

THE KANSAS FARMER.

Eyer, Prof. B. F. 463
Eyes, ears, and brain 338
F
Factories without chimneys 6
Facts about circus elephants 460
Facts to think about 375
Failures and their causes 159
Fair, Allen county 617
Fair, a neighborhood 648
Fair at Frankfort, Kansas 665
Fair, Chanute 617
Fairchild, Ernest 632
Fairchild, F. F. 633
Fair, Clay county 633
Fair, Coffey county 633
Fair, Coffeyville 633
Fair, Jackson county 633
Fair, Jefferson county 633
Fair, Kaw valley 633
Fair, Miami county 633
Fair, Neosho county 633
Fair notes 617
Fair notes, Fredonia 633
Fairs in 1899, Kansas 561
Fairy story, another 534
Falk, Geo. W. 89
Fame for young men 150
Famine in Russia, the second 34
Farm cattle, increasing 503
Farmer and the flax, the 544
Farmer and the grange, the 604
Farmer Coburn at Boston 680
Farmers, among the 565
Farmers' banquet, a 463, 480
Farmers' boy, the 463
Farmers' bulletin No. 105 739
Farmers' dream, the 790
Farmers' industry brings big balance 40
Farmers' institutes, 536, 545, 561, 601, 608, 652, 745, 755, 770, 787, 802
Farmers' institutes of central Kansas 841
Farmers' institute, Rhinehart 850
Farmers' institutes, old times at 542
Farmers' reading courses 802
Farmers' views 655
Farmer, the new 453
Farm fence, the most economical and practical 4
Farm idyl, a (poem) 38
Farming in Cuba 658
Farming, thoughts on 674
Farm lands in the east, the decline of 738
Farm notes 787
Farm pay, how to make the 542
Fatal pause, a 62
Father to the man 614
Faville, Prof. E. L. 9, 42, 116
Feast of lights, a (poem) 386
Feather-pulling 878
February notes 73
Federation, a farmers' 576
Federation, the farmers' 612
Feed and water before shipping 19
Feed early 570
Feeders, the outlook for 511
Feeding 654
Feeding and care of pigs after weaning 108
Feeding cut bone 82
Feeding mash and grain 862
Feeding materials, composition of 20
Feeding pigs of different grades 19
Feeding problem, a 291
Feeding standards 715
Feeding stuffs, our table of 699
Feeding system in 453
Feed just before shipping 584
Feed, preparing 564
Feeds, two valuable 199
Feed vs. test 275
Fellow's mother, a (poem) 435
Feminine observer, a 530
Fence, farm, etc. 4
Fencing 786
Ferris, H. L. 238
Fertility in the soil, latent 398
Fertility in the question of 744
Feyshad 354
Fiddle swindle in Vienna, the 418
Filling the silo 230
Financial panic, the next 152
Finishing touches 741
Firecracker, a costly 531
Fischer, Dr. Paul 35, 283, 321
Fish as food 2
Fish-barley as feed 272
Fisher, E. P. 60
Fish that use parasols 75
Flag of distress—a hope, a 549
Flavor in butter, etc. 61
Flavor, manufactured 437
Flies, to rid the house of 434
Fodder crop of Oklahoma 564
Foley, W. C. 565
Food, fish as 2
Food for poultry, proper 14
Food for winter 611
Food preservatives, danger of 744
Forage and feeding 651
Forage plants, some nitrogenous 834
Foreigners supply his wants 542
Foreign trade in agricultural products 372
Foreign wheats, the best of 698
Forerunners of spring (poem) 235
Forestry, a primer of 602
Forestry station, a government 373
Forest trees 634
Forever (poem) 132
Forgot to get up 199
"Fourth" from my window, the 483
Fourth of July 452
Fowls in winter 638
Foy, J. M. 446
France to issue new stamps 583
Franklin county fair 661
Franklin's mother 202
Fraternity (song) 694
Fraud, a 462
Free speech 452
Frost-bitten fruit-trees 163
Frost, notes on 582
Fruit crop report 468
Fruit garden, in the 123
Fruit garden, the farmer's 154
Fruit not all killed 254
Fruit report to date 518
Fruits and vegetables, keeping 422
Fruit soups for a luncheon course 530
Fuel superior to coal 637
Fulcomer, John 338
Fuller, Mrs. E. O. 27
Fulton, L. N. M. 275
Funny sayings, some 157
Furnished an appetite 563

Galloways in the south 643
Galloway, the milking quality of the 842
Galloway what is the future outlook of the 367
Galveston port of the west 616
Garden City poultry show 28
Garden irrigation in Kansas 74
Gardner, Alex. 469
Garrett, G. R. 155, 830
Gates, Melvin L. 24
Gaylord, J. S. 358
General-purpose fowl, which is the best 423
Gentry, N. H. 512, 713
Georgeson, Prof. C. C. 182
German colonial school 68
German girl's education, a 546
German markets, American farm products in 163
Germination, effect of insecticides 314
Get out of the old rut 837
Getting the most out of skim-milk 27
Gillespie, F. P. 652
Gillette, G. G. 8
Gillett, W. J. M. D. 723
Gilkerson, Marion 186
Gilman, John 87
Gladstone's personal magnetism 530
Glanders, the Mallein test for 787
Glick, ex-Governor G. W. 88, 465
Glogan, O. E. 550
Goats 559
Goble, Francis 306
Godard, A. A. 452
Golden side, the (poem) 519
Gomez to Havana, coming of 402
Good advice to John 467
Goodell, H. E. 256
Good excuse, a 467
Good milk 62
Goodnight (poem) 57
Goodrich, DeWitt 803
Good roads 246
Good roads for farmers 339
Good stock 506
Good taste in dress 498
Good, what is (poem) 271
Goode, W. P. 52
Goose, saved by a 562
Gopher bait, a 314
Gophers 468
Grafting the peach 116
Grafts from bearing trees 617, 696
Grange and the trusts, the 512
Grange, how to extend the 500
Grange meeting, an open 582
Grange picnic 204
Grange suggests reforms 340
Grange, the 840
Grape, for fruit and shade, the 154
Grapes, bagging 436
Grapes, developing of northern varieties 650
Grapes, fifty years of American 778
Grapes, ringing 274
Grapes, three promising new 60
Grass, awnless-brome 754
Grass, seeding to 706
Grass, tall gramma 738
Grass, what kind of 204, 582
Grateful snake, a 646
Graves of our young men 372
Gray, E. M. 274
Grazing grasses of western Kansas 165
Green feed for hogs 367
Green food for winter 31
Greenwood county 215
Gregg, John 682
Griess, A. H. 254, 390, 794
Griffing, W. J. 221
Grinding Kaffir-corn, does it pay 70
Groshong, G. J. 117
Groves and hedges 40
Gurtler, Henry 438
Gurwell, Wm. 358
H
Haines, Charles 559
Haines, D. S. 256
Hair grow, for making the 318
Hall, A. 690
Hall, W. L. 70, 79, 117, 274, 436, 502
Hamberg 741
Hamm, J. W. 87
Hams and shoulders, care of 869
Haney, J. G. 332, 367, 595, 723, 821
Hanna, Hon. G. W. 207
Hannah, W. S. 674
Hanson, Nels 572
Hardness of trees 79
Hard wheat flour in favor of Kansas 268
Hargrave, Mrs. F. A. 878
Harmon, A. E. 314, 320
Harmon, J. B. 266
Harp of song, the (poem) 466
Harrison, Col. T. W. 34, 322
Harris, W. A. 573
Hartley, C. P. 154
Hatching in cold weather 686
Hatching young turkeys 194
Hated long prayers 395
Havana, in 286
Havana under our regulars 235
Hawaii, information concerning 253
Hawks 260
Hay for hogs 367
Hay fork and cart 510
Hay-making 512
Heading and threshing Kaffir-corn 51
Hearne, Frank B. 19, 298
Heathen Chinese, the (poem) 598
Hedge, affirmative 152
Hedge fences, about 87
Hedge law, that infamous 162
Hedge question, a 254
Hedge question again, the 127
Hedges along highways, trimming 135
Hedges, groves and 40
Hedges, Ola 270
Hedge vs. wire 170
Hedge, wants to kill 564
Help that comes too late (poem) 403
Hen-house for winter, repairing 622
Hen, how to set a 194
Henry, W. A. 191
Hens and their fruit 410
Hens, care of setting 194
Hens, scoring laying 750
Hereditary health 504
Hereford association, American 788
Hereford cattle not too high 415
Hereford conditions 183
Hereford demonstration, unique 131
Hereford show, national 649
Herefords next Tuesday 757
Her pathetic contrast 354
He shall prosper who obeys (poem) 515
He sized them up 830
He stirs the world 830
Hewitt, J. A. 238

Hides, classification of 691
Hill, A. W. 479
Hilton and A. T. Stewart's millions, Judge 756
Hilton, H. R. 47
Hints on fattening fowls for the table, some 702
Hired man problem, the 414
His cap as security 39
His friend 678
His little bill 466
His mind was relieved 57
Hitchcock, Frank H. 448
Hitchcock, Prof. A. S. 106, 470, 486, 494, 510, 552, 834
Hoagland, J. E. 147
Hoard, W. D. 674
Hog and hay (poem) 164
Hog as a work of art, the 506
Hog-cholera, experience with 321
Hog-cholera, prevention of 192, 500
Hog-cholera, serum treatment for 803
Hog-cholera, vaccinating for 388
Hog feed, excellent 398
Hog-feeding, mistakes in 803
Hog millet 58
Hog millet no good for north-west Kansas 273
Hogs for market, growing and feeding 691
Hogs, how an Ohio farmer raises 559
Hogs, raising good 542-2
Hogs, skim-milk for 821
Hogs, trouble with his 873
Hogs, vaccination of 723
Hog, the bacon 387
Hohenlinden (poem) 727
Holcomb, Mrs. F. C. 210
Holland, J. G. 610
Holmes and Lowell 168
Holsinger, Maj. Frank 221, 422
Holstein-Friesian cows, official test of 342
Home 26
Home grounds, shrubs for 190
Home is woman's creation 498
Honey, autumn 718
Honey bees, enemies of 548
Honey, manufactured 587
Honey farm, after the 587
Hood, a new object lesson 244
Hoykin, Prof. C. G. 838
Hornets, boy's essay on 135
Horn-fly remedies 587
Horn-fly remedy 471
Horn-fly, shoo the 456
Horse, a knowing 561
Horse-breeders' association 236
Horse-breeding, western 803
Horse market, improved conditions in 267
Horse-raising, profitable 771
Horses, breeding and care of heavy 431
Horses, breeding, rearing, and training 707
Horses, good big trotting bred 3
Horse show, Topeka 388, 482
Horses in foreign countries 183
Horses, principles of controlling 595
Horse to breed the kind of 432
Horse-trainer, an invincible 151
Horse useful, the 336
Horticultural exhibit, for a 550
Horticultural interests of Kansas; value of the 583
Horticultural products of the Philippines 470
Horticultural society, Shawnee county 301
Horticultural subjects, photographic exhibits of 550
Horticulture, experimental 42
Horticulture, experiments in 794
Horticulture, importance of 182
Horticulture, the Edison of 878
Horticulturists, Kansas 8, 782
Horticulturists, Shawnee 437, 469, 616, 811
Hosack 58
Host called for 481
Hot water 386
Hot weather notes 474
Houghton, A. E. 330
House for brood sows 249
Household, the (poem) 243
Howard, F. M. 256
Howey, V. B. 107
How he got a ride 790
How they treated Dewey at Nice 630
How to care for the dairy cow 27
How to feed and water before shipping 19
How to save time 375
How to tell the age of horses (poem) 678
How Uncle Dave made an encyclopedia 39
Hoxton, S. 342
Hudson returns to his own 500
Human eyes as a camera 450
Human sleuth, a 646
Humus in the soil 254
Humus in the soil, the importance of maintaining the supply of 526
Hutchinson, C. C. 658
Hybridizers of grapes and their works 693
I
If the scheme would work 872
If we knew (poem) 39
Illustrations, our 359
Immortal (poem) 695
Immortality 514
Importance of horticulture 60
Improved conditions in horse market 267
Improved stock breeders, the Kansas 37
Improved stock breeders, to 115
Improvement in corn, possibilities of 18
Improvement in implements, needed 198
Incident of the French camp (poem) 711
Income per cow, etc. 27
Incubator and brooder management 362
Incubator lamp, the 177
Incubators, about 155
Indian corn 86
Influence of the kitchen on the home 870
Ingman, Ada 720
Inoculation against Texas fever 571
Inoculation by another plan 239
Insecticides 334
Insecticides and fungicides 438
Insects of the year, some 873
Institute, Norton at the 204
Introduction, best style of 756
Iowa state fair 601
Ireland's many names 401
Iron barometer, the 616
Irrigation, a plan for 24

Irrigation in Kansas, garden 78
Irrigation survey 516
It might have been (poem) 646
J
Jackson, W. V. 106
Jensen, A. 27, 43, 62, 79, 818, 859
Jensen, W. F. 27, 155, 174, 478, 795
Jerseys and scrub cattle, contest between 567
Jewels possess organic life 678
Joachim, anniversary for 402
Johnson grass 25, 246, 356
Johnson, M. M. 38, 670
John Smith and his wife 38
John's wife 186
Jones, Aaron 301
Jones, H. L. 374
Jordan, A. M. 71, 127
Josh Billings' philosophy 450
Journey southward, a 663
Judging cattle by points 675
July notes 433
June hatching 378
June notes 383
K
Kaffir-corn 642
Kaffir-corn and corn, relative cost and value of 127
Kaffir-corn as a feed, the value of 723
Kaffir-corn, does grinding it pay? 70
Kaffir-corn for roughness 338
Kaffir-corn grinder wanted 106
Kaffir-corn, heading and threshing 51, 78
Kaffir-corn headers, about 478
Kaffir-corn heads, mill to grind 722
Kaffir-corn in Kansas 51
Kaffir-corn keeping 531, 565
Kaffir-corn not Kaffir-corn 502
Kaffir-corn, rick the 552
Kaffir-corn, saving 37
Kaffir-corn, sowing 368
Kaffir-corn, taking care of 127
Kaffir snake story, a 219
Kaiser's big soldiers, the 218
Kaiser's boys, the 371
Kaisersome, how to make 582
Kansas lead 308
Kansas a farm 869
Kansas, a good word for 859
Kansas and her cattle 565
Kansas boy and the Kansas dairy school 731
Kansas biennial 40
Kansas breeders' annual meeting 40
Kansas breeders of pure-bred stock, to 55
Kansas cattle losses slight 188
Kansas City horse show 681
Kansas City markets, the 6
Kansas commission, report of the 58
Kansas crops, officially 282, 405, 531
Kansas dairy school, concerning the 519
Kansas figures, some 415
Kansas girls at the front 450
Kansas, information about 387
Kansas landmark gone, a 808
Kansas pocketbooks and expansion 58
Kansas sea serpent 302
Kansas state exposition, for a 114
Kansas statistics, some 388
Keeping the cellar clean 694
Keeping up the quality 327
Keep the end in view 495
Kelly, G. W. 71
Kenyon, Wm. 249
Kern, W. D. 406
Kershner, Dan 40, 370
Kidnapping princes 546
Kimberlin, I. J. 578
Kimbles, Sam 309
Kindling a flame 302
King's mania, a 720
Kings, I. M. 110
Kirpatrick, E. S. 128
Kirpatrick, H. M. 323
Kiser, C. 323
Knows its value 40
Knox, S. M. 368
Krueger, a morning call on 760
Kutch, Jos. E. 500
L
Lace curtains, to launder 790
Ladies and more ladies 222
Lady officials 466
Lamb, experience in feeding 283
Landis, Wm. S. 373
Landscape gardening, aesthetic phase of 10
Large charity 530
Largest life, the (poem) 318
Laundering, valuable hints in 466
Lawn, the home 92
Lawrence, Chester R. 866
Layers, nitrogenous diet of 814
Learned at farmers' institutes, some things 97
Leghorns 141
Legislators at Manhattan 152
Let others do likewise 79
Lice on animals 199
Life of General Nathan Bedford Forrest, the 530
Life's scars (poem) 6
Lincoln could get angry 67
Lincoln fixed the blame 530
Liquid air 235
Liquid air, what is 662
Liquid lice-killer 159
Listing, does it waste fertility 382
Listing wheat 68
Literary borrowing, some 580
Little and the great, in the 202
Little daughter Dorothy 776
Little girl's piece, a (poem) 599
Little kindnesses (poem) 387
Live stock association, American 723
Live stock association, National 19, 857, 867
Live stock condition of 166
Live stock convention, national 76
Live stock inspection 840, 856
Live stock insurance, on 777
Live stock interests and the international live stock exposition, the allied 792
Live stock, Kansas 583
Live stock meetings and the press 851
Live stock on the ranges 447
Live stock production, economy in 71
Live stock regulations for 1899 4
Live stock report, government 333
Live stock rules, new 725
Live stock shortage 773
Live stock statistics 468
Live stock, twelfth census of 675
Live stock wounds of 595
Loag day (poem) 581

Local paragraph, a 729
Locking up the town don 377
Locomotive, parts of 377
Looking forward (poem) 478
Lord, Ed. A. 377
Louisiana, how put 377
Love nature 377
Love's fulfilling (poem) 377
Love that reaches (poem) 377
Lubeck 377
Lumpy jaw 377
Lund, Jacob 377
Luxury, his idea of 377
Lyon's street fair 377
M
Machinery, home-made 729
Magician, the 729
Maguire, F. P. 129, 367
Mail to farmers, free delivery of 420
Making both ends meet 150
Mammoth remains in Kansas 21
Manager of a skimming-station, the 214
Manhattan, changes at 494
Man in the moon, the 531
Man of many licenses, a 446
Mansions of the heart, the (poem) 580
Man, the making of a 756
Manure, inquiry about 8
Manuring, a chance for green 421
Man with the hoe, the (poem) 418, 806
March notes 152
Markel, Asa 58
Marker, C. 635
Market reviewed, Kansas City 392
Markets, the Kansas City 8
Mark Twain on the Fourth 531
Marple, M. W. 218
Marriage plant, Burroughs' 499
Married man's musings, a 275
Marshall, J. R. 127
Martindale, C. D. 205
Martin, Geo. A. 478
Martin, J. W. 21, 127, 198, 478
Martin, Mrs. Nettie 234
Marvel of Guipuzcoa, the 562
Mary S. 186
Maxims of Joubert 483
Maxwell, M. M. 117
May notes 305
McAfee, Henry 182
McAfee, J. B. 646
McCaskey, J. P. 202
McCreas, A. H. 239
McCundy, S. H. 750
McDuff, Miss Bird 655
McHenry, W. G. 174
McKay, Prof. G. L. 61
Meat and eggs, Kansas 601
Meat-eating in Japan 303
Meat, high prices for 532
Meat on the farm, curing 182
Meats and what to serve with them 678
Meat trade, statistics of the 712
Mellecker, J. E. 186
Memory's mystic castle (poem) 186
Memory was faulty, his 6
Merchant's view, the 489
Merinos, those bald-faced (poem) 1510
Merriman, Effie W. 32
Michelson, Elbert 27
Miles, O. 320
Milk and butter, cheaper production of 635
Milk, beef, or grain, which is most important 117
Milk-can, a one-seam 670
Milk, care and keeping of 80
Milk, care of 137, 603
Milk, cleanliness with 439
Milk, directions for sampling 651
Milk, does it pay 62
Milkers, effect of changing 471
Milk farm, a visit to an eastern 824
Milk, feeds and feeding for 852
Milk, good 62
Milk-hauler, the 155
Milk-hauler, trials and tribulations of a 830
Milk house, a cheap 375
Milk scales, the 305
Milk separator, hints on the 503
Milk sweet, a problem in keeping 455
Milk-testing and inspection of creameries and cheese factories, state control of 821
Milk, time required to weigh sample 567
Milk to be tested, don't send churned 567
Milk, variation in daily yield of 551
Miller, E. P. 617
Miller, H. B. 465
Miller, Low 358
Millet from Dakota, two new 216
Millie's kitten 93
Milling, scientific 489
Missouri is "poor old" no more 79
Missouri's Black Chief to be sold 388
Missouri state dairy association 80
Mites on fowls and stock 245
Modifying characteristics of animals 399
Money, after your 549
Money in onions 96
Montague and Capulet 307
Montgomery, C. D. 439, 503
Montgomery, Robert 238
Moore, Porter 699
Moore, W. H. 92, 190
Morey & Winfield 600
Morning thought, a (poem) 202
Morrow, President E. G. 71, 399
Moscow, the retreat from 6
Moses, E. R. 305
Mother (poem) 615
Molting, what I know about 756
Mr. Bobbleton packs up 568
Mr. Oddie's courtship 774
Mrs. Browning's farewell to her husband 530
Mule, a word for the 383
Mules for Africa, Kansas City 713
Multiply by five or six, do you 651
Munger, Geo. W. 322
Music and matrimony 562
Muskmelons and remedy, causes for inferior quality of 602
Muskmelon, winter 602
Must study to succeed 503
Mute wife, the 270
Mutton, our exports of 387
Mutton sheep questions 231
Mutual insurance, about 388
My bike and I (poem) 679
My ship (poem) 402

THE KANSAS FARMER.

Table of contents listing various articles and their page numbers, including sections on agriculture, livestock, and general news.

THE KANSAS FARMER.

