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THE
AMERICAN
AGRICULTURIST.

FOR THE
Farm, Garden, and Household.

"Agriculture is the most Healthful, the most Useful, the most Noble Employment of Man."—WASHINGTON.

W. W. Dray & Co.
VOLUME TWENTY-FOUR—FOR THE YEAR 1865.

633

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A

Acres—One Enough.....47
 Advertisements—Endorsing, 304
 —Interesting, 69—Noticing, 333—Who Read?.....269
 Advertisers—Note to, 105—Reliable, 204—Unreliable,.....67
 Advertising—Notes on.....40
 Advice asked and Given,.....310
 Advice—Good,.....336
 Ad' Colleges at South, 203—
 Department, 5-71-145-232-303-311—
 Department Report, 7-237—
 Society, N. Y.....69
 Agriculturist—Loaning,.....143
 Agriculturalist—New Terms,.....79
 Ammohium—Starting,.....231
 Anemone—Wood,.....122
 Animals—Well Bred,.....244
 Animals—Traps for.....365
 Apple Blossom Double, 271—
 Sauce—Economy, 54-85—
 Sweet, Sour, 336—Tree, Pro-
 lific, 6—Trees, Diseased, 142
 Trees, Trimming,.....173
 Apples—Early Bearing, 84—
 For Hogs, 36—For Iowa, 6—
 The Porter, * 315—Unstring-
 ing,.....54
 Articles—Re-publishing,.....204
 Ashes for Fruit Trees,.....271
 Asparagus—Ashes for 38—
 Bunches, 6—Culture, 117—
 Planting,.....205
 Asphodel Described,.....7
 Autumn Leaves and Fruits,.....315
 Azalea—Fine,.....205

B

Bachelor in the Household,.....87
 Bachelor's Wish Realized,.....158
 Barley on Light Soil,.....36
 Barn Door—Fastening, * 369
 Barn—Illinois,.....12
 Barn Plan—Premium,.....239
 Barnum's Museum,.....5
 Barnum's Museum Burned,.....239
 Barn Yard—Good,.....206
 Basket—Talk About,.....364
 Battle-Field—Virginia,.....2*
 Beans—Colored, 143—Concord
 71—Culture of 150—For Bak-
 ing 6—Varieties,.....4*
 154
 Beech Leaves—Large,.....154
 Beef for Soldiers 107-142—Gov-
 ernment Contracts, 206—
 Price of,.....206
 Bees, Calendar for Jan., 2—
 Feb., 34—March, 67—April,
 104—May, 140—June, 172—
 July, 204—Aug., 336—Sept.,
 267—Oct., 238—Nov., 331—
 Dec.,.....362
 Bees—Burying in Winter, * 174
 —275—How to Hive 144—Ita-
 lian Hardy 235—Italian Pro-
 fitable 4—Italianizing 43—238
 —Prolific Queen,.....302
 Beet—Large,.....6
 Bence or Sesame,.....106-248
 Bells for Dogs,.....339
 Birds and Strawberries,.....173
 Birds—Snowy Owl,.....13
 Black Board—Kitchen,.....68
 Black Currants—Improving, 106
 Black Knot,.....156-239
 Blackberry—Cut-leaved, 7—Kit-
 tatinny 234—Root Medicine,
 205—Syrup, 254—Vines, Killing
 201—Wilson's Early 237—Wine, 254
 Bladder Nut Tree,.....2*
 153
 Bog Land—Reclaiming, 76-147
 Bone Charcoal,.....302
 Bones—Breaking Up 204—Dis-
 solving 174—Uses, 174-204-306
 Bonnets—Chapter on,.....3*
 21
 Books—American Weeds, 7—
 Bradbury's Golden Censer,
 265—Burr's Vegetables, 174—
 Cotton Manual, 5—Flax
 and Hons, 105—For House-
 keepers, 335—Food of Ani-
 mals, 70—Horse Doctor, 5—
 In Farmers' Families, 22—
 Mothers' Alphabet, 143—Nurs-
 ery Culture, 6—On Insects,
 335—Rabbits, 5—Songs of
 Seven 365—S. S. Lessons,
 37-367—The Great West,
 367—Wet Days at Edge-
 wood, 37—Woodward's Coun-
 try Homes, 107—Zoology,.....367

Boat Legs—Use for,.....318
 Boots and Shoes—Greasing,.....382
 Bottles—Care of,.....39
 Bottles—Cleaning,.....54

BOYS AND GIRLS' COLUMNS.

