38	7.50	100.00	1.30	1.58
Barley straw	10.94	1.80	82.12	5.14	100.00	0.35	0.42
Oat straw	8.25	2.15	84 50	5.10	100 00	0.39	0.47
Wheat straw	6.42	1.80	86.66	5.12	100.00	0 35	0 42
Corn stalks	10 20	1.08	83.22	5 50	100 00	0.24	0 29
Carrots	85.20	1.50	12.40	0.90	100.00	0.24	0 29
Turnips	90.43	1.35	7.72	0.50	100.00	0.21	0.25
Potatoes	75.00	2.20	21.90	0.90	100.00	0.35	0.42
Peas	10.80	23.40	62.70	3.10	100.00	3.74	4 54
Beans	8.75	22.81	65.04	3.40	100 00	3 65	4.43
Indian Corn	15.00	11.25	70 75	3 00	100.00	1.18	1.43
Rye	10.00	10 57	77 33	2 10	100.00	1.69	2.05
Oats	10.10	14.20	67.20	3.50	100.00	2.27	2.75
Barley	8.75	14.50	73 10	3 65	100.00	2.30	2 80
Wheat	8.55	19.50	69.10	2.85	100.00	2 32	2.81
Buckwheat	5.20	9.50	83.10	2.20	100.00	2.41	2.92
Cotton Seed cake	12.00	35.00	34.50	4.50	100.00	5.60	6.80

TABLE II.—*Showing the component value of Animal Excrements in* 1,000 *pounds.*

KIND.	Water.	Phos. Acid.	Potash.	Nitrogen.	Ammonia.
Hog manure	840	8.0	5 0	7.0	= 8.5
Horse "	743	12.2	28.0	5.4	= 6.5
Cow "	864	5.2	10.7	3.5	= 4.2
Chicken "	850	15.2	5.5	21.5	= 26.1
Sheep "	670	22.7	7 0	7.1	= 8.5
Human "	750	3.3	1.0	15.0	= 18.2

TABLE III.—*Showing the amount produced annually per Animal.*

	Amount.	Phos. Acid.	Potash.	Ammonia.	Value.
Hog	200	1.6	1.0	1.7	$0 62
Horse	2,000	24 4	56 0	1.30	9 94
Cow	2,000	10.4	21.0	18.5	5 15
Chicken	5	0.076	0 03	0.15	4
Sheep	50	1.27	0.35	0.42	40
Human	100	0.33	0.10	1.41	50

TABLE IV.—*Showing the value of urine of different Animals as determined by the value of salts contained in each.*

	Water.	Phos Acid.	Potash.	Nitrogen.	Ammonia.
Hog	9.29	trace	6.0	11.8	= 14.3
Horse	9.40	trace	2.8	15.4	= 18.7
Cow	9.23	trace	4 5	11.4	= 5.3
Sheep	9.65	1.3	7.2	13.1	= 15.9
Human	9.57	4.0	2.0	14.2	= 17.2

TABLE V.—*Showing the value of urine produced annually by each Animal.*

	Amount.	Phos. Acid.	Potash.	Ammonia.	Value.
Hog	1,000 lbs.	trace	6.0	14.3	$4 00
Horse	2,000 "	trace	5.0	37.4	9 79
Cow	2,000 "	trace	9.0	8.8	2 92
Sheep	500 "	0.6	3.6	8.0	2 35
Human	750 "	3.0	1.5	10.7	3 16

TABLE VI.—*Showing the value of solid and liquid excrements of Animals, taken together, per year.*

Hog excrements, solid and liquid	$4 62
Horse " " "	19 73
Cow " " "	8 07
Sheep " " "	2 75
Human " " "	3 66

To show the draft on our soils for mineral elements of plant food, we give the following, which may be relied on as very nearly correct.

Twenty-five bushels of wheat per acre of 60 lbs. to the bushel, is a fair yield, and requires:

	Grain.	Straw.	Total.
Ammonia	41.71 lbs.	10.18 lbs.	51.89 lbs.
Phos. Acid	15.00 "	11.10 "	26.10 "
Sul. Acid	1.80 "	5.10 "	6.90 "
Lime	1.35 "	12.00 "	13.35 "
Magnesia	4.65 "	5.10 "	9.75 "
Potash	12.00 "	23.70 "	35.70 "

Indian Corn.—Fifty bushels of corn of 38 lbs. to the bushel, requires:

	Grain.	Stalk and Cob.	Total.
Ammonia	34.22 lbs.	6.00 lbs.	40.22 lbs.
Phos. Acid	25.81 "	13.50 "	39.31 "
Sul. Acid	2.90 "	8.40 "	11.30 "
Lime	0.87 "	17.70 "	18.57 "
Magnesia	7.83 "	9.30 "	17.13 "
Potash	15.08 "	59.70 "	74.78 "
Silica	2.32 "	81.60 "	83.92 "

Oats.—Fifty bushels per acre of 33 lbs. to the bushel, takes from the land, as follows:

	Grain.	Straw.	Total.
Ammonia	37.45 lbs.	7.80 lbs.	45.25 lbs.
Phos. Acid	10.39 "	4.00 "	14.59 "
Sul. Acid	6.62 "	3.20 "	9.82 "
Lime	1.81 "	7.40 "	9.21 "
Magnesia	3.47 "	3.80 "	7.27 "
Potash	7.59 "	6.00 "	13.59 "
Silica	2.14 "	45.40 "	47.54 "

Barley.—Thirty bushels of barley to the acre of 48 lbs. to the bushel, requires:

	Grain.	Straw.	Total.
Ammonia	33.40 lbs.	7.60 lbs.	41.00 lbs.
Phos. Acid	9.64 "	5.40 "	15.04 "
Sul. Acid	1.73 "	4.40 "	6.13 "
Lime	.72 "	8.80 "	9.52 "
Magnesia	2.44 "	2.80 "	5.24 "
Potash	6.33 "	25.80 "	32.13 "
Silica	7.63 "	68.80 "	76.43 "

Potatoes.—One hundred bushels of potatoes per acre of 60 lbs. per bushel, require:

	Tubers.	Tops	Total.
Ammonia	21.00 lbs.	1.50 lbs.	22.50 lbs
Phos. Acid	33.00 "	18.00 "	51.00 "
Sul. Acid	12.60 "	15.50 "	28.10 "
Lime	4.20 "	55.00 "	59.20 "
Magnesia	7.80 "	10.50 "	18.30 "
Potash	109.00 "	70.00 "	179.00 "
Silica	13.00 "	30.00 "	43.00 "

These are *taken out* of every soil where the above amount of crops are grown per acre.

Marine Manures.—Along the shore of the bay rock-weed abounds, and is gathered annually by the farmers, who use it in various ways. Some put it in yards for cattle to lie on, and tread it up with their droppings after which it is used for corn and potatoes. It is used as mulch about the apple trees, and the exemption from borers enjoyed by our shore orchardists, may be largely due to this mulching with rock weed. In some instances it is used as a top-dressing for grass lands, being spread on after haying.

"Muscle bed" is used to some extent as an ingredient for composts, and as top-dressing for grass lands. It is also put in yards to be incorporated with the droppings of cattle. It is a rich mud deposit found in shoal water, or left bare by tides, and is filled with marine shells and the remains of shell fish. It is readily obtained by use of flat-boats or scows, which are filled at low water and floated in shore on the rising tide. Sometimes the flats admit of driving upon them with teams to the muscle deposits.

"Porgy chum" is the residue left after expressing the oil from the fish, which have been steamed or boiled. This is usually composted with seaweed, muck, and soil, and some leave it in large mounds covered with earth, till the following season, when it is spread on grass land or put on land that is intended for cultivation with hoed or grain crops. This is a powerful nitrogenous manure, and gives good results when carefully applied, to almost all crops.

Lobster shells and waste is of the same nature as porgy chum, with the exception of containing more lime in its composition.

We are confident that the marine manures of our coast are not duly appreciated, or applied as much as they will be in years to come. The ocean casts up of its rich furnishings annually, to the shores, much that is of great fertilizing value. This will be more and more appreciated and utilized, as the necessities become yearly greater, supplying the soil with food for plants. By drying and pressing or grinding, porgy chum, rock-weed, and muscle-bed could be packed in close bulk and transported cheaply to the interior. But little has been done in this direction, so far, though we believe Mr. Kaler of Belfast, has initiated this branch of industry.

Forest Growth.

Originally Waldo county was covered with a magnificent growth of forest trees. The early pioneers found the pine, the hemlock, the spruce, fir, tamarack, beech, birch, maple, bass, and a variety of other timber growth in the greatest abundance. The pine, the monarch of our northern forests, was peculiarly at home. Oak and ash were largely worked up into staves and found a market at our seaports, from whence they were shipped to the southward. Towering in primitive grandeur there were the finest of timber trees, unculled by the lumberman, or undwarfed by contiguous clearings. There was indeed wood enough and to spare. How to get rid of it in order to clear the land for crops, was the grand problem. The trees must be cleared away before the corn would grow, and the forest removed before the field could be made. A superabundance induces reckless waste; so in the destruction of forest growth. The trees were felled and burned where they lay. Fires were encouraged to run in the woods in dry times, and every means taken to subdue the exuberant growth. Man is a destructive agent and fully distinguished himself in this and proved equal to the emergency, as the naked hill-tops and scattered fringes of wood attest.

On many farms the supply of wood is inadequate to the necessities. But few, comparatively, are well stocked. The general destruction of growth, the demands for timber and fuel, together with inattention to preserving sufficient breadth in woods, has left the country with a comparative short supply. It is sad to reflect that as yet, even with the facts of short supplies staring us in the face, and the general knowledge of the state of things, has not as yet started any general effort to preserve and prevent further waste of what we have left.

Shade trees beside roads and about buildings are beautiful and add much to the beauty, attractiveness and value of real estate so provided. We are glad to observe that there is a wide-spread appreciation of this, and that trees are annually set and cultivated in every locality. There is, in isolated instances, a strong effort put forth to preserve young growth and prune it and keep it in the best condition. There is also an inclination to let waste places and rocky, barren pastures grow up to bushes and woods. Perhaps this comes from an indifference on the part of the owners rather than from any direct desire, or from want of time to cut

them away, owing to the amount of surface elsewhere that takes time and attention of the occupant. English willows when planted, by means of cuttings, thickly beside roads, or division fences, form pretty screens, wind-breaks, and hedges. They are rapid growers and soon form an impenetrable barrier to stock, and can be cut every eight or ten years for wood, leaving stumps three feet high, which soon throw up vigorous sprouts again to form a new harvest of wood.

Poplar is a rapid grower, and forms a handsome shade tree. It is deserving of more attention, as such, than it generally receives. It bears transplanting well, and forms a round dense topped tree with close foliage, and its leaves, being delicately hung on fibrous stems, feel the slightest moving of air, and are constantly in motion. It is known as aspen tree in some localities. The abundance in which this tree occurs on gravelly soils, the sturdy habit it early assumes, the ease with which it can be removed and the absolute certainty of living if well transplanted, recommend it to general use as an ornamental tree.

The maple is a slow grower but forms a splendid shade tree when it attains growth enough to develope considerable spread of top. The elm is a hardy, graceful tree, and does best in a moist, alluvial soil. It is hardy, if care is taken in setting.

The evergreens—spruce, hemlock, arbor vitæ or cedar and fir—make desirable ornamental trees and their pyramidal form and dense foliage protect from bleak winds and keen air. They are found in abundance in old pastures and may be easily removed with nearly all their roots intact, and drawn on a sled or stone-drag with their mass of soil clinging to them, and set with small chance for loss, about orchards and on the north and west sides of houses, they form nice protecting screens if set thickly together. They should be at some distance from the house to allow good light and air. Pine and tamarack form desirable ornamental trees. They are more open of foliage than the others and consequently not so well adapted for hedges, but rather for separate growth. Sumac and mountain ash are very pretty foliaged trees; the former bears a red cone, the latter scarlet berries, which remain upon the tree till winter, making a pretty ornament above the dreary dun carpeted earth of late fall or the white snows of winter.

Not much of the original growth of the county remains. Here and there in secluded places, a few acres may be found where the old growth trees yet remain, but the greater portion of our forests

and woodlands are second, or younger growths. White oak does not appear but in one or two localities, but red oak is quite common. White birch abounds upon the seashore, or on the gravel ridges of the interior.

Attention to tree-planting must be had, together with a judicious preservation and cultivation of what growth we have, or the next generation must import all their building materials, and burn coal to a large extent. This is very apparent to the observer, and wood is one of the necessities of a climate like ours. We would not raise the idea that Waldo county is more destitute for wood than the other counties of central and seaboard Maine, but on the contrary think from observation she is fully as well provided, if we except Washington county. But this attention to wood production, and the fact of its becoming scarcer gradually, is patent to all who have observed and given the matter attention.

Our bold hill-tops could be put to no better use than to re-clothe them with their original forest covering. We believe the climate of the county would be essentially modified by so doing; that bleak winds would not be so much felt, and drouths would prevail to a less extent. Forests have visible effect upon the health of any district. Where the growth is largely composed of balsamic trees it is free from fevers and lung complaints to an extent unknown to other districts. There should be always the proper balance of forest maintained, and this can be on lands of avail for no other agricultural purpose, and be made a source of profit, as well as health and pleasure.

List of Trees and Shrubs common to Waldo County.

NOTE. A collection of specimens embracing the above list, was made by the author while preparing this article, and afterward presented by him to the State College of Agriculture and the Mechanic Arts, Orono, where they may be seen in the cabinet of that institution. It will be seen this list embraces only those kinds which are common to all parts of the county.—J. W. L.

Smooth Alder.....*A. Serulata.*
Black Alder.....*A. Incana.*
Yellow Ash.....*F. Sambucifolia.*
Brown Ash.....
Black Ash.....*F. Sambuciflora.*
White Ash .....*F. Americana.*
Mountain Ash.....*P. Americana.*
Apple Tree.....*P. Malus.*
Blackberry .....*R. Villosus.*

Blueberry..... *G. Frondosa.*
Red Beech..... *F. Sylvatica.*
White Beech ..... *F. Sylvatica, (2d).*
Yellow Birch ..... *B. Excelsa.*
White Birch..... *B. Populiflora.*
Black Birch..... *B. Lenta.*
Balm of Gilead..... *P. Condicans.*
Black Basswood ..... *T. Americana.*
White Basswood ..... *T. Heterophylia.*
Cedar..... *T. Occidentalis.*
Wild Red Cherry..... *C. Pennsylvanica.*
Black Cherry ..... *C. Seratina.*
Choke Cherry..... *C. Virginiana.*
Red Currant..... *R. Rubrum.*
Black Currant..... *R. Nigrum.*
Dogwood..... *C. Florida.*
Dogwood..... *C. Altherniflora.*
Moosewood..... *C. Canadensis.*
Squaw Bush..... *C. Circenata.*
White Elder..... *S. Pubens.*
Red Elder ..... *S. Canadensis.*
White Elm ..... *U. Americana.*
Slippery Elm ..... *U. Fulva.*
Fir..... *A. Balsama.*
Gooseberry..... *R. Cynasbata.*
Hemlock..... *A. Canadensis.*
Hackmetack..... *L. Americana.*
White Hazel..... *C. Americana.*
Whithe Hazel..... *C. Rostrala.*
Hardhack ..... *S. Tormentosa.*
Tea Hardhack ..... *S. Solicifolia.*
Hornbeam (Hop)..... *C. Virginica.*
White Hornbeam..... *C. Americana.*
Lilac..... *S. Vulgaris.*
Locust..... *R. Pseudacacia.*
White Maple ..... *A. Dasycaspum.*
Rock Maple ..... *A. Sacharinum.*
Grey Maple..... *A. Nigrum.*
Striped Maple ..... *A. Pennsylvanicum.*
Swamp Maple ..... *A. Rubrum.*
Red Oak ..... *Q. Rubrum.*

White Oak ..... *Q. Alba.*
Shadbush ..... *P. Arbutiflora.*
Plum ..... *P. Domesticata.*
Poplar ..... *P. Tremuloides.*
Pine ..... *P. Strobus.*
Rosebush ..... *R. Nitida.*
Raspberry ..... *R. Strigansus.*
Sumac ..... *R. Typhina.*
Mountain Sumac ..... *R. Capallina.*
White Spruce ..... *A. Alba.*
Black Spruce ..... *A. Nigra.*
Juniper (Tamarack) ..... *L. Americana.*
Pussey Willow ..... *S. Eriocephala.*

The list might be considerably extended, but the foregoing embraces the principal, which serves to give an idea of prevailing growth and some few of the most prized and cultivated ornamental trees and shrubs.

Game, Fish, and Birds.

In Waldo county, which is upon the seaboard, not much game is found. Ruffed grouse inhabit every grove of any size, but are exceedingly shy Hares abound in our swamps to some extent. Snipe are occasionally met with, but woodcock are about extinct. Fur bearing animals are found to some extent; the fox, mink, raccoon, and skunk, are the chief. Originally they were abundant, and in days of early settlements, or forty to sixty years ago, they were to he met with at almost every step.

Fish are scarce; brook trout, the prince of fish, between persistent fishing and dams across all brooks of size, and water polluted with sawdust from mills, have nearly all disappeared. Some varieties of inferior fish are yet quite plentiful.

Along shore, springs and autumns, good shooting may be had for ducks and geese which here pause on their migrations.

Good opportunities for fish culture are found in every town, but as yet we have no one who has engaged in that business. Smelts and tomcods are very plentiful springs, in the bay and river, and

later in the season the bay affords cod, haddock, hake, mackerel, and porgies; the latter caught mainly for their oil, which is expressed, after they are boiled in large boilers, under powerful screws. The residue left, known as "porgie chum," is a powerful fertilizer, and commands a good price.

Lobsters, that once abounded along the seacoast of the county, have been pursued to such an extent, that they are scarce and small, and command a high price.

The early settlers were familiar with the black bear, the deer, moose, wild cat, sable, and other animals now virtually extinct in the county. The streams then swarmed with "speckled beauties," and a tramp of half an hour beside almost any inland water would secure such a string as we never see now. Our waters can be restocked—should be—and cared for that they are properly fed and protected. They may thus be made the means of supplying much delicious food, and from a source now barren.

Herring are largely caught in weirs and prepared by pickling and smoking, for the market. Salmon are caught in weirs to some extent. Belfast annually sends out quite a fleet of fishing vessels, some to the banks, and some along the coast.

A little attention to trout breeding, fishways to allow shad and alewives to ascend our larger streams, and protection of fish preserves, would in a few years add vastly to the food producing capacity of our inland waters. It is a subject well worth the attention of our leading citizens, and we hope ere long that fish culture may be inaugurated and our streams and ponds be restocked with edible fish.

The song birds are the same as those of other sections of the State. They deserve protection and encouragement, for they are our safeguards againt insect depredations.

The following list embraces most of the wild animals now found in the county:

Raccoon ..... *Procyon lotor.*
Skunk (Pole cat)..... *Mephitis mephitica.*
Woodchuck..... *Arctomys monax.*
Grey Squirrel..... *Sciurus migratious.*
Red " ..... *Sciurus Hudsonius.*
Striped " (Chip munk)..... *Tamias striatus.*
Flying " ..... *Pteromys volucella.*
Musk Rat (Musquash)..... *Fiber zibethicus.*
Common Rat..... *Mus. decumanus.*

Field Mouse.....*Hesperonmys myoides.*
Woods Mouse (Deer Mouse)..*Jaculus Hudsonius.*
House Mouse.....*Mus. musculus.*
Meadow Hog (Black Mole)....*Condylura cristata.*
Common Mole.....*Blarina talpoides.*
Mink (Martin).....*Pularius nigrescens.*
Weasel.....*Putorious cicognanii.*
Rabbit (Hare).....*Lepus Americanus.*
Hedge Hog (Porcupine).....*Erethizon dorsatus.*
Fox (Red and Grey).....*Vulpes, fulvus and argentatus.*
Otter (very rare).....*Lutra Canadensis.*
Fisher (ib.).....*Mustella Pennantii.*
Loupcervier (ib.).....*Lynx Canadensis.*

The principal fresh water fish are as follows:

Trout.....*Salmo frontinalis.*
Chub.....*Leucosomus Americanus.*
Shiner.....*Chirastama notatum.*
Red-fin.....*Plary-yrus carnutus.*
Sucker.....*Catastomus Bostoniensis.*
Eel.....*Annguilla Bostoniensis.*
Pickerel.....*Esox reticutatus.*
White Perch.....*Morone Americana.*
Yellow Perch.....*Percu flavescens.*
Horned Pout.....*Amiurus pullus.*
Roach.....*Pocus lineatus.*
Smelts.....*Osmerus mordax.*
Pumpkin Seed.....*Pomotis appendix.*

The following list embraces some of the more common birds of Waldo county:

White Headed Eagle.
Fish Hawk, (Ospray.)
Great Horned Owl.
Brown Owl.
Saw-whet Owl.
Great Footed Hawk.
Pigeon Hawk.
Sparrow Hawk.
Robin.
Redstart.
Pewee.
Night Hawk.
Canada Fly-catcher.
Yellow-rumped Warbler.
Winter Wren.
Gold Crowned Wren.
Ruby Wren.
Bluebird.
Brown Creeper.
Black-and-White Creeper.
Cedar bird.
Catbird.

Phebe bird.
Gr. Crested Fly-catcher.
Kingbird.
Kingfisher.
Chimney Swallow.
Barn Swallow.
Bank Swallow.
Martin.
Humming bird.
Water Thrush.
Olive-Backed Thrush.
Golden-winged Woodpecker.
Yellow-bellied Woodpecker.
Three-toed Woodpecker.
Downy Woodpecker.
Wild Pigeon.
Ruffed Grouse.
Crane.
Kildeer Plover.
Piping Plover.
White-bellied Nutbatch.
Yellowbird.
Bobolink.
Crow Blackbird.
Crow.
Bluejay.
White-throated Sparrow.
Chipbird.
Swamp Sparrow.
Black Cookoo.
Ash-colored Sandpiper.
Little Sandpiper.
Spotted Sandpiper.
Wood Duck.
Great Shearwater.
Loon.
Herring Gull.
American Gull.

Agricultural Organizations.

We have in Waldo county one County Farmers' Association, three Agricultural Societies, and eight Farmers' Clubs. That more clubs are needed, till every town boasts of one well-supported, live, working club, is apparent; too much in their favor cannot be said, when rightly conducted. That we have too many agricultural societies, is apparent, when we view the limited area of our county and the weakness consequent upon division of each society; one central county society, with auxiliaries in each town holding town exhibitions under the auspices of the town club, would add vastly to the effective power for good of these societies.

Waldo County Farmers' Association.—This was organized by a few of the leading, progressive farmers, pursuant to a call published April 20th, 1872. It meets monthly with different clubs, and in different sections in the county, except July and August. It has been the means of great good, for farmers are brought into contact with each other from different sections, and instruct and are instructed by an exchange of experience. Associated Dairying has been introduced and carried forward by its means, and new interest awakened by its influence. Such an organization

should exist in every county, and may be made to the county what the Board of Agriculture is to the State. The officers of this association are: A. G. Jewett, Belfast, President; George Woods, Belfast, Israel R. Grant, Monroe, Seth Thompson, Unity, Vice Presidents; J. W. Lang, Brooks, Secretary and Treasurer.

Waldo County Agricultural Society.—This society was organized in 1847. From a letter from the present Secretary, Mr. A. D. Chase of Belfast, I condense the following brief history of the society:

"Early in June, 1847, several gentlemen, feeling an interest in the welfare of the agriculturists of Waldo county, held a meeting at the old Court House in this city, for the purpose of taking into consideration the expediency of forming an agricultural society. At this meeting it was concluded that it was best to form a society, or organize under an old charter granted to a former society. Accordingly notice was given in the newspapers, that a meeting would be held at the Court House on the 3d day of July, to form a society or organize under the old charter. At this meeting the question of organization under the old charter, was discussed with animation and ability, and finally it was decided by a very large majority to form a new society, and the following gentlemen were nominated, by a committee of one from each town in the county, for officers, and were subsequently elected: Isaac Twombly, President; William G. Sibley, Secretary; Harry Hazeltine, Josiah Murch, Vice Presidents; John Hodgdon, E. A. Pitcher, Alfred Sawyer, C. H. Thompson, Samuel Marden, Mark S. Stiles, Allen Davis, H. H. Sherman, Thomas Ayer, Charles Prescott, Ithamar Bellows, Abner Littlefield, Levi Johnson, David Dolliff and Ebenezer Hopkins, were elected Trustees, and John Greeley, Treasurer; after which, voted, that the President and Secretary use their influence to procure a new charter from the present Legislature; voted to adjourn, to meet at the Court House August 25th, 1847.

At the meeting holden 25th of August, as per adjournment, there was a lengthy discussion upon the question of proceeding under the then present voluntary organization, and since the last meeting a charter had been obtained, and it was thought advisable to delay action until the society could legally organize. H. H. Sherman, one of the persons named in the act of incorporation, was chosen to call a meeting of the corporators, to be

holden at Brooks Village, on the 11th day of September next, at 10 o'clock A. M.

Brooks, September 11th, 1847.

At a meeting of the major part of the persons named in an act incorporating the Waldo County Agricultural Society, approved by the Governor, August 2d, 1847, Isaac Twombly was chosen Chairman and William G. Sibley, Secretary.

Voted, That all persons who have become members of the voluntary society formed at Belfast, August 3d, be considered our associates under this act.

Voted, To accept the act of incorporation.

Charter Members.—Isaac Twombly, William G. Sibley, Harry Hazeltine, Josiah Murch, E. A. Pitcher, John Hodgdon, Alfred Sawyer, Charles H. Thompson, Samuel Marden, Mark S. Stiles, Allen Davis, Harvey H. Sherman, Thomas Ayer, Charles Prescott, Ithamer Bellows, Abner Littlefield, Levi Johnson, David Dolliff, Ebenezer Stevens, their associates and successors, be and hereby are constituted a body incorporate, by the name of the Waldo County Agricultural Society.

The present organization of the society is as follows: Daniel L. Pitcher, President; Jesse Townsend, Moses W. Frost, Vice Presidents; Hiram Chase, William W. Hall, Howard Murphy, David Lancaster, Trustees; A. D. Chase, Secretary and Treasurer.

The society is indebted to the amount of about two thousand dollars at the present time, but the prospect is quite bright that by the close of our autumnal fair, the debt will be among the past unpleasant reflections of our agricultural friends, and that we shall take new life and make our Society what it ought to be, the first in Eastern Maine."

North Waldo Agricultural Society—Was organized in 1861. It holds its annual exhibitions at Unity village, and embraces several fine farming towns. Its present organization is as follows: Seth Thompson, President; Benjamin Fogg, Vice President; Lindley H. Moshier, Secretary; Eli Vickery, Treasurer; H. B. Rice, Agent and Collector; George W. Clark, Benjamin Hunt, P. W. Ayer, David B. Johnson, Charles Hutchins, Charles Vose, E. Davis, G. McGrey, E. M. Baker, W. Stevens, C. Y. Kimball, James W. Wallace, Benjamin Ferguson, N. Gould, W. C. Gordon, C. Butman, Trustees. We learn the society is prospering. It owns no grounds or halls for exhibition.

Waldo and Penobscot.—This society was organized in 1868. It holds its annual exhibition on the grounds of the "Monroe Trotting Park Association." The society is in good financial standing. Its present organization is as follows: Freeman Atwood, President; John Goodwin, Vice President; E. H. Nealley, Secretary and Treasurer; T. Mayo, Librarian; R. W. Mayo, Monroe, Joel Lowe, Frankfort, F. W. Ritchie, Winterport, Amos Lane, Prospect, A. E. Nickerson, Swanville, J. W. Lang, Brooks, J. W. Wallace, Jackson, Amos Stevens, Dixmont, James Farnham, Newburg, Board of Trustees. This is the youngest, and claims to be the smartest society in the county. It has held good exhibitions and been successful in accomplishing desirable results.

Farmers' Clubs. *Belfast Farmers' Club.*—This club is composed of good material, and has accomplished much good. It was organized several years ago—Daniel L. Toothaker, Secretary. This club has suspended operations several times but always seemed to retain its vitality, coming to the front each time recuperated and ready for energetic labor in the field of progress.

Brooks Farmers' Club—Was organized March 9th, 1872; A. G. Rose, President; J. W. Lang, Secretary. It has a library of about sixty volumes and has good material composing it. A cheese factory organization is one of the outgrowths of its usefulness. It meets Saturday evenings; the attendance has gradually increased since its organization. There are evident signs of improvement within the circle of its influence.

Freedom Farmers' Club.—This Club was organized in March, 1873. D. B. Johnson, Secretary. This Club starts out with much enthusiasm, and we have no doubt of its future stability or usefulness, knowing the material of which it is made up.

Montville Farmers' Club.—Organized in 1872. Jonathan Hamilton, President; Z. T. Cooper, Secretary. A cheese factory company has been organized within the jurisdiction of this club. We learn from its energetic Secretary that its meetings have been well attended, and productive of much good. A paper and declamations together with select readings, during part of each meeting, has served to interest the young folks and draw in the older.

Newburg Farmers' Club.—This club is partly in Penobscot county, yet within the jurisdiction of one of our Agricultural

Societies. It is a smart club, and here a cheese factory company have made an organization, and owe their existence to the influence of this club. Meets Saturday evennigs—J. F. Hussey, Secretary.

Prospect and Stockton Farmers' Club.—This is our largest, best, and champion club. Holds its meetings Saturday evenings. J. R. Partridge, President; R. M. Trevett, Secretary. It meets alternately at two school-houses, one in Prospect, and the other in Stockton—hence its name. These houses are one and a fourth miles apart. It has a library, and a fair working sum in its treasury. It has sixty-six members, one-half of whom attend regularly. This a flourishing club and holds an annual fair which often eclipses that of the county societies in interest.

Unity Farmers' Club.—This club was organized several years ago, and is in good working condition. Unity is the headquarters of the North Waldo Agricultural Society. This club meets Saturday evenings—Thomas H. Cook, President; James Libbey, Secretary.

West Winterport Farmers' Club.—John York, President; Fred. W. Ritchie, Secretary. A live, wide-awake club, that has made its mark and stands on a firm basis. It has aided largely toward the establishing of a cheese company at Monroe village. Its President and Secretary are among the best farmers of the section and of Waldo county. It is doing good service.

Cheese Factories. There are five organized cheese factory companies in Waldo county at present, two of which are in operation. The others are erecting buildings and preparing for operations another season. The breadth in potatoes this year is narrowed up nearly one-half, which shows that farmers' are seeking more profitable crops and better cultivation.

Northport Factory.—This company was organized in 1872, and and erected and completed their buildings one year ago this fall. Jason Hills, President; Daniel A. Wadlin, Secretary; Jason Hills, D. A. Wadlin, Amos Pitcher, S. B. Foster, P. C. Hunt, R. W. Ellis, Board of Directors. Their Superintendent learned in the Strong factory. J. R. Hurd is Treasurer. This is the pioneer factory of the county. It was started by an energetic company of farmers who were determined to get out of the ruts of the old ways of farming. The stock consists of $2,500, divided into

shares of $50 each. It has paved the way and encouraged other places to embark in this method of dairying by associated effort. All honor to these men!

Brooks Cheese Factory.—A. G. Rose, President; Benj Knowles, Vice President; J. W. Lang, Secretary; M. Chase, Treasurer; A. G. Rose, J. W. Lang, George Moulton, Jas. Ellis, J. D. Jones, Directors. Capital stock $2,000.

Monroe.—W. Cates, President; Freeman Atwood, Vice President; E. H. Nealley, Secretary; Cyrus Dolliff, Treasurer; D. Dolliff, F. W. Ritchie, P. H. Cane, W. Cates, E. H. Nealley, Directors.

Montville Centre.—I. B. Thompson, President; John F. Bean, Secretary; Oramel Murray, Treasurer; E. H. Carter, Alonzo Bryant, R. F. Jackson, Charles Owen, Directors. Capital stock, $2,000.

Montville and Searsmont Factory.—This dairy company was organized, like the others, except Northport, in the winter of 1872. N. Smart, President; Z. T. Cooper, Secretary; A. S. Wentworth, Treasurer; Otis Wilson, A. Pease, L. Cooper, R. S. Ayer, Directors. The factory is in process of erection and will be ready in the spring of 1874. Capital stock, $2,500.

List of Members of Board of Agriculture from Waldo County.

1857—Thomas W. Cunningham, Belfast.
1860—D. Norton, Monville.
1863—Samuel Johnson, Jackson.
1866—P. W. Ayer, Freedom.
1869—George E. Brackett, Belfast.
1872—J. W. Lang, Brooks.

Newspapers of the County.—There are three weekly papers published in Belfast in this county. *The Progressive Age;* folio, thirty-two columns; republican; published on Thursdays; $2.00 per year; William M. Rust, editor and proprietor; two columns of agricultural matter. The *Republican Journal;* democratic; William H. Simpson, editor and proprietor; Fridays; two columns agricultural matter; thirty-two columns; $2.00 per year. The *Belfast Weekly Advertiser*, Emery Boardman, editor; G. W. Burgess, publisher and proprietor; independent; $1.50 per year; published every Tuesday; one column of agricultural matter;

twenty-four columns. The combined circulation of these papers is about 7,000 copies. These papers, especially the two first, which have been long established, have been of great service to the community, and have done much in spreading information among the people and benefitting our home industries.

What the Newspaper has done for the Farmer.

It needs but a glance over the past to see the advance that has been made in farming. Improvements of all sorts meet us wherever we turn. And perhaps in no class of the wide community is the improvement so manifest as in the agricultural masses of the country. As a promoter of knowledge, the newspaper holds no secondary rank. Its weekly visits ever bring something new—some fact in science, some better method of doing things, some experiment or experience teeming with usefulness; and, further than this, its language, its tone, and its spirit, inducing a habit of reading and inquiry, acts beneficially upon the thousands who read and come under its influence. Go back thirty years and see the state of the country when agricultural papers were almost unknown; the status of the rural population, and general information among them. We find the farmer without very many of the comforts he now enjoys, pursuing the time-honored practices of his ancestors, without ambition to excel that now actuates the farmer of to-day. We see him following superstitions that are now exploded, firm in his limited acquirements as the rocks about him, plodding on in old beaten ruts without using efforts to get out of them, content to let "well enough" alone. He was satisfied if his children got a little education, enough to read and write and "cipher" respectably, seeing no use for those higher branches he did not understand, and supposed had no use for. All this was perhaps well enough for their day and generation, when muscle was called for to subdue the wilderness and break down the stubborn soil. They served well the purpose of their day. Now, progress, resistless Yankee *energy*, has urged the former state of things out of the way, and inaugurated a new programme.

The newspaper has been greatly instrumental in this work. There is in human nature a groping for better things. With knowledge of their existence comes a desire to possess, and efforts for possession. So with knowledge of improved methods in farming came their application to practice. Improved breeds of cattle

were heralded by the press, their points discussed and farmers enlightened as to their merits; this led to their introduction. We see now no slab-sided, long-eared rail-splitter in the farmer's hog pen. They have become obsolete through knowledge and possession of better breeds. They do not *pay*, hence are not kept. The farmer of the present is a snug calculator. He has learned from his paper that farm accounts are beneficial and has adopted them. They help systematize his business and from system and order arises thrift. The old "native" breed of cattle have nearly all disappeared, their places being filled with thoroughbreds and grades of the same. The good and bad points of the various breeds have been so thoroughly discussed through the papers that almost every farmer is well posted in regard to them. It has come to such a pass that every paper maintains its agricultural column, even our religious sheets, made perhaps, more especially for sabbath reading. This general inclination toward farming and farmers, shows the tendencies of the times, and speaks volumes for agricultural progress. Most farmers have some idea of the mineral construction and elements of the soil, the elements contained in plants and fertilizers, which were almost wholly unknown thirty years ago. They are becoming somewhat acquainted with agricultural chemistry, and better understand how to adapt fertilizers to soils and crops.

The newspaper has discussed these topics and the farmer has learned from them and been led thereby to seek other sources of information. Instead of orchards with fruit fitted for little else than cider, we find now the choicest kinds. Small fruits are cultivated where before unknown, unless they grew wild and uncared for. The better varieties have taken the places of the old and the garden presents an attraction hitherto unknown. The home has been adorned by shade trees, shrubbery and flowers outside, while inside books and pictures lend their charms. There is something deeper, pleasanter, and better in that family circle at the farmer's fireside than before.

The newspaper, especially the agricultural newspaper, has left the impress of refinement and progress in many a household, and yet its mission is just begun. The future is a broad field in which it will move on to new triumphs, new heights, and new usefulness. We all poorly realize what we owe the newspaper and public journal for the advancement science, agriculture and civilization have made. Take them away—blot them out and we

retrograde more rapidly than we have ever advanced. Let them be well supported and they in turn will support us.

The press has an all-powerful influence and is the lever which moves the world of mind. It argues favorably for the citizens of Waldo county that three weekly papers find support therein. Besides these, papers from out the county, especially papers largely devoted to agriculture, find a good patronage. Such papers as the Maine Farmer, Lewiston Journal, Boston Cultivator, Massachusetts Plowman, New England Farmer and Country Gentleman, are taken in the order named, quitely extensively, in all the rural towns. There is also an eagerness manifested to secure the reports of our State Board of Agriculture, and they are read and prized. This speaks well for the farming community in point of progressive intelligence.

Emigration.

To this source we may trace very much of the reason why Waldo county, in common with the whole State, has not made greater progress in the agricultural and industrial arts. The restless, roving spirit of the Yankee element of New England, is manifest to every close observer. That same spirit of adventure, and love of freedom, and seeking after novelties, that was so conspicuous in peopling these western shores from Europe, still operates and urges westward the inhabitant of the more eastern portions.

Maine has contributed of her hardy sons liberally to help people the west. Waldo county has not been behind in this exodus. Her sons and daughters are found in every State of the wide Republic. The white sails of her ships are mirrored in every sea, and her adventurous sailors are found the world over. This drain to oceanward and to the sunset lands has materially retarded her growth and development. While other sections have been built up in consequence, no inflowing immigration has replaced those who have sought the sunny south, the prairied west, or the Pacific slope. We often hear of the great success of some who have gone to Prairie-land or Eureka, but we do not hear of the far greater number of failures; and, too, many of the reports of fabulous successes do not bear investigation. Reports never lose by traveling, and "distance lends enchantment to the view." We believe it best and would counsel adherence to our native place. If we *must* move, instead of seeking the "shakes" of the west,

let it be to the broad and fertile acres of our own Aroostook. It is hard regaining in the new and strange anomalies of the west, the old-time society, privileges and enjoyments, which, to an eastern man, make up the best half of life.

The late war, which took so much of blood and treasure from the nation, bore with full weight in sacrifices upon Waldo county, and we can see plainly the check given to industrial progress by its agency; while at the same time we feel in our homes and by our firesides the cost of a nation's life.

We believe with the better knowledge of our resources and the introduction of manufactures, emigration will gradually grow smaller. A better knowledge of western actualities will also tend to, as it is already doing, prevent many from going west. The work for the progressionist is to but fairly present truth understandingly to secure his points. This is being done, and has its visible effects in decreased emigration from our borders.

Farms and Farmers.

We have visited some of the energetic and leading farmers in several towns, and follow this with description of their farms and farm practices. We have selected these men, not because there are not other farmers in the county just as good, but because we could visit them more conveniently, and because they are worthy to be patterned, and well represent the possibilities of the Waldo county farmer. Our thanks are due them for kind hospitality, and for facilities rendered to obtain information. They represent what may be done at farming in Waldo county where brain is blended with muscle in operating the farm.

The "Great Farm," Jackson.—The "Proprietors," who bought up a large part of the "Waldo patent," Messrs. Sears, Thorndike and Prescott, early established a farm of over a thousand acres near the centre of the town of Jackson, which was intended as a summer resort for themselves, and to aid in colonizing their lands. Here they conducted farming on a large scale, built a large, fine house, and large barns. They employed a large force of hands, and introduced blood stock, and new varieties of seeds. It has been with extreme difficulty that we have obtained reliable data of this farm, and this will render our description somewhat imperfect.

Through this farm runs a brook of considerable size known as

the "Great Farm brook," which is one of the tributaries to Marsh river, uniting with it at Monroe village. The land was of a rolling surface with some interval bordering the brook. The buildings were upon a swell of land north of the brook, and some fifty rods from the highway, and had access to the same by means of a wide avenue, bordered by elm and other shade trees. The house was a large two-story, roomy, structure, with ell and outbuildings attached. These buildings were considered almost a palace in the simple days of the early settlements. Two large barns—one known as the "Egypt"—with several smaller ones completed the outfit. An orchard of large extent was set out early in the history of this farm, and when it came into bearing, a cider mill was built. The prospect from the buildings is beautiful and extensive.

The farm now has fallen much to decay and contains but four hundred acres of the original one thousand. It is owned by Mr. N. E. Carpenter. The fields, except the intervales, produce little other than "June grass," except the newly seeded pieces. The buildings are but wrecks of what they were once and its ancient glory has departed. The stream that winds across the farm contains a few trout, but is the most persistently fished stream in the county.

The proprietors used to make their summer pilgrimage in carriages, all the way from Boston, occupying some two weeks in the journey. Think of this, ye who can hardly spend ten hours to go the same distance over iron rail. Think of these jolly old school gentlemen, leisurely jogging along in their coach and span, taking life easily, jolting over the country highways. Their arrival and departure was a noted event in the annals of the "Farm." Shooting, fishing, cordiality, and sociability marked their stay, while the crew of laborers were stimulated to feats of work by their presence, and their pennies.

Their stock was a source of pride and gratification to the proprietors. Water was brought three-fourths of a mile from the slope of a hill to the south, in a lead pipe and supplied to the buildings. The first overseer of the farm that we can learn of, was a Mr. Perry who was there seven years, or from about 1807 to about 1814. Whether clearing was commenced under his direction, or by a former employee, we are unable to say. The towns adjoining were settled between 1795 and 1805, so we infer that Mr. Perry may have been the first foreman employed to start the farm, and direct its development. In 1814, Mr. Timothy

Thorndike, from Jeffrey, N. H., nephew to Col. Thorndike, one of the proprietors, took charge of the farm as foreman. Mr. Thorndike was there eight years, or till 1822, when he settled in Brooks, on what is now known as the Woodbury Edwards place. One of his sons is now a merchant in Belfast, and from whom we have obtained many facts regarding the "Farm."

Col. Thorndike imported a large number of Shorthorn Durham stock from England, during Mr. Timothy Thorndike's service on the farm; the larger part of which went to Kentucky. Several were sent to the farm, together with some Spanish Merino sheep, and jacks for service of mares. Devons were also put on the farm afterward, and during Mr. Thorndike's stay, and also before an infusion of the "Vaughan" stock from Hallowell. Mr. Clapp from Portland, succeeded Mr. Thorndike as overseer. Other blood animals were from time to time introduced, which have become blended with the stock of the county and has done much good. But to this statement we wish to add the qualifying remark, that the introduction of Merino was unsatisfactory, and regarded as a failure. They proved weak, tender, and unfit for the climate. Perhaps in the new settlement and hardships of the times they did not receive the care they might or ought to have had, and this caused the dissatisfaction given.

Many young men came from New Hampshire and Massachusetts, and took up lots of wild land from which to make farms, working on the "great farm" to pay the first installments. Beside being a pleasure resort for its owners, it proved to be a means of developing the country about it, and of accomplishing thereby good results.

Farm of J. G. Reynolds, Brooks.—The farm of this enterprising farmer lies in South Brooks and consists of two hundred acres of land, mostly of upland gravel loam; although considerable moist land occurs in one field, which is favorable for the production of grass. Considerable has been underdrained; the drains are opened three feet deep with spade and pick, then field stone filled in and covered; an open course is left at the bottom of the drain for the passage of water. Top-dressing has been considerably practiced, and Mr. Reynolds believes it gives best results on the most porous soils he has; he also believes this practice best adapted to leachy soils. The stock of this farm consists of some fifteen head of cattle, two horses, and one hundred sheep. Usually from two to

four cows are kept. The barn is one of the best in the county, forty by sixty feet, twenty feet posted; it has two main floors, one above the other, ample mows and tie-up, horse stalls, and all necessary conveniences; it was built some five years ago, is finished outside, shingled on walls, and has a ventilator on the roof. A barn, separate from this, accommodates the sheep. Mr. Reynolds does not use the cellar beneath, having prejudice against barn cellars. The house is a story and half, with ell and outbuildings connecting it to the larger barn, giving ample accommodations for hogs, hens, and storage for fuel and farm tools.

One remark of Mr. Reynolds deserves thought and attention, for it has weight not at first apparent: "The only farmers that are making money are those that are feeding the most provender; those that are making most, feed the most corn and other grain." He feeds yearly from three hundred to five hundred bushels of western corn, besides all he raises. His system is mixed husbandry, which he believes best adapted to the farmers of this county in general. If he were to make a specialty it would be sheep. He cuts from fifty to seventy tons of hay per year, plants one and a half acres in corn, and has hitherto raised barley and oats principally. This year he has sown three acres in wheat. He has a small productive orchard near the buildings. Applies about forty ox-loads of barn dressing per acre to his lands, harrowing in new dressing, and putting old in the hill. Mr. Reynolds sells some hay, but more than replaces it with corn used. He believes only good farming pays. His farm is very pleasantly situated at the intersection of four roads, is eight miles from Belfast and five from tide water. Mr. Reynolds has been on this farm some fifteen years, and has greatly increased its productive capacity and made money while so doing. In this, and for this, we claim for him the well-deserved title of a model farmer.

By the examples and the accomplishments of these representative farmers we may pattern and learn lessons of value. They show to us facts and possibilities that may be attained if we but use the same efforts. Though it be not precisely in the same branches, it will be in the same direction, and equally profitable to us, and to those about us.

John M. Dow and Son, Brooks.—This farm is situated on a high elevation of land and consists of one hundred acres, fifteen of which are in wood mostly second growth and valuable. The

soil is a deep granite loam, in places a sandy loam, deep and strong, with hard subsoil. The farm is divided by the county road leading through West Brooks from East Thorndike to Belfast. The buildings consist of story and a half farm-house with ell; a neat, tasteful structure. There are two barns, one nearly new forty by forty, finished outside, and well fitted up inside. Another barn about same size, with commodious yard, gives sufficient storage for the crops raised. An orchard just coming into full bearing, grafted with choice varieties, attests Mr. Dow's skill as an orchardist. Over one hundred bearing trees are in this orchard, and a thrifty nursery shows that additions are soon to be made from a reliable source. Mr. Dow prefers home grown trees. The farm stock consists of two horses, two colts, three cows, one pair of oxen, six young cattle and twenty-five sheep; the stock are grades. For hoed crops Mr. Dow usually plants one-half acre corn, four acres of potatoes with half an acre in garden and roots. He has always raised wheat, and has two acres this year; four acres oats and other grain. Cuts thirty tons of hay. The potatoes are generally raised on rough pasture land turned over. Mr. Dow applies twenty to twenty-five loads of manure per acre, generally spreading on the furrow and harrowing in; always applies manure to land he is seeding down to grass. Much rough, hard land on this farm has been broken down and pulverized, made smooth and put into handsome fields. The farm shows to disadvantage from the road by reason of out-cropping ledge, and a steep side hill on the west. Considerable stone wall of substantial character has been built and some drains laid. Top-dressing moist grass lands has been practiced to some extent. Mr. Dow does not use superphosphates, finding their cost too great. Ashes, lime, and plaster are used to some extent on grain and hoed crops. Mr. Dow came from China, Kennebec county, some twenty-nine years ago and located here, and he has been successful and built up a good property, a pleasant home and a fine farm. In this we commend his example to the young men of our county, and think his success must satisfy the doubtful, when they ask, "does farming pay?" Industry and economy are the mainsprings of success in farming, when coupled with the requisite knowledge that adapts ends to means, and means to ends. The State of Maine offers, we become more and more satisfied as we investigate, inducements as good, nay better, than any other State, to the young men who are natives of her soil. Taking a view

of every advantage and every defect, comparing our own stock with others, we are satisfied, and forced to the conclusion that this is so. The success of our farmers amply backs up the statement.

Farm of P. W. Ayer, Freedom.—Two and one half miles west of Freedom village, on a high ridge of land, lies the farm of Mr. Ayer. The soil is granite in structure, light and easily worked, with hard subsoil. The fields lie well for convenience in tilling and are large and smooth. The farm contains three hundred acres of land, one hundred of which is wood. The fences are of stone wall and cedar "yoke fence." Most of these consists of a wall foundation with cedar "yoke fence" built upon it. We seldom find a farm so well fenced. There is no interval or swale land in the fields. The buildings consist of a large, roomy, old-fashioned, one-story farm house, in fair state of preservation, with convenient outbuildings; two barns, one forty-three by fifty, the other forty by ninety-six. These are conveniently arranged, and comfortable. The location of the farm buildings is very pleasant, and commands fine views of the surrounding farms to the south, east and north. The garden is quite extensive, and well kept. Small fruits as well as vegetables receive care and attention. The garden is surrounded with a neat, substantial fence of pickets —the latter a point of some importance. Mr. Ayer's orchard is not extensive, but young and thrifty. The farm stock, all told, consists of about thirty head of cattle and horses, and forty sheep. He has three horses and three colts, six cows, one pair oxen and the remainder are young cattle. He has four thoroughbred Shorthorns, viz: Bull, "Knight of Geneva,"* three years old; cow "Flora,† five years old; "Duke of Waldo," one year old; "Rose of Freedom" two years old. He has also eight yearlings by

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* "Knight of Geneva" was bred by James O. Sheldon of Geneva, N. Y., and purchased by Mr. Ayer of Augustus Whitman, Fitchburg, Mass The following is his pedigree: Got by "4th Duke of Geneva," 7931; dam, Belle Marion, by Red Duke; Maid Marion 5th by Albion, (2482); Maid Marion 2d by Lord John, (11728); Maid Marion by Robin Hood, (9555); Lily by Lealoh, (8797); Lily by Young Vandike, (8933); Dutchess by Young Spectator, (8619). "Fourth Duke of Geneva," 7931, is a full "Bates" bull; was bred by James O. Sheldon, Geneva, N. Y.; got by "Baron of Oxford" (25370); dam, "7th Dutchess of Thorndale," by "2d Grand Duke" (12960), in 1869, and a half interest in him was sold to Messrs. Walcott & Campbell, for $4,000.

† "Flora," was bred by Josiah Eastabrook of Royalston, Mass. Purchased by Mr. Ayer of Mr. Whitman.

Knight of Geneva. Duke of Waldo and Belle of Freedom, are out of cow Flora. These animals all show the good points of the breed and are a credit to their owner. Mr. Ayer deserves especial mention for his efforts to improve the stock of the county, and offers to the farmers at reasonable rates, access to the best blood they can use in breeding. It required some nerve to "pitch in" and introduce at great cost these fine animals, but we are sure he will meet his reward in due season.

Mr. Ayer has some fine Cotswolds and grades of the same, also as a pure blood Yorkshire boar. He pastures sheep on one pasture till they spoil it for themselves, by causing too rank a growth, then puts on cattle which thrive well on the rich feed. He has a cow of the Durham blood, a relic of Col. Thorndike's "Great Farm Bull" blood. She is a fine representative of the old Durham strain. His cows all show extra milking qualities.

On this farm are ususally planted two acres corn, four acres of potatoes, and four to six acres wheat, and two acres oats sown. The cut of hay is about seventy-five tons annually. Mr. Ayer uses considerable provender during the year, believing that it pays to keep good stock, and keep it well. His thoroughbreds are fed no better than his grades. Mr. Ayer has done a great deal of labor on this farm, building fences, hauling stone and laying wall, smoothing up the fields and improving it in other respects. He has the satisfaction of knowing he has one of the best farms in the county and that it is paying him well. He plows in his green manure, putting twenty-five ox-loads to the acre. Old manure he spreads on the furrow and harrows in, or puts it in the hill. The second plowing is a little deeper than the first so as to bring up and mix with the top soil, the residue of the manure left from the year previous that was plowed under It is a pleasure to visit such neat, well cared for farms, and doubly so when stocked as this is, with nice blood stock, that give promise of utility not only to their owner, but to the community at large.

Elisha Johnson & Son, Freedom—The farm of these enterprising farmers lies one and one-fourth miles west of Freedom village on a pretty swell of land, and has a southern aspect. It consists of one hundred and forty acres of upland soil of which twenty-five acres are woodland. It lies on both sides of the county highway and is conveniently partitioned by substantial cedar "yoke fence," stout and strong. The soil is a fine gravel loam over a stiff gravel

subsoil. Some portions have been drained by rock drain, thereby very much improving the wetter portion of the farm. The buildings consist of a story and a half house, large, well arranged and roomy, with outbuildings connecting it with the barns. The main barn is forty-five by sixty-five with two main floors and cellar beneath. The arrangements for making and saving manure are very good, and worthy of imitation by all farmers. The contents of the privy and waste water from the house are all caught and utilized by absorbents conveniently placed, and the hogs are levied upon to aid in the manufacture of fertilizers. We noticed in one stye, a full blood Yorkshire boar from the stock of Hon. Warren Percival of Cross' Hill. We think highly of this breed, judging from the make up of the animals, and their general appearances. The stock on this farm are grades, and consist of one yoke of oxen, four cows, two horses and twenty-six sheep, several of which are pure blood Cotswolds, from the stock of Mr. Hanscomb of Albion, and several high grades. Together they form one of the best flocks in the county, in quality.

There is an extensive cedar swamp on this farm which furnishes material for good fencing. There is an old and young orchard, the former of which is some fifty years old, and decaying; the latter is just coming into bearing and is grafted in the limbs with choice varieties. The trees were, most of them, raised in a nursery on the farm. Some twenty-five New York trees are in another place and have been set only a few years. Mr. Johnson prefers native trees. The young orchard is mulched about the trees with white-ash shavings from the shovel handle factory at Freedom. The soil, which is a witch-grass sod, is mellow and loose beneath this mulch. The trees are washed every spring with weak lye, or strong soap-suds. A fine nursery is in process of cultivation, which promises to furnish trees enough for the whole neighborhood. We noticed some stocks of bees, a rarity this season among the farming community in the county. The season of 1871, and two succeeding winters, worked vast damage to the bee interests of Waldo county. One of the pleasing features of this farm was the garden filled with vegetables and small fruits. Considerable space is devoted to this and it pays well. The condition in which it is kept speaks volumes for the industry and zeal of these representative farmers. Phosphate is used to quite an extent on corn, on this farm. Sometimes it is sown broadcast on grain and to good profit. One piece of about three

acres is under summer tillage with oats. This farm cuts some thirty or more tons of hay. Witch-grass abounds in most of the fields, but makes a fine quality of hay. Plaster is sown as a top-dressing for grass, just as the snow is going off, at the rate of 200 lbs. per acre, with good results. Corn is planted on inverted sod. The land is plowed the fall previous, manure spread and harrowed in; in the spring it is worked and phosphate put in hill with the corn. Two and a half acres of corn, three of potatoes, and three of wheat are annually planted and sown; about three acres of other grain is cultivated, sometimes barley and sometimes oats. Manure is applied at rate of twenty to thirty ox-loads per acre on the furrow and harrowed in. The situation of the farm buildings is pleasant, and the surrounding landscape presents picturesque views. Their arrangement is handy and facilitates the labor of caring for the stock and doing the household work. Brain as well as muscle, has evidently been employed judiciously in the building up and managing of this excellent farm.

Farm of John H. Fogg, Jackson.—This farm lies partly in Jackson, Waldo county, and partly in Dixmont, Penobscot county, and contains two hundred acres, situated upon one of the ridges on the southern slope of the Dixmont hills. Mr. Fogg has owned this farm about ten years. When he took possession of it, it was in a somewhat low state of productiveness. He has cleared about twenty acres, and by prudent and judicious management, raised its production of hay to an average of about sixty tons. The pasturage is excellent of which there is an abundance, and it is well watered by living springs and streams. On the farm is plenty of wood and lumber, one piece of timber land being valued at about $1,500, stumpage.

The stock usually consists of about twenty head of cattle and one hundred sheep, with several horses. There is an excellent orchard upon the farm near the buildings, and a promising nursery that means *replenish*. The farm buildings consist of a story and half house, with ell and woodshed, granary, carriage-house, &c., connected—a tasteful and elegant stand. Two barns, one of which has recently been remodeled and enlarged, manure sheds, hen-house and sheep barn complete the outfit. Mr. Fogg has in his recently repaired and modernized barn, one of the best in Waldo county. His arrangements for tying up his stock in separate apartments, the ease with which they can be attended, and a full supply of water in the yard, are points worthy of imitation.

Mr. Fogg's method of procedure is to plant potatoes and corn upon newly broken up land, with light dressing—the potatoes getting nothing but plaster—then the next year apply to these stubble pieces forty ox-loads of yard manure per acre upon the furrow, sowing grain and laying down to grass. The home field has been so treated once, and he is now in his second rotation of fertilizing it. This field is very well located and easily worked, and was in the most exhausted state of any part of the farm when he came into possession. He has raised as high as one hundred and twenty-five bushels of beans in one year. These were from burnt land. We noticed a large piece in beans that from their thrift bespoke that he intends to maintain position of "deacon" this year. These were on plowed land, and were known as "Canada Blue-Pod," a very prolific bearer and a small, handsome white bean.

One of the most pleasing features of the household economy was the never failing cistern of water beside the sink in the kitchen. The water is brought some distance in lead pipe, and supplies both house and barn with pure cold water the year round. We could but think of the very many homes where running water could be introduced at small expense, and where the time-honored pail still takes its passage by hand from well to house and house to well, wasting the time and strength of the owner. The outlay of a little head work and money would secure a full supply at the place desired.

Two hundred bushels of potatoes are the average product on this farm, and one ton of hay per acre. Oats is the principal grain grown. Mr. Fogg's specialty in the stock line is fine large oxen, of which he intends to have the best. Perhaps the question, "Will farming pay?" is as well answered at this farm as anywhere in the State. Within a period of little more than twenty years, Mr. Fogg has accumulated a property of eight or ten thousand dollars, supported a large family, and made a good living and reputation by farming, managing wisely and shrewdly and using brains in his business. His is an example to be imitated, and at the same time presents an undeniable evidence that farming in Waldo county is a safe, sure business, when conducted on strictly business principles.

Farm of Jason Hills, Lincolnville.—In reply to questions propounded by letter to Mr. Hills in regard to his farm practices, the following reply has been received by the writer. It is so con-

densed, concise, and to the point, that we attempt no pruning or extenuation, but present it with pleasure, thanking Mr. Hills for kindness in answering our inquiries. Mr. Hills is President of the Northport Cheese Factory, and was one of the foremost in introducing associated dairying into our county. The farm of Mr. Hills, by his skill and industry, has been made one of the best in Southern Waldo :

"In answer to your letter, I will say that my farm is situated in the northeast part of Lincolnville. Fifty years ago it was in possession of Enoch Knight. In 1833, Mr. Knight sold it to my father, Isaac Hills. In 1840 I came into possession of it from my father. At this time, it was under a poor state of cultivation and somewhat worn out, cutting about thirty tons of hay. The homestead formerly consisted of one hundred and fifty acres, to which I have added one hundred acres, making in all two hundred and fifty. I have in wood about twenty acres; in pasture, one hundred and fifty acres. Fences about one-half stone wall and one-half wooden fence. My orchard consists of two hundred grafted trees, chiefly Baldwins and Russets. My farm buildings consist of a one and a half story house and ell. House twenty-six by thirty-two ; ell seventeen by thirty ; workshop twenty by thirty ; woodhouse twenty by forty ; barn connected with house one hundred by forty-five—twenty foot posted. Cellar under house, barn and ell. No barn-yard, but a passage to the barn cellar covered with a shed. The barn cellar is used for a cattle yard, and is supplied with water from an acqueduct from a good spring. Garden only sufficient for own use. Fruit yard contains pears, cherries, grapes, currants, gooseberries and strawberries. In 1872 I wintered fifty hens, from which was sold $137.00 worth of eggs and chickens, besides the poultry and eggs used in family. I think poultry keeping profitable.

"My method of applying manure is as follows: For hoed crops, I spread nine or ten cords of manure per acre, taken from the barn cellar and spread on the furrows and covered with the harrow or cultivator, and at the same time applying nine or ten cords per acre, which was hauled out the fall before, in the hills, making from eighteen to twenty cords per acre, per annum. The same ground I put into grain the next year, to which I apply nine or ten cords more manure per acre, spread on furrows and harrowed or cultivated in. Ashes are applied as a top-dressing. Plaster is used in the hills for corn and potatoes. Guano has been used, but

not with satisfactory results. I use about twenty-five cords of muck annually as an absorbent. I also use ten or twelve cords of sawdust for the same purpose.

"I cut from seventy-five to one hundred tons of hay. Usually commence haying July 5th and continue about one month. I use mower, horse rake and horse-fork. The first of haying I want three days' sun to make it sufficiently. I intend to have the hay cocked up every night. To renovate pastures sow oats two years in succession, seed the second year. Last year I raised eighty bushels Lost Nation wheat from three acres. I always seed my fields with wheat. I use twelve pounds clover, twelve quarts herdsgrass and twelve pounds redtop per acre. My stock comprises thirty-five to forty head of horned cattle, two horses and twenty sheep. My neat stock is divided as follows: Four oxen, twenty cows, sixteen young cattle, divided equally as to heifers and steers. The breed is "Native" and grade Durham.

"My upland is a granite soil, free from stone. I have interval which is alluvial, deep and productive, consisting of about twenty-five acres. I break my ground as soon after haying as convenient, for corn and potatoes. I plow about eight inches deep. For renovating old fields, from four to six inches deep. Spread about fifteen cords manure per acre and sow wheat and grass seed the following spring. I plow ground, previously in corn and potatoes, in the spring, about six or eight inches deep. For harrowing, I use the "Knox Cultivator." I hoe my corn twice with a hand hoe, after going over it with cultivator. I use the horse hoe for covering and hoeing. I have laid about three hundred rods of underdrain. I dig about three feet deep, lay an open drain at the bottom with stone, then dump small stone to fill the ditch within one foot of the surface, then cover with brush and dirt. I furnish the cheese factory with milk about six months in the year; the remainder of the time make butter. For special forage crops I sow corn. Last year I sowed one acre of the Southern variety. I feed oats and potatoes in winter to my stock of cattle."

Farm of Mark P. Palmer, Thorndike.—This farm embraces over two hundred and fifty acres, nearly half of which is in woodland. Soil is of fine texture and granitic in its composition—perhaps we ought to call it fine gravel loam. It lies prettily, having a northern and western aspect, and is bounded on two sides by the county highway. The fences are of cedar, built in a substan-

tial manner, "stake and yoke fence." One field has twenty acres, another forty, and both are smooth as floors. The farm buildings consist of an old-fashioned, double-tenement farm-house, with ells and buildings connecting house with barns. Three barns of large size, well finished and conveniently arranged, give ample room. There is considerable orcharding on the farm, mostly young and vigorous trees. The stock usually kept consists of one pair of oxen, five cows and six young cattle; two horses, several hogs and one hundred sheep. Mr. Palmer feeds from one hundred and fifty to two hundred bushels of provender per year, and believes it pays best to keep good stock and to keep it well. Water is supplied from wells, and is convenient to the house and yard. The farm has good pastures, and Mr. Palmer believes that sheep are the best renovators for pasture lands. The hoed crops are cultivated to quite a large extent this year. We find one acre in corn, five in potatoes and about an acre in other hoed crops. Eight acres are sown in wheat, three in oats and three in barley. The method of applying green manure is to put twenty-five ox-loads upon the acre, spread and plow in. He does not believe in putting on the furrow and harrowing in, except with old dressing; nor does he practice top-dressing grass lands or underdraining. Has used leached ashes at the rate of one hundred and fifty bushels per acre, harrowed in on the furrow, with grain, with good success, and has observed great benefit from them in succeeding grass crops. Would prefer unleached ashes. The stock are grades, Jerseys, Durhams and Herefords. Sheep are grades of all kinds, but a picked flock. He believes mixed husbandry the best for our farmers to follow.

The farm produces fifty tons of hay, all of which is upland. Mr. Palmer raises his own bread. Sows Lost Nation wheat, plants Orono potatoes and believes in clean seed of the best kinds to be had.

Farm of Isaac Coffin, Thorndike.—Mr. Coffin occupies the farm on which his father settled, and cleared from forest some sixty-five years ago. Has five hundred acres, all of which is upland, and which lies upon a high, round swell of land. The farm buildings are pleasantly located and command an extensive view. The house is two stories, well planned and convenient. Suitable outbuildings are connected with the ells, and near by is an excellent barn, forty-five by ninety-five, thoroughly built and finished. A smaller

barn forms one side of the yard, which is upon the sunny side of the large barn. One hundred and twenty-five acres of nice woodland is found upon this farm. The annual cut of hay is about ninety tons. The stock consists of some twenty-five head; six to eight large oxen, six cows and twelve head of young stock, two horses and fifty sheep, form the usual quota. Mr. Coffin has preserved the strain of blood obtained from the importation of Durhams by Col. Thorndike, on the "Great farm" in Jackson, some sixty years ago. He sold a pair of oxen a few years ago whose girth was almost nine feet, and which weighed nearly six thousand pounds. He has some fine grade Durham stock of cows, steers and heifers. Mr. Coffin spreads his green manure and plows it in, using sometimes old manure in hill, but not generally, applying twenty to thirty ox-loads per acre. He thinks top-dressing moist grass lands pays. Uses plaster on corn and potatoes. He has used ashes on grass lands as top-dressing, to advantage. Thinks mixed husbandry the best method for the great mass of farmers to follow. On the farm is an orchard of some extent, but it is declining and he has not set out any young trees to take its place. Cuts his hay early. Wilts and partly cures it in the field and stows it in generally the same day, if it is good weather, and likes this plan better than to fully dry it in the field. He usually plants six to eight acres potatoes, one to two acres corn and sows ten to fifteen acres of grain. The farm is divided into two parts by the county road, is well fenced and kept in good order, neat and trim. This farm lies near Mr. Palmer's, and both are among the best in Waldo county.

Farm of F. W. Ritchie, Winterport.—This farm consists of about one hundred and eighty acres of strong, gravel loam, of a fine texture, not very rocky. It lies upon both sides of the road leading from Monroe village to Bangor. A high, ledgy ridge runs back of the house, upon the northwest side, which effectually shelters the farm buildings from west and northwest winds. The house and barns are prettily embowered by the orchard, which extends upon both sides of the road some distance each way. The house is a story and a half, with Gothic roof and ell and woodhouse connected. It is well planned and convenient, and has a pretty flower yard in front—Mrs. Ritchie's special care—and she finds time aside from caring for her house to keep all in neat, trim condition. Plants in pots, disposed about the door, add a charm to

the place, and in winter enliven the sitting room with their presence. Two barns, conveniently arranged, with large yard between, give ample storage room for fodder and shelter to stock. We noticed the yard was well provided with dry muck, which is to be used as top-dressing for moist grass lands this fall. The orchard—Mr. Ritchie's strong point—consists of about five hundred trees, in full vigor. They were mostly raised in nurseries on the farm. About twenty-five New York trees are in the orchard, which are thrifty and vigorous, and have been set about fifteen years. Mr. Ritchie prefers home-grown trees. The deep snow of the past winter broke down many branches of the trees, injuring some greatly. We saw some fine standard pear trees, but Mr. Ritchie has no faith in dwarfs, and pointed out some decaying stubs in support of his argument. In his small fruit garden are found strawberries, several varieties of currants, gooseberries, grapes, plums and blueberries. He is enthusiastic over the culture of currants and of blueberries. A fine kitchen garden, with a large bed of onions, among other common vegetable products, shows that he appreciates "biled victuals." Mr. Ritchie finds the best fall apple for him is the Williams' Favorite, and next the Sops o' Wine. For winter fruit, he would recommend in their order Baldwin, Naked-limbed Greening and Nodhead. He finds the Bellflower does best on moist land, and the Baldwin best on dry, rocky land. He mulches his trees to some extent, and keeps the land about them in a good state of fertility. Trains them low, with spreading tops. He thinks why many fail in orcharding is that they do not adapt varieties to soil. Certain kinds, like the Bellflower for instance, thrive best in moist soil and bear best in wet years, like that of 1872. He has some three acres set in cranberries, only a small part of which has yet come into full bearing. From six square rods, last fall, he gathered nine bushels, which sold readily in Bangor for $3.50 per bushel.

The usual cut of hay on this farm is from sixty to seventy tons, and is all upland or English hay. He has one acre in corn, three acres in potatoes and five acres in grain this year. Applies from fifteen to twenty large ox-cart loads of manure per acre, and never lays down a field to grass without having it well enriched, hence always gets a good "catch,"—a hint worth taking by all farmers. Mr. Ritchie believes in top-dressing wet or moist grass lands in autumn, (and only these) and at no other time. He does not believe in fall feeding grass fields with cattle. He makes

large quantities of dressing with hogs, of which he keeps four, and keeps them well supplied with muck, turf and litter of all sorts. Plows in his long manure and uses old in the hill for corn and early potatoes. His stock consists of from fifteen to twenty head of cattle. Has at present two horses, four cows, four oxen, and six young animals, with twenty-four sheep, and intends to keep cows to a larger extent hereafter, being interested in the Monroe Cheese Factory, which is but two miles distant. His stock are grades of Durham, Jersey and Herefords. He uses the "Clement's cultivator" on stubble land, and much prefers it to plowing. It does its work better and faster, and can be gauged to pulverize any required depth less than one foot. It is excellent for preparing newly broken up sod land for planting. Uses a cultivator with small shovel teeth, made of a mill saw, on hoed crops. He has about thirty acres of good wood land, much of which is second growth and valuable. Mr. Ritchie is President of the West Winterport Farmers' Club, and a live, practical, progressive farmer. He believes in "Maine for Maine men," and manifests his faith by works. Would that Waldo county had many more such energetic, wide-awake farmers, to give agriculture that impetus which would result in rapid, onward moves.

No one can visit such country homes and see peace, plenty and independence all about and not be in love with rural life. It gives new ideas to the weary brain and courage to the failing heart. It speaks to the soul, in accents emphatic and clear, of possibilities and actualities, of comfort and quietude around the fireside and beneath the roof-tree, to be won by strong arms and willing hands, guided by a love for and knowledge of the farmer's vocation.

Conclusion and Review.

We have thus imperfectly and hastily glanced at the state of agricultural and mechanical industry of Waldo county. In doing so we have seen much to commend and some things to condemn. It would have been gratifying to have discussed as we went along the merits of each farm practice, but space forbade, and we have been content to photograph the passing views in a somewhat hasty manner. We have briefly presented the physical features of the county, her climatology, with illustrative tables, and her farming as it is. We have seen her husbandmen at home in the fields and observed their practice. We have seen her stock, and

orchards and farm buildings. These we have presented with no polishing of rough corners or varnishing of defects. And all this has been instructive, and from it we may learn lessons that may be of benefit. In a paragraph, we may sum up the advantages enjoyed by the county and also its defects. Then we may proceed to discuss each at length, if we will. Her advantages seem to be:

First, Proximity to the seaboard.
Second, Good natural grass soil.
Third, Abundant water power.
Fourth, Good organizations among farmers.
Fifth, Good dairy facilities.
Sixth, Good advantages for orcharding.
Seventh, Extensive sheep ranges.
Eighth, An enterprising, intelligent yeomanry.
Ninth, Good market facilities.
Tenth, Growing faith in farming.

Her disadavatages are not numerous or incurable, but are rather temporary and fast being overcome. They are:

First, Want of sufficient woodland.
Second, Growing too many potatoes.
Third, Going out west to mill.
Fourth, The selling of hay.
Fifth, Emigration.

These are the chief disadvantages, and are the parent of the rest or minor ones. We will consider consecutively some of the points raised and see what we can draw from them for consolation, for guidanee and instruction.

Proximity to the seaboard, giving the advantage of cheap water transportation to and from her ports, the access to marine fertilizers and the healthy effect of sea air, on her climate. While some crops may do better in an interior situation, very many do best on the sea shore and under the mitigating influences of sea air. No inland transportation, exeept where large lakes and rivers are available, can compete with the cheap water communieation enjoyed by maritime districts. It is a way that keeps itself constantly in repair, cannot be overcrowded, and admits of great competition and can never be monopolized in a free country. The waters that wash the shores are the nourisher of much cheap and healthful food in the shape of fish, elams, lobsters, &e., which

grow up without cultivation and cost only the gathering and marketing.

Good natural grass soil in abundance is another point of vantage. Beside our ponds and streams, between our hills, in our valleys, everywhere, are natural meadows, intervals, swales and flat lands, rich, deep and fertile. Many of our swells of land are moist of soil and rich in their composition, fostering a luxuriant growth of grass annually. Grass grows spontaneously and abundantly, so much so that there has sprung up the custom of selling it off in bulk, not waiting the slower method of converting it into beef, mutton, wool, butter, cheese and milk. Grass production underlies, permeates, controls the whole system of our agriculture. It is given the greatest breadth and looked to as the mainspring that keeps the farm machinery in motion. But important as it is and much as its claims are allowed, we must say they are not fully understood or appreciated. We must also say that not enough brain force—good calculation—is applied to producing it in the greatest abundance, of the best quality or curing it for hay in the best manner. Too much of our grass for hay gets too much matured, ripened, before cutting—too much is hurt by overdrying in a scorching sunshine and too much is damaged by dews and rains, which a few dollars' worth of cotton cloth made into hay-caps would largely prevent.

The wash of the buildings, of roads and pastures, can be turned over fields to advantage. There is profit which runs to waste in the rills that course unheeded by every roadside and on every farm. We have known fields whose produce has been doubled by judiciously spreading out in proper channels the road wash which was led and guided by an intelligent hand over those spots more sterile and unproductive. It is in this, one of the very many minutiæ of the successful farmer's operations, that we see the truth of the old proverb, "The diligent hand maketh rich."

We come now to consider the vantage which a large water-power gives the county—or would give it were it fully developed. If, beside our streams, where the wealth of power is lost in "idle dashings," rose the fair, gigantic mill, factory and shop, employment would be given to our young men and women, who now go to other places to seek the same work and wages that could here be given. We should retain and increase our population, make home markets for all sorts of country produce, at good prices, and all classes would enjoy prosperity thereby.

Nine-tenths of our population who go to other places outside of the county for employment, never return to live again within its borders. They carry out the vital wealth of any community—health and labor—and their places remain vacant. Go to Lewiston, Biddeford, Lawrence, Lowell, to the great West, to the Pacific slope—anywhere—and you will find plenty of Maine men and Maine women. They are a vast acquisition to the place of their adoption—a vast loss to their native place. To the country, as a whole, I admit that this change of locality is, perhaps, a gain, but it is an irreparable loss to the section that depopulates itself to build up another. When Waldo county has fully developed her resources of water-power, she will not only retain her increase of population, but she will attract some from other places. Skilled labor will be in demand and will be well paid.

In unison with their brethren of the West, at the present time, though not in so radical a degree, the farmers of Waldo county have been organizing, and have several comparatively good associations, though these organizations, as yet, have been more for consultation on farming topics, improvement and social intercourse, than for political or personal protection and advancement. Our brethren of the west are organized and organizing for protection against monopoly, for political equality and personal advantage They have been driven to this, as it were, by the severe exactions of railroads in particular and monopolies of all kinds in general. We feel sure they will achieve the success so abundantly deserved.

Our chief organization is the Waldo County Farmers' Association. This is a deliberative body, having an oversight for the best interests of the county. Its constitution provides that all who attend its meetings are members. It has a president, three vice presidents, secretary and executive committee, which is composed of the secretaries of each and all farmers' clubs in the county. The topics for discussion are selected with reference to their timely application and practical needs. Generally, some one is appointed to open the discussion, and then it is given the widest limit of debate. The president is a man well fitted for the place, "instant in season and out of season." The secretary takes notes, writes out the most important parts of the discussion—facts and points of value—and causes it to be published in some paper largely circulated in the county. The meetings are monthly, except during July and August. We would urge other counties, who have not already done so, to forthwith organize and maintain a

county farmers' association, for improvement and social intercourse. They will find such an association of the grandest utility in pushing forward the material progress and prosperity of their several counties. We are glad to chronicle that Oxford, Franklin, Penobscot and Waldo each have initiated this good movement. Speed the time when Maine shall have in each county such an one, and sixteen instead of four shall be in operation.

The county agricultural societies are good institutions for giving an exhibition of results attained, but are cankered by that evil of our country—horse racing. We hope the time is rapidly approaching when purely agricultural fairs will be held, free from the immoralties of the turf. That trials of speed should be wholly rejected we are not fully convinced, but we can and should prune and confine them to the actually useful and shear them of all clinging vices of cruelty, gaming and dishonesty. The policy of giving half of the premiums offered to the one quality—speed —we loudly protest against. It leaves the premiums for the other more useful qualities of the horse and all other various departments of agricultural and mechanical production, shamefully small and comparatively insignificant.

Our farmers' clubs are a source of much good. They are the nurseries of agricultural improvement. The eight we have in Waldo county are live clubs and accomplishing much good, not only in their immediate vicinity, but their influence goes out all over the county, for good. There ought to be at least one in every town—twenty-six in the county—and several of the larger towns could well support two, uniting as one for holding their show and fair. We would recommend to all clubs, everywhere, to hold an annual fair. It will furnish an opportunity for showing what you have done and what you have, and also what your neighbors have done. It furnishes a gala day for the whole town and a day of enjoyment and sociability. You will go home more of a man, more of a determined, earnest farmer, strengthened and made better. Your wife and children will look to it as a bright spot in life's pathway, and the effect on the whole community, by these rural gatherings and merrymakings, will be good, grand and beautiful.

> "The barren wilderness shall smile,
> With sudden green and herbage crowned,
> And streams shall murmur all around."

No county in the State has better dairy facilities and hitherto

no county has stood at a much lower level. Cows have always been kept to some extent, much butter and considerable cheese produced, but it has always, except in isolated instances, been of the ordinary quality. Little attention has been given to breeding for milking qualities and it is rare to see good milking qualities transmitted for several generations in our neat stock. That we have many fine cows, good milkers, giving rich milk for butter or for cheese, is a fact; but it is also another fact, no less patent, that little dependence can be placed upon good "Native" cows for producing good milking daughters, under the present loose system of using scrub bulls and hap-hazard method of breeding. This ought not to be, and now that cheese making by associated effort is fairly inaugurated with us, we hope to see more attention paid to producing superior milkers. Cows have advanced in price already, and this will continue, under the demand that exists. A better and uniform article of cheese will be produced, which will command a good paying price. We are persuaded there will also be a good opening for butter makers, for prices of good butter can but advance everywhere. Our local markets must be better, since the withdrawal of so many cows from making butter, whose milk is used at the factories for cheese, will leave better openings for the sale of butter, and they will offer better prices to the producer of a good article. We have but little of the "gilt-edged" butter produced in Waldo county, and in fact but little of that which is real good. The bulk is low in quality, as well as in price. The best of pasturage, water and cheap fencing, point to our advantages. The necessity of making some change in our method of farming induces us to embark in dairying. Cheap transportation from our ports gives us vantage in marketing and the necessities of building up our farms urge us onward. We are confident the county will be found largely engaged in dairying by the expiration of the present decade. It must be so from force of circumstances. The course of events point to this conclusion. The best calves should be reared and an admixture of Ayrshire and Dutch blood be procured in those sections where cheese is to be the product made; and Jersey, Ayrshire, Dutch, Shorthorn and Hereford in those sections where butter and stock are to be the leading branches. The use of thoroughbred bulls with "Native" cows will give us animals nearly always partaking of many of the good qualities of both parents. The cost will be but little more

than that of using scrub bulls, whose calves are unfit often for any other purpose than to be killed for their rennet!

Attention should be turned to the breeding and selection of better dairy stock than we now have. Suppose we add to the value of our dairy products by this cheap and easy means one per cent. How much would it amount to? Let us see. We take the volume of last census report (1870) out of our vest pocket and hunt up statistics. On page 745, Waldo county we find produced in 1870, 876,494 pounds of butter and 31,386 pounds of cheese. Assuming the butter to be worth twenty-five cents a pound, it would be worth $219,126. One per cent. of this would be $2,191.91. If we increased the value ten per cent., it would be $21,912.20. The value of cheese may be put at sixteen cents per pound, which would be 31,386×16=$5,021.76. This added to the value of butter product would be, $219,126+$5,021.76=$224,-147.76. Ten per cent. would be $22,414+.

Good orchard lands yet unused and a good climate for maturing fruit, together with exemption from insect ravages to a large extent as compared with other parts of the country, point to the advantages we enjoy in this respect, and which should be made use of at once. Enough has been done in fruit culture to demonstrate its feasibility and profitableness, and this is almost all Waldo county should export—millions of bushels of the choicest winter fruits—cranberries and other small fruits. The Baldwin, Rhode Island Greening, Roxbury Russet and such standard varieties are particularly at home in the county, and may be raised with safety and profit. Black knot is the scourge of plum and cherry trees, yet is comparatively exempt in some towns. I am told by experienced fruit growers that the Black Tartarian and Gov. Wood cherries are exempt from black knot. Should this prove true in all cases, it would be worth much for fruit growers to know.

If we were asked the faults that are prominent in our orcharding, we should answer them under the general head of neglect. Neglect in selecting the proper site for an orchard, in selecting proper trees and varieties, in setting the trees, in keeping stock out while they are small, in properly mulching and manuring, in grafting, in pruning and in keeping insects from devastating. Neglect all the way through. This is the prominent fault with our orcharding; it is the general and the specific fault. But there are some noble exceptions.

Should we be asked how we would conduct an orchard, we should answer from painful experience and lessons learned by mistakes. We should begin right and keep right—that is, in our own estimation. In the first place we would select our site, and if not naturally of porous subsoil would put down drains enough to keep it dry as a garden should be. We would put the drains down two and a half to three feet, of tile or stone, made to last a lifetime. We next would plow the ground and incorporate old barn-yard manure, ashes, lime, plaster and wood mould enough with the soil to make it rich enough to bear a heavy crop of corn. The soil should be worked up thoroughly and fine. The holes should be dug as "big as the hind wheel of a coach," but not much deeper than six inches. We would dump a pile of several bushels of fine chip dirt, rich loam, &c., convenient to each hole and then go for our trees. We would go to the nearest nursery where a good stock was on hand and personally select the trees. We would have no scrubby, crotched or ill-formed ones. They should be straight, thrifty, vigorous, with evenly balanced, well set limbs, clean and having that "just right" look to them. We would have these or none, paying a fair price and having what we wanted. We would have them taken up carefully, put in a big box and kept covered with wet moss, hay and coarse cloth, taking them home and setting as soon as possible, as deep as they stood in the nursery and the same side to the north. In order to do this they should be marked before taking up, which can easily be done by attaching the label to a limb upon that side. We would spread out the roots evenly, having immersed them first in a tub of water to secure dampness, cut carefully every mangled root, pack the dirt carefully about each root and mixing in the loam and chip dirt before provided. When the roots were all placed, the dirt properly packed and the hole leveled up an inch or two higher than the surrounding surface, we would put on a mulch three inches deep of chip dirt, strong manure, old hay, decomposed leaves or straw. A very good mulch is made by mowing brakes as soon as large enough and packing them about the tree. We would keep the mulch over a space larger than a circle of the top of the tree. The following spring would dig in this mulch with a hoe and fork, replacing with new. The land we would seed to grass, cutting at the usual time, using some to lengthen out the mulching of the tree on the outer edge, the

rest dry for hay. We would not plow the land again, but keep a space about the tree, yearly widening its circle, rich, loose and well mulched. Would allow no stock to even *look* into that enclosure and would have delicious apples in plenty in ten years from the setting.

Care would have to be given each year in removing superfluous branches, destroying insects, putting mulch about in spring and raking it away from the trunk of the tree in late autumn to prevent mice sheltering beneath, in digging it in the following spring and in various other details which eternal vigilance, and a quick eye and ready hand would find to do.

If a few choice sheep could find no other pasture, it would be admissable to put a fence of laths or pickets about each tree and admit them to harvest the grass and leave their droppings. The lath fence could be built as follows: Drive four posts four feet apart, having the tree for the centre. The posts should be two feet above ground. Then nail on laths three inches apart, making a yard four feet square about the tree *sheep-tight.* This would prevent their "oiling" the trees, which is injurious, and also prevent their gnawing them "for the fun of it." Cotswold, Leicesters or South Downs, full-blooded, are *best* to pasture orchards with, and only such should be kept in Waldo county.

Our highlands, rocky hills and ledgy hill tops make the best of sheep ranges; the grasses that grow here are sweet, nutritious and fattening. The bushes and tender herbage are relished by the flocks and they thrive upon them. These highland pastures are not so well adapted to pasturing neat stock or horses. Cows do better on less broken lands and where there is a denser growth of grass, but sheep are particularly at home on mountain lands or hilly uplands.

Wool production can never be the chief object of sheep husbandry here. Mutton, especially lambs, commands a high price in our local markets or to send to Massachusetts. The raising of early lambs for market is very profitable and the wool one year with another from good ewes will pay their cost of keeping. Taking this view of the case, Merinoes are practically excluded, for they are a poor mutton breed. The South Down has had the preference in the county thus far, but Cotswolds and Leicesters are working in to considerable extent. Mr. S. F. Mansur of North Monroe has a flock of pure blood Oxford Downs,

bred by Charles H. Nealley, Esq., of South Monroe. These sheep give good satisfaction, are hardy, prolific, good mothers and shear a good fleece of middle wool.

There have been introduced by way of homeward bound ships from foreign ports, whose captains were somewhat interested in agriculture when at home, various breeds from different localities, which have left their mark on many flocks of Waldo county. One favorably received was locally known as the "No Eared" breed. The ears were entirely wanting, save the rudiments, which were covered by a lock of coarse wool. They had a singular appearance to the observer who saw them for the first time. Their wool was of medium texture; they were well wooled on legs and belly, hearty, good mothers and matured early. They were of medium size, well proportioned and plump. Another strain of blood, introduced from Italy, we believe, was known as the "Paddle Tails." They had wide, ungainly tails, somewhat like the beaver, were black, white and all intermediate colors and yielded very coarse wool. They were very prolific. They are now about extinct, the wool being too coarse for our home markets. They were a good mutton breed, if well fattened. Desirable qualities in any breed of sheep are quietness and peaceable as regards fences.

Good fences should always be found about sheep ranges, and this will tend to make sheep peacable. But any breed that is breachy naturally—that is uneasy of "metes and bounds," that dislikes confinement—is not a profitable breed. Aside from their breaking out of pasture now and then, they have less tendency to take on fat and keep in good condition than quiet flocks.

It is quite a general practice to feed mowing lands with sheep and cattle in the autumn. Some contend no harm arises from feeding with sheep, as they do not pack the ground to any extent, leave more than they get, if they have provender as they should, and top-dress the land more evenly than any other animal. President Jewett, of our County Farmers' Association, claims to have renovated several fields by autumn feeding with sheep, and doubled the product of hay on them. We have no doubt that a flock of sheep confined on a field immediately after haying up to the time of housing, liberally fed with grain, would greatly benefit the land, and possibly the cut of hay the following year, provided there was a good covering of snow during the intervening winter. "Sheep are the corner stone of good husbandry," and are one of

the four pillars of profitable farming—the whole being cows, sheep, poultry, bees.

An enterprising, intelligent yeomanry is the wealth, the support and the hope of any nation. There is good stock in that comprising the citizens of Waldo county. There is but little foreign element and the inhabitants are descendants principally of the early settlers which came from New Hampshire, Massachusetts and western Maine. They are men and women of sterling qualities and traits, trained to habits of economy and industry and enterprising in all matters of progress and reform. They are imbued with a natural shrewdness and caution, which turns to energy and *push* when the subject has proved worthy of encouragement.

Emigration of such men tends to bankrupt the community, and this is why we deplore their exodus. It is not the wealth of material value which we miss, but the wealth of brain, and muscle and energy. It is not so much the fact that there is less population, but that they have carried off some of the very foundations of our social and associated capital of vigor and strength.

Good market facilities, both by land and water, offer advantages for marketing at the best points the surplus of fold and field. The railroad and steamboat lines, the many coasters that ply in our waters and the county highways, all open up avenues of availability, which are used to fullest extent demanded by the exigencies of the times. These all combine to build up a growing faith in farming within our borders. Wet and dry, heat and cold, prosperous and unfruitful years have a tendency to discourage some and perhaps for the time being create distrust, but the sum total—the average of several years—and a better knowledge of other States, tends to develop a better, grander, deeper faith in farming in Maine, and our farmers turn to their labors with renewed zeal, born of hope and contentment.

They are more willing to learn, eager to improve, more liberal and social in their habits and life. There is manifest progress in the ranks of the classes of the farming community from year to year. There is a wearing down of the rougher aspects and points and more culture of mind and manner. We point to this as something grand and noble—something worthy of mention and that may well excite an honest pride in our yeomanry, bringing a cheerful outlook, with promise for the future.

We may ask what is the mainspring of this? What is its source? We answer:

In all ages wise men have been interested in agriculture. Much has been written upon the subject. Its merits have been celebrated in prose and in poetry, and to-day our greatest minds are still employing their talents in the study of the subject, and are giving to the world the results of their investigations. Surely agriculture is a science. To realize and to know that it is a science worthy of the most patient toil and effort, is the first step, well taken, on the part of him who would be a successful agriculturist. But, notwithstanding all that has been written in former times on the subject, and all that has been brought out by scientific investigation, the subject has not yet begun to be understood. Its different branches, the numerous elements that enter into it, and its various departments, render it one of the greatest and grandest subjects to which man ever turned his attention.

Farming is not an ignoble pursuit. Those countries in which agriculture is best understood, and carried on, are the most prosperous in every respect. Morals and intellect are there found to be of the highest order. The noblest and strongest men in our land are the farmers. Their sons are the hope of the country. In all practical affairs of State they will take the lead. The pale-faced city boys, have not, and will not, be able to compete in halls of legislation with the clear-headed, stalwart sons of the soil.

Our best scholars do not come from the cities, but from the farms. Men who are to-day doing the greatest amount of intellectual labor, have their farms, upon which they spend a portion of each day in vigorous employment. They are not ashamed of a brawny hand nor a sunburnt face.

There never was a time when there were so many aids to enable the farmer to become an expert in his profession, as now. Practical farmers are continually publishing works, setting forth the results of experimental investigation. Chemistry was never so well understood as now. Within the last fifty years wonderful progress has been made in that science. It has been put into the books in such a method that it can be easily understood. Our Agricultural Colleges have done a great work in training up men in agricultural science, who have given their attention to a scientific investigation of the soil, the best fertilizers, methods of preparing the ground for the different kinds of seed,

the manner of taking care of the plants when up to give the best results. To bring this about, science and experience have been united and have given wonderful results.

It has always been conceded that no one is so independent as the farmer; while others must fail and become bankrupt, the farmer will thrive ; gold corners cannot ruin him. When sunshine and rain fail, then may the farmer fail, but not till then.

Farming is remunerative. Perhaps it will not, in a single day, pile up colossal fortunes, but it never fails to give a competence for old age, to the industrious. But the wealth of our land is after all in its farms. There are more farmers well off, and in comfortable circumstances in our land, than among any other class of people. And in fact it is, in the majority of cases, the best paying business. Scientific farming yields *great* profits. What we need is more of it. To cultivate a taste for it is to develop our land in material and solid prosperity.

We will glance briefly now, in conclusion, at some of the more prominent disadvantages under which the county labors, and perhaps point out some means for avoiding and overcoming them. The want of sufficient woodland, and in the proper places, first claims our attention. The early settlers pitched upon the hills and cleared them first, because the sun would have better access to their openings on hills than in valleys; second, because the uplands would bear corn and were more exempt from frost ; third, the belief was prevalent that the lowlands were useless for farming purposes and good for nothing, except to hold the earth together; fourth, because these uplands were dryer and could be cleared more easily—as better burns could be obtained. They were productive and gave satisfaction to the pioneers by their abundant return of heavy crops. The settlers being on hills when roads were opened, they of course were laid over the hills to accommodate, and this accounts for so many of our hilly roads. The lowland was left for woods and waste places till nearly all the highland had been denuded of wood. Great rocky hills and spaces of broken land were stripped of lumber and then burned over or cleared, or partially so, for the few first crops that it would bear before its fertility was depleted and its sterility developed. Many of these tracts are now worthless for even sheep ranges and are growing up to bushes and woodland. This is as it ought to be, and every such hill and waste place should be put in wood as soon as possible. There is wood enough in the

county but it occupies the best land for grass and grazing generally. The woodlands now are principally in the valleys, beside the streams, ponds, and covering the natural meadow and interval lands. These are the richest grass lands now in the county, and by removing the growth, allowing the sunshine and atmospheric influences full access, would soon become fit for the production of the choice grasses. Every country highway should be an avenue of shade trees. They add much to the comfort of the traveller and to the prospect of the landscape. They add a money value to every farm and are the source of pleasure and profit.

Much of our woodland being in valleys and much of our highland being bald and destitute of trees, what woodland we have has less effect upon our local climate than it might have. It is as though the country was more destitute of trees than it really is. The highlands flood off and evaporate their surplus water quickly and the sun sooner parches their exposed surface. The valleys retain moisture longer, become more miasmatic and attract less from the atmosphere of its watery particles in time of drouth. Our woodland, from its situation, is not benefitting us as much as it should, agriculturally. Its wash goes away in streams or is held in the swamps, and is virtually locked up from the fields and pastures, which contribute to the woodland, rather than the woodland to them.

"Nature abhors a vacuüm." She clothes all with her livery of green and her robes of white. Her rain and sunshine, her sunlight and air circulate for all. She clothes the crag by pushing forward the hardy lichen to mat its surface and decompose its particles, forming by its decay and commingling with the rocky particles, a scanty soil in which some hardy tree or shrub may cling and grow. No place with any pretense of soil can be unfitted for some sort of vegetation. With a little judicious assistance from the hand of the farmer, all our waste places may be clothed with trees and made to contribute to the productiveness of neighboring lands and to the ameliorating of the climate, while their own growth gives profit for timber and fuel.

Potato raising has heretofore received a large share of attention in Waldo county. It has induced a slovenly method of farming and the running over large areas with light manuring. It has militated against wheat raising and narrowed the breadth of corn planted. Many have depended on growing potatoes for

sale, to buy their corn, flour, and pay their taxes, deeming it more profitable than to raise corn, and flour and stock to sell for ready money. This mistaken policy has prevailed too much and wrought fruits accordingly. Old pasture lands have been plowed up, potatoes planted on them, with no other dressing than a little plaster, superphosphate, &c., and these lands, after thus being skinned twice in as many years, seeded down to grass without a spoonful of barn manure being applied. Fields have been "potatoed" over and over again, with only light dressings of manure, till some of the light ridges "won't sprout white beans" and the grass roots are distant from each other as honest men are in this world. Not all our lands are thus run down, but thousands of acres in the aggregate are scattered all over the county in patches. Nearly every farm has a few acres of such—enough to show the evil effects of potato raising beyond the proper limits. The tops of the potato are rich in potash and should be buried at the time of digging, to prevent waste. A hoeful or two of dirt placed over them is easily and quickly done and causes them to rot quickly. The too prevalent practice is to leave them lying loose on the surface, where they are washed and wasted.

This wholesale attention to potato culture has got the farmers into the custom of "going out west to mill:"—that is, buying their corn and their flour. The sale of potatoes for these articles induces some needless costs and puts into the hands of the middlemen two articles from which to take toll—and they are experts in the tolling business—often leaving but little after the toll is taken. First the potatoes are sold to them, then the corn and flour bought, both at their own prices. By raising his own, the farmer saves going to market and saves the costly exchange rates. There is a difference of from fifteen to forty cents between Belfast and Boston prices on potatoes. Corn is worth from fifteen to twenty cents in farmers' cribs on the prairies of Illinois and eighty to ninety cents here in our local markets. These are the margins at present writing. Can the farmers of Maine afford to give these profits to the middlemen? Can the farmers of Waldo county afford to pay these tolls, for the sake of swapping potatoes for products they can raise just as well themselves? Flour worth three dollars to five dollars per barrel in St. Louis and nine dollars to twelve dollars in Maine markets. Maine can raise as many bushels of wheat to the acre as any western state and of just as good quality. This has been proved over and over

again, and the census proves it too. We are pleased to know that our farmers are turning attention more to raising wheat, convinced of its profitableness, and to avoid the toll exacted by the middlemen. They are finding that it is more profitable to go nearer home to mill than out west. They see that it is a poor make shift system where a coarse article like hay or potatoes is sold off in bulk and the finer products bought in return; and that they must change this policy if they would live and thrive.

The selling of hay is an evil that is hard to uproot. Its damaging influence is admitted on all sides, and the farmer admits its unthrifty practice while he goes on selling his hay. It is sad to see the long lines of the "Hay brigade" almost any day from autumn to spring on the roads leading to our ports. It is astonishing to view the vast piles of hay in bales in the store houses awaiting shipment. The only way we can see that it will be stopped is by turning the attention of the hay-sellers to some branch of farm industry by means of which the hay can be consumed at home on the farm, and that will yield more money and as quick return as selling the hay off in bulk. At present, only one branch seems to offer such inducements in full, and that is associated dairying. Now that it has gained a foothold in several places in the county, we shall expect to see hay-selling gradually becoming less frequent in practice, till it reaches a minimum position that it will we hope only be able to maintain in the future.

Perhaps hay might be raised near good markets, by a judicious system of repaying the soil by use of commercial fertilizers and use of city stable manure, night soil and sewerage, at a profit, while the lands were kept up to a high state of productiveness. But interior towns can never hope to thrive by this process, as the cost of transportation of hay and of fertilizers will eat up tho profit of the lands, and the better situated lands will be enabled to compete with them to good advantage and profit. It seems a slow process to those used to selling hay to fall back to stock raising, sheep husbandry and a hard shift to engage in private dairying. By ridding dairying of the laborious part performed by the farmer's wife, by associated manufacture in factories, the objection to dairying is mostly removed. It seems to open up an avenue of promise, which is eagerly being taken hold of by our farmers.

The severe climate of our winters, the periodical drouths, and

the failure of the soil to respond generously under a slip shod system of culture, has and still does induce many to seek the west and go in search of "baked figs," and they go out with their earthly dear ones and possessions to seek new homes in the "boundless west and sunny south." They find there some advantages over Maine, but a great many more disadvantages; but getting located they remain and are lost to the commonwealth of the old Pine Tree State. This emigration takes away many of our smartest men and women, who, not satisfied with the public spirit, energy and enterprise of their town, county and state, go to seek better in the west, if happily they may find it. Often the town is to blame for its close construction policy, that is after the "penny wise and pound foolish" kind. Often the "narrow gauge" policy is pursued, so very narrow that it drives out those men who would do immense good could they be retained by a common sense conduct of public affairs.

> "Ill fares the land, to hastening ills a prey,
> Where wealth accumulates and men decay:"

Especially if that wealth, as is often the case, is hoarded in coffers sunk from usefulness to the laboring man in bonds, banks and western railroad stocks. There is a class of men who pile up wealth and never use it for any public improvement or invest it in manufacturing enterprises, who are found opposing everything that looks to public weal when it does not reflect to them two to one or some other peculiar personal prosperity. How many such men would it take to upbuild a Lewiston or a Lawrence, to push on public improvements and social elevation, if social elevation cost anything in dollars and cents?

What any community wants to be vigorous, prosperous and happy is energetic men, who have its best interest at heart and have a cordial support from the community. Then, under their wise coöperation and guidance, the whole will thrive and grow, be peacable, quiet, orderly and offer inducements for other energetic men to locate in the midst, join their fortunes with theirs and help upbuild. This is what we want to see in every town in Waldo county, and then we shall see progress and prosperity.

In conclusion, we ask the lenient criticism of the reader. It has been our object to give a brief, succinct account of the agriculture and industry of our county; and we beg our mistakes to be overlooked and errors kindly corrected. Such as our work is

we present it, hoping we have labored not in vain in our efforts to cast abroad a better knowledge of the resources, capabilities and present prospects of Waldo county.

"Whoever thinks a faultless piece to see,
Thinks what ne'er was, nor is, nor e'er shall be.
In every work regard the writer's end,
Since none can compass more than they intend;
And if the means be just, the conduct true,
Applause, instead of trivial fault, is due."