Trust magnate, attitude of a. 436
 Trust methods. 683
 Trust question, the. 648, 696
 Trusts. 220, 320
 Trusts, after the. 484
 Trusts, new views of. 272
 Trusts, what of the. 188
 Trust, what is a. 452
 Tuberculosis. 659
 Tuberculosis in England. 134
 Tuberculosis, practical conclusions as to. 415
 Tuberculous cattle, quarantine against. 447
 Turkey-raising. 65
 Turkeys, hatching young. 192
 Turkeys, management of. 378
 Turkeys, raising. 120, 158
 Turkeys, the young. 344
 Turkey talk. 140
 Two lilies (poem). 22

U

Udder, let blood flow to. 62
 Uncle Jerry's back sliding (poem). 467
 Uncle Rastus has something to say on shows and scoring. 538
 Unexpected always happens, the. 499
 Up garret (poem). 23
 Up the Himalayas. 790
 Use of the hump. 758
 Usury, a lesson in. 447
 Utilization of our native fruits. 502

V

Van Deman, H. E. 322
 Van Houghton, Geo. H. 437

Van Leeuwen, Henry. 257, 821
 Van Valkenburg, Al. W. 480
 Various matters. 38
 Vegetable garden, the. 399
 Venice. 855
 Ventilation and sunlight for the barn. 174
 Veterinarian, state. 40
 Views of an expert. 512
 Vineless sweet potato, growing the. 166
 Visit, a portentous. 773
 Vissering, J. P. 231

W

Wages, he got his. 418
 Wagner's "Parsifal". 662
 Wallace, Henry. 257
 Wallace, R. W. 27
 Walls, James. 204
 Wants Kansas butter. 275
 War money, and how England raises it. 854
 Warner, A. B. 248
 War of clothes-lines. 336
 Washing crocks and milk vessels. 646
 Washington as a farmer. 123
 Washington's boyhood. 369
 Washington, S. W. 667
 Water. 567
 Water for stock, clean. 351
 Waters, L. C. 305
 Waters, W. H. 132
 Water storage. 389
 Water supply on farm, the. 869
 Water supply to animal diseases, relation of. 446
 Watson, D. H. 50
 Watson, Geo. W. 41
 Watson, Wm. 695
 Way found at last to keep the

hair curled. 630
 Weak argument, a. 539
 Wealth of the United States. 462
 Weather - crop bulletin. 247, 269, 288, 300, 321, 339, 357, 369, 385, 401, 417, 433, 449, 469, 485, 497, 513, 545, 561, 597, 586, 612, 629, 645,
 Weather report for March, 1899. 233
 Weather report for May, 1899. 384
 Weathers, J. C. 246
 Webster, Ed H. 239, 551, 275, 575, 408, 440, 455
 Weeds in stubble fields. 632
 Weeds, notes on. 67
 Welch, D. H. 116, 635
 Weller, Geo. A. 4
 Wellhouse, Walter. 334
 Wellhouse & Son, Fred. 190
 Were I again a kid (poem). 547
 Werner, H. B. 421
 Western Kansas as a dairy country. 43
 Western tenant and his eastern landlord. 680
 Westgate, J. M. 314, 632
 What I know about alfalfa. 50
 What now and where next? 132
 What of the distant future? 338
 What's the game? 114
 What would you do (poultry). 242
 What yo' gwine to tell de Lawd (poem). 663
 Wheat and corn, prices of, in 1898. 8
 Wheat as hardy as rye. 561
 Wheat as the trader sees it. 517
 Wheat belt, out in the. 776
 Wheat drill experiments, the. 446
 Wheat drill suited to Kansas, wants a. 421
 Wheat experiments, Oklahoma. 446
 Wheat farming, successful. 146

Wheat-growing, ton, cost of...
 Wheat, improve.
 Wheat in Minnesota.
 Wheat lister, need
 Wheat, methods of
 Wheat, new and improved.
 Wheat, newly originated.
 Wheat, plowing deep for
 Wheat, preparation of soil for.
 Wheat, the position of.
 Wheat, wants pure-bred.
 Wheat with corn, protection of.
 When autumn passeth by (poem). 69
 When it paid. 69
 When spring returns (poem). 563
 When the girls wore calico (poem). 483
 When the old toys were young (poem). 254
 When the sun's in the west (poem). 56
 When we grow old (poem). 586
 White, Robert. 141
 Why Captain Dreyfus promised to live. 515
 Why he complained. 253
 Why they never feel the cold. 560
 Why they twinkle (poem). 371
 Wichita, a hot week in. 713
 Wife, caution to the busy. 402
 Wild animals that adopt the young of other species. 219
 Willard, J. T. 462, 510, 550
 Williams, J. W. 406
 Williamson, Dr. Charles. 682
 Williams, R. B. 162

Zacona, a tw
 of
 Zacona's reco

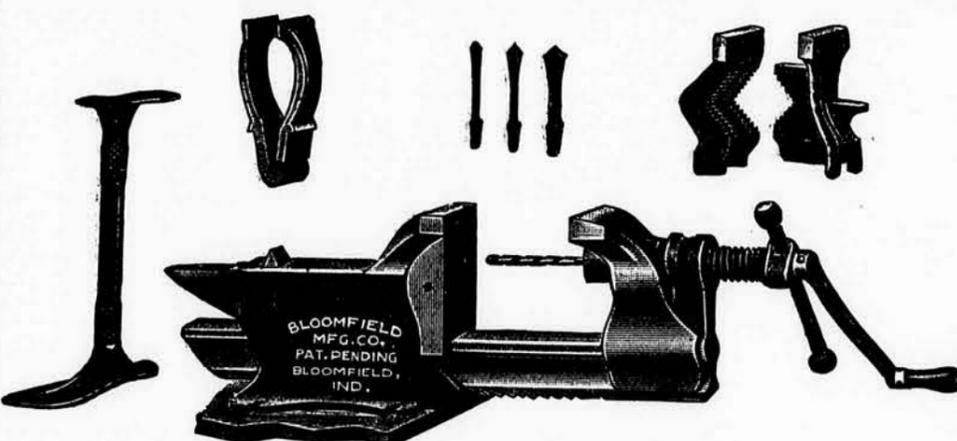
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VOL. XXXVII. NO. 1.

TOPEKA, KANSAS, THURSDAY, JANUARY 5, 1899.

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Has some fine sows, 1 year old this fall, sired by Tecumseh Chief (he by Chief Tecumseh 2d), and are bred to Look Over Me (he by Look Me Over); also, an extra lot of Spring Gilts, bred the same, and some good Spring Males of the same breeding. Come and see, or write and get prices. Wm. McGuire, HAVEN, KAS.

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Registered Jersey cattle. Young bulls and heifers for sale.

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Farm two miles east of Topeka on Sixth street road. T. P. CRAWFORD, Mgr., Topeka, Kas.

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JACKS FOR SALE.

I have for sale twelve Jacks, aged 3 and 4 years next spring. Their breeding is from Spanish Kentucky and Tennessee bred Jacks and Jennies, black with white points. L. O. HINGSTON, Richmond, Okla.

Cows barren 3 years

MADE TO BREED.

Book Free, Moore Brothers, Albany, N. Y.

Agricultural Matters.

SOIL SCIENCE—THE GROWING OF CORN.

By Col. Guilford Dudley, read before the Oak Grange (Shawnee County) Farmers' Institute.

Every farmer either plants or has some time planted and raised corn. The question under consideration is how practically to raise more and better corn. There are three constituents essential to corn growth, and the better we understand their relations to one another, and to the plant proposed to be cultivated, the better are our chances for success. These constituents are soil, water and heat.

It is only of recent years that the physiologist has learned that bacteria produce disease, and that the medicos, generally, have accepted the germ theory in nearly all diseases. But, we are beginning to realize that this is only a small part of the purposes they fulfill. We are learning that these same organisms are single-celled, colorless, microscopic vegetable animals, and that to their peculiar action many of the normal processes in nature are due, and that to their agency the growth of plant life of the higher orders is largely indebted. One of the most surprising discoveries in this connection has been the relation of bacteria to the process of nitrogen assimilation in the leguminous plants—the plants that have pods.

It is well known to all botanists that nitrogen is an absolutely necessary food for plants and animals. Plants in their ordinary vegetation are capable of obtaining nitrogen from the soil alone, and unable to use the free nitrogen of the atmosphere. This conclusion is the result of very many experiments.

In 1888, Professor Hellriegel, a Prussian, reported a series of careful experiments wherein he found that tubercles grown upon the roots of leguminous plants were abnormal productions caused by the agency of some organism in the soil, related to bacteria, but different from them. So he called them bacteroids.

Prazmowski, a German, found that they live normally in the earth, collect on the outside of the roots of various legumes, and that some of the organisms succeed in forcing their way into the tissues of the young root. For a while they remain as free bacteria. Soon a thin membrane is formed around the masses enclosing them like a pouch. The ones which do not succeed in getting into this pouch return to their regular ways of bacteroids. Those in the pouch now begin to grow with much vigor. The pouch grows in thread-like masses, making its way among the cells of the roots, branching more or less as it grows, soon permeating the roots with a fine branching filament which looks much like the mycelium of a mold, but in reality it is nothing but a branch colony of bacteria enclosed in a thin membrane. The growth of this colony of bacteria among the cells of the roots stimulates the roots to an unusual growth. The cells multiply more rapidly than usual and soon produce a swelling on the root, which is the beginning of a tubercle. In the meantime the bacteria pouch continues to grow and swell out into rounded vesicles filled with expanded portions of bacteria thread. The relations of the bacteroid and the legume are of symbiosis—living together with mutual advantage. Soon the root cells form a plastic covering around the nodule containing the bacteria threads, but impervious to them, and confine them within its limits. The bacteria family now undergoes a change. It is thought that the vesicles in the central wall swell until the membrane covering the bacteria becomes so thin that it bursts, and the bacteria themselves are extruded into the plasma of the root cells, where they soon begin to undergo involution changes into higher compound forms in their structure.

As to the method which this association of organisms extract free nitrogen from the air, science has not yet indicated, but experiments have proved that larger amounts of nitrogen can be assimilated through some of the legumes and bacteria than by the same plants if they are fed with nitrogenous foods. The amount of nitrogen assimilated and fixed in the soil is large. Hence, we must look to the legumes chiefly for the enriching and re-stocking of our soils with nitrogen.

Red clover seems to be our most certain, cheap and available source of leguminous bacteria for fertilizing the soil. With clover the farmer can enrich any field at will, preparing the soil for increased production of corn, wheat and other food-producing plants.

In a recent experiment it has been

found, as reported by the Torrey Botanical Club, that a single crop of beans assimilates and fixes in the soil 225 pounds of nitrogen per acre, equivalent to about 1,400 pounds of nitrate of soda.

In preparing the seed-bed for corn, deep plowing mechanically improves its ventilation and percolation properties, as well as temporarily reducing the capillary force of the soil. In the normal condition the surface foot of soil is one-half soil grains and one-half air. The plant cannot grow while the spaces between the soil grains are filled with water. It is stationary till the percolation is sufficient to admit the air to the roots. It extracts its water from the film of moisture surrounding the soil grains. The soil water, percolating down, or drawn sidewise by diffusion, or upward by capillarity to restore the equilibrium, or expanded by the heat of the sun, is kept well in motion.

Three hundred and ten pounds of water are required by the corn plant to every pound of dry matter produced. The greater dissipation of soil water is through evaporation rather than through consumption by the plant. The use of such tillage as will produce a fine aerated mulch over the surface will reduce the evaporation to the minimum. This mulch can be acquired by harrowing the land each day as fast as it is plowed, with a large- and a small-toothed harrow, or better the latter. Three small harrows, each three feet wide, attached to a pole, having about 100 teeth each, say of sixty-penny spikes, will be found efficient. By attaching a pair of cultivator handles to these small harrows, an implement is made than which I know no better for cultivating between the rows of corn at all stages of growth. It conserves the moisture and the heat.

While we may not know much about the nature of sunshine, we realize that it is some sort of motion which comes to us from the sun, traveling through space at the rate of 186,000 miles per second of time, and, after reaching us and being transformed into one or another form of energy, it does almost the work of the entire world. We can only in part comprehend the important part which altered and direct sunshine plays in plant growth. We have no control over the amount which may come to a given field, but we can and do control the amount stored in the soil, and we also determine the number of plants that shall stand upon the field to utilize the sunshine which does come to it. Professor King states that Lord Kelvin estimates that the power of the sun upon the surface of the earth during the three or four summer months, measured by horsepower, is equivalent to about one-seventh of a horsepower to a square foot, equal to one horsepower to seven square feet. One horsepower is rated as a force sufficient to raise 33,000 pounds one foot in one minute. The power of the sun upon one acre of land would be equivalent to 6,222 horsepower. It has been proved that the sun will pump up, evaporate, and carry away in seven days, from an acre of land not stirred, a rainfall of one and three-quarters inches—47,000 gallons, or 198 tons of water. This would be at the rate of nearly 7,000 gallons per day per acre. Nor is this loss of water all the adversity which befalls our own corn fields. The evaporation of one pound of water from a foot of soil causes the temperature to fall 10 degrees lower than before this evaporation. Good husbandry will save the most of this water, as well as conserve the larger part of this wasted heat, which is very desirable to warm the soil early in the season.

One hundred units of heat will raise the temperature of one pound of water 100 degrees F., while it takes 966.6 units of heat to evaporate one pound of water. The dry earth mulch alluded to, will reduce evaporation to the low mark, while the heat thus saved is now free to warm the soil. Enterprise and vigilance early in the season have their reward, so that when corn-planting time comes, during the first days of May, the conditions for active, vigorous and hardy growth are favorable. The soil will be ventilated, moist, and, compared to the adjoining unplowed land, warm.

The saying, "Whatsoever a man soweth that shall he also reap," has not lost its meaning. If the seed has been grown under favorable conditions, its precocity, vigor, and power to reproduce itself in slightly improved form, will become more intensified.

Nature pays much attention to the details in the contest for the survival of the fittest in organic life. The tillage in the corn, the kind of cultivation, tells in condition. The mellow, moist, waxy condition is desired and can be easily had by using the small nail harrow and three 6 oak plants, five feet long, six penny spikes for teeth, and a pair of cultivator handles. You can make it your

cost, for material, of \$1.40. It is astonishing how soon after a rain this implement will work and restore the mulch. In the cultivation of the corn this single harrow is as rapid in its work as the two-horse cultivator, and leaves the soil mellow and level.

During the season of 1898, we planted a piece of corn on the 17th day of May. It began to show tassels on the 4th day of July, forty-eight days from the time of planting, which is about three weeks earlier than the corn under the old regime. We planted another piece May 30. It was tended with nail harrow and commenced to tassel in forty days. On the ninety-second day from planting, we plucked an ear from the first field which measured eleven inches long, was filled to the end, and had commenced to glaze, while the grains of corn measured nine-sixteenths of an inch long. This field, with a poor stand, weighed in fifty bushels to the acre when husked.

Professor Storrer states that the corn plant shows by analysis only a trace of nitrogen up to near the time of tasseling; that from the time of tasseling to maturity it increases 4.8 times in weight of dry matter. From the time of full silking to maturity the increase in dry matter was 2.5 times.

The corn plant stores, deposits, and uses nitrogen in the growth and formation of its seed, which begins just before the tassel appears, and this is the time when available nitrogen is specially needed. The aerating, hoeing, or cultivating the soil, produces nitrogen through bacterial ferment, hence the more need of cultivating with the one-horse, or the hoe, when the plant is absorbing and using nitrogenous food, which is required up to the time of glazing of the corn.

The enriching of the soil with clover, the deep plowing, the cross-fertilizing the seed, the timely system of dry earth mulch culture, the continued manufacture of nitrogen when the plant specially requires it—that is, when forming its seed, the frequent hoeing of the cross-fertilized rows, are large factors in bringing the results which we seek. They may truly be compared to the establishing of an irrigation plant, to a field hot-house frame, and to the manufacturing of fertilizers without any outlay of cash.

Such husbandry can but make a large increase in the product in the near future, over the corn-growing area of our State. The experience of the writer shows a gain of nearly twofold.

Peanuts.

Editor Kansas Farmer:—In your issue of December 22, I noticed an inquiry concerning the value and proper cultivation of peanuts. Having had experience with the crop in Mississippi, Kansas and Colorado, I will give your readers the benefit of what I have learned.

The nuts should be planted in rows about the same distance apart as corn, and from ten to fifteen inches apart in the row. Cultivate carefully throughout the season; but, after the blossoms begin to appear, be careful not to disturb the vines. The bed below the vines should be moderately mellow, at the time the plants begin blooming, in order to permit the fruit-stems, which grow downward from the blossoms into the ground, to readily penetrate the soil. (It is a common belief that the blossoms must be covered, but this is not necessary, as the fruit-stems grow downwards into the soil and produce the nuts under ground.)

Before frost comes the crop should be dug, if the vines are to be used for forage. In places where peanuts are raised on a large scale, a special plow is used which is run on each side of the rows. Others run on each side of the row with a small turning plow and then throw the vines out with pitchforks. The vines are put in windrows to dry, or are shocked around stakes. After curing in the windrows they are put under cover until convenient to pick the nuts. The nuts by hand; cheap labor to pick better to use a simple machine, made by stretching wires so across a frame, no peanut can pass between them, while at the other ends of all sizes a skillful hand will pick the nuts rapidly by gathering a handful of vines and placing them, roots downward, on the frame and then working them around gently until the nuts have fallen through where the wires are far apart, after which the bunch is drawn across the frame and raised, thus pulling off all the nuts at once. The nuts are assorted afterwards.

The peanut hay is nearly equal to clover hay as a feed for stock. I have worked horses hard while feeding them peanuts in place of grain, and I have

Swollen Neck

Also Had Great Difficulty With Her Heart—How Cured.

"My daughter had a swollen neck and also heart trouble. After the least exertion she would breathe so hard she could not hear all over the room. She could not sweep the floor or even move her arms without affecting her heart. Her limbs were badly bloated. Her father insisted that she must take Hood's Sarsaparilla and we gave her about six bottles, when she was cured, and there has been no return of her ailments." Mrs. Emma Thomas, North Solon, Ohio.

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. \$1; six for \$5.

Hood's Pills easy to buy, easy to take easy to operate. 25c.

seen horses do well when fed on peanut hay. I have seen hogs fattened by allowing them to run in a field where peanuts had been raised and not dug clean. Experiments have shown that peanuts are a profitable food for hogs in places where the soil and climate are adapted to the growth of the crop.

Concerning varieties, the Spanish seems to be about as good as any, if it is to be used for stock. But, if for the large white sorts would be best if they are grown for the hogs. Girls who "use them at spelling" write I would suggest that the inquiry be made to the Department of Agriculture, Washington, D. C., asking for a copy of Farmers' Bulletin No. 25, "Peanuts: Culture and Uses," and also Farmers' Bulletin No. 84, "Experiment Station Year VII." These two bulletins will give figures as to value and uses of the peanuts. J. E. PAYNE, Cheyenne Wells, Colo.

Fish as Food.

The United States Department of Agriculture has just issued another of its popular publications known as Farmers' Bulletins. It is No. 85 of the series, is entitled "Fish as Food." It is prepared by C. F. Langworthy, of the office of Experiment Station, and treats of the chemical composition, nutritive value, digestibility, and special importance of food fish and aquatic invertebrates.

In relation to the widespread belief that fish contains a large amount of phosphorus, and on that account is particularly valuable as brain food, the bulletin states that in the specimens analyzed the percentages of phosphorus are not larger than are found in the flesh of other animals used for food. But, even if the flesh be richer in phosphorus, there is no experimental evidence to warrant the assumption that fish is more valuable than meats or other food material for the nourishment of the brain.

Fish contains the same kind of nutrients as other food materials. It is essentially a nitrogenous food, and in this respect resembles meat. Neither fish nor meat is a source of carbohydrates. Both contain some carbohydrates, but the foods which supply this group of nutrients most abundantly are the cereals, fish, meat, eggs, milk, etc., and cereals and vegetable foods, all supply fat, the amount varying in the different materials.

Artificial-digestion experiments made with fish indicate that it is less quickly digested than beef, being about equal to lamb in this respect. However, as compared with other foods, the difference in digestibility is not great. Actual digestion experiments with man show that fish is very completely digested, there being practically no difference between fish and meat in this respect. The place of fish in the diet is discussed in considerable detail.

The bulletin shows that the total weight of fish (including the water portion of shell fish) taken from the salt and fresh waters of this country is about 1,696,000,000 pounds yearly, representing as the value of the catch \$47,180,000.

The bulletin concludes with a chapter on the possible dangers from eating fish. The bulletin is for free distribution and may be obtained from members of Congress or by applying to the United States Department of Agriculture.

TO CURE A COLD IN ONE DAY Take Laxative Bromo Quinine Tablets. All druggists refund the money if it fails to cure. 25c. The genuine has L. B. Q. on each tablet.

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The Stock Interest.

GOOD BIG TROTTING-BRED HORSES.

At the recent meetings of breeders at Springfield, Ill., Hon. Norman J. Colman, ex-Secretary of Agriculture, delivered an address from which we make the following extracts:

While speed is a quality in the trotting horse which should never be lost sight of, there are other qualities of equal importance which must ever be kept in mind and duly regarded by the breeder. Size is an element of great value, and the fact that two of the fastest harness horses in the world, Star Pointer and Joe Patchen, are both over sixteen hands high, goes to show that large size is no detriment to speed, and the number of heats in which they have made the fastest time ever made in harness show that they possess the endurance to resist wear and tear. As size is an indispensable quality in many classes of harness work, the intelligent breeder will be sure to secure it, so that if the horses he produces should not have great speed, they will have enough to meet the wants of those who may want them as roadsters, carriage teams, coaches, or for some other kind of work.

STYLE.

Another quality that should be regarded by the breeder is style. Why will one horse bring double or treble what another will of equal size and speed? It is because he is handsomer, more stylish and will attract greater attention. The day of breeding plain horses, homely horses, has passed, and particularly if profit is one of the objects of breeding. While in the formation of the breed, size and style did not cut much of a figure, with some breeders, yet the day has come when these qualities are indispensable to success in the breeding business. Breeders must produce such horses as the public wants if they expect to sell them. The public wants horses of size and substance, of beauty and style, with speed combined. Such horses can be produced. One need but go to any of our large trotting meetings to find stallions of the choicest breeding that have size, style and speed combined that would be suitable to put at the head of any breeding farm. If rears of similar qualities have been selected and are mated with such a stallion, and the produce have the proper care and attention, the result cannot be questioned.

REGISTRATION.

The law of breeding, that "like produces like or the likeness of some ancestor," is inviolable. And here comes the rub, "or some ancestor." How important, then, becomes the matter of ancestry. If of high character and excellent qualities, it matters but little whether the progeny takes after the ancestry or the parents. But if the ancestry are of low character and poor quality, the produce are liable to inherit their traits, and the results will be most disappointing. The breeder must know positively of the ancestry of his breeding animals. There is only one way by which he can properly get that knowledge, and that is by the records of the breed which he is producing.

Those who have neglected to register their breeding animals grieve over their error. Only last week I was on the farm of a breeder who had quite a lot of very fine Shorthorn cattle, equal to any I had seen for a long time. I asked him if they were pure-bred. He said yes. I asked him if they were registered. He said no; that he could have registered the stock from which they descended at one time, but had neglected it, and now it was too late, and he was selling them at less than half the prices the same animals would bring if he had attended to registering them when this could have been done. What an argument this is in favor of breeders keeping their breeding animals properly registered. It is the only way that the genealogy and history of domestic animals can be perpetuated. It is the only way that purchasers may know what they are buying. It is the only way to perpetuate a breed.

THE IDEAL OF THE BREEDER.

The breeder should form in his own mind the type of a horse he desires to produce and keep that type constantly in mind as the polar star of his hopes. He should have some definite object in view. He should have in his mind's eye some goal to reach. He should have a purpose in breeding, and every coupling should be in the prosecution of that purpose. He should have an ideal in his mind of the horse he wants to produce, and every step he takes in breeding should be towards that object.

Having in his mind a clearly defined type of the horse he wants to produce, if he understands the laws of breeding, and

will follow those laws, he will eventually reach the object of his ambition. It is just as easy to produce a type of trotting horses as it is to produce a type of cattle, such as the Hereford, Devon or Jersey. Horses can be bred so as to match as exactly as cattle do, but it will take generations of skillful breeding to perfect such a type. It can be reached only by slow degrees, but it is progress in the right direction, and leads to ultimate success.

If a community of breeders could agree upon a type in advance as to size, color, style, etc., and all breed constantly towards that type, they would attain the end much sooner than would mere individual efforts, and they would establish a popularity for their horses, as they advanced, which would create a demand and bring the best buyers from all parts of the country and from Europe.

The type determined upon, and we will say in color it is a bay; size, 16 hands; weight, about 1,100 pounds; body well formed; good necks, heads and tails; well carried; action bold, yet graceful. Here we have a type that would be in general favor and in general demand. The breeders should aim at the type desired and mate horse and mare combining the characteristics described as nearly as possible, and then by selection of the best of the produce continue the work of breeding, and in time a race of horses can be established as true in color, size and general appearance as is to be found in well established breeds of cattle, sheep, hogs or any other animals.

Combine with this type the most valuable qualities of the horse, say trotting speed (and plenty of good mares and stallions answering to the described type and having great trotting speed can be found) and we can have the best, the most valuable breed of horses in the world. Breeding in the unsystematic, haphazard way the American breeders have been doing is all wrong. It is not necessary to take the type we have described if any other suits any one better. Let one have a clearly defined object as to the kind of horse he wants to breed, and then breed towards that object constantly—never away from it. Aim towards the mark set, and if you cannot reach it come as near it as possible. Go forward, not backward. There has been too much promiscuous breeding of horses. Visit any of our breeding farms, and you will find almost as many colors in horses as there were in Joseph's garment, and they will differ more in size, form and action than they do even in color.

SOUNDNESS.

The breeder should aim to produce animals that are absolutely sound. To this end he should know that not only are the parents sound, but that the families from which they descended had no defects that were liable to be transmitted to their descendants. Tendencies to unsoundness are just as liable to be transmitted as are the choicest qualities. One must not expect that the virtues only are transmissible. The vices and the weaknesses are transmitted as well as the choicest qualities, and sometimes they will skip a generation or two, and then break out with great violence.

But animals may be sound and yet lack the necessary stamina to be highly useful. Wear and tear qualities are of the highest value. Some horses have strong constitutions, just as some men have, and can endure great trials and receive no great injury therefrom, while other horses are faint-hearted, so called, and have not the pluck and courage or the physical or mental qualities to compete in great trials of speed or endurance. The wise breeder will aim to breed the best, knowing that it is only from the best that the best can be produced. Parents with weak constitutions transmit weak constitutions, while from the strong, good constitutions may be expected.

