

**Rural Economy.****AGRICULTURAL PROGRESS OF THE SOUTH.**

The planter correspondents of the *Southern Cultivator* advocate more corn, less grass growing, stock raising, and less cotton, at this time of transition from slave to free labor, when it costs so much to grow cotton.

One planter says, "We have fixed cotton to buy untaxed hay, when our lands will make from two to four tons of hay to the acre: that the tax on cotton direct and indirect amounts to about \$20 per acre, and as a matter of pecuniary calculation cotton growing to the neglect of general farming is suicidal." Another planter at Cave Spring, Ga., says he made a large fortune by cotton, and lost it by the war; now he is beginning to farm on a valley farm in the mountains, growing grain, grass and stock. By such a system he says, "but a few dollars are necessary, and by rotating, manuring and seeding down land to grass, clover, cow-peas, &c., a farm may be enriched and made more productive yearly." He is fully convinced that at the present cost of labor the taxed cotton crop can no longer be made profitable as a general crop, and that farming and fruit-growing must be adopted in its stead. To grow cotton successfully he says, "the land must be enriched and labor economized so as to make one hand do what it takes three to do now; and by labor-saving machinery to make two hands do the work of five." In Upper Georgia there is a soil of unsurpassed productiveness, adapted to all the grains, cotton, clover, the grasses and tobacco, as well as variety of fruit.

Although grass will not grow as well in summer as it does in the high, cool, dairy region proper at the North, yet all the Middle and Western Georgia has the best of fall and early winter pasture, and after February both the white and yellow clover make good pasture. It appears that all the Northern grapes which thrive at the South change their habit and become winter grapes, and grow even during the warm days of winter. The yellow clover or Spotted Lucern, (*Medicago Maculata*) a very prolific biennial which freezes out here, grows nearly through the winter in Middle Georgia, and is becoming a favorite forage plant, this with red clover and all the other leguminous plants being very rich in nitrogen, cannot fail to enrich the soil, either as a green crop plowed in, or when fed to animals, and the manure well-rotted and applied to the soil. The editor of the *Southern Cultivator*, who is also a practical farmer, says that all the South wants to make it the most prosperous farming country in the world, is more attention to grass growing and stock raising so as to enrich their land and make twice the present growth of cotton to the acre, and even at less expense. He said that their cattle had lived on the white and yellow clover since February, and then in March red clover was two feet high. In Western New York no village cow was admitted to pasture until after the 20th day of May. But after all, cotton must continue to be the great paying crop of the South, and general farming and stock growing is the cheapest and most certain means of enriching the soil, so that fewer acres will produce more cotton at less expense than under the present system.

**THE CROPS.**

**Wheat.**—Rarely has a season been noted in which so few complaints have been uttered by farmers, and so much cheerfulness expressed, in view of the prospect for a wheat crop. If we, our correspondents make any mention of winter killing of insects, or of rust. In some parts of the South there has been some complaint of rust, but it has been mainly confined to the leaf, while the grain was so nearly ripe as to be little liable to attack. The harvest has been gathered in Georgia and other Gulf States, with a very gratifying result.

The acreage of winter wheat is as large in a majority of the States as last year, though it is less than half of the principal wheat growing States, Texas, Kansas, Ohio, Indiana, report a diminished acreage; Virginia, Georgia, Arkansas, Tennessee, a largely increased breadth; the New England States show a slight increase; the middle States a similar advance, not exceeding six per cent; the Southern wheat-growing States an average increase of twenty per cent.

In point of "condition," the facts are still more encouraging. Ohio reports an average improvement upon last year of 160 per cent; Indiana, 73 per cent; Illinois, 15 per cent; Michigan, 80 per cent; Wisconsin, 22 per cent; Minnesota, 7 per cent; Missouri, 39 per cent; Kentucky, 53 per cent; Virginia, 100 per cent; North Carolina, 40 per cent; Tennessee, 93 per cent; and other States, with the exception only of Texas, making a favorable comparison with last year.

The acreage of spring wheat is largely increased; in Ohio, 37 per cent; in Indiana, 48 per cent; in Illinois, 25 per cent; in Minnesota, 35 per cent; in Wisconsin, 15 per cent; in Michigan, 16 per cent; in Missouri, 31 per cent; in Iowa, 28 per cent; in Kansas, 50 per cent; in Nebraska, 90 per cent. This increase of breadth in the wheat-growing region must tell very perceptibly upon the aggregate yield, if no unusual casualty awaits the maturing crop.