Accounts—Keeping, 25-89—Ad-
 vice for Boys, 159—Apples—
 Good and Bad, 256—April—
 Thoughts on, 125—Aik-
 wright's Invention, 256—Bal-
 ance, Keeping, * 160—Benevo-
 lence Defined, * 256—Bible
 Questions, 354—Birds,
 Friendly, 125-224—Bragging,
 89—Bread, Small Loaf, 24—
 Boy in a Predicament, 225—
 Carlo's Portrait, * 24—Chase,
 Portrait of, 320—Chicken,
 Hurl, 255—Children Left
 Alone, * 192—Chinese Story,
 351—Christmas Tree Party, * 384
 —Colored Men in Army, 55—
 Customer, Sharp, 24—Dream,
 Useful, 90—Dreams, Belief
 in, 55—Dog, Trustworthy, 352
 Drunkard Cured, 89—Elm,
 Fate of, 90—Enjoyments at
 Home, * 319—Feb. 14th, Wo-
 man's Day, 191—Ferment,
 Definition, 191—Fire, Ways
 of Getting, 225-287—Fisher-
 man's Return, * 56—Flag in
 Baltimore, 256—Frightened
 Workman, 351—Frog Race,
 * 283—Games, Fire, 56—
 Glass, Damaged, 125—God's
 Organ, 25—Good Boy Want-
 ed, 192—Good Nature, Pres-
 erving, 191—Hair, Some-
 thing About, 159—Happy New
 Year, 23—Harry's Successful
 Effort, 126—Hen, Calculating,
 224—Hints for Boys and Girls,
 125—Holiday In-door Games,
 383—Honesty the Best Policy,
 351—Indian Traditions, 192—
 Judge's Experiment, 288—
 Keeping the Mouth Shut, * 2
 23—Kind Act Rewarded, 320
 —Laborer, Witty, 160—Land-
 scape, Curious, 2 * 256-320—
 Last Day of the Year, 382—
 Lesson for All, 351—Lincoln's
 Sympathy, 253—Lively Out-
 door Games, 385—Locomotive
 The First, 192—Loving and
 Leaning, 55—Mother, Child's
 Regard, 159—Mother's Hand,
 * 126—Musical Instrument, Prop-
 er, 255—Names, Publishing,
 89—Neighbors on the Farm,
 159—New York at Night, 160—
 Noble Example, 287—Organ
 Grinder and Pet, * 90—Parting
 with Old Friend, 384—Peach,
 Valuable, 351—Petroleum,
 Selling Farm, 55—Pictures,
 Making, * 24—Pies, Tongh,
 90—Play of Cbarades, 125—
 Postage, Evading, 319—Pre-
 miums for Children, 351—
 Prisoner and Birds, * 285—
 Profanity, Avoid, 125—Puz-
 zles, * 23-2 * 55-2 * 89-4 *
 125-4 * 159-3 * 191-2 * 223
 3 * 255-2 * 287-2 * 319-351
 3 * 383 384—Railroad, Under-
 ground, 24—Rat, Cunning, 126
 —Read with Profit, 319—Ride,
 Glorious, * 352—Rogues Out-
 witted, 258—School, Hints
 for, 351—Selfishness Reward-
 ed, 159—Sewing Machines,
 Sketch of the Inventor,
 320—Sheridan and his Sol-
 diers, 55—Shortening Tall
 Man, * 160—Signaling in the
 Army, 382—Skaters, Hints to
 24—Sleep, Something About,
 192—Soldier, Force of Habit,
 384—Soldiers' Return, * 224
 —Stain on the Carpet, 56—
 Stitch in Time, * 320—Stock-
 ing Frame Invention, 283—
 Switch Tender, Heroic, 90—
 Telegraphs, Ancient, 352—
 Topsy Officer, 25—Tradition,
 German, * 256—Traditions,
 Early, 222—Truthfulness of a
 Hero, 267—Wall Street, Fly
 Market, 192—War Ended,
 Good News, 159—Weak
 Points, 126—Weights and
 Measures, 319—Wind, Why
 it Blows, 89—Windmill,
 Amusing, * 319—Work, Mak-
 ing Easy,.....223

Brandy for Sorghum,.....336
 Bread, etc.,—Wheaten Meal, 254
 Good, 53—Pictorial History,
3*
 153-248-376
 Breeding In-and-In,.....279
 Bridges—Rustic,.....185
 Broccoli Heading,.....206

Broom Corn Culture, 113-205—
 Dwarf, 70—Harvesting, 307—
 Planting, 182—Price,.....38
 Buckthorn Seeds,.....142
 Buckwheat—Cultivation, 183—
 Harvesting, * 275-310—Stor-
 ing, 343—Straw Mulch, 302—
 Wild,.....6-175
 Buffalo—East Indian,.....9
 Bulbs—Catalogues, 303—Culti-
 vation, 71—Spring Flowering
 2 * 316—Treatment,.....38
 Bushel—Contents of,.....303
 Butter—Preserving, 142—Pure,
 190—Color,.....22
 Butternut Ornaments,.....349
 Buttonwoods—Diseased,.....205