As the trotting horse is a very intelligent, tractable and serviceable horse, in almost any capacity, he should be bred of sufficient size and strength and style to fill any requirement. If this is done he is salable for the carriage or coach team, for the surrey or buggy, for use on our streets in our cities and towns, for all purposes. He makes the model cavalry horse, and indeed he fills almost any requirement for which the horse is needed. As a horse for general farming purposes he has no superior, as I know from an experience of half a century. As all horses that are bred for speed do not possess enough to become successful race horses, the point I wish most earnestly to enforce is to breed such a class of trotting horses as will command good prices for other purposes, so there need be no blanks in breeding. Horses 16 hands high, of good color and style, good bone and muscle, heavy quarters, wide and deep around the heart and lungs, sound and of good disposition,

possessing good action, can be raised with much certainty and at a profit, and will find buyers in every market, even if they do not possess phenomenal speed; but if a system of wise breeding has been pursued, and sires and dams have been selected of the kind we have mentioned, possessing in addition to these desirable qualities trotting speed of a high order, there is no reason why champion trotters should not now and then crop out, commanding thousands of dollars; but even if they do not, the breeder has produced a class of horses of which he may be proud, and which will bring him good returns, always being in demand for almost any purpose.

Business of 1898.

R. G. Dun & Co., New York:

"The year has not only been one of victory, of important increase in territory and of incalculable expansion of the influence of the United States among other nations, but has surpassed all other years in financial and industrial results. The center of financial power has crossed the ocean. After paying debts of several hundred millions abroad and conducting a war to an honorable end, the country is lending so many millions in Europe that, for the first time, banks abroad look to New York to dictate the rate of exchange. Exports have been about \$1,250,000,000, and the excess over imports about \$617,000,000, against \$357,000,000 in 1897, and in only two previous years has the balance risen to \$300,000,000. In no past calendar year have net imports of gold reached \$75,000,000, but this year they have been about \$140,000,000. November passed all previous months in value of produce exports over imports, but December has gone much beyond November.

"Power in the world's markets comes with a demand for breadstuffs and other necessities never before equaled. Exports of cotton have been over 7,700,000 bales, about 3,936,000,000 pounds, and in no previous years as much as 7,000,000 bales, or 3,500,000,000 pounds. Exports of breadstuffs have been, in value, \$283,918,294, in eleven months, and have never been as large in any other year. Exports of wheat for the year, lacking a day or two, have been 218,594,686 bushels, flour included, slightly exceeded only by 225,665,812 in 1892, and of corn 200,979,077 bushels, nearly approached by 189,217,570 in 1897. The heaviest exports of both grains and flour in any previous year were 59,000,000 bushels smaller, having been 360,220,513 bushels in 1897.

"The triumph in finance has been largely due to industrial progress. The output of pig iron has been about 11,645,000 tons, the greatest yet reached in any year by 2,000,000, and greater than Great Britain ever reached by 2,800,000 tons. Yet the consumption in manufacture has been still larger, in spite of net exports of pig, in ten months, 163,089 tons. Exports of iron manufactures in ten months were about \$87,644,538 in value, against imports of \$13,497,817. Prices shown for the year in the table of comparisons have been unusually steady, varying not 5 per cent from the lowest to the highest, and for finished products not 6 per cent.

"Textile industries have been retarded by high prices of wool and abnormally low prices of cotton, both deterring purchases. In three months cotton reached 5.31c, the lowest price for fifty years, the greatest yield ever known being followed by receipts since September 357,000 bales larger than last year. Exports have increased, but not as greatly. Toward the close, recovery came with accounts of some destruction by storm, and the price reached 5.87c, giving a strong impulse to the manufacture, so the takings by Northern and Southern spinners in the calendar year have been 3,425,200 bales, a little greater than in any previous crop year. Goods were reduced in price 5 per cent to the middle of November, but have risen 7 per cent and closed at the highest point for the year.

"In spite of enormous stocks held, wool was so lifted that buying, both of wool and of goods, was checked early in the year, but slow decline began in February. Sales have been only 232,451,131 pounds at the three chief markets, so that the mills have probably used less than a full year's supply and the stock of goods was also excessive a year ago."

Pancakes and Honey Are Now in Order.

Comb honey is rather expensive for general use, and from this time on it is liable to be more or less granulated. Pure extracted or liquid alfalfa honey is the best, and if ordered direct from the bee-keeper it can be had as fresh and good as ever the year around, and in quantities to suit, at wholesale prices. Write for delivered prices to Oliver Foster, proprietor of "The Arkansas Valley Apiaries," Las Animas, Colo.

Money talks! We guarantee that

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will cure anything that a liniment can cure—\$100 reward for you if it doesn't. Reference, publisher of this paper: Send for circulars and full particulars to DR. S. A. TUTTLE, 27 Beverly St., Boston.

NEXT TO A DAILY.

The Semi-Weekly Capital

FOR THE FARMERS OF KANSAS.

The war with Spain has emphasized the fact that a weekly newspaper, for general news, is too slow for the up-to-date, progressive farmer. Thousands who could not take a daily have secured in

The Semi-Weekly Capital

a complete summary of the news of the war, besides all the other news of the world, especially everything happening within the borders of Kansas. The settlement of the controversy with Spain and the introduction of American government in the newly acquired territory will afford a great fund of interesting news and information. Subscribers to the Semi-Weekly Capital will receive it all at the same cost as an ordinary weekly paper. Sample copy free upon request.

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for this first-class cooker and water heater. Just the thing for cooking food for stock, pigs or poultry and for heating water for scalding hogs. Burns wood only. The Farmer's Feed Cooker is made of best cast iron with No. 22 galvanized steel boiler, and holds 20 gallons. We make larger cookers and will quote prices on application. Send for free circulars. Reliable Incb. & Brdr. Co. Box 62, Quincy, Ill.

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Advance Fence Co. 4101 Old St., Peoria, Ill.



ELY'S CREAM BALM is a positive cure. Apply into the nostrils. It is quickly absorbed. 50 cents at Druggists or by mail; samples 10c. by mail. ELY BROTHERS, 56 Warren St., New York

FARM FENCE—THE MOST ECONOMICAL AND PRACTICAL.

By Geo. A. Weller, read before Vinland Farmers' Institute, December 13, 1898.

The most economical post for a fence is Osage orange. The best way to set the end post and brace post is to dig for end post not less than 3 to 3½ feet deep by 1½ to 3½ feet; then, in center of hole, where post comes, dig six inches deeper, so the post can have two pieces framed on the bottom, not less than 3 to 3½ feet in length. These should be floored over and well tamped to prevent post from pulling up or turning sideways. The proper place for the brace, is three-fifths the height of the fence. The foot of the brace should be cut into the bottom of the brace post above the ground line; then draw a wire from three-fifths the height of the brace post to the ground line of end post, and twist together with a small bar of iron. Remove the twister when the wire is tight enough.

Farmers, like other people, are looking for their money's worth. Whether they buy land, stock, farm implements, or fence, they wish to spend their money judiciously, and get the best possible returns. They do not buy a farm among the sand hills at 50 cents an acre, but rather pay \$20 or more an acre for rich bottom land, because it returns a better net profit. A successful feeder does not buy scrub stock at any price, because he knows it will not pay out; but puts more money into good, thrifty cattle, that will grow and fatten at a profit. That farmer who buys broken-down, ring-boned and spavined horses, at a small price to do his farm work, cuts his wheat the first of August, lets his stock harvest his corn for him, and, while they are busy harvesting it he sits around the stove, growling because he does not succeed like his neighbor, who buys everything first-class. The same principle applies to fencing. Because it costs little is no sign it is cheap. An article to be cheap, must do what it is intended to do, and do it well. What then can we use for fencing, and do it economically? Not the old-fashioned rail fence our fathers built in the East; that is out of the question. Board fence is too expensive. Wire seems to be the only material that will answer the purpose in Kansas. In what form then can this be used effectively and profitably? Shall we use barbed wire? The majority of the farmers in Kansas, up to the present time, have answered this in the affirmative; yet if an accurate account of the losses from this cause could be obtained, the balance would be so far on the debtor side, that the law-makers would be warranted in passing a bill forever barring its use. Then it is not effective. If you wish a hog fence it must be strong and close enough to hold hogs, even the little fellows, because the little chaps are getting their education, and, if they can get through when young, they will do their level best to continue. Barbed wire is no good here. If you make the fence secure, it is too expensive.

If you use hedge, Osage orange or honey locust will do the work. It may be possible that this will do, if you have been very fortunate in getting a stand, and have tended it as a mother watches her only child; but even then you very seldom make a thorough success. Your little chicks, pigs, and sometimes the old hogs will go through. But this is not the worst, for, when you have succeeded best, you have failed the worst. Your hedge has grown up. It stands even and nice, and it turns your stock perfectly. It is trimmed to a symmetrical oval. The time is June. You look over your fields with pride. The crops are growing luxuriantly, bordered with your fence of green. It is a pretty sight, and you consider yourself a fortunate man. Harvest time; you go to reap the benefits of your toil; never were crops more profuse; but what is the matter with the border of your fields? For a rod or more on each side of your fence the crops are struck with blight. You stop and think, and think again. Ah, that fence. It has sucked the life blood from the soil and killed your crop. Your harvest is past; weeds grow prolific, and ripen; fall winds blow over the fields, clipping the seed tops and landing them by the side of your beautiful hedge, and deposit seed enough to grow a crop large enough to seed a county. Underneath the lodged weeds are all kinds of vermin, from a chinch bug to a coyote, ready to pounce on the results of your labor, and secure the profit that should be yours. The dearest fence on earth is the hedge, but the very best post timber is the Osage orange.

Shall we use smooth wire for our fence? Certainly; it is the cheapest and the best. "But," you say, "we have tried that; we went to the store, bought a

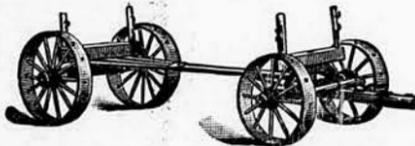
ton of number nine smooth wire, stretched it on our posts, and it does not give satisfaction." I don't doubt it in the least. I presume your cattle would walk through it anywhere, your hogs would only laugh, if the corn field were on the other side of such a fence. "What is the trouble?" you ask. You used annealed wire, which will stretch, either from stock running into it, or from the effect of heat and cold. You will have to provide for the contraction from cold. You should use first quality tempered steel wire, that will not stretch, though your posts will pull up, or your wire break. The only practicable and economical wire fence is one with the horizontal wire made of the best tempered steel, woven together with cross-wires close enough, so that the wire will not readily spread, and with a continuous coil in each of the horizontal wires. This should be slight enough to give the desired elasticity. You notice I say coil and not crimped. A bend or crimp won't do. Draw the crimp straight and it will stay straight. Draw the coil straight, then let up on the tension and the coil comes back. It must be something that will give elasticity that will stay. The coil is the only thing that will do that. "Well," you say, "I will buy a hand machine, get some wire, coil it, or get it already coiled, and build my fence cheap." Better not try it. Do your best and you can't compete with steam. You may think you can, and try to make yourself believe you have struck it rich; but when you count all the cost—your machine, which is short-lived, your labor and other expenses, saving nothing about the annoyances—you will quickly conclude that life is too short, and steam too swift, for you to waste your time in that way, and, like a host of others, will throw your little picket plaything in the scrap pile and buy what you want, ready made.

Coiled horizontal fence wire is patented; any person or company buying, selling or using the Page coiled wire without their permission is liable to them for damages.

Notice the difference in the strength of the annealed wire and that of hard steel wire: No. 9 soft wire, tensile strength, 1,440 pounds; No. 9 hard wire—nearly double, 2,660; No. 11 soft wire, 1,060; No. 11 hard wire, 1,920; No. 7 soft wire, 1,600; No. 7 hard wire, 4,100.

Farm Wagon for Only \$19.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, sold at the low price of \$19.95. The wagon is only 25 inches high, fitted with 24 and 30 inch wheels with 4 inch tires.



This wagon is made of best material throughout, and really costs but a trifle more than a set of new wheels and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.

Farmer's Handy Feed Cooker.

Reader's attention is called to this device, which is sold at \$12.50 for 50-gallon capacity. By feeding poultry and animals cooked food during winter at least one-third of the feed is saved; also hav-



ing stock in a healthy condition, preventing hog cholera among your hogs and insuring the hens laying freely during the winter months. On application to the Empire Manufacturing Co., Quincy, Ill., a catalogue giving full description, may be obtained. They are made in all sizes.

Live Stock Regulations for 1899.

The regulations of the Kansas live stock sanitary commission for the coming season, which commenced Sunday, have just been issued and are as follows:

Section 1. It is hereby ordered by the live stock sanitary commission that no cattle originating below or on southerly side of the quarantine line, described in Governor Leedy's proclamation dated January 31, 1898, may come into Kansas during the month of January, 1899, except as provided in our dipping bulletin, dated November 5, 1898, hereto attached, or for immediate slaughter, in accordance with rules 1, 2, 3, and 4 of said proclamation, and amendments thereto, by bulletins of this commission. All Southern divisions of stock yards located in Kansas for the purpose of unloading, feeding, and resting of Southern cattle in transit for immediate slaughter or for dipping during the year 1898 shall be maintained during the month of January, 1899, exclusively for Southern or infectious cattle.

Sec. 2. Notice is hereby given that cattle infected with the Boophilus bovis, or Southern cattle tick, disseminate the contagion of splenic or Southern fever (Texas fever). Therefore, cattle originating outside of the district prescribed by this order or amendments thereof, and which are infested with the Boophilus bovis tick, shall be considered as infectious cattle, and shall be subject to the rules and regulations governing the movement of Southern cattle.

Sec. 3. Stock yards and railroad companies receiving cattle infested with said ticks shall place such cattle in the pens set aside for the use of Southern cattle, and transportation companies are required to clean and disinfect all cars which have contained the same, according to the requirements of this department.

Sec. 4. All cattle originating above or on the northern side of the quarantine line, except as above set forth, will be admitted to Kansas without any restrictions.

OFFICE LIVE STOCK SANITARY COMMISSION, TOPEKA, KANS., November 5, 1898.

Whereas, The Secretary of Agriculture of the United States, by order (B. A. I. Order No. 23), has announced that Southern cattle, when properly dipped in a solution of 86 pounds of flowers of sulphur to 1,000 gallons of extra dynamo oil, can be safely shipped,

Now, therefore, this commission hereby modifies its quarantine rules against Texas or splenic fever, so that cattle are not excluded from Kansas by this commission, if accompanied by a certificate of an inspector of the United States Bureau of Animal Industry that they have been properly dipped and have fully complied with the requirements of said order No. 23.

JOHN BRYDEN, Chairman.
TAYLOR RIDDLE, Secretary.

Cured of Cancer of Twenty-four Years Standing.

I was for twenty-four years a sufferer from a cancer the size of a quarter of a dollar on the temple. I am rejoiced to bear witness that, under the care and treatment of Dr. Rinehart, I am permanently cured, and there remains but slight evidence, even by scar, that a cancer ever existed there. I can most heartily recommend his treatment and skill to all afflicted with cancer or skin diseases, and will answer all letters of inquiry if a stamped envelope is enclosed. Respectfully,
BENJAMIN CORBET,
225 Douglas St., Indianapolis, Ind.

Persons afflicted can have home treatment sent at moderate prices. No burning plasters used. For further information send for a free book to Dr. E. Rinehart, Lock Box 221, Indianapolis Ind.

The old year just past will be made memorable, in one respect, by our 1899 Supplement, which contains our offer of the Kansas Farmer Sewing Machine and the paper, for \$18.98. This is one of the best things offered in the way of combinations for the New Year. This office has never received a single complaint from any of our purchasers. Just as good sewing machines, when sold by agents, bring \$45, while a year's subscription and the Kansas Farmer Sewing Machine, delivered to any point in Kansas, only costs now \$18.98.

In no way is the march of progress better realized than by a comparison of the early and modern modes of travel, and a study of the development of the street railway system in a city like Boston. The completion of the subway has led Mr. George G. Crocker of the Boston Transit Commission, to make such a comparative study, and he contributes to the January issue of the New England Magazine a capital article on "Passenger Traffic of Boston and the Subway" which is accompanied by many fine illustrations. "It would have been simply impossible," he says, "at the beginning of the century to have predicted this wonderful development in transportation. It is equally impossible for us at the end of the nineteenth century to predict what will happen in the twentieth."



The woman who is weak, nervous, tired and exhausted; who has a poor and variable appetite and no strength or nerve; who suffers from pains and aches, dragging down and burning sensations; and who recognizes herself, that she has become irritable, cross, blue and despondent, is in almost every case suffering from weakness and disease of the delicate

and important organs that bear the burdens of maternity.

Thousands of women suffer in this way and do not recognize the cause, or if they do understand their condition, neglect it rather than submit to the obnoxious examinations and local treatment insisted upon by the average physician. Dr. Pierce's Favorite Prescription is a wonderful medicine for women who suffer in this way. It does away with the necessity for these trying ordeals, and may be used in the privacy of the home. It acts directly on the delicate organs concerned, and makes them strong, vigorous and healthy. It banishes the discomforts of the expectant period and makes baby's advent easy and almost painless. It transforms weak, nervous, petulant invalids into happy wives and mothers. Thousands of women have testified, over their own signatures, to this fact. The "Favorite Prescription" may be procured from any good medicine dealer. Any woman who will write to Dr. R. V. Pierce, Buffalo, N. Y., may have the advice of an eminent and skillful specialist without charge.

Mrs. Cora M. McLaurin, of Rockport, Copiah Co., Miss., writes: "I had displacement and inflammation of the uterus. I was under the treatment of our family physician for a long time, but received no benefit. I had falling of internal organs with ulceration and enlargement. I commenced using Dr. Pierce's Favorite Prescription, 'Golden Medical Discovery,' 'Pleasant Pellets' and 'Extract of Smart-Weed.' From the first day I began to improve, and in a short time I was able to do all my housework. If it had not been for your medicines I would have been dead long ago."

Stomach and liver troubles with sluggish action of the bowels are cured by Doctor Pierce's Pleasant Pellets.

B. & B.

GOODS AND PRICES DO THE TALKING HERE.

We believe in advertising—and practice it—but big type alone doesn't bring such great and increasing mail order business.

It's CHOICE GOODS and LESS PRICES that PROVE what we say, that's bringing results.

Our announcements are simply to let you know about this store—where it is—how extensive and well prepared to meet your wants—and that you can save money buying here.

Soon as you write and give us an idea of your preference—silks, Dress Goods or other sampleable goods—we'll send samples—widths and prices marked on them so you can see for yourself what's bringing business here from Maine to California.

See what handsome Black Bourette effect Dress Goods, 46 inches wide, 50c yard—made and imported to sell for a dollar.

Samples cost you nothing. Neither does our 250-page catalogue.

BOGGS & BUHL,
Department G. G. Allegheny, Pa.

\$2.75 BOX RAIN COAT

A REGULAR \$5.00 WATERPROOF MACKINTOSH FOR \$2.75. Send No Money. Cut this ad. out and send to us, state your height and weight, state number of inches around body at breast taken over vest under coat close up under arms, and we will send you this coat by express, C. O. D., subject to examination; examine and try it on at your nearest express office and if found exactly as represented and the most wonderful value you ever saw or heard of and equal to any coat you can buy for \$5.00, pay the express agent our special offer price, \$2.75, and express charges. THIS MACKINTOSH is latest 1899 style, made from heavy waterproof, tan color, genuine Davis Cover Cloth; extra long, double breasted, Sagor velvet collar, fancy plaid lining, waterproof sewed, strapped and cemented seams, suitable for both rain or overcoat, and guaranteed greatest value ever offered by us or any other house. For Free Cloth Samples of Men's Mackintoshes up to \$5.00, and Made-to-Measure Suits and Overcoats at from \$5.00 to \$10.00, write for Free Book No. 806, Address, SEARS, ROEBUCK & CO., CHICAGO, ILL. (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)



How Much Money



do you make from your cows? No matter; you would make a half more if you used one of our **SAFETY HAND SEPARATORS**. It will not only increase the amount of butter you get from the same cows but it will also improve the quality to such an extent that you can get a much better price. The skim milk is always sweet and much better for feeding calves, pigs, poultry, etc., than skim milk from pans, etc.

P. M. SHARPLES,
 Toledo, O. Omaha, Neb. West Chester, Pa.
 Elgin, Ill. St. Paul, Minn.
 Dubuque, Ia. San Francisco, Cal.

Paint Talks--XII.

CAUSES OF THE DESTRUCTION OF PAINTS.

There is no paint that does not look well when it is new. The poorest mixture produced looks bright, glossy and clean when it is fresh from the brush. But rain and snow, wind and sun quickly test the quality of paints. The best paints will still look quite respectable at the end of five or eight years; the poorest begin to look shabby at the end of as many months. What is the cause of this difference?

Briefly stated, with very few exceptions, the lasting paints are compounded with pure linseed oil and contain a goodly percentage of zinc white, while the fading, crumbling, discoloring paints contain materials which destroy the oil and are based on pigments which are themselves not permanent.

If a paint darkens, loses its gloss and begins to grow "chalky" after a short time, it is probably a pure white lead paint; if its colors fade or change in the sunlight, it is either colored with aniline dyes, or it is a white lead paint tinted with one of the many colors that are destroyed by lead; if it "deadens" or "flattens" and begins to peel and chip off it probably contains an alkali which has destroyed the linseed oil, or a mineral oil which has evaporated; if it shows cracks like the lines on a checker-board, the painter has probably been at fault in not allowing sufficient time for the under coat to dry before applying the next; and if it shows blisters, one or more of the coats have probably been applied in damp weather or at a time when the air was saturated with moisture.

But there is another cause for the destruction of paints which, though seldom taken into account, is very important, and that is the action of the dust, sand, etc., carried by the wind. If we have two paints, one of which retains its glossy surface, while the other becomes dull and powdery, we shall find that the latter collects and retains dust while the other remains comparatively clean, and that of the two the dull surface will be worn away much more rapidly than the glossy coating. The reason for this is that the glossy surface is elastic while the dull surface is brittle; the wind-borne dust acts like a sand blast, and cuts away the brittle surface, while upon the elastic surface it makes no impression. Remembering that pure white lead paints always lose their gloss and become dry and powdery in a very short time, while paints containing zinc retain their gloss indefinitely, it is easy to understand one of the reasons why a combination paint based on zinc is more durable than other paints. The additional reasons are the greater stability of zinc white itself, and its superior oil-carrying capacity; for it should never be forgotten that so long as the oil endures the paint will remain good and sound, but when the oil is gone the paint crumbles and washes away.

The most lasting paint is the most economical. The combination paints usually cost less and cover more surface per pound than the so-called "strictly pure" paints, and they last fully 50 per cent longer; therefore the paint consumer will see that it will profit him to insist that the paint used on his buildings shall be based on zinc white and that it shall be mixed only with pure linseed oil and the necessary driers—the less of the latter the better for the paint.

STANTON DUDLEY.

Big Drop in Dress Goods.

Every one can now buy Dress Goods of every description and from one yard upwards, for just as little money as the largest merchants can buy in quantities. You will receive free by mail postpaid, a book of 60 cloth samples of latest things in all kinds of Dress Goods, at 12 1/2¢ to \$1.25 per yard, also full instructions how to order, etc. If you will cut this notice out and mail to the big reliable house of **SEARS, ROEBUCK & CO. (Inc.), Chicago.**

When writing advertisers please mention **Kansas Farmer.**

Gossip About Stock.

The Texas Live Stock Association will hold its eighth annual convention at Galveston, January 17-19, 1899. For detailed information address Vorles P. Brown, secretary, San Antonio, Texas.

The fifth annual convention of the Oklahoma Live Stock Association will be held at Woodward, on February 12 and 13, 1899. Half-fare rates on the Santa Fe line. Will E. Bolton, secretary, Woodward, Okla.

"The Domestic Sheep" is a new \$1.50 book by Henry Stewart, the highest authority on sheep. This work gives all the essential facts about sheep, the science of breeding and feeding, diseases and treatment. This new book contains 372 pages and 165 illustrations. Sent in connection with the Kansas Farmer, both for \$2.25.

The next annual meeting of the American Tamworth Swine Record Association will be held at Flint, Mich., February 20, 1899. Edwin O. Wood, the secretary, writes that the increase in popularity and great demand for this, the largest and most prolific of the bacon breeds, indicates a most encouraging outlook for the future.

Genial Tom Hubbard, of Rome, Kans., writes: "Stock looks very well and there is plenty of roughness. My hogs never looked better. They are in the pink of condition and I have about twenty of the Large English Berkshire males and a few Poland males for sale and a grand lot of sows of each breed for sale, bred or not bred. Come and see me."

Carl Freigau, secretary, Dayton, O., writes: "The American Chester White Record Association will hold their fifteenth annual meeting at the Great Southern Hotel, Columbus, O., Wednesday, January 11. A swine breeders' institute will be held at the same place the evening of Tuesday, January 10. All persons who are interested in raising and feeding swine are invited to be present."

Attention is directed to the new advertisement of J. W. Higgins, Jr., Hope, Kans., who offers a lot of Poland-Chinas, by such sires as Eberly's Model 2854, Duke of Weston 16974 and Wren 17172, and out such sows as Princess Eulalie 26748, Short Stockings 2d 37728, Kaw Chief Sow 22221, Black Roman 29608, Hadley White Face 48319 and May Tecumseh 47011, all of which show a very desirable line of breeding of animals that will be sold at prices that will certainly please the customer.

Prices for heavy drafters remain good despite the fact that many of the export buyers have gone home for the holidays. Last week the market for these sorts closed strong at Chicago, National Stock Yards, Ill., and Indianapolis, the figures for 1,700- to 1,900-pound horses ranging from \$150 to \$225 and the top at \$250 in the auctions. These prices are somewhat lower than the top on the bulge of last April, but this coming spring values will go even higher for there are not as many horses to go to market.

Until a few years ago lump jaw was supposed to be incurable, and even now the treatment usually prescribed fails to cure the larger number of cases. We are glad to inform our readers, however, that this disease can be cured with even more certainty than any other of the diseases and ailments to which cattle are subject. "Fleming's Lump Jaw Cure" has been in use now long enough to thoroughly test it and a large number of cattlemen all over the country testify to its efficacy. It is easily applied and the instructions which are furnished with it are easily followed. Our readers who are interested should write for their circulars giving valuable information as to the cause of disease and showing that this remedy is scientific and effective. Write to Fleming Bros., Union Stock Yards, Chicago.

The Farmer's Friend Feed Mill.

The illustration on this page is of the Farmer's Friend Feed Mill, manufactured by Kelly & Taneyhill, Waterloo, Iowa. It is a mill that has been thoroughly tested by hundreds of farmers throughout the country and has given satisfaction in every instance.



The Farmer's Friend Feed Mill is constructed on entirely new principles, and contains many features not found in other mills. It has a double ear-crusher, which is constructed in such a way as to shell the corn and break the cob at the same time. The cob-crushers also run on steel ball bearings, which makes the draft on the team light and the mill easy-running.

There are no cog wheels in this machine, and all power is applied directly to the burrs. The machine is adjusted by means of a hand wheel and screw, and the grain can be ground to any degree of fineness. The grinding rings or burrs are made of the very best material, in fact the whole mill

SWEET POTATOES Sprouted on Shares

No experience required. Directions for sprouting free with order. Also Vineless Sweet Potatoes for sale and on shares.

T. J. SKINNER, Columbus, Kas.

is made of the best material, and of the best workmanship, and every mill is thoroughly tested before being placed on the market. This mill is sold on its merits and guaranteed to do first-class work, and anything that may be found defective in the material or workmanship will be furnished free by the manufacturers.

Illustrated circulars and terms will be sent to dealers upon application to the manufacturers.

Publishers' Paragraphs.

The Kansas Seed House of F. Barteldes & Co., Lawrence, Kans., is out with an elegant descriptive seed catalogue that should be in the hands of every farmer who is interested in reliable seeds. This house is one of the largest and best in the country and has a reputation second to none. Write them for catalogue and say that the Farmer advised you to do so.

We call special attention to the advertisement in this issue of T. J. Skinner, Columbus, Kans., who advertises a vineless sweet potato which is a great producer. The demand for sweet potato plants in season is becoming quite general and the business of sprouting them can be learned without risk of loss, and now is the time to consult Mr. Skinner on this question.

From the factory to the farm is the principle of the Hapgood Plow Co., of Alton, Ill., whose "ad." appears elsewhere in this issue. They send free, to all who write, a catalogue illustrating and describing a thousand articles they sell farmers at a great saving over regular prices. If you get the catalogue and don't find the prices enough cheaper than you are paying, there is no obligation to buy anything. The re-

sponsibility of the Hapgood Plow Co. is unquestioned, and their honorable methods make it perfectly safe to entrust any remittances or orders to their care. They offer to refund any money if goods are not found perfectly satisfactory by the purchaser.

Those of our readers who feel an interest in improving their yield of corn will find some valuable information by securing the annual catalogue from our advertiser, Mr. J. C. Suffern, of Voorhes, Ill., who has made a specialty of seed corn for a great many years. He has also favored the Farmer with a special article along this line that will be published this month.

We are in receipt of the 1899 catalogue of the Des Moines Incubator Co., which should be in the hands of all who are interested in looking up the question of incubators. Pages 87 to 105 are devoted exclusively to poultry buildings and the general care of different varieties of fowls, put in such form that it is sure to interest and instruct every breeder of poultry. A copy of this valuable catalogue will be sent free to any of our readers who may request it.

An experienced art critic gives it as his opinion that there will be no handsomer piece of color work issued this year than Hood's Sarsaparilla Calendar for 1899. It is not only useful, but artistic and beautiful, and up to date. The charming "American Girl" whose beautiful face appears with a delicately painted flag in the background, makes a pleasing feature which anyone will be pleased to have before him the whole of 1899. We suppose druggists will have this Calendar, or a copy may be obtained by sending 6 cents to C. I. Hood & Co., Lowell, Mass.

Dr. Bull's Cough Syrup can be relied on. If you suffer from coughs, colds, hoarseness, bronchitis or other throat and lung affections, this old reliable remedy will cure you.

4-POUND CATALOGUE FREE!



THIS BIG CATALOGUE CONTAINS 1120 PAGES in 9x12 1/2 inches in size, contains over 100,000 quotations, 10,000 illustrations, the largest, most complete and lowest priced catalogue ever published. NAMES THE LOWEST WHOLESALE PRICES ON EVERYTHING, INCLUDING everything in Groceries, Drugs, Dry Goods, Notions, Clothing, Shoes, Dresses, Boots and Shoes, Watches, Jewelry, Books, Hardware, Store, Agricultural Implements, Furnishings, Harness, Saddles, Buggies, Sewing Machines, Crockery, Organs, Pianos, Musical Instruments, Furnishing Goods, Guns, Revolvers, Fishing Tackle, Bicycles, Photographic Goods, etc. Tells just what your storekeeper at home must pay for everything he buys and will prevent him from overcharging you on anything you buy; explains just how to order, how much the freight, express or mail will be on anything to your town. THE BIG BOOK COSTS US NEARLY \$1, the postage alone is 50 cents.

OUR FREE OFFER. Cut this advertisement out and send us with 15 cents in stamps to help pay the 50 cents postage and the Big Book will be sent to you FREE by mail postpaid, and if you don't say it is worth 100 times the 15 cents you send, as a key to the lowest wholesale prices of everything, say so, and we will immediately return your 15 cents.

WHAT THE PRESS SAYS ABOUT THIS CATALOGUE:
 "It is a monument of business information."—Minneapolis (Minn.) Tribune.
 "A wonderful piece of work."—Washington National Tribune.
 "The catalogue is a wonder."—Manchester (N. H.) Union.
 "Sears, Roebuck & Co. is one of the largest houses of its kind in Chicago."—Chicago Inter Ocean.
 "The big catalogue forms one of the finest shopping mediums that could possibly be sent into a district."—Boyce's Monthly, Chicago.

"Their catalogue is a vast department store balled down."—Atlanta Constitution.
 "The catalogue is certainly a merchandise encyclopedia."—Chicago Epworth Herald.
 "A law should be passed compelling the use of this catalogue in all public schools."—The Hon. G. A. Southoun.
 "We could quote thousands of similar extracts. SEND 15 CENTS AT ONCE and you will receive the 4-lb. book by return mail. Address, **SEARS, ROEBUCK & CO. (Inc.), CHICAGO, ILL., U. S. A.**

HARPER'S WEEKLY THE NATION'S WEEKLY

Will continue to give week by week during 1899, by means of illustrations and text, all the important news of the world in a clear and concise manner.

POLITICS
 Independent of parties, devoted to good government, it will not hesitate to approve or disapprove, whatever the situation may be.

ART
 The leading artists of the country will contribute to the pages of the WEEKLY, as heretofore, making it the foremost illustrated weekly.

Cuba and the Philippines
 Special articles will appear on these two countries by Messrs. Phil. Robinson and F. D. Millet, both of whom made special journeys to the islands.

Hawaii and Porto Rico
 These places will be similarly treated by Caspar Whitney and W. Dinwiddie, who likewise made a study of the places.

... THE BEST ...

PICTORIAL HISTORY OF THE YEAR
 is what HARPER'S WEEKLY has been in the past and will be in the future. The great work accomplished in the late Spanish-American war is characteristic of the WEEKLY'S live and energetic policy.

SERIAL STORIES
WHEN THE SLEEPER WAKES. By H. G. Wells
WITH SWORD AND CRUCIFIX. By E. S. Van Zile
THE CONSPIRATORS By R. W. Chambers

Some Short-Story Contributors
 W. E. Norris Owen Hall F. J. McCarthy H. S. Merriman
 E. F. Benson M. S. Williams John Corbin M. S. Briscoe

THE WEST
 and its industries will be treated in a series of articles by Franklin Matthews.

ALASKA
 and its resources will be the subject of a series of papers by Edward J. Spurr.

The London Letter
 will be written by Arnold White, and will be full of timely matter.

This Busy World
 by E. S. Martin, will continue to amuse and instruct its readers.

AMATEUR ATHLETICS
 will be continued weekly by its well-known editor, Mr. Caspar Whitney

10 Cents a Copy Subscription, \$4 00 a Year

Address **HARPER & BROTHERS, Publishers, New York, N. Y.**



H. G. Wells



R. W. Chambers



Caspar Whitney



Franklin Matthews

The Home Circle.

LIFE'S SCARS.

They say the world is round, and yet
I often think it square;
So many little hurts we get
From corners here and there.
But one great truth in life I've found,
While journeying to the West:
The only folks who really wound
Are those we love the best.

The man you thoroughly despise
Can rouse your wrath, 'tis true;
Annoyance in your heart will rise
At things mere strangers do;
But those are only passing ills,
This rule all lives will prove:
The rankling wound which aches and
thrills
Is dealt by hands we love.

The choicest garb, the sweetest grace
Are oft to strangers shown;
The careless mien, the frowning face
Are given to our own.
We flatter those we scarcely know;
We please the fleeting guest;
And deal full many a thoughtless blow
To those who love us best.

Love does not grow on every tree,
Nor true hearts yearly bloom.
Alas for those who only see
This cut across a tomb!
But, soon or late, the fact grows plain
To all through sorrow's test:
The only folks who give us pain
Are those we love the best.
—Ella Wheeler Wilcox, in *History*.

TEDDY'S FIRST ROUGH RIDERS.

George Cromwell, a boyhood friend of Governor-elect Theodore Roosevelt, related a number of amusing incidents the other day connected with a voyage to Europe he and his brother made with the Roosevelt boys thirty years ago next May. It was a great event in 1869 to cross the Atlantic, particularly for youngsters all of them under 11 years of age.

"As I remember Theodore," said Mr. Cromwell, "he was a tall, thin lad, with bright eyes and legs like pipe stems, for he had grown very rapidly indeed, and I don't believe that he was ever quiet in those days, excepting when he was asleep. He was constantly investigating all parts of the vessel, asking questions of everybody he met.

"The Scotia was considered a very fast boat in those days, yet it took her almost two weeks to cross the ocean, and that is plenty of time for four American boys to become acquainted. Theodore and Elliott Roosevelt went in one direction when we reached Liverpool and our family in another. The next time we met to play was in the garden of the Tuileries in Paris. I was strolling about there one day when I heard a most blood-curdling whoop and then an arrow come whizzing past me.

"Naturally I turned in alarm, and saw coming from behind a tree a tall, thin boy dressed like a North American Indian war chief, a quiver full of wooden arrows slung across his back, one hand waving a bow, while the other rapidly struck his lips while he yelled at the top of his lungs, thereby producing the ideal war whoop of boyhood. As may be imagined, it was rather an upsetting sight to meet with in Paris, of all places; but in a moment I recognized in the leaps and bounds of the warrior Theodore Roosevelt.

"Naturally we were delighted to find each other again, and after that we all used to play in the gardens every day until the time came for my brother and I to leave for Florence.

"Just before Christmas we ran across each other in Rome, and learned that both families intended to stay there for some time. As soon as Theodore heard this he decided right off that he would have to organize a company of soldiers, and he hustled right out and gathered all the boys of the American colony he could find and formed his first command—the original rough riders. I suppose you might call them, for, while it was an infantry company, I'm afraid we did ride roughshod over the prejudices of amazed Roman citizens—certainly of their pet dogs which happened to be in the streets.

"The first thing Theodore insisted upon was that every boy in the military company must have a gun; and, as we couldn't get real muskets, we obtained somehow enough toy ones to go around and an immense quantity of paper caps. Just where all the ammunition came from I don't know to this day, but Theodore managed to have plenty for everybody when it was needed. Nobody thought of questioning his right to command, somehow, and he was absolutely relentless when it came to the matter of discipline and drill—such discipline and such drill as an 11-year-old boy would know of, I mean. Just what his idea was I don't know. Perhaps he imagined that Italy might go to war with the United States some time, and that it would not be a bad idea to let the city of Rome see how ferocious a company of

American soldiers would look. At any rate, by the time Christmas arrived we were drilled sufficiently to suit Theodore, and on the 25th of December he marched us about the city, much to our satisfaction and greatly to the entertainment of observers, I have no doubt.

"While we were in Rome we spent a great deal of our play time on the Pinchon hill, where we had great hunting expeditions. Dogs were our game, and they represented anything from a fox to a grizzly bear or a tiger. We used to creep up close to the poor beasts and suddenly bang away at them with our paper caps and toy guns, and they always fled in terror. It seemed that they were not used to such treatment; they didn't understand the fun that American boys had, I guess. Anyhow, they didn't seem over fond of us.

"It has been nearly thirty years since that company of original Roosevelt rough riders broke up in Rome, when it was time for our families to separate; and very few of us have met more than once or twice since. But as I look back at Theodore Roosevelt, the masterful, energetic boy of 1869, it seems perfectly natural that, even as a young man, he should already have reached a commanding position in national affairs. It could not have been otherwise. The soul of honor, truthful, free from any mean action or thought, he must have shown, as a boy, to his elders, that a remarkable future bid fair to be his."—*Inter-Ocean*, Chicago.

Emilio Aguinaldo.

Aguinaldo was born on the 22d day of March, 1869, at Cavite Viejo, and his education was such as the schools of the little country town were able to provide, and his life was spent in business to his twenty-fifth year, when he was elected Mayor of Cavite. On the 20th of August, 1896, the Governor of the Province of Cavite reported to Manila that everything was quiet in Cavite, and no insurgents to be found anywhere. Aguinaldo,



EMILIO AGUINALDO

From HARPER'S WEEKLY. Copyright, 1898, by Harper & Brothers.

on his way home on the day after, the 21st of August, 1896, heard that a warrant had been issued for his own arrest on the charge of siding with the insurrectionists. Instead of going home, according to Captain W. A. Harper, in *Harper's Weekly*, he gathered twenty of his friends around him and waited for the arrival of the warrant. On the 22d a captain of the civil guard and two sergeants appeared to arrest him, and were promptly killed. This started the revolution which has culminated in making him President of the Philippine Republic.

Factories Without Chimneys.

To horseless carriages and smokeless powder add chimneyless factories as the newest in nomenclature. Heretofore it has been necessary in order to secure plenty of draft for a furnace to build an immensely tall chimney. Now it is found that instead of pulling the draft by a chimney you can push it from below with a fan. A plant running three boilers of 260 horsepower tried this experiment with a fan whose wheel had a diameter of 54 inches. The draft was so much bettered that the firm saved nearly \$1,000 a year by using a cheaper grade of coal.—*San Francisco Chronicle*.

GOLD DUST

THE BEST WASHING POWDER

Where Woman is Master.

Montrouge, who has just returned from seventy years' residence within a few miles of the north pole, tells of a curious custom existing among a colony of Poles who dwell there. The woman is the head of the house and the family, and she has an ingenious system of keeping the husband out of mischief during her absence. The method is simplicity itself. As she is leaving she pours a pailful of snow water over the entrance to the snow hut. This instantly freezes, and the husband is thus safely imprisoned within the house, as he is too lazy to dig out, and is therefore compelled to stay at home until the return of his lady. Unfortunately, climatic conditions and others prevent the adoption of this system in England, where something of this sort is much needed.—*London Judy*.

Encyclopedia Britannica.

The wife of the sculptor Flaxman was greatly responsible for her husband's success. Sir Joshua Reynolds, chancing to meet Flaxman soon after his wedding, said to him that his marriage was a mistake, since it would ruin him as an artist. On reaching home Flaxman sat down by his wife, took her hand in his and said:

"Ann, I am ruined as an artist."

"How so, John?" said she. "How did it happen and who has done it?"

"It happened in the church, and Ann Denman has done it."

Then he told her of what Sir Joshua had said and how imperative it was for a student to give himself heart and soul to his art and also that if he would become a great artist he must study the works of Michael Angelo and the other great masters in Rome and Florence. Then Ann declared that great he should become and that no one should say "Ann Denman ruined Flaxman for an artist."

Their means were small, but by work and economy on the part of his wife Flaxman at the end of five years was able to go to Rome, where he studied for seven years. For thirty-eight years Flaxman had in his wife a cheerful, wise and appreciative helper. He was himself a perfect child in business matters, but he fully appreciated his wife's cleverness and in questions of difficulty he would say: "Ask Mrs. Faxman—she is my dictionary."—*Syracuse Standard*.

The Retreat from Moscow.

It was on November 25, at about 7 o'clock in the morning, when we saw the head of the column. The first we saw were generals, a few of whom were on horseback, but the majority on foot. The latter painfully dragged themselves along, almost all having their feet frozen and bound up in rags and pieces of sheepskin, and dying of hunger. We then saw what was left of the cavalry of the guard. The Emperor came next on foot, with a stick in his hand. He was muffled up in a large capote lined with fur, and wore on his head an amaranthine velvet cap edged with black fox-skin. On his right marched, also on foot, King Murat; on his left, Prince Eugene, Viceroy of Italy; then Marshals Berthier, Prince of Neufchatel; Ney, Mortier, Lefebvre, and other marshals and generals, whose corps had been partly destroyed.

They were followed by 700 to 800 officers and subofficers, marching in order and bearing in the greatest silence the eagles of the regiments to which they had belonged and that had so often led them to victory. They were the remnant of over 60,000 men. My poor Picart, who had not seen the army for a month, gazed on silently, but his con-

vulsive movements showed only too well what he felt. I saw big tears roll down the cheeks and fall on his moustache, from which icicles were hanging. Then, turning to me: "Really, compatriot, I do not know whether I am asleep or awake. I weep because I have seen our Emperor marching on foot, a stick in his hand—he that was so great and who made us so proud!"—From "Memoirs of Sergeant Bourgoigne."

Tragic Sea Story.

There are now two ships in this port which collided off Cape Horn one dark and stormy night in a thick snowstorm. They are the Glen Ericht and the Balmoral. Captain Davies of the Glen Ericht, believing that this vessel was on the point of sinking, seized his wife and threw her onto the Balmoral and rushed to get his child to pass aboard that ship. Meantime the two vessels had separated and could not communicate with each other in the midst of the raging storm. In the morning they had drifted out of sight of each other. As Captain Davies threw his wife aboard the Balmoral he heard a scream which greatly distressed him afterward, for it sounded to him as the despairing cry of one lost. His ship was not so much damaged as he supposed, and he made for Montevideo, which was reached in due time. A few days since the Balmoral made the same port, and then Captain Davies learned that his wife had fallen short of the ship, and the cry he heard was the death shriek of his wife, who perished through his attempt to save her.—*Montevideo Times*.

His Memory Was Faulty.

The late Justice Keogh was in the latest years of his eventful career afflicted with failing memory. On the occasion of a "bar dinner" at his house he went upstairs to dress, but did not reappear. The company sat patiently for some time, till at length—just as their hunger was getting the better of their manners, and an emissary was dispatched to hunt up the missing judge—his lordship appeared and explained with many apologies that, imagining that he was retiring for the night, he had undressed and got into bed. After an hour's sleep he awoke, when it suddenly struck him that he had not yet dined, on which he hurried down to his guests. He once attended a representation of "Macbeth" in the Gaiety Theater, Dublin. It will be remembered that the witches, in reply to the thane's inquiry what they were doing, declared they were doing "a deed without a name." Catching the sound of the words, and no doubt imagining he was on the bench in the Four Courts, Keogh explained, to the astonishment of the audience, "A deed without a name! Why, it's not worth sixpence!"—*San Francisco Wave*.



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The Young Folks.

THE SCHOOLBOY'S FAVORITE.

For any boy 'at's little as me,
Er any little girl,
'hat-un's the goodest poetry-piece
In any book in the worl'
An' ef grown-peoples wuz little ag'in
I bet they'd say so, too,
Ef they'd go see their ole Gran'ma,
Like our pa lets us do!

Over the river and through the wood
Now Gran'mother's cap I spy;
Hurrah for the fun! Is the puddin' done?
Hurrah for the punkin'-pie!

An' I'll tell you why 'at's the goodest
piece—
'Cause it's ist like we go,
To our gran'ma's, a-visitun' there,
When our pa he says so;
An' ma she fixes my little cape-coat
An' little fuzzi-cap; an' pa
He tucks me away—an' yells "Hoo-ray!"
An' whacks Ole Gray, an' drives the sleigh
Fastest you ever saw.

Over the river an' through the wood
Now gran'mother's cap I spy;
Hurrah for the fun! Is the puddin' done?
Hurrah for the punkin'-pie!

An' pa ist snuggles me 'tween his knees—
An' I he'p hold his lines.
An' peek out over the buffalo-robe—
An' the wind ist blows!—an' the snow ist
snows!—
An' the sun ist shines an' shines;—
An' the ole horse tosses his head an'
coughs
The frost back in our face;—
An' I'd ruther go to my Gran'ma's
Than any other place!

Over the river an' through the wood
Now Gran'mother's cap I spy;
Hurrah for the fun! Is the puddin' done?
Hurrah for the punkin'-pie!

An' all the peoples they is in town
Watches us whizzin' past
To go a-visitun our Gran'ma's,
Like we all went there last;—
But they can't go, like ist our folks
An' Johnny an' Lottie, an' three
Er four neighbor-childerns, an' Rober-ut
Volney
An' Charley an' Maggy an' me!

Over the river an' through the wood
Now Gran'mother's cap I spy;
Hurrah for the fun! Is the puddin' done?
Hurrah for the punkin'-pie!

—James Whitcomb Riley.

Written for Kansas Farmer.

YOUNG FOLKS IN THE OLD COUNTRY.

BY ANNA MARIE NELLIS.

NUMBER 54.

ROSTOCK.

On the left bank of the river Warnow and eight miles from the Baltic Sea, is situated the capital of the Grand Duchy, Mecklenburg-Schwerin. It is a very ancient town and long ages ago it was of more importance, commercially, than it is now. The railway depot for Rostock is nearly a mile from the gates of the city; and when we left the cars we found not a single means of conveyance in waiting by which we could ride to the city. A street railway extends to the depot, but no cars were "running" so early in the morning.

However, we found walking not disagreeable, and we arrived at the market place in time to see the German women arrange their shops or stalls for the day's business. The market place of a German town is nearly always the center of the business portion; and the market house in Rostock is of such quaint and interesting appearance that it is worth walking a mile to see it.

The Rathhouse is the most prominent feature of the market square, and it was built just 633 years ago. When Columbus discovered America this building was over 225 years old.

All the buildings around the market square are ancient in appearance, though kept in excellent repair. The city has several very old and interesting churches, but I have described so many that I will omit these in Rostock. The population of the place numbers nearly 50,000, but not much evidence of commercial activity did we see.

In the middle ages it was a member of the "Hanseatic League," and for hundreds of years was a center for the Baltic Sea traffic.

We visited the grand ducal palace, which is even plainer and smaller than that in Neustrelitz, described in a former letter.

Rostock has several very ancient gates, which were erected many centuries ago, when it was a walled town. The gates are worn by the storms of ages, but are still very interesting as objects for inspection. One I especially admired is called the Steinthor (stone gate). It is two stories in height and very solidly built of huge blocks of stone. Over the gateway are several rooms for the occupancy of the keeper and his family.

The streets are paved with cobblestones and are generally quite narrow. It was 10 o'clock when we had finished our examination of the Steinthor and had seen all of the city we cared for. The little street car, which makes a few

trips each day to the depot, was waiting at the stone gate, and in it we enjoyed a swift ride of one mile in twenty minutes or so to the depot.

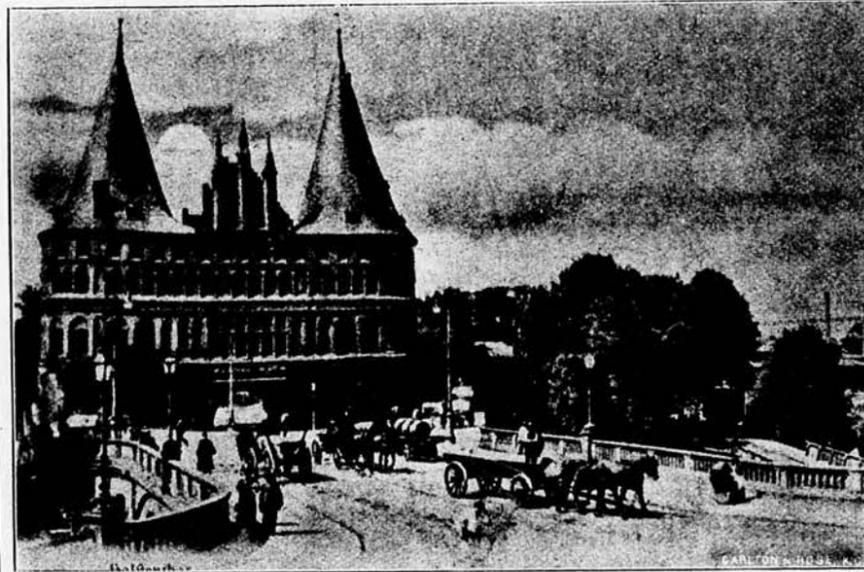
LUBECK.

A railway ride westerly from Rostock of nearly sixty miles, through a country not very interesting to the eye, brought us to the free city of Lubeck, which is located on a ridge between the rivers Trave and Wackenitz.

Like Rostock, this city is more renowned for its past than its present commercial importance. It is visited every year by thousands of tourists who desire to view the characteristic memorials of its former greatness. Here may be seen, as in the days when Lubeck stood chief among the eighty-five cities of the Hanseatic League, the old gabled houses, the quaint churches with their wonderful carvings, and the imposing remnants of the ancient fortifications.

The present city dates from 1143, when it was built, five miles from the site of an older Lubeck, of Slavonic origin, by Count Adolphus II. of Holstein. Fourteen years afterward "Henry the Lion," Duke of Saxony and Bavaria, forced Count Adolphus to surrender the city to him and the Duke made it his capital. About fifty years later, Waldemar, King of Denmark, conquered Lubeck, so its early years were marred by much warlike enterprise.

Instead of stone and wood, which were always scarce in northern Germany, Lubeck is built of variegated brick, chiefly red and black. The churches, unlike those in the Rhine valley, have no flying buttresses, but are exceedingly plain as to their exterior, but are surmounted by very lofty towers.



HOLSTENTHOR, LUBECK.

We entered the city through the finest specimen of medieval gateway to be found in all Europe. The "Holstenthor" is composed of two beautiful and immense towers, many stories in height; the picture herewith will give a better idea of its construction than a printed description could.

From the gate a short walk brought us to the market place and Rathhouse. As in German cities generally, the city building is one of the most interesting objects to be visited. The one in Lubeck occupies the northeast corner of the market platz. It is built of brick, in Gothic style, with huge gables and quaint spires. It is peculiar in that it consists of two buildings adjoining each other at right angles. On the two buildings I counted eighteen spires, and as I could not see all four sides at once, I presume there are more spires than I counted.

The interior is as interesting as the exterior. We entered under a huge arched doorway, and found we had taken the wrong entrance, as this led to the "Rathskeller," which is fantastically painted and reminded me of the Rathskeller in Bremen. A corps of university students were in the Rathskeller, sitting at the tables drinking wine and singing German songs. We simply took a hasty look and then continued our search for the city hall. On the ground floor are the exchange rooms, in which we found nothing to interest us particularly. The staircase is a gorgeous affair, supported by pillars of very brightly-colored tiles and with richly-painted arches. In the hall above we saw a fine mural painting, representing "Henry the Lion receiving the homage of Lubeck." The many chambers of the Rathhouse date from the sixteenth century, so far as their interior decorations are concerned. In one "saal" there is an inscription over the chimneypiece which amused me, which, translated, would be: "Many a man

sings loudly when they bring him his bride; if he knew what they brought him he might well weep." This inscription dates from 1575.

While we were admiring the beauties of the old rooms, we heard the chorale of the chimes, which sound every half hour from one of the towers of the Church of St. Mary, which adjoins one wing of the Rathhouse. We spent the next twenty minutes in visiting the famous "Hall of the Hansa," where the deputies from the eighty-five cities of the Hanseatic League used to meet, and then hastened to the Church of St. Mary to see the famous clock, which performs every day at noon for the edification of a never-failing audience.

The church is a fine example of the low German brick architecture. Its many interior decorations are all different from each other, and not like any I had seen in other German churches. Every stone in the floor has an inscription and a name telling whose remains lie beneath. There are a half dozen small chapels, all fantastically decorated. There are slabs of marble and brasses on the walls marking the vaults of different families. The church has three immense organs, the largest having 5,134 pipes. In one of the galleries I saw a Danish flag which had been captured by the Lubeckers in 1427. The whole church, by reason of its decorations and contents, seemed more like a museum than a sanctuary.

But it is "on the stroke" of 12 o'clock and we hasten behind the high altar to see the clock strike. The clock's face represents the signs of the zodiac as well as the hours of the day. There were fully one hundred people present to see the performance. The top of the clock is decorated with a sort of miniature al-



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Its very newness has given it active life, so that one would think it was largely inhabited by "formerly of Kansas" people.

While Hamburg had an existence as a town long before, yet it became first of historical interest when Charlemagne built his castle there in the years 808 to 810. In 1215 the Emperor Otto V. of Germany made it an imperial city, and in 1241 Hamburg and Lubeck arranged the foundation for the "Hanseatic League," which fostered the commercial interests of northern Germany for very many years.

The city is situated on the northern branch of the Elbe, about ninety-five miles from the mouth of that river, and at a point where the Alster river joins the Elbe. The Alster river has been dammed near its junction with the Elbe, and water thus turned back makes practically two lakes, called the "Binnen Alster" and "Aussen Alster," around which the handsomest portion of the city is built.

The Binnen Alster, or Alster Basin, is a quadrilateral sheet of water covering about sixty acres of surface, and on three sides are quays planted with trees and flanked with palatial hotels and handsome private residences; the fourth side is bounded by a magnificent bridge which separates the basin from the outer Alster, which is a much larger body of water. Many steamers and electric launches enlivened the surface of both the inner and outer basins.

It was near night when we reached the city, and our first visit was to the Alster lakes. We went aboard a steamer in the outer basin and had a delightful ride to the Elbe junction and back, which afforded us a fine view of a large part of the city. On our return it was nearly dark, but we determined to enjoy a ride on the inner basin before closing our day's work. A ride on an electric launch on the "Binnen Alster" in the evening of a beautiful July day is the most delightful excursion I can imagine. The large hotels and palace-like houses on the banks were brilliantly lighted, and if we had not been exceedingly tired from the long day's travel we could have enjoyed it for many hours.

The following morning we visited the market place—a point in a German city I never shall neglect when my object is sight-seeing. Here we saw plenty of ancient German costumes; women with wooden shoes, with yokes on their necks, carrying baskets and pails. These we knew were not from Kansas, but were characteristic of the "Old Country" sure enough. We crossed over many bridges, for Hamburg might be called a northern Venice, from the fact that many of its streets are canals and the residents along these canals must travel by boat from point to point.

We did not neglect the churches of Hamburg, for this was to be our last point for visiting before returning to Berlin.

St. Peters', St. Nicholas', St. Catharine's, St. James' and St. Michael's are the names of the most prominent churches of Hamburg, and they give the names to the five oldest city parishes. The church of St. Nicholas is the most prominent of the five, and its architecture is quite plain. It has one of the very high spires of Germany, and only two others in Europe are higher. St. Nicholas reaches an elevation of 473 feet, while St. Ouen's, at Rouen, is 492, and the Cologne Cathedral 511 feet from the ground.

Shortly after noon we took the train for Berlin, and sixteen miles from Hamburg we passed near Freidrichsruh, the home of Prince Otto von Bismarck, whose official funeral I attended in Berlin a few days later.

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STOCK BREEDERS' ANNUAL MEETING.

The attention of every breeder of pure-bred stock, as well as the feeders of live stock generally, is called to the program of the ninth annual meeting of the Kansas Improved Stock Breeders' Association, the Kansas Swine Breeders' Association, the Kansas State Board of Agriculture, and the State Poultry Association's annual exhibition, all of which will be held in Topeka next week—January 9 to 14, 1899.

These programs have been published in detail in the *Kansas Farmer* and cover such a range of pertinent matters of value to the general farmer that he can ill afford to miss them. It will be time and money well invested.

The Kansas railroads have all granted for these meetings an open rate of one and one-third fare for round trip tickets and no receipts or certificates will be necessary. Tickets will be on sale January 7 to 12 inclusive, and be good for return passage until and including Monday January 16.

The breeders' associations intend to publish their proceedings, this year together with all papers and discussions, and a list of the members with the class of stock bred by each. Such a publication will provide a live stock manual worth many times the cost of the dollar membership to any breeder or feeder in Kansas. Whosoever will may come.

THE PLUNGER NOT YET CAUGHT.

The latest form of large-sized swindling is in the use of "cattle paper." For several years money lenders have found desirable investments for money in their charge by lending it for the purchase of "feeders." These feeders constantly increase in value, under competent handling, so that the security becomes better as feeding progresses. Cattle paper brings high rates of interest. Competition for this class of paper has, of late, been active.

The opportunity for a bold plunger in the making of cattle paper, found its man in the person of G. G. Gillette, of Dickinson County. He handled cattle by thousands, mortgaged them several times over, and found ready takers for the paper. His operations were so magnificent that he could sell a thousand head of mortgaged cattle under the eyes of the mortgagee and never be suspected. He became the champion borrower and the champion seller of mortgaged property.

But, a few weeks ago, the crash came. He wanted more money and failed to borrow it. He then disappeared, and his creditors found themselves possessed of several times more Gillette paper than the value of the security.

The latest news is that Gillette has located at Chihuahua, Mexico, and there engaged in the business of shipping cattle to Cuba. It is reported that he has compromised with his creditors by paying \$50,000 in settlement of several times as much indebtedness.

After going to Chihuahua, he wore disguises and assumed the role of a hunter. His attorney bought a large interest in the leading hotel and took care to cover his principal's identity. This attorney has also conducted the compromise negotiations.

It is a pity that such a plunger should escape the just punishment meted out to smaller swindlers.

THE NEW RAILROAD LAW.

The Kansas legislature, assembled in extra session, has enacted a new railroad law. The evident intent of this law is to bring the railroads of the State under a more rigid control by the powers of the State than has heretofore been exercised. This control is to be exercised by a court which the new law provides.

Heretofore the differences arising between the railroads and their patrons, as to carrying charges, have been adjusted through a board of railroad commissioners. This board had the right to hear complaints and to recommend adjustments, but had no power to enforce its judgments. The law made this board's findings prima facie evidence as to what was reasonable and just, so that should they reach court the commissioners' decisions were generally sustained. Proceedings before the commissioners were simple and direct, and not subject to long delays nor liable to create heavy costs as before a court.

The earlier plan of the advocates of more rigorous regulation of railroads, appears to have been to clothe the commissioners with power to enforce their decisions. This however, met the constitutional provision which confines judicial powers to courts alone. The new law provides for the establishment of a full-fledged court clothed with the powers of a court. It also provides a method of procedure, whereby cases may be brought before the court and be disposed of. This is similar to procedure in other courts of the State. The judgments of this court are subject to review in the Supreme court of the State and may doubtless be carried to the Federal Supreme Court.

The new court, to which the law gives the peculiar name of "The Court of Visitation," is provided with a solicitor, with clerk and stenographer and a marshal. It is given jurisdiction in strike cases.

The board of railroad commissioners is, of course, dispensed with. Its powers of recommendation are substituted by the court's power to make or revise rates.

The friends of the new law are hopeful for its benign operation.

The appointment of the first court is by the law made the duty of the incoming governor. The three judges, so appointed, will hold office until after the next general election, when their places will have been filled by election for the term of four years. The non-partisan character of the board of commissioners is not preserved, so that the new court is likely to change politics with the changing ascendancy of parties in the State.

KANSAS HORTICULTURISTS.

The thirty-second annual meeting of Kansas State Horticultural Society, last week, showed a well-sustained interest, especially in fruit culture. The small apple crop of the season may have inclined the apple men to a little less prominence than they have heretofore commanded, but there was no indication of abatement in the commercial apple orchard industry.

The study of insect and bacterial foes of the orchard and of methods of combating them, furnished subjects for several strong papers. An encouraging feature of this branch of the work is the increasing attention given by the scientists to practical methods of fighting the big and little bugs, worms, scales, and other living and active foes.

The small fruit culturists and the vegetable gardeners had more of an inning than usual, and they improved their opportunities in a way that could leave no doubt of the growing importance of these industries and of the talent enlisted in them.

The discussions on the irrigation question presented a changing phase. Instead of being confined to speculations as to possibilities in the "short-grass" country, and demonstrations of results attainable by the application of water to the rich soils of western Kansas, the question of irrigation in eastern Kansas, for the production of potatoes and other horticultural crops, became prominent. It may be remembered, that Maj. J. W. Powell, under whose direction many large volumes of the United States Geological Survey were devoted to irrigation, predicted that, while irrigation is important in, and will do much for western Kansas, its greatest development in this State will come in the eastern half.

A feature in which this meeting of the society differed from some of its predecessors, was the comparative absence of the perennial talker who had no paper

prepared, had nothing in particular to say, but just wanted to talk all around every subject. At some meetings this voluble individual is numerous present and seems never to remember that most of the members have come considerable distance, and are attending the meeting at no small expense, and that it is little less than a crime for the mere talker to bore them, simply because he has the opportunity. It would be a good rule, in all such meetings, to require that every address be reduced to writing and submitted to a censor before it could be presented. If, in addition to this speeches, in discussion of papers, were limited to five minutes each and to one speech from each speaker, the work of the society could be better done in the time devoted to its sessions.

The *Kansas Farmer* presents this week the exceptionally fine paper read before the society by Dr. H. W. Roby. Other papers and the more important parts of the discussions will be given in future numbers.

THE KANSAS CITY MARKETS.

The most accurate compilations of live stock statistics are those for which the data are derived from packing house and stock yards records. These show for Kansas City, the market which most interests Kansans, a fairly good growth for the past year, notwithstanding a considerable decrease in numbers of several classes of stock. The total number of animals reported for 1898, is 6,516,028, an increase of nearly 73,000 over 1897. The value of animals marketed at Kansas City in 1898, was \$112,640,613, an increase of \$2,120,000 over 1897. But there was a considerable decrease in receipts of cattle, sheep, and horses. The increase in the number of hogs was from 3,350,796, in 1897, to 3,672,909, in 1898.

Kansas City's dealings in the classes of stock known as feeders is very large. During the year there were sent to the country, for feeders, 583,663 cattle, 50,309 calves, and 235,944 sheep. The largest purchaser of cattle and calves for feeders is Kansas. This State took nearly half of the entire number of cattle and just half of the calves, sold as feeders. Kansas took also 73,214 of the feeder sheep, being exceeded only by Missouri, and leading Iowa by several thousands.

Prices of cattle ranged a little above those of 1897, but lower than those of any other year since 1890.

The bulk of hog sales were at prices differing little from those of 1897. Prices of hogs have been low for four years and are this year little more than half what they were in 1893.

As a wheat market, Kansas City received nearly 29,000,000 bushels in 1898. With the development of outlets to Gulf ports this trade has increased greatly during recent years. The Port Arthur Route is doing more for Kansas City's supremacy in the West than seems to be realized.

Kansas City's corn trade was not so heavy as in 1897, owing to the lighter crop of the season of 1898, but that market received over 13,000,000 bushels of corn during the year.

There can be no doubt but that Kansas City is to be, more emphatically in the future than in the past, the great marketing and distributing center for this section of the West. The fact that this metropolis is spreading rapidly on the Kansas side of the State line is no objection in the minds of the city's most numerous patrons.

PRICES OF WHEAT AND CORN IN 1898.

The prices of the leading grains fluctuated through a wide range during 1898. According to a comprehensive supplement issued by the St. Louis Market Reporter, No. 2 red wheat opened the year at 93½ cents. By February 1, it had reached 97 to 97½. During February the dollar mark was touched and passed. March opened at 98½. The dollar mark was touched once, March 19. April opened at 99 to 99½, but \$1 was reached on April 4, and prices ranged above a dollar during the remainder of the month. May opened at \$1.09. The highest price of the season was reached May 9, for which date the quotation is \$1.40. June opened at 98. June 4, \$1.00¼ was bid, and this is the last time during the year when the dollar mark was in sight. July opened at 75; August, at 64 to 65½; September, at 68½; October, at 67; November, at 69¼; December, at 70; and the year closed at 72½, or 11 cents lower than the figure at its beginning.

No. 2 corn opened in January, 1898, at 26 cents. There was less than 1 cent variation during January, and February opened at 26. March opened at 27¼; April, at 27; May, at 32 to 32¼; June, at 31½; July, at 30½; August, at 32; September, at 29½; October, at 29; Novem-

ber, at 31½; December, at 32¼, and the year closed at 36¼, or 10½ cents above its opening.

INQUIRY ABOUT MANURE.

Editor *Kansas Farmer*:—Being a subscriber and an admirer of the *Farmer*, I wish to ask if there is any other fertilizer than stable manure that it is profitable for practical farmers to apply to their crops here in Kansas. And, if so, what it is, and in what amount should it be applied, and how?

I have no ambition to pose as a fancy or "book" farmer, but wish to increase the net profit of the grain-growing portion of my farm. I raise alfalfa, "the beef steer and his sister" to the number of sixty, "the helpful hen" in four flocks, numbering perhaps fifty each, and am interested in "pork production" to the tune of a hundred or more pigs a year. All these are very good, indeed.

Now, if lime, or salt, or cotton seed meal, or ashes will pay us here to sow on grain crops, we ought to know the fact. Who has tried it and can advise us?

I take a half dozen farm papers and believe the *Kansas Farmer* best for Kansans. When each paper is read, it is given to some neighbor farmer. Have given away, in the last three years, over 500 copies.
O. A. SEATON.
Jewell, Kans.

The writer has had no experience with the use of so-called artificial fertilizers in Kansas. And, reasoning from the facts in the case, it is safe to predict that he will be in his grave a century before artificial fertilizers can be used with profit on Jewell county farm crops. Kansas soils are exceptionally rich in the mineral elements of fertility. Even the often scarce potassium nitrate is in many parts of western Kansas found in the soil in inconveniently large proportion.

Lime is to but a limited extent a plant food. It has its uses, however, in the soil, not the least of which is to counteract the acid in sour land. Now, land is often sour from acids formed by vegetable decay. But, decaying vegetable matter is the one constituent in which Kansas soils, especially western Kansas soils, are deficient. Lime cannot supply this. It is a fact that some Kansas land contains too much alkali. Lime augments the trouble with such soils, having, itself, what chemists call a powerful alkaline reaction.

Most Kansas soils contain as much salt as is desirable.

Cotton seed meal is a vegetable fertilizer. Its chief advantage above other vegetable matter results from the large percentage of nitrogenous matter it contains. But Kansas soils are rich, in some places too rich, in nitrogenous matter. It is, therefore, apparent that the expense of cotton seed fertilizer, upon ordinary grain crops in most parts of Kansas, would not probably be returned.

If our correspondent could afford to plow up an alfalfa field each year he would ameliorate the condition of his soil more rapidly, and at less expense, than by the use of any commercial fertilizer on the market. But a well-set alfalfa field is so hard to get, and is so valuable, that the Kansan who can bring himself to plow an acre of it has yet to be reported.

Barnyard manure is the most rational fertilizer to use in Kansas. All trash that can be turned under and rotted in the soil serves a good purpose. The chief difficulty about using this kind of fertilization results from the liability of the trash to remain dry, and comparatively sound, in the soil. To be of value it must be rotted. The speediest way to get it rotted is by tramping of stock in the feed lot. Trash that is plowed under without having undergone the feed-lot process, may be hastened in its decay by thoroughly harrowing the field immediately after plowing. If the plowing is done soon after harvest considerable trash can be turned to account.

In general, the fertilizers made on the farm are best in Kansas. Soils that are deficient in some mineral, or other constituent, may be improved by making good the deficiency with commercial fertilizer. Such soils are frequently found in portions of the country where excessive rainfall leaches out the soluble elements of fertility and carries them away. Kansas soils have not been thus robbed, but contain the well-balanced proportions of elements of mineral fertility derived from the rocks from which they were made. They seem from time immemorial to have had opportunity to acquire but scanty stores of vegetable mold. To increase this will improve the color, the mechanical condition and the water-holding power of our soils and will thus add to their productiveness.

ALFALFA INVESTIGATIONS IN CENTRAL KANSAS.

By J. B. Norton, in the Industrialist.

This summer, during the latter half of the month of August, it was the writer's fortune (or misfortune) to be allowed to go on an observation trip for the Experiment Station through the central part of Kansas. One of the principal objects of my investigations was alfalfa, and as usual in such cases I saw less alfalfa than anything else. But what I did see only strengthened my conviction that the most of the region visited ought to be given the treatment that one of the men I met recommended for the farm he was living on. He said, "If I owned this land I would put every acre of it into alfalfa."

MODE OF TRAVEL.

My method of travel was more or less of an experiment in itself. The outgoing trip was made entirely on foot, and alone, except for the company of a collecting wheelbarrow that carried my baggage, etc. Besides performing the aforesaid function, it acted as business manager, and determined my route, at least so far as good roads were concerned; always attracted a large and inquisitive audience; started the conversations, and so impressed ladies in stylish rigs and the drivers of mule teams—the two classes of people who always keep the road—that they recognized my imperative right to the road, and always gave their share as well as mine. In fact, it made a profound impression on every one except the Union Pacific baggage master at Abilene, who refused to let it go through as excess baggage to Manhattan, when I was coming in.

Starting at Manhattan, August 15, and going by way of Junction City, White City, Herington, McPherson, and Great Bend, I turned up in Rush Center, over two hundred miles from home, August 31. In passing over this region, just in the center of the State, I saw very little land that could not be more profitably devoted to raising cattle and hogs on alfalfa than in raising the crops that are now being grown on it. This assertion is made without consent of the owners of the land and in spite of the opposite testimony of many of them. "Alfalfa won't grow here, it's too dry," "The roots can't get through the hardpan," "No good unless you can irrigate," "Won't stand pasturing in dry weather," "Must be where the roots can reach water," and many similar phrases were heard; and, while there is some basis for these remarks in a few instances, yet on the whole, they should be suppressed as pernicious to the best interests of the farmer who wishes to get the most good out of his land.

ONE HUNDRED PER CENT INCREASE.

The acreage of the whole area is decidedly on the increase, as at least 50 per cent has been planted in the last eighteen months. The farmers are beginning to find out that, even if alfalfa grown on the uplands will not yield like that grown in Colorado under irrigation, it will yield enough to give excellent returns for the time and labor. They are beginning to realize that they can make more out of prairie hay and pasture, with alfalfa grown on the lower parts of the farm, than they could out of a crop of wheat or a half crop of corn once in five or six years. But those who have the interests of the farmer at heart, and those who have alfalfa seed for sale must not take it for granted that this awakening is general. There are thousands of farmers who, when urged to grow alfalfa, say as they do when listening to a sermon, that the lesson is not for them but for their neighbor.

EXAMPLES.

In order to bring the point home, I will give examples from the different counties that I passed through. During the journey of two hundred miles, practically all kinds of soil and conditions were examined, from the low, sandy bottom lands of the Kansas River to the high, limestone hills of farther south, and the sandy, desert-like wastes in parts of Rice, Barton and Rush counties.

RILEY COUNTY.

Through Riley county my course lay in the Kansas River bottom land, where alfalfa is a success but is not grown to any great extent. In the very sandy ground the gophers kill it out badly and ruin the stand after several years. It gives three or four cuttings on an average and makes good pasture for hogs.

GEARY COUNTY.

Geary county is well represented, in the ranks of alfalfa growers, by Mr. H. A. Huston, of Junction City, who has a farm, several miles south of town, on which are thirty acres of fine alfalfa. Fifteen acres of this had been growing for ten years, and not growing under the best conditions, either; for the

soil is gravelly and stony on part of the field, which is a sloping hillside on the edge of the Lyons creek bottoms. The lower half of this field was re-seeded, this spring, at the rate of one-half bushel of seed per acre; and, notwithstanding the prevailing belief that a field with a poor stand cannot be successfully re-seeded, got a good stand that was doing well at the time of my visit. Besides this field he had fifteen acres in the bottom on which the alfalfa was several years old. From his thirty acres he got over one hundred tons last year and expects more this year. This hay commands a good price, and Mr. Huston finds a ready sale for most of it right from the windrow, thus making his net and gross receipts almost the same.

MORRIS COUNTY.

In Morris county, alfalfa grows well on the bottom land, and will do well on upland, if given a fair show. I saw a piece near Skiddy doing nicely on the top of the high hills of that region, in soil that I could scarcely dig because of the clay and gravel. If you ever go to Skiddy, go up on that hill and be convinced that alfalfa will grow where its roots cannot reach the water. At White City I found the only piece of subsoiled alfalfa on my trip—a three-acre piece belonging to Mr. W. R. Bigham. While the subsoiling may not make a remarkable difference in this case, still the field seems to enjoy the drought better than the unsubsoiled fields near by. This field shows the superiority of alfalfa over red clover and timothy, for, of the three which were sown together, the alfalfa alone remains and yields 1½ tons per cutting on each acre. All through this region, which is on the divide between the two river systems and is the highest land in this part of the State, there are fields of alfalfa usually away up on the highest prairie country, and, at the time of my visit, growing and green in spite of the fact that they had had no rain for weeks.

DICKINSON COUNTY.

In Dickinson county, a mile or two west of Herington, lives Fred Meyer, a German farmer, who has had alfalfa on his place for over eleven years and probably will continue to grow it for all time to come. He finds no trouble in making it pay and of course thinks it is the crop. He often gets four cuttings from the lower portion of his 23-acre field which is on the slope of the Lyons creek valley. This creek is lined with alfalfa. As Mr. Meyer says, "most everybody has some alfalfa in here."

MARION COUNTY.

In the northern part of Marion county, along the Rock Island track, there was little alfalfa to be found, though what was there clearly indicated its value in that region. Between Tampa and Durham, is a ranch belonging to Mr. J. Jacoby, of Marion. On this place there are over two hundred acres of alfalfa, largely on upland soil, and doing well; used for hog pasture in part, but showing up green and fresh amid the dried-up appearance of the surrounding fields. With such large centers of infection, alfalfa is liable to come into general use in this part of the country; and this one ranch is not the only place in the county where alfalfa is grown. There are numerous fields, of from ten to fifty acres, scattered all through the northern part of the county, and, I am told that it is more abundant in other portions.

MCPHERSON COUNTY.

Of all the regions investigated, the eastern part of McPherson county seems to be best adapted to the growing of alfalfa without irrigation. The "flats" east of the county seat, McPherson, are very rich, and ought not to be wasted on wheat or corn. The larger part of the farmers have five to ten acres of alfalfa to supply their needs in the way of hay and pasture. As an example, take the owner of a farm four miles east of McPherson, Mr. R. D. Dean, who has five acres, sown three years ago. It was cut twice this spring, and pastured by fifty head of hogs for three weeks, yet it will have to be cut a third time. Part of the field was once a lane, and on this hard soil the growth is better than on a strip alongside of it that was mulched for potatoes. The old potato patch in fact is poorer than the rest of the field. Besides this he has a larger field sown this spring, and expected to do some fall planting on some ground that he was having plowed for the purpose while I was there. It is claimed that alfalfa can be grown to better advantage in this region than it can without irrigation in the Arkansas River Valley, and I think the claim a just one.

In McPherson I saw a lot of about half an acre planted to alfalfa and supporting a large flock of fine Black Langshan fowls, the appearance of the piece showing beyond doubt how the chickens liked

it. The western part of the county is not so good as the eastern part, but there are several fields of alfalfa that show up quite well.

RICE COUNTY.

In Rice county there is a large acreage of alfalfa on the Little Arkansas River. Some farmers have fifty or more acres, in the rich bottom land, devoted to it. But the part that attracted my attention was two fields, together making only eight acres, that for nine years have survived the disagreeable climate of the high hills of that region on which the farm is located. The farm is the property of two brothers named Rose and is about ten miles east of Lyons. The boys say that each of the seven seasons has yielded at least one good cutting. This year, taken as a sample, they got two cuttings of a ton per acre each time. In the next ten miles there are several fine fields, and tales of others much larger just off the road. One small piece, on a creek bottom, yielded three tons per acre the first cutting this spring.

Little Cow creek, west of Lyons, has several good fields along it. Mr. J. F. Caldwell has about twenty acres—four of which were planted this summer after the rye was cut from the ground. For six weeks the seed lay in the dry ground, and then germinated when a rain finally did come. At the time of my visit, it was doing well, roots over a foot in some places, and a thick stand all over the field.

BARTON COUNTY.

From here until Ellinwood, in Barton county, was reached I saw no alfalfa. Much of the country is made up of sand hills, though there are large areas, like the Cow creek valley, which is broad and almost an equivalent of the Arkansas River bottom land, which should yield great returns in this line. From Ellinwood to several miles out of Great Bend, I was in the Arkansas River bottoms where alfalfa is a staple crop. The only difficulties in growing it are the gophers that kill out patches over the fields where the ground is too sandy, and the grasshoppers that work in from all sides. The gophers do not bother much in the gumbo land, and this kind of soil yields as large crops of alfalfa as the sandy fields do. Along my line of travel in this region, I saw several fields of forty or fifty acres in extent.

Up Walnut creek, there is not much alfalfa after one gets beyond the direct influence of the river. What I saw seemed to be doing well and yielding good returns, but the farmers do not think it pays them. They know of the successful fields along the Arkansas, and get discouraged because their fields do not yield like those. On the high lands, alfalfa, they say, will not grow; it dies out in a few years. I heard of some fields that were still growing after several years trial, and saw some that were doing well on the slopes of the hills. Stray plants growing along the roadbed of the Santa Fe, in Rush Center, show a fine growth, and indicate that the region is not altogether hopeless. Thus far up the valley, I would prefer the risk on a crop of alfalfa to the one that would have to be taken on a wheat crop—and the people seem to be getting rich on their wheat.

All along my route, the only places where alfalfa will not be the best thing are in the sandy regions where the gophers kill it. Under irrigation these places would succumb, and make the whole region an alfalfa country. Of course, the uplands will not do as well as the bottom lands, but the crops of alfalfa harvested will pay better than a failure in wheat and corn, and be worth more than a good crop of both, leaving the prairie hay that would have been used as feed for clear profit. The only essentials for success are, a farmer with a reasonable amount of horse sense, a clear piece of ground in good shape, and lots of seed—one-half bushel or more for upland. Then, sow early, to get a good start before dry weather, keep the weeds cut, and don't pasture too close, and, with a few other precautions, any one can raise alfalfa on the uplands and make it pay.

Subsoiling is not much practiced, but would, I think, help. Nurse-crops are not usually of any great help in the upland, and, as a rule, it makes little difference whether the seed is drilled or sown broadcast. The element of chance enters into the question to a considerable extent, when the field is making its first start. Dry weather, insects and weeds are only overcome by persistent effort. The "try, try again" method is the most successful with alfalfa. A man out on Walnut creek, tried three times before he got a stand, but now his field "is a thing of beauty and a joy forever."

Henry Clews concludes his latest circular by saying that "high prices for cereals make capitalists in the West,

Church Debts

Very likely the Dorcas Society, The King's Daughters, or the Young People's Society of Christian Endeavor, want funds to carry on their work this winter. Perhaps you have in contemplation a new organ or carpet for the Sunday-school, or possibly the question of paying off the church debt is troubling you. We have a plan for making more people read THE LADIES' HOME JOURNAL, and at the same time providing money for any of these objects. Write to us and we will tell you how to do it.

The Curtis Publishing Company
Philadelphia, Pa.

while low prices for them make Populists instead." Moral: If Wall street is opposed to the increase of Populists, give us high prices for the products of our farms. Kansas is willing to take that kind of medicine.

A PROMOTION.

At the beginning of 1899 Kansas loses and Pennsylvania gains a valuable worker, in the person of Prof. E. E. Faville, who has, since September, 1897, been at the head of the horticultural department of the Kansas State Agricultural College. Professor Faville goes to the presidency of an agricultural college recently established at Doylestown, Pa., by the Reformed Jews. The wealth that is behind this college is ample to provide every facility for development as rapidly as it can be made. The change, which is a promotion for Professor Faville, has been earned by hard work, efficiently performed. His latest service to the State of Kansas was rendered last week, in presenting before the annual meeting of the State Horticultural Society some of the results of his investigations of the questions of keeping and marketing fruits and of combating insect pests. A bulletin, now in the hands of the printer, will make available in more enduring form some of the results of his work as to insects, and should go into the hands of every fruit-grower, gardener, and farmer in the State. It will be sent free on application, by postal card or otherwise, to the Kansas Experiment Station, Manhattan, Kans.

Good work may be expected from Professor Faville in the higher position to which he goes. He is a young man, with an immense amount of good work in him. Kansans will watch his successes with pride and interest.

There are things which some wealthy New Yorkers must have at whatever cost. For Christmas, 1898, one of these necessities consisted of strawberries. They sold at \$9 a quart wholesale, and it is computed that if the retailer made his usual profit the berries cost the consumer 75 cents to \$1 apiece. Most Kansas farmers did without these luxuries for their Christmas dinners.

Shafter as a Story-Teller.

Sitting amid a group of personal friends at Chamberlin's, General W. R. Shafter related last evening many interesting stories of his military experiences on the plains. The General is a tip-top story-teller, and as his honest face lights up while he talks in his sincere, unpretentious way, one feels that here is an old-fashioned, true-hearted gentleman, broad-gauged and liberal, enjoying life himself and loving to see others happy.

The conversation turned on Texas, a country that is very familiar to General Shafter, and he told of the days when his soldiers ran out of meat on the Staked Plains, and he turned his two companies of cavalry loose on a herd of buffaloes. They shot down some forty or fifty head out of a drove of thousands, and there was feasting on bison until everyone grew weary of it. In Presidio County, in southwest Texas, a county as large as the State of Delaware, the General has a town named in his honor, and, singular to say, the town of Shafter is as reliably Republican as if it were in Maine or Vermont.—Washington Post.

Horticulture.

THE AESTHETIC PHASE OF LANDSCAPE GARDENING.

Address delivered before the Kansas State Horticultural Society, December 27, 1898, by Dr. Henry W. Roby, of Topeka.

Landscape gardening has two objects, profit and pleasure. Profit in landscaping relates to the enhancement of land values. A piece of bare native prairie will produce as much wheat and corn or graze as many cattle as it would if it were laid out and planted in the most elaborate and artistic manner known to landscape art, but it would not sell for as much and would be totally undesirable as a place of residence. Its only attraction or value would lie in its capacity to produce something the owner could sell. No bird, nor beast, nor man would choose to live on it as a matter of preference, though we are often almost compelled to think so, when we ride through the country and see so many dilapidated and shabby shanties and shacks set in the hot sun on so many bald knobs and treeless patches by the roadside. But the occupant is always ready to tell us that, through ignorance or penury, he can do no better.

I think all sane men will admit that if a corner of any bare farm were to be set apart and well improved by trees and shrubs and flowers, by walks and driveways and grass plats, such a farm would always find a much readier sale than it would without such improvement. And the nearer that corner of two or three acres approaches landscape perfection the greater its value in the market, and the greater its capacity for conferring pleasure on all the family, and keeping the boys and girls at home on the farm. I have no doubt that if, on a given day near at hand, a three-acre patch were reserved out of every farm in the State and set apart for landscape gardening, and every owner should buy and study some good practical book on landscape gardening and apply its principles faithfully to his little reservation, the entire farm values of the State would double in ten years by reason of this one element of enhancement. It would take about that long to make a fair growth of trees and shrubbery. That improvement would cost far less in money than might be imagined. A few dollars for trees and shrubs, and genius and energy would do all the rest in otherwise idle hours, and the owner's mind would grow while his trees were growing.

But, as I am not to talk on the profit side of landscape gardening, except by a brief recognition of its existence, I must come to the topic specially assigned to me by your secretary, namely, the "Aesthetic relation of landscape gardening to mankind."

AESTHETIC PHASES.

Now that word, "aesthetic," is a big word, a whole mouthful to some people who chew tobacco and talk wisely of hogs and horses. But it is entirely harmless and a good word to get acquainted with. Webster and Ruskin take all the lurking dangers out of it by telling us that it is Greek, and means "the theory, or philosophy of taste; the science of the beautiful in nature and art; especially that which treats of the expression and embodiment of beauty by art." It is a wholesome, handsome, cheery word. It has no poisoned arrows in its quiver, no deception in its heart and no Spanish torpedoes or kicking machines in its coat-tail pockets. It goes abroad in rain and shine without rubber boots or umbrella, for the sunshine and showers are in league and love with it.

WHAT IS LANDSCAPE?

What is the landscape? And what is landscape gardening? Phillip Gilbert Hammerton, who has written a very delightful book on "The Landscape," tells us that the landscape includes all that the eye can take in of land, sea and sky, and that a landscape includes simply what we can see at a glance from one point of observation. So, you see, if we undertake to garden the landscape, we have something larger than an "army contract" with the navy thrown in, for landscape gardening is the art of laying out grounds and arranging trees, shrubbery, etc., in such a manner as to produce a picturesque effect.

FIRST LANDSCAPE GARDEN.

And I am happy to say to you that landscape gardening is absolutely the oldest and most delightful occupation among men. The first man to mount the planet and assume authority and control over it was a landscape gardener, the Father of the Adamites. According to the book of Genesis, when the Landlord of this big planetary garden got it all laid out just to his liking, he said, "There was no man to till the

ground. So he planted a garden eastward in Eden with every tree that was pleasant to the sight and good for food and set Adam to "dress it and keep it." And for wages, the new gardener was to have all he and his family could eat and drink on the premises, except the fruit of one tree, which was reserved especially for the owner. How many of you get any better net wages than that today? Clothes and house rent were not in demand at that time, and specie payment had not then been invented. But Adam, like many of his sons, got tired of hoeing and raking and sweeping up leaves on the lawn and concluded to sell out and go west. But there was no man on earth to buy the place. So he traded it off to the landlord of another big plantation in a very tropical region, and took Horace Greeley's advice and went west. A deal that his family has regretted ever since, for none of them ever got a chance to go back and visit the old homestead. You see Adam was not satisfied with the aesthetics in the case. He wanted more land and plenty of help, just as many of you do to-day. He wanted more land, to raise more corn, to feed more hogs, to buy more land, to raise more corn, to feed more hogs, to buy more land. He wanted all the land adjoining his, and because he could not have it, he got up the first strike we have any record of, and his sons have kept on striking ever since.

But I hope we have all learned by this time the force of Adam's last utterance to his family, that a little garden well tilled, a little wife well willed, and a little pocket well filled, is the quintessence of human prosperity and happiness. So much for the origin of our subject.

WORLD WITHOUT LANDSCAPE.

In order that you may realize the full meaning of the landscape in its aesthetic relation to mankind, I will ask you to imagine, if you can, for a moment, the planet without the landscape. No mountains, no hills, no valleys, no plains, no meadows, no streams, no forests, no flowers, no grass, no lights and shadows, no clouds—nothing but one vast and boundless expanse of dreary waste, described in those four awful words in Genesis as "without form and void." Can you comprehend the appalling transformation wrought on the planet when the Great I Am ordered the landscape?

Let your imagination take you back to that last hour of chaos, just before God thought of light.

How your senses would thrill,
How your heart would stand still,
Seeing God first unroll
The primordial scroll,
And then hurling the earth
Forth from chaos to birth!

Stand here, and look back, and see the internal fires of the globe, expanding and heaving uncounted tons of matter into wrinkles and ridges, into corrugations and contortions of mountains and plains, of hills and valleys, of meadows and water courses. Then, see the Titans of frost and heat, of rain and snow, of crystallization and decrystallization, the melting and disintegration of granite peaks and rocky slopes into soil and fertility. See the forests budding and bursting from the uplands and plains and rising in majestic sweeps and beautiful contours; see them cloaking in green the bare hills and brown plains; see them robbing the valleys in the changing garb of gray and brown and yellow and green and red; see the flowers and shrubs and grasses leaping into existence and clothing with verdure and beauty the interspaces that the kindly forests had left unclad; see the clouds gather and the shadows congregate and the rills trickle where gravity leads the way and collect into streams, leaping in waterfalls and rushing torrents down the winding ways to the sea! See the vines springing from the dark mold of disintegrated hills and climbing and running hither and thither, up the giant stems of the trees and winding over their branches and trailing from limb to limb, and knitting up the forests in a vast network of beauty and bloom. See the towering palms swaying in the breezes and the giant oaks bracing themselves against the shocks of torturing storms and thunderbolts. See the great reaches of pines and cedars and firs lifting, green-garmented, above the snowy carpets of the North; see the interwoven jungles at the equator, denying access to man, and guarding the primeval secrets of nature. See the insensate seas gathering the waters of all the rivers and piling them to unfathomed depths above their deep valleys, whose treasures no man hath discovered! See the inaccessible poles where the frost king's dominions are never invaded. See all these and a thousand other wonders, and then tell me, if you can, the magnitude of the landscape and its momentous relations to man! When we say all we can about it, we have even then only touched the

hem of that mighty garment with which the Creator has clothed this rolling sphere and garmented but one of the countless orbs of his mighty kingdom! Can you comprehend it?

LIFE TRAGEDIES.

The first and last tragedies in life have relation to the landscape. Men are born and buried in it.

Go forth beneath the arching sky and list
What thou shalt hear! Climb to the lifted
crags,
Where brooding silence sits, as one asleep;
Or, sail the sea a thousand leagues from
shore;
Or, thread thy way amid the jungle's
gloom—

Lo, there the first quick cry of infancy
Is heard! Stand where the roaring cata-
ract
Complains of endless servitude, or where
The babbling brooks and swollen streams
lift up
Their voices through the night, or on the
hills
Where storm-swept pines moan in the sol-
itudes.
Or, where unending summer reigns, and
there
That primal cry is heard, and tragedy
Creeps into life and haunts it to the end.
There, too, are found the dead of all the
years
Couched in magnificence or shame. No
spot
Is found, but there some monument re-
mains
To tell the tale that life has gone before.

WORLD'S GREAT SCHOOLMASTER.

Apart from the tragedies of birth and death, the landscape has other and tremendous influences on the human race. It is one of the greatest schoolmasters of the world. It teaches us the grand symphonies of form and color, the marvels of light and shade, the enchantment of rest and motion, the splendors of times and seasons with unending periodicities; the magic of heat and cold, the winning witcheries of grace and beauty, the solace of bloom and fragrance, the music of birds and plashing waters, the lessons of unwearied persistence, the lullabys of gentle and tender ministries, the majesty of mighty forces, and the glorious hope of immortality.

It furnishes studies for the painter and sculptor, patterns for the architect and materials for the builder. It gives a thousand hints to the engineer and builds for him arches and bridges and causeways. It touches man at every point of existence. It brings into his life the beautiful things in art, literature, science, music and oratory. It stimulates imagination and the creative faculty. It develops the beauty-sense as nothing else in the world can do and gives it an ever-present exhilaration. Beauty is the omnipotent charm of the universe and it holds perpetual court in the landscape. All men are courtiers bowing to beauty. Under that most compelling teacher, we all prefer to study the mysteries of the universe. Take beauty out of the landscape and we instantly turn away from it. Put more beauty into it and we camp by the wayside to enjoy its sweet enchantments. We have no quarrel with Emerson, who holds that "Beyond their sensuous delight, the forms and colors of nature have a new charm for us in our perception that not one ornament was added for ornament's sake," all for utility, and the climax of utility is ultimate beauty. Men travel the world over to see the landscape. Buffon published fifteen great volumes in which he reported back to mankind the beauties of nature he found in his travels. Condorcet says of him, that, "Like all great poets, he knows how to render interesting the delineations of natural objects, by blending with them moral ideas which affect the soul at the same time that the imagination is amused and astonished."

OUR DEBT TO SPAIN.

There is one deep debt of gratitude we owe to Spain, for she fitted out and sent the immortal Humboldt to the new world that Columbus had discovered. The world had seen nothing like it since Alexander the Great fitted out a like expedition for Aristotle. To Humboldt, above all mortals, do we owe the grand debt of loving gratitude for collecting and reporting the inexhaustible treasures of the landscape. As the result of five years of research in the then Spanish colonies of Central and South America, he gave the world twenty-nine great volumes of landscape lore, with over 2,000 marvelous illustrations. His observations covered the whole field of natural science, on all that was in and of and related to the landscape. Then, later, came his "Kosmos," the greatest book ever written on nature. There, under the pa-

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Agents wanted. Mound City, Kas.

trouage of the Czar of Russia, came three more great volumes from his pen, on Central Asia. Many other lovers of nature have followed closely in his footsteps. But they only followed.

LANDSCAPE IN LITERATURE.

Great writers have exhausted their descriptive powers on the landscape, and great artists with pencil and brush and camera have transcribed its sublime features and its exquisite nooks. One great Japanese artist sketched Fusi Yama from a hundred different points of view in order to know which aspect of it was most sublime. For—

The lights and shadows in endless play
Renewed its beauty from day to day.

If you would know the prose-poetry of the mountains, read Phillip Gilbert Hammerton's "Moods of a Mountain" and Ruskin's "Mountain Gloom" and his "Seaside Clouds."

If you wish a masterly word picture of our great Western plains, read Sir Charles Dilke's "Greater Britain" and Longfellow's "Evangeline." And if you would see a magnificent word portrait of the tropics, read Charles Kingsley's "High Woods in the West Indies." And for the stupendous and awe-inspiring wonders of the landscape, read Lanoye's "The Sublime in Nature" and "Egypt 3,300 Years Ago." And "The Wonders of the Plant World," by some author too shy and too modest to append his or her name to the title page of that very charming book. For grand portraiture



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of the ancient landscape, go to the Bible and Homer and Virgil. Would you know the poetry of the landscape, go to all the classic bards this side of oblivion. Read Byron and Wordsworth and Thompson and Campbell and Burns and Shakespeare and Tennyson and Longfellow and Bryant and Emerson and Joaquin Miller; they will intoxicate you with its beauty. It was such an one who exclaimed at the beginning of a popular hymn:

"Could we but climb where Moses stood
And view the landscape o'er."

Of all the great philosophers, Emerson stands closest to the heart of nature. In his essays he never tires of recurring to the landscape in its relation to life. He gives us its poetry, its art, its music, its ethics, its tuition, its enchantment of the mind, its benefactions in commerce, in politics, in religion and literature. He never wearies of its grandeur and sublimity, nor its matchless simplicity and beauty. After the one overmastering passion of the human heart, symbolized by the blind god, Cupid, the landscape holds the master position in fiction and song. The influence of the landscape on health and sanitary science is so vast that no man can tell it all. The world is now on wheels in search of health resorts and Adam's lost garden.

INFLUENCE ON MANKIND.

Is there any wonder that landscape gardening holds such a vast place in human affairs? The true landscape gardener produces on a small scale the excellences of the universal landscape. He puts in small compass much that God placed in large compass. He groups, in miniature, in garden and park of a few square feet or acres, the trees and shrubs and flowers and water pools that God has grouped widely on vast unmeasured squares of the earth's surface. And he must always have reference to sky-line and land-line, to outline and inline, to vista, green carpet and umbrage, groups and masses, single shrub and solitary tree; and, for comfort and convenience, he has added walks and drives, paying due regard to that exquisite curve that geometers and artists call "the line of beauty." Some half-blown artists insult you with a rude daub which they call "a landscape," and some half-fledged landscapists insult you, equally, with a rude patchwork which they call a landscape garden. It was such an one Lord Bacon had in mind when he said in one of his essays:

"Deformed persons are commonly even with nature; for as nature hath done ill by them, so they do by nature." And in another, "He that buildeth a house on an ill site committeth himself to prison." And still again, he says: "I recommend that whatsoever form you cast it (your ornamental garden) into first, it be not too busy or full of works, wherein I for my part do not like images cut in juniper or other garden stuff, they be for children."

LOCAL LANDSCAPING.

You only need to go to the northeast corner of our massive State house to find a walk so more than "serpentine" that you are in danger of the blind staggers if you attempt to traverse its artless, witless zigzags. Ultraserpentine paths may do for serpents, but they are an abomination to cultivated minds. And you only need to take one glance at the court house lawn in your beautiful capital city to see a specimen of such gross ignorance of all the laws of beauty in landscaping as to make you think it the silly whimsey of a drunken man or an inmate of the insane asylum. It is said by its projectors to be a specimen of "depressed lawn." Aye, and it is set in the midst of a depressed and oppressed population. It seems to be intended as a revelation and lesson to God, for certainly he never made a lawn or landscape like it, not even in hell's half acre. When you contemplate such balks and botches in art, you will thank God that these landscape savages are not set up as architects and gardeners in all our parks and public grounds. An ignorant man with a little money and shoddy tastes, will plant his urban plat or suburban acres like an infant jungle, packed and crowded with incongruities that make you wish the law would hang him and hand his place over to a swineherd.

All these miscarriages of art that we so often see have a lasting and baneful influence on uncultivated minds. The untutored mind enjoys Humpty Dumpty better than Hamlet, and until their minds are developed, ignorant men and children like play-houses and play-gardens just as the Chinese do. A stuffy little hubbubbery by the back fence is a great triumph to the ignorant man or child who never saw one of God's great landscapes, although living in the very heart of it. The law of beauty is inexorable as the law of gravity, whether in maiden's cheek or blooming rose or rolling sphere. And where State and county

commissioners, who are politicians by trade, and poor at that, foist insufferably rude and barbarous gardening on the public gaze at public expense, it is time for people of taste and culture to call them down and install in their places some landscape artist who knows a curve from a cowpath and a peony from a potato.

LANDSCAPE SCHOOLS.

We should have schools in landscape gardening as well as in agriculture and dairying.

America, instead of following, should lead the world in fine landscaping, and Kansas should lead America in that direction. We have the broad acres at our gateways, we have the soil and climate, and we ought to have the talent and energy in that, as we have in so many other directions.

GREAT PARKS.

Twenty-six cities in the United States have an aggregate of 100,000 acres in public parks, while eight capitals of the old world have an aggregate of 217,000 acres set apart for breathing spaces, health resorts and schools of beauty. And since one-half of all the population of the United States lives in crowded towns and cities, the need of fine landscape gardens clustered in all suburbs is imperative. The National Government has set apart two wonderful tracts of land for public parks—the Yosemite Valley with Mariposa Grove, and the great Yellowstone National Park. The latter contains 3,575 square miles, and is the largest public park in the world. Aside from these, it has a few soldiers' homes and cemetery plats of various sizes.

ART OF SEEING LANDSCAPES.

In the Atlantic Monthly for this month, Prof. Shaler says: "The art of seeing the landscape has a certain advantage over all the others we have invented, in that the data it uses are ever before those who are blessed with eyes. Outside of prison, a man is sure of the sky, the largest, most varied, and in some regards the richest element of all scenes. Every look abroad tempts him beyond himself into an enlarging contact with nature. Not only are the opportunities for this art ever soliciting the mind, but the practice of it demands no long and painful novitiate. There is much satisfaction at the very beginning of the practice; it grows with exercise until it opens the world as no other art can do."

"The Titans of the earth are they who know its laws." Only a few men shut themselves away from the landscape as though they hated it. Pulitzer and Lew Wallace have built and committed themselves to jail-like structures, so arranged that no view of the landscape can be seen by the occupant within. But Washington and Gladstone both left great careers as statesmen and went back to the beautiful landscape to end their noble lives amid sylvan seclusions. And Horace Greeley found at last more pleasure in felling trees than in felling his political opponents, knowing, as did Emerson, that everything in nature goes by law and not by luck.

But, forever and ever, we need more high-class landscape gardening, for the silent tuition of the landscape is the most imperial that holds the schoolmaster's rod over the human race. And fortunate are they who learn its lessons well.

Finally, I adjure you all to study the landscape and get ever closer and closer to the heart of good, kind old Mother Nature, who is always saying to her children:

Come back to thy mother, ye children of
toil;
Come back to the homestead, the land-
scape, and soil.
When trials assail thee and make thee to
weep
I'll hold thee, and kiss thee, and rock thee
to sleep!

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In the Dairy.

Conducted by D. H. OTIS, Assistant in Dairying, Kansas Experiment Station, Manhattan, Kas., to whom all correspondence with this department should be addressed.

THE BUSINESS RESULTS OF THE KANSAS STATE AGRICULTURAL COLLEGE HERD.

Paper read before the Kansas State Dairy Association, November, 1898, by F. C. Burtis, Kansas Experiment Station, Manhattan.

Probably, in reading over the program, when you came to the topic assigned to me, records of Jerseys, Guernseys, Holsteins or cows of phenomenal yields of butter and milk came to the minds of many of you, but I trust that you will not be disappointed when I relate to you an entirely different story. At present the Agricultural College dairy herd consists of grade and mongrel cows, raised on the plains of Kansas, under the great blue sky for shelter. This may seem like a remarkable herd for a college to have, but its like is not an uncommon thing on many farms of Kansas.

The purchase of this herd was brought about as follows: During the process of ridding the college farm of tuberculosis, in the fall of 1897, all the stock—pure-breds—were disposed of. Although the buildings were thoroughly disinfected, it was not thought advisable to place high-priced stock in the buildings for some time to come. Our dairy school was to be started at once, and milk would be needed for this. Common grade milk cows could furnish this article for a time and their value would not involve any great risk under the conditions. Partly for the above reason, it was decided to go out among the farmers and buy the common grade cows found on the average farm, and our herd is a representative of this class of cattle from the central part of the State. Don't understand that I have been making an apology for the existence of such a herd on the college farm, for under any conditions we would probably have purchased some such cows, as there was another very important thought we had in mind, which was the ruling factor in deciding to purchase such a herd.

Records of pure-breds, kept under fancy conditions are numerous, but dairy records of the cows that are found on the majority of Kansas farms are very scarce, and few farmers can tell what are the profits in dairying with this class of cattle, and they do not realize that half of them are not paying for the feed they eat. To many farmers all cows look alike, as far as dairying is concerned; but what a surprise it would be to the average farmer if he knew that of the two cows standing side by side in his barn, one produced butter at 7 cents per pound for the feed consumed, while the other charges him 15 cents. While his stock may not be the most desirable type, he may be shown that an improvement on his method of feeding and care will give him much better results.

It should be demonstrated to him that, by the proper selection of cows from this class of stock, and the use of a right kind of a sire, and a further culling of the offspring, the profits of his herd can be doubled in a few years. To furnish information, along this line, with this class of stock, was the one great object the college had in mind in purchasing our present herd; and have kept and will continue to keep a minute record of each individual as to feed consumed and milk and butter returns.

The cows from which I am to give you the records were purchased in Lincoln County, Kansas, and came from various farmers there. It is true better cows could have been found in the eastern part of the State, but very common cows there were held at \$40 to \$50. The very successful wheat crop in the West had to some extent dampened the enthusiasm for the cow, and thirty-two head were purchased there and laid down at Manhattan at an average cost

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of \$34 per head. In selecting these, an effort was made to get cows approaching the dairy type at least, but nothing more than an average of the cows of that district were obtained, for many of the most desirable ones were held at prices out of our reach. I must confess they were a hard-looking lot when they reached the college, very thin in flesh, and from the conditions of their coats, the barbed wire fences there are not very good shelter.

They are mostly grade Shorthorns, the remainder being grade Holsteins and mongrels.

Before taking up the results of the work, I would say that soon after their arrival at the college all of these cows were subjected to the tuberculin test, and, out of the thirty-two head, two responded and were slaughtered and found to have tuberculosis—rather surprising results for cows raised on the plains of Kansas.

The cows were purchased at two different times; twenty head reached the college January 5, and twelve head April 15, so for one bunch we have the record for ten months and for the other six and a half. The work has yet only a good start and the results will be of much more value when they cover a couple of years, so my paper will be but a progress report.

The first thing that had to be done was to teach many of these cows to eat grain. Meal of any kind was a strange article to all of them and likewise alfalfa, but a straw stack in the yard was made ready use of by them from the start.

Most of them were well onto a grain food in a couple of weeks and doing well. For the first week the daily average milk yield per head was 15½ pounds and this was increased to 21 pounds for the second week. With a few exceptions, given later, the cows had all calved within a month or so previous to the purchase by the college.

As the cows were received at two different times, several months apart, it will be necessary to consider the results of each bunch separately in most cases.

Of the first twenty cows that were purchased, two were slaughtered and six others were in calf when received, and dropped their calves from one to five months afterwards; hence, we will be able to carry only twelve of them through the total results.

In figuring out the cost of feeds consumed, we had to settle the perplexing question that always arises as to just what prices to take for the feeds—the local market prices, or the average of several markets or the cost of raising to the farmer, etc. The following prices given are for Manhattan markets and in most cases represent what the college paid:

Corn meal, per hundredweight.....	\$0.55
Kaffir corn meal, per hundredweight.....	.55
Linseed oil meal, per hundredweight.....	1.25
Soy bean meal, per hundredweight.....	1.00
Cotton seed meal, per hundredweight.....	1.00
Bran, per hundredweight.....	.55
Alfalfa, per ton.....	4.00
Ensilage, per ton.....	1.00
Pasture, per month.....	.75

In most cases these are good stiff prices. To make the results more applicable to the farm, we give the cows credit for the butter fat at a price paid each month at the Manhattan creamery, where, during a series of experiments, we delivered the largest part of our milk during the summer. The creamery returns the skim-milk which we credit at 90 per cent of the milk delivered and place its value at 15 cents per hundred-weight. In the results each cow should have the value of a calf to her credit, but this is not included here, as only the

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few mentioned came into the possession of the college.

The records for the first lot of cows purchased will cover a period from January 5 to November 1 and will include twelve cows. At the start they were put on a grain ration, consisting of a mixture of two-thirds bran and one-third linseed oil meal, and alfalfa for roughage. This was a narrow ration, designed to start a good flow of milk at once, and it did the work well. Next, they were put on a ration of Kaffir corn meal and alfalfa for seven weeks. Following this for a couple of weeks the grain ration was a mixture of Kaffir corn meal and soy bean meal in equal parts, and Kaffir corn stover for roughage. A grain mixture of one-third ground oats, one-third bran and one-third corn meal, along with alfalfa and stover, followed the above for a three-week period. Following this until spring the grain consisted of varying mixtures of soy bean meal, cotton seed meal, bran and corn meal and alfalfa for roughage. Early in May silage was added to their feed. The cows were not turned out to pasture until the 1st of June. Soon after this the grain was changed to a mixture of four parts corn meal and one part bran. Up to this time the daily grain ration per cow had been eight pounds per day for all except a few. At times it had been raised to ten pounds, but the returns did not justify the increase. A daily grain feed of three pounds per cow was continued through the summer, and the alfalfa continued in varying amounts to suit the condition of the pasture, and at times as high as fifteen pounds per head was eaten.

During this period of a little less than ten months the milk yield for the twelve cows was 60,170 pounds, which contained an average of 3.97 per cent butter fat or 2,451 pounds. In round numbers, for the production of this milk the twelve cows consumed 24,000 pounds of grain, twenty-nine tons of alfalfa and Kaffir corn stover together, and eighteen tons of silage, and were six months on pasture, which, at our figures, makes the cost \$289.

At Manhattan creamery prices the butter fat would have a value of \$381, which would leave a balance of \$92 over the cost of the feed. The skim-milk, at 15 cents per hundredweight, would amount to \$81, but deducting the hauling at 10 cents per hundred from this, it would leave \$21, or a total net return of \$113, or a little over \$11 per month. The average daily yield of milk per cow would be 16 2/3 pounds and would contain 0.68 of a pound of butter fat. While the average results are quite low, when compared with good dairy cows, several of these individuals gave much better results, and one cow gave phenomenal results for a grade cow. Her daily average for the 299 days was 27 1-3 pounds of milk and 1.07 pounds butter fat. Omitting the record of this cow and taking the results of the next best two cows of the twelve, we find if the bunch had averaged as good as these two, the net results would have been \$179 instead of \$113, or a gain of \$66. Those two cows gave an average daily yield of 19.9 pounds of milk and 0.83 of a pound of butter fat. Hundreds of herds are being milked in Kansas, the results of which will not average any better than these twelve cows, when, if records were kept and the culling process carried on, they could be made to equal as good results as the two cows cited above. The feed consumed by the poorest cow of the twelve cost some \$2 more than the returns of the butter fat.

The flow of milk was at its highest point in March, when the daily average was a little over 20 pounds, and this had decreased to 13 1/4 pounds in October. This is very good for this class of cows, when we consider that they have been giving milk ten months or over. The greater part of them have not been successfully bred until within the last month. At the present time three are giving considerable less than a gallon of milk a day, but some are holding up the milk remarkably well.

It is a results during the periods of dif-

ferent feeds are interesting, but time will allow taking up only one or two of them here.

The most successful period, financially and otherwise, was the one where Kaffir corn meal was fed for grain and alfalfa for roughage. Here the proper proportion of grain and roughage were readily eaten and a balanced ration maintained on ten pounds of the meal and eighteen pounds of alfalfa. A pound of butter fat was produced at a cost of 11 1/4 cents.

The soy bean meal and Kaffir corn meal made a very good milk ration, but in the half-and-half proportion the butter was very soft. But this was partly caused by the cows refusing to eat more than three or four pounds of the Kaffir corn stover a day that was furnished for roughage. If this had been eaten in proper amount it would have partly corrected the softness of the butter.

For the second lot of cows purchased we have the following results, which cover a period from April 15 to November 1: After becoming accustomed to grain they were put on a mixture of five parts corn meal, three parts bran and two parts cotton seed meal. For a time they were fed ten pounds of this mixture a day. Besides each cow ate about thirty-five pounds of corn ensilage and fifteen pounds of alfalfa. This readily brought the milk yield up to twenty pounds a day and the grain feed was reduced to eight pounds per day in a couple of weeks. June 1 they were turned onto pasture with the other cows and the grain changed to a mixture of four parts corn meal and one part bran and the grain feed reduced to three pounds a day for the summer, and were also fed alfalfa, and had access to the wheat pasture with the others during October.

During this period of six and a half months the milk yield for the twelve head was 40,226 pounds, containing an average of 3.87 per cent butter fat or 1,559 pounds. Roughly, this is about sixteen pounds of milk, or six-tenths of a pound of butter fat per day for each cow.

Figured at the same prices as used with the former cows, the total butter fat has a value of \$232.95. The total amount of feed eaten, 13,386 pounds of grain, 25 1/2 tons of ensilage, 14 1/2 tons of alfalfa and Kaffir corn stover and six months of pasture, cost \$210.43, making a balance of \$22.52 in favor of the receipts for the butter fat over the cost of feed.

After deducting the cost of hauling from the value of the skim-milk there is a balance of \$14, or a total balance of \$36.51 for the six and one-half months, or about \$5.50 per month. Not a very inspiring showing. Again, while the average is poor, some of the individuals made very creditable showings. For instance, during the period the two best cows gave 9,424 pounds of milk, which contained 334 pounds of butter fat. This would be an average daily milk yield of about 23 1/2 pounds and 0.84 of a pound of butter fat per cow, a very common yield among good cows, but if the twelve head had averaged as well, the total balance of returns over the expenditures would have been \$100, instead of \$36.52, as it actually was.

At the close of October four of the cows were giving less than half a gallon of milk each per day, and will be dry in a short time. None of them will be fresh for from six to eight months. This shrinkage has taken place under good feed and care and illustrates the inherited trait that these cows have to go dry six to eight months in the year.

Although these results cover only a part of a season's work, some valuable points have already been brought out.

The grain feed and alfalfa were continued through the summer, partly to prepare the cows for another season's work, but from the results of the past summer we obtained a valuable lesson.

From July 5 to August 16 the milk yield of the college herd shrank 4 1/2 per cent, while that of eight herds belonging to farmers and kept on pasture without grain, shrank 39 per cent. This was during a dry spell that affected the pastures materially.

In considering the results for this part of a season, it should be borne in mind that these cows have had hardly time to recover from a rough journey on the cars at a critical time, and have been recuperating from the effects of years of misusage which will take a year or two to tell how completely they can recover.

But, above all results, stands out the great variation in individual results, and years are not likely to change these much.

To illustrate, for all the cows the butter fat cost an average of 12.65 cents per pound, with the best cow 8 1-3 cents, with the five best cows 9.9 cents, with the five poorest 16 cents, with the poorest individual 21 cents.

I regret that I am unable to show you

pictures of some of these individuals that would further demonstrate the fact that, to the degree a cow approaches the true dairy form, she becomes a paying cow. These individual variations are marked and important and clearly point out the methods to be employed to improve our Kansas dairy herds. Cull out the poor cows, and the farmers' profits in the dairy industry of Kansas will be increased many fold.

One On the Rector.

The little daughter of a local clergyman has reached the age where big words are apt to floor her, and where she is very sensitive to the remarks of an elder brother.

Not long ago she came running to her father.

"Papa, papa, George called me names."

"Why, what did Georgie say?"

"Oh," said the little girl with a strong expression of disgust, "he said I practiced what I preached. I don't, do I?"

"Well, my child, I—"

"But I don't, do I, papa? I don't any more than you do, do I?"

And then the rector choked up. But he took a half hour from his sermon and explained the meaning of the obnoxious expression to the best of his ability.—Cleveland Plain Dealer.

A Chinese Buddhist priest, who claims to have sat in a cave at Adam's Peak, Ceylon, with his legs crossed for six years, during which time he spoke to no one and subsisted on half an inch of a blade of grass only daily, is at present in Bangkok, trying to improve his exchequer on the strength of his exploits. He does not meet with much success.—Siam Observer.

Remove all surplus honey boxes before winter, and place the bees down in the brood chamber. Stop every crevice and crack in the hives and contract the entrances to all hives, whether weak or strong. Strong colonies do not require large entrances in winter, and if we could manage to have the entrances open only on days that they can fly, it would be better to close it entirely, except on such occasions.

In fixing up hives of bees for winter, they should not be changed about, thus changing the locations of hives. If they are moved any distance from their former location they will, on first coming out afterwards, go back to their old stand and will not return to their hive. Moving at this time will cause considerable damage by weakening the colony, and a few bees lost now will tell on the colony before spring.

Dr. Bull's Cough Syrup is sure to cure incipient consumption. This remarkable remedy will stop the wasting away of the patient, and in a short time effect a cure.

Cured Her Rupture

Happy Restoration from a Dangerous Malady.

The Rice Method is a Wonderful and Certain Cure.

Although 62 years of age and ruptured many years, Mrs. E. Drew of Ipswich, So. Dak., would not give up the struggle to be cured of her affliction. After repeated failure she tried the well-known treatment



MRS. E. DREW, Ipswich, So. Dak.

Invented by Doctor W. S. Rice of 359 D. Main St., Adams, N. Y., and was perfectly restored to permanent physical strength and the rupture completely healed. When we consider the number of people who have been ruptured nearly all their lives, who have struggled through weary years of uncertainty, failure of trusses, constant fear or sudden death and all the pain, misery, discomfort and loss of time and pleasure in life it is a wonderfully braiding thing to know that there really is a cure for the malady.

Write to Dr. Rice for his free book that fully explains all about his plan of treatment. Write today. Do not put off the inclination but go right at it and learn all about this new and marvelous rupture cure that restores you to permanent freedom from rupture.

It is a home cure, safe, painless, without operation or detention from work and everyone should send for Dr. Rice's book and mail it to anyone you know to be ruptured. Such an act of kindness will be remembered by those who suffer with the great affliction of rupture.

PATENT secured or money all returned. Search free. Collamer & Co. 124 F St., Wash. D. C.

BED-WETTING CURED. Sample FREE. Dr. F. E. May, Bloomington, Ill.

HARPER'S MAGAZINE

will be of more than usual interest during 1899. Besides a series of articles on noteworthy subjects, it will contain a comprehensive political and narrative

HISTORY OF THE SPANISH-AMERICAN WAR
 By HENRY CABOT LODGE, U. S. SENATOR
 who is eminently fitted for the task, not alone because of his ability as a writer of American history, but for the position he has held in our government. There will also appear such articles as

Admiral Sampson's Fleet Battle of Manila Bay
 By Lieut. A. R. STAUNTON, U.S.N. By Lieut. J. M. ELLICOTT, U.S.N.

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 A serial story—to appear—containing all that characteristic charm that has endeared Mr. Howells to the reading public.

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 A serial story full of adventure and strong situation. A serial story the scenes of which are laid during our recent war.

SHORT STORIES

UNDER AN APRIL SKY GHOSTS OF JERUSALEM
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THE RENTED HOUSE WAY OF THE CROSS
 By Octave Thanet By Stephen Bonsal

THE LOVE OF PARSON LORD THE CUCKOO CLOCK
 By Mary E. Wilkins By Ellen Douglas Deland

THE CENTURY'S PROGRESS IN SCIENCE
 By Henry Smith Williams, M.D.
 These papers will thoroughly review the work accomplished by scientists throughout the nineteenth century. Other series of papers to appear are:

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35 cents a Copy Subscription, \$4.00 a Year
 Address HARPER & BROTHERS, Publishers, New York, N. Y.

MARKET REPORTS.

Kansas City Live Stock. Kansas City, Dec. 31.—Cattle—Receipts, 1,225; calves, 2; shipped yesterday, 3,769 cattle; 1 calf. The market was nominally steady. The following are representative sales:

COLORADO AND OKLAHOMA STEERS. No. Ave. Price No. Ave. Price 363 fdr..... 987 \$3.80 4..... 702 \$3.85

SOUTHWEST COWS. 25 Ark..... 671 \$2.10 NATIVE COWS. 3..... 1,020 \$4.25

NATIVE STOCKERS. 1..... 610 \$3.25 1..... 580 \$3.00

Hogs—Receipts, 7,534; shipped yesterday, 1,850. The market was strong to 50 higher. The following are representative sales:

Table with 3 columns: No., Price, and another No. listing various hogs and sheep prices.

Sheep—Receipts, 406; shipped yesterday, 590. The market was nominally steady. The following are representative sales:

203 sh..... 111 \$4.05 203 sh..... 117 \$4.05

Horses and Mules—The market has been unusually quiet. There was no quotable change in values. Dealers believe that there will be a big improvement in the demand for mules in the near future. The following is the present range of prices:

Table listing prices for various types of horses and mules, such as Extra draft, Good draft, Saddlers, etc.

Chicago Live Stock.

Chicago, Dec. 31.—Cattle—Receipts, 600; market steady; beefs, \$3.00@5.70; cows and heifers, \$2.00@4.75; Texas steers, \$3.40@4.65; stockers and feeders, \$2.80@4.40.

Hogs—Receipts, 24,000; market active, 5@10c higher; light, \$3.40@3.67 1/2; mixed, \$3.45@3.72 1/2; heavy, \$3.40@3.75; rough, \$3.40@3.50; yorkers, \$3.80.

Sheep—Receipts, 1,000; market steady; natives, \$2.75@4.25; westerns, \$3.00@4.15; lambs, \$4.00@5.35.

St. Louis Live Stock.

St. Louis, Dec. 31.—Cattle—Receipts, 800; market steady; native shipping steers, \$4.25@5.75; light and dressed beef and butcher steers, \$3.00@5.25; stockers and feeders, \$2.50@4.50; cows and heifers, \$2.00@4.40; Texas and Indian steers, \$2.90@4.30; cows and heifers, \$2.40@3.75.

Hogs—Receipts, 3,500; market strong; pigs and lights, \$3.40@3.50; packers, \$3.45@3.65; butchers, \$3.60@3.70.

Chicago Grain and Provisions.

Table with 5 columns: Dec. 31, Opened, High'st, Low'st, Closing. Lists prices for Wheat, Corn, Oats, Pork, Lard, and Ribs.

Kansas City Produce.

Kansas City, Dec. 31.—Eggs—Strictly fresh, 20c per doz.

Butter—Extra fancy separator, 19c; firsts, 17c; seconds, 15c; dairy, fancy, 16c; country roll, 11@12 1/2c; store packed, 11c; packing stock, 10c.

Poultry—Hens, 5c; springs, 6c; old roosters, 12 1/2c each; young roosters, 17 1/2c; ducks, 5c; geese, 5c; young turkeys, 7c; old turkeys, 6 1/2c; pigeons, 50c per doz.

Vegetables—Navy beans, \$1.35 per bu. Lima beans, 4 1/2c per lb. Onions, red globe, 4 1/2@5.00 per bu.; white globe, \$1.00 per bu. Cabbage, home grown, 40@50c per doz. Celery, 45c per doz. Pumpkins, \$1.00 per doz. Squash, 75c per doz. Turnips, home grown, 15@25c per bu.

Potatoes—Home grown, 30c per bu.

ITALIAN BEES.

Bred from queens imported from Italy. Full colonies; two, three and four frame nucleus shipped anywhere and safe arrival guaranteed. We ship Bees any time from March to November. Queens, hives and supplies generally.

A. H. DUFF, Larned, Kas.

KANSAS ECONOMY INCUBATOR.

Send for circular which describes my book on incubators and brooders. The book gives full details so that you can build your own incubators, brooders, incubator and brooder houses, poultry houses; also much other information on poultry, including diseases, their treatment and prevention. Price of book, \$1. Send to JACOB YOST, Lock Box 196, Arkansas City, Kas.

When writing advertisers please mention Kansas Farmer.

THE STRAY LIST.

FOR WEEK ENDING DECEMBER 22, '98.

Greenwood County—Perry Clemons, Clerk. STEER—Taken up by M. A. Morher, in Salt Springs tp., one red steer, marked and branded as follows: Swallow fork and underbit in each ear, branded with a mark somewhat resembling a P on right hip; valued at \$24.

Elk County—J. A. Benson, Clerk. STEERS—Taken up by Gust. Anderson, in Painterhood tp. (P. O. Busby), December 2, 1898, one two-year-old red and white steer, left ear cut off, dim brand on right hip, letter S on left hip; valued at \$30. One one-year-old red steer, dehorned, no other marks or brands; valued at \$18.

Neosho County—B. W. Garvin, Clerk. STEER—Taken up by I. B. Henry, in Big Creek tp. (P. O. Leanna, Allen county), one black steer about three years old, dehorned, left ear cut off, branded with three letters L's on right side, also with letter T reversed on left thigh. Hind legs also show barb-wire scars; cash value \$20.

FOR WEEK ENDING DECEMBER 29, '98.

Greenwood County—Perry Clemons, Clerk. STEER—Taken up by James Rue, in Twin Grove tp., one red steer, with white belly and legs, with horns, short 2 years old, notch out of right ear; valued at \$20. STEER—Taken up by J. D. Webb, in Bachelor tp., one dark red steer, 3 years old, branded with a heart on left hip and both shoulders; valued at \$20.

Wilson County—C. W. Isham, Clerk. MARE—Taken up by E. N. Wertz, in Prairie tp. (P. O. Fredonia), November 29, 1898, one bay mare, about 3 years old, small white spot in forehead, no other marks or brands; valued at \$30.

Ellis County—Jacob Blasing, Clerk. TWO HORSES—Taken up by A. D. Goetchins, in Lookout twp., November 17, 1898, one dark bay horse, 7 years old, weight 1100 pounds, and one dark bay horse, 6 years old, weight 900 pounds; no marks or brands; valued at \$45.

FOR WEEK ENDING JANUARY 5, 1899.

Chase County—M. C. Newton, Clerk. THREE COWS—Taken up by Fred Hoffman, in Cottonwood tp. (P. O. Cedar Point), December 13, 1898, three cows, medium size, red, 6 to 8 years old, right ear cropped, some brand on right hip, looks like a letter V; valued at \$60.

Pottawatomie County—A. P. Sorichenfeld, Clerk. STEER—Taken up by M. Gunter, in Spring Creek tp. (P. O. Springside), December 5, 1898, one yellowish red steer, marks on both ears, brand on right hip, indistinguishable, dehorned; valued at \$25. HEIFER—Taken up by Ph. Immenschuh, (P. O. Louisville), September 14, 1898, one dark red heifer; valued at \$16.

McPherson County—C. M. Gray, Clerk. HEIFER—Taken up by Gus Severson, in Empire tp. (P. O. Galva), November 29, 1898, one red two-year-old heifer, hole in left ear; valued at \$20.

Atchison County—S. S. King, Clerk. MARE—Taken up by William Strickler, Lancaster tp. (P. O. Lancaster), light bay mare, 7 years old, 15 hands high, left ear slit, star in forehead, wire out on front legs.

Butler County—S. G. Pottle, Clerk. STEER—Taken up by John T. Henley, in Chelsea tp., one two-year-old red steer, no brands; small white spots in forehead, white spots on both right and left flank, white under the forelegs; also in bush of tail; no horns; valued at \$22.

Greenwood County—Perry Clemons, Clerk. COW—Taken up by T. J. Bailey, in Eureka tp. (P. O. Eureka), one roan cow, one-quarter inch rope four feet long around neck, dehorned, underbit in left ear, brand on right hip but too dim to determine.

STEER—Taken up by Robt. Wiggins, in Bachelor tp. (P. O. Eureka), November 1, 1898, one red steer, branded O 1 on right hip and Z on left shoulder; square crop out of under part of left ear; square slit in under part of right ear.

Climate Cure

For Weak Lungs, Weak Throats, Weak Bodies.

The Health Resorts of New Mexico and Arizona

are unrivaled. Pure, dry air; an equable temperature, the right altitude, constant sunshine.

Send for descriptive pamphlets issued by Santa Fe Route Passenger Department.

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HATCH YOUR CHICKENS

in an Incubator, \$7.50. Raise them in a Brooder, \$8.00. Stamp for Circular.

NONE-SUCH INCUBATOR CO., TERRE HAUTE, IND.

1000 RUS. MULBERRY \$1.00 Apple, 3 to 4 ft. \$6. Cherry, 3 to 4 ft. \$14. Freestone Peach, \$2. Concord Grapes, \$2. WE PAY THE FREIGHT. Complete Catalogue free. ABOUT SAME PRICE. Jansen Nursery, Jansen, Jeff Co., Neb.

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EXHIBITING OUR WONDERFUL GEM GRAPHOPHONE TALKING MACHINE in public halls, schools houses and churches. It talks, it sings, it laughs, it plays music, it imitates perfectly the brass band, the orchestra, the piano, the human voice, in fact anything. A wonder as a money maker and as a home entertainer. All the latest music, either vocal or instrumental, speeches of prominent men, etc. COMPLETE OUTFIT consisting of Talking Machine with automatic spring motor, 12 musical or talking records, large illustrated advertising posters (18x18 inches), admission tickets and instruction book with advice about making engagements, securing the use of halls, etc. FOR \$15.25. SO SIMPLE that a child can operate it and nothing to get out of order. Will last a lifetime. Cut this ad. out and send for catalogue of Graphophones, Records, etc., with copies of hundreds of testimonials from people who are making hundreds of dollars with our exhibition outfits. ADDRESS, SEARS, ROEBUCK & CO., (Inc.) Chicago, Ill.

Blocks of Three!

Two new subscriptions for one year for \$2, and, in addition, a renewal for one year FREE, to any old subscriber who sends two new subscriptions and \$2 in one order.

Kansas Farmer Co., Topeka, Kas.

PURE-BRED HEREFORDS

FOR SALE. THIRTY-FIVE HEAD OF BULLS AND HEIFERS.

They are extra good ones. Prices as low as any responsible breeder. Farm adjoins the city, Address H. L. LEIBFRIED, Emporia, Kas.

VALLEY GROVE SHORT-HORNS.

THE SCOTCH BRED BULLS Lord Mayor 112727 and Laird of Linwood 127149 HEAD OF THE HERD.



LORD MAYOR was by the Baron Victor bull Baron Lavender 2d, 1 out of Imp. Lady of the Meadow and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor heifers bred to Laird of Linwood for sale. Also bred Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale.

Address T. P. BABST, PROP., DOVER, SHAWNEE CO., KAS.

ELI ZIMMERMAN,

Proprietor of the Brown County Herd of Poland-China Swine and General Live Stock Auctioneer, is prepared to make sales anywhere. He is a first-class salesman and keeps posted on the prices of live stock and the best time when to sell and when not to sell. Registered Poland-China Swine of both sexes of the best strains of blood always on hand. Address him at

FAIRVIEW, KANSAS.

Nelson & Doyle

Room 220, Stock Yards Exchange Building, KANSAS CITY, MO.,

Have for sale at all times, singly or in car lots... Registered Herefords and Short-horns.

Stock on Sale at Stock Yards Sale Barn, Also at Farm Adjoining City.

N. B.—We have secured the services of John Gosling, well and favorably known as a practical an expert judge of beef cattle, who will in the future assist us in this branch of our business.

Blackleg Vaccine

Write for particulars, official indorsements and testimonials of thousands of American stockmen who have during the last three and a half years "vaccinated" their cattle with PASTEUR VACCINE and prevented losses from Blackleg.

PASTEUR VACCINE CO., 52 Fifth Ave., CHICAGO.

N. B.—Each packet of our original and genuine Vaccine bears our trade-mark. Beware of imitations.

THE KANSAS CITY STOCK YARDS

—ARE THE— FINEST EQUIPPED, MOST MODERN IN CONSTRUCTION AND AFFORD THE BEST FACILITIES For the handling of Live Stock of any in the World.

THE KANSAS CITY MARKET

Owing to its Central Location, its Immense Railroad System and its Financial Resources, offers greater advantages than any other in the Trans-Mississippi Territory. It is the Largest Stocker and Feeder Market in the World, while its great packing house and export trade make it a reliable cash market for the sale of Cattle, Hogs, and Sheep, where shippers are sure to receive the highest returns for their consignments.

Table with 3 columns: Cattle and Calves, Hogs, Sheep. Official Receipts for 1897: 1,921,962; Sold in Kansas City 1897: 1,847,673.

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST, Vice Pres. and Gen. Mgr. Secy. and Treas. Asst. Gen. Mgr. Traffic Manager

WHEN WRITING ANY OF OUR ADVERTISERS PLEASE MENTION KANSAS FARMER.

The Poultry Yard

Conducted by C. B. TUTTLE, Excelsior Farm, Topeka, Kas., to whom all inquiries should be addressed. We cordially invite our readers to consult us on any point pertaining to the poultry industry on which they may desire fuller information, especially as to the diseases and their symptoms which poultry is heir to, and thus assist in making this one of the most interesting and beneficial departments of the Kansas Farmer. All replies through this column are free. In writing be as explicit as possible, and if in regard to diseases, give symptoms in full, treatment, if any, to date, manner of caring for the flock, etc. Full name and postoffice address must be given in each instance to secure recognition.

KANSAS STATE POULTRY ASSOCIATION.
President, A. M. Story, Manhattan.
Secretary, J. W. F. Hughes, Topeka.

Poultry Show—At Topeka, January 9 to 14, 1899. C. H. Rhodes, judge.

PROPER FOOD FOR POULTRY.

The majority of fowls get far too much grain, such as corn, oats, wheat, bran, etc., to the exclusion of animal substances and green or vegetable foods, such as clover, grass, cabbage, turnips, etc. The grain bin is usually well filled and handy of access, so the feeder, being in a hurry and despising "bother," just takes what grain he wants and throws it to the fowls, and that makes an end of the matter. This is not the best policy, for grain is a very heavy, hearty, heating and concentrated staple of diet, and never intended to be fed to stock without other additions. We see this fact quite clearly when we consider that every plant has more weight of leaves and stems than of seed. Cattle, grazing, are obliged to consume a great deal more grass or hay than seeds or grain. In other words, for the good of digestion and health, they must eat much husks in order to get the few coveted kernels. From this the feeder takes the hint.

Happily, vegetable productions are many and varied, and the poultry keeper had best employ several of them for the sake of variety. Sameness of diet is always to be condemned. The clovers are admirable poultry greens. Having considerable nitrogen in their composition, they are especially valuable to hasten growth of chickens or to stimulate the mature birds to laying. Throughout the summer, pull the clover fresh every morning and feed it at once while it is at its best. In winter, however, the fresh clover cannot be had, so some must be stored in advance for the winter. Cut it after the dew has left it, and cure very carefully, otherwise there will be a great deal of loss in the operation. If the quantity is not too large, it should be cured under some shade, as the strong sun soon desiccates the leaves and they drop off the stems and are wasted long before the latter are at all dry. The clover may be spread thinly upon poles or slats in the barn loft, and, if turned carefully and often, should dry down well and still retain a good green color.

To use this dried clover, chop or cut it finely, steam by covering with boiling water and wrapping it up tightly to retain the heat for several hours, then, after draining off all surplus wet, we have a dainty winter appetizer that all poultry delight to honor. Now, take two parts of this steamed clover and add one part of ground grain—corn, oats or wheat or a mixture of all—and one part of coarse bran, stirring all well together, and one of the best, if not the best, rations for laying or growing stock is produced that can be found.

If the clover is not grown at home, it can be bought of most any dealer in poultry supplies, cut ready for steaming, at a reasonable price. Clover is also now ground into a meal, and in this form is the most economical to use.

All the so-called roots, turnips, potatoes, etc., come into use in the regular morning or evening mash, as they are boiled and mixed with the grain. Where flocks of any size are kept, a good feed cooker is a necessity, such as are now on the market and made for this special purpose, and sold quite cheaply at supply stores. Every cultivator of these crops has "seconds" or "culls" of little value for market, that he can save to feed to his fowls, and parties who raise nothing of the kind themselves can purchase their supply at a low figure every fall.

Next comes animal food, which is to go hand in hand with vegetable food, to supplement and fortify the grain ration. For animal food nothing surpasses lean meat and fresh-cut green bone. The boiled, pressed scraps from rendering works have lost about all the goodness they ever possessed, being reduced to a tasteless mass of fibrous lean meat, of even less virtue than the piece of meat possesses which has been boiled and boiled to give the human family a rich soup or "beef tea." When you give the poultry animal food, by all means give them something that still has its animal juices intact. For this reason, nothing can surpass fresh-cut green bone, for the

preparation of which bone-cutters can now be had, from the small hand mill for a flock of a dozen, up to the power mill for a flock of a thousand or more.

One commercial preparation, however, might be mentioned which will be found of considerable value, and that is ground dried blood. This is an excellent animal food in a very concentrated form and must be fed with judgment or the matter will be overdone.

In connection with foods, it might be well to again call attention to the fact that fowls need and must have something to grind up their food, else indigestion follows and bad results are sure to come. Grit of some kind and oyster shells are indispensable in the poultry yard. For this purpose, crushed pearl is a very superior product, being made from the remnants of shell left after making pearl buttons, as it is very hard, answering for both grit and shell, consequently saving one-half the cost.

More About the "Big Show."

As the time approaches for the State poultry show, prospects grow brighter and brighter, and the indications now are that Topeka, during the time from January 9 to 14, 1899, will have the biggest, best and most entertaining exhibition of poultry ever seen in this or any other State. We speak advisedly in this particular, for it is well known that most of the large Eastern shows are bolstered up by exhibitions of pigeons, pet stock, dogs, cats, rabbits, etc., while the Kansas State poultry show will be devoted exclusively to poultry and poultry alone. No side issues this time, gentlemen, but straight poultry all the way through. Another point: Heretofore, as far as now known, our sister State, Missouri, has never been represented in any of our State shows. This year the secretary has assurances of exhibits not only from Missouri, but also from Nebraska and Texas, with more to hear from. Eight hundred dollars in premiums constitute a great inducement to many, no doubt. But that is not all; for they are still coming. The latest addition reported by the secretary is from Geo. Topping, of Cedar Point, Kans., who offers the following specials:

For best display of Mammoth Bronze turkeys, scoring 90 or over, one Poland-China pig, male or female as the winner may select, valued at \$15. For second best display, one Mammoth Bronze turkey, male or female, as winner may choose, valued at \$5.

Hamilton Hall, the largest and best lighted hall in the State, has been secured in which to hold the tenth annual show, and no pains will be spared to make it a record-breaker. The secretary, Col. Hughes, is growing more enthusiastic every day and says: "We are going to have the largest exclusive poultry show in the United States." Kansas never does anything by halves, and always leads the van. Now come, everybody, and bring your birds.

Winter Chicks in the Brooder.

The hatching and rearing of chicks artificially in the winter to meet the early spring demands for fries and broilers, and of securing seasonable specimens for the early show room and the fall fairs, has become a business with the fancier and with a great many of the best known farmers.

It is practiced because it pays; and with the perfecting of incubators and brooders, the work has been reduced to a scientifically simple operation. Farmers and farm-wives have found it a quite profitable work for winter months, and have prepared for the work. And since the introduction of brooders that can be depended upon to keep chicks warm, one need have no fears of hatching broods at any time through the cold months. They will never suffer, but will grow right along into profitable, handsome birds. We have tried it and shall try it again, now that we understand so well that it can safely be attempted.

Many of the brooders of the first few years were practically worthless, and especially for winter care of chicks. Many of them were, and still are, dark and dismal, for no light is let in. To thrive, chicks must have light. They are not content to sit in the dark in daylight hours, and if so cold that they must be confined to the warmth of the brooder, how can they be either content or thrifty, sitting in darkness? The better and newer makes of brooders have been made with a thought to this state of affairs, and good, wide glass windows and doors have been put in, and a wide play-room or scratch-room has been provided where the light shines in the brightest.

Such brooders are made to operate out of doors as well as indoors, and do their work of brooding to perfection. The sun shines upon the chicks through the day,

A Mayor's Act.

AN EFFORT IN THE CAUSE OF SUFFERING HUMANITY.

The Successful Method of Mayor Weltner in Accomplishing a Praiseworthy Undertaking—Many People will be Benefited.

From the Optic-News, Wellsville, Mo.

The Hon. C. H. Weltner, mayor of Wellsville, Mo., has lately accomplished something of which he might justly be proud. It is an effort in the cause of suffering humanity and one which, for nearly ten years, he has been quietly trying to carry out.

Everyone in and around Wellsville knows Mayor Weltner, and of his progressive business ability, which has made him a leader in various enterprises. It is this fact which inspires confidence and the hearty support of citizens in his undertakings.

About ten years ago he appealed to the best local physicians, as well as to a number of specialists, for relief from the dread disease—catarrh, but his appeals were in vain; the doctors' efforts were fruitless. The disease, all the while, was fastening its clutches firmer upon him and he was about to despair of ever obtaining relief when Dr. Williams' Pink Pills for Pale People were recommended and as a last resort he began their use, the happy sequel of which is that he now feels like a new man.

"I became aware about ten years ago," he says, "of the fact that some disease was preying upon me. The physician whom I consulted diagnosed my case as 'pharyngeal catarrh' and prescribed for it.

"Instead of getting relief the disease had a deeper hold upon my system.

"I sought other physicians, but their treatment was unavailing. I tried a number of catarrh remedies, but without obtaining any relief to speak of, and had come to the conclusion that my case was incurable. Dr. Williams' Pink Pills for Pale People were recommended to me, and I concluded to give them a trial.

"When I had taken half a box of them I began to feel that they were bringing me the relief for which I had been seeking.

"It has been about two years since I commenced taking them. I have used eight boxes and am so much benefited that I can cheerfully recommend these pills as a wonderful medicine.

"I would earnestly insist that all who are similarly afflicted give these pills a trial, fully believing that they will obtain results such as can be obtained from no other source. During the eight years I was troubled with the disease prior to taking Dr. Williams' Pink Pills for Pale People, I spent three hundred dollars for medical aid which was the same as thrown away, as no benefit was derived.

"Now, the secret of these pills is that they purify the blood, and, of course, that will help in any disease. They are the best blood purifier I ever used."

The best authorities state that catarrh is a blood disease acting upon the mucous surfaces of the system. It does not always commence in the nose, but frequently starts in the stomach or bowels with symptoms like dyspepsia, which many mistake for that disease. This is because the blood is in such a condition as to irritate the stomach. It is a waste of time and money besides harmful to use "snuffs." Dr. Williams' Pink Pills for Pale People are composed of vegetable ingredients, forming an internal remedy which acts directly on the blood and mucous surfaces of the system, cleansing it from impurities and causing the diseased matter to pass through the proper channels. The medical profession recommends these pills and every druggist sells them.

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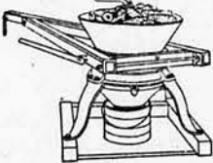
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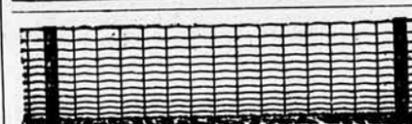
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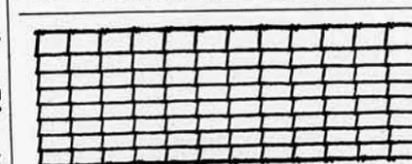
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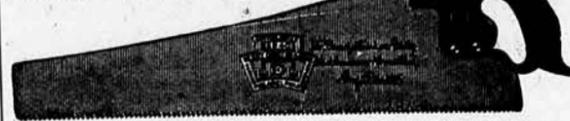
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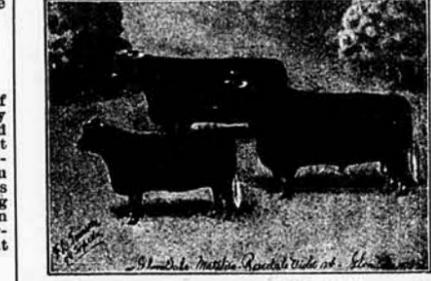
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