It is quite too early to estimate the bushels the final result of the harvest. If the conditions continue favorable, however, at least two hundred millions of bushels may be expected in all the States and Territories.

**Barley.**—An average acreage of winter barley has been sown in a majority of the States. A decrease of five per cent is estimated for New York; Ohio, eight per cent; Indiana, three per cent; and instead in Tennessee of ten per cent; and in Arkansas of twenty-five. On the whole, there is a very slightly diminished breadth of barley; but the increase of the spring sowing will compensate for the deficiency.

**MILITARY LIFE.****SAVE THE SOAP-SUDS.**

"Easy now, that air is a wicked waste, d'ye know it neighbor Flanders?"

"What, Uncle Enoch? Dunno as I quite understand ye?"

"Why, thrown out and wasted that way, we'll soap-suds the way your girls there is doin'."

"Mind if soap-suds south Upper Hatch?"

"Both a hundred dolars, I guess, what you folks make between now and spring."

"What, Uncle Enoch? Dunno as I quite understand ye?"

"Didn't I tell ya? Walrally now, I meant to do it, and I will now. We save every mite of our suds and dish-water for the garden and truck-patch, splashing it over the ground about once a week all winter. It's good for gooseberries and currants, and kills a powerful lot of bugs, and beetles, and peaty worms, and fattens the ground more'n a hundred dollars worth, besides. That's what soap-suds is good for."—*Saturday Evening Post.*

**SCIENTIFIC.**

**THE AMERICAN PLANETARIUM AT THE PARIS EXHIBITION.**

The *Pall Mall Gazette* has the following account of an American inventor, which has been described in part in this country:

"One of the curiosities of the Paris Exhibition is a planetarium designed and constructed by Mr. Milton Barlow, an American gentleman, who has given fourteen years of his life to the work. In the center of a circle about thirteen feet in circumference is a brass ball which represents the sun, and which turns upon its axis, attatched by a slender steel rod to the mechanism which moves the sun is Mercury, and then Venus, and close to the edge of the outer ring is our globe with its satellite. The earth is connected with the sun by a series of wheels placed so as not to interfere with the revolutions performed by the two planets which spin between us, and the chief luminary. When it is desired to set the planetarium in motion, the operator has merely to take hold of a handle fixed to the mechanism which moves the earth and pushes it round the outer ring; the sun immediately commences to turn on its axis, and the moon and planets to describe their peculiar orbits."

Some idea may be formed of the difficulty of adjusting this delicate mechanism, when we remember that when Mr. Barlow had to do was to invent, not an instrument which would give the same result every time it was turned round, but one as true and as variable as nature. To make that matter clear to the reader, we may add that there is an inner ring on which are marked the years of this century. If you want to know the position of the planets in May last year, you may push the handle of the planetarium backward, and to obtain their position next year, push it forward. Push the earth back to December, 1865, and the five bodies represented will be seen nearly in a line, with Mercury and Venus almost in opposition. Let the earth be pushed forward to July 5, 1867, and then at full moon Mercury and Venus appear almost in conjunction. Mr. Barlow, in short, has substituted wheels for mathematics, and makes clear to the eye what figures prove to the reason. Several of these planetary have been purchased by the United States Government for different universities, and the space allotted to Mr. Barlow at the exhibition was paid for by the American Commission, acting under orders from Washington. A small planetarium fit for a library might be obtained for £80, but the cost of such an instrument as the one above described is about £400.

**PHOTO-LITHOGRAPHY.**

The photo-lithographic only differs from the lithographic process in the manner in which the drawing is made upon the stone to be printed from. With the latter our readers are all familiar, and the first step in the former is to place the drawing, engraving, or other original you desire to multiply copies of, on your plan-board, and make a perfect negative of it in the usual way. The negative must, of course, be excellent in every particular, and free from distortion. A print is made from this on a sheet of positive paper coated with a mixture of gelatinous bichromate of potash, and albumen. This is a very sensitive paper, and prints much more quickly than silvered albumen paper. Removed from the printing-frame, we have upon the paper a brown drawing upon the bright yellow sheet, which receives an even coating of a peculiar lithographic ink, called transfer ink. This operation is known as "blacking" the positive print. The sheet of prepared paper, with the photo upon it, is now to be made capable of parting with the superfluous ink upon its surface. For this purpose, moisture and heat are necessary, and both are applied