C

Cabbages—Club-footed, 6—
 Culture, 186—Fine, 303—Notes
 on, 121—Raising Seed, 237—
 Trouble, 367—Wintering, * 311
 Camellias—Fine, 71-143—New,
 72—Management,.....7
 Canary Seed—Growing,.....7
 Canada Thistles,.....6-70-205
 Candles—Good,.....124
 Candles—Lighting,.....22
 Capers Described,.....285
 Cardinal Flower,.....348
 Carpets—Management of,.....124
 Carpets—Suggestions,.....157
 Carrots—Culture, 179—For Hor-
 ses, 6—Mowing Tops, 141—
 On Heavy Soil, 151—Wild,
 Subduing,.....206
 Carving Instructions, * 287-381
 Castrating Calves, etc.,.....178
 Catalogues Received, 37-69—
 107-174-239-271-299-265,.....
 Cattle—Breaking Steers, 36—
 Breeders Ass'n, 69—Bone Dis-
 ease, 174—Cure for Plague,
 270—For Milk, 42—For Lab-
 or, 77—How much Hay, 113
 —Inspecting, * 344—Killing,
 Breeding, 247—Native Breed,
 70—Of So. Asia, * 9—Prevent-
 ing Hoove, 211—Price of
 Ayrshires, 36—Russian Mur-
 rain, 207—Turning Yoke, 70
 —Selecting for Special Use,
 10—Versus Hog Raising, 146
 —Warbles,.....113
 Cauliflowers—Wintering, 71-311
 Celery Culture,.....3*
 218
 Cement—Glass Lamp,.....324
 Cemetery—Woodlawn,.....37
 Chair—Home-made,.....86
 Cheese—Coloring, 221—Exhi-
 bition, 267—Factories, * 340—
 From Few Cows, 189-318—
 Keeping, 4—Makers' Ass'n, * 5
 Chemist—Analytical,.....271
 Chestnuts—Improved,.....377
 Children—Fault-finding,.....190
 Chipmunks—Keep'g fr'm Corn 174
 Churn—Best,.....237
 Cider—Keeping Sweet, 106-367
 —Making, 304—Mill,.....206
 Cinnamon and Cassia,.....3*
 349
 Cions—Keeping,.....38
 Cions—When to Cut,.....51
 Cistern—Ice Water,.....3*
 Citron Described,.....2*
 221
 Clay Lands—Treatment,.....214
 Clay Soil—Draining,.....302
 Claytonia, Spring Beauty, * 122
 Clergymen—Hint to,.....364
 Cloth Tearing Machine,.....38
 Cloths—Crushing,.....214
 Clothes Wringers,.....205
 Clovers—Curing, 151-214—Pour-
 leaved, 39—Raising Seed, 182
 With Oats,.....39-70
 Coal Ashes—Walks, etc.,.....48
 Coal Tar for Stakes, etc.,.....5
 Codfish—How to Cook,.....382
 Coffee—Massachusetts,.....39-106
 Colens Verschaffellii,.....377
 Colleges—Agricultural, 37—
 Mass. Ag'l, Michigan Ag'l,
 36—Penn. Ag'l,.....7
 Columbine Seeds Poison,.....303
 Columbines Described,.....151
 Colts—Halting-breaking,.....181
 Complaints of Dealers,.....173
 Contributions Wanted,.....8
 Conundrum—Original,.....158
 Convolvulus minor,.....189
 Cooking Academy,.....158
 Cooking—Economic,.....53
 Cork Oak Tree,.....106
 Corn Crib—Measuring, 336—
 Fine, 70—Fodder, Binding,
 * 343—Fodder, Curing, 204—
 278—Fodder—Cutting up,
 371—Fodder in Minn. 4—
 Ground, Plowing, 113—Husks
 Wanted, 143—Manning, 178
 —Marker, Best, * 149—Pre-
 serving Green, 256—Repel-
 ling Chipmunks, 174—Select-
 ing Seed, 122—Shelling Green
 318—Small Variety, * 51—

Syrup, 142—Tall, 303—Tar-
 ring Seed, 150—Thinning, 178
 —To Husk Quickly, * 338—
 Wyandot Drying,.....266
 Cornell University,.....175
 Cotton Goods Dear,.....304
 Cotton Manual,.....5
 Cows—Alderney Profitable,
 365—Caked Bag 38—Calv-
 ing Time, 116—Cleanly Milk-
 ing, 4—Double Teats, 237—
 Feeding for Milk, 4—Gesta-
 tion, 174—Kicking, 38-142—
 Leaky Teats, 238—Self-
 milking, * 70-335—Spaying,
 114—Stripping, 366—Warts, * 4
 Cranberry Cultivation,.....250-271
 Cranberries—Upland, 6-39-71-121
 Cranberries, Fine,.....367
 Cream—Frozen,.....124
 Curious Growths,.....3*
 249
 Currant Worms, 187-237-303—
 Black Naples, 37-71—Dried, 298
 Large, 237—Planting, 121—
 Preserving, 222—Varieties,
 Culture,.....3*
 281
 Cuttings in Autumn,.....336

D

Dahlia Seeds—Sowing,.....303
 Dandelion—Uses of,.....189
 Daphne Mezereum,.....*
 119
 Daphne—Non-blooming,