by floating the copy, face up, upon a surface of boiling water, so long a time as the experience of the operator tells him is requisite. The next step is called "washing off." The print is laid, face up, on a piece of glass or other hard, smooth surface, and friction with a wet sponge or other suitable substance is applied to the black coating under which the photographic image exists, and to develop which is now the object in view. This is proceeded with until all traces of ink are removed, save those required to form the picture. After "washing off" in this way, an abundance of hot water is poured over the print to wash away entirely all soluble matter, and it is then dried.

We now have a photograph in lithographic ink, identified in every respect with the original.

A fine lithographic stone is next prepared, warmed slightly and put in the lithographic press. Upon this the positive print is placed inverted, having first been dampened by laying between moist paper, and the whole is then passed repeatedly through the press.

We now make examination, and find the paper has attached itself so firmly to the stone that considerable force is necessary to separate the two. When the paper is removed, it brings with it the albuminous surface, but the ink is gone. It has left the paper for the stone, and on the latter we find a reversed drawing of the original, which, after the proper preparation, will print quite as well as a drawing made by hand. This will be easily understood when we tell you that the greasy ink, having a great affinity for the substance of the stone, combines with it to form a lithographic drawing in the strictest sense of the words.

Thus it will be seen, light does the tedious work of the lithographic artist, as far as copying the original is concerned, saving immense labor. The stone is now ready for the printing, which is proceeded with in the usual way of lithographic printing.

Nothing can be more perfect than the prints thus obtained. Every line and figure, trace and blur, is faithfully reproduced, and the original enlarged or reduced at will.—*Photo-Photographer.*

**ESLER & CO., COR. 4TH & LIBRARY STS.**

**Agents Wanted.**

**INSURE YOUR LIFE.**

**IN YOUR OWN HOME COMPANY.**

**AMERICAN**

**OF PHILADELPHIA.**

**S. E. COR. FOURTH & WALNUT STS.**

**AGENTS NEEDED.**

**INSURERS IN THIS COMPANY HAVE THE ADDITIONAL GUARANTEE OF THE CAPITAL STOCK ALL PAID UP IN CASH, WHICH, TOGETHER WITH CASH ASSETS, NOWOWNED AMOUNT TO**

**\$1,616,461.81**

**INCOME FOR THE YEAR 1866,**

**\$766,537.80**

**LOSSES PAID DURING THIS YEAR AMOUNTING TO**

**\$222,000.00**

**LOSSES PAID PROMPTLY.**

**DIVIDENDS MADE ANNUALLY, thus aiding the insured to meet their expenses.**

**THE LAST DIVIDEND ON ALL MUTUAL POLICIES IN FORCE JANUARY 1ST, 1867, WAS**

**FIFTY PER CENT.**

**THE AMOUNT OF PREMIUMS RECEIVED DURING THE YEAR 1866,**

**ITS TRUSTEES ARE WELL-KNOWN CITIZENS IN OUR MIDS, ENDING IT**

**TO CONSIDERATION, THOSE WHOSE MANAGERS RESIDE IN DISTANT PLACES.**

**ALICE WHILDEEN, President;**

**GEORGE INGENT, Vice-President.**

**JOHN C. SIMS, Actuary.**

**JOHN S. WILSON, Secretary and Treasurer.**

**CHARLES G. RODSON, Assistant Secretary.**

**AGENTS NEEDED.**

**WHEELER & WILSON MANUFACTURING CO.**

**Embraces all the attachments of their other well-known Machine, with many peculiar to itself, and in all the requirements of a**

**FAMILY SEWING MACHINE,**

**IS THE MOST PERFECT OF ANY IN USE.**

**The following extract from the report of the Committee on Sewing Machines, New York, Feb. 1866, gives a condensed statement of the merits and excellencies claimed for this machine:**

**"We, the Committee on Sewing Machines, after a careful and thorough investigation into the respective merits of the various machines submitted for examination, find the Elliptic Lock-Stitch Machine to be superior to all others in the following points, and to be the best in the world."**

**SIMPLICITY AND THOROUGHNESS OF MECHANICAL CONSTRUCTION.**

**EASE OF OPERATION AND MANAGEMENT.**

**NO. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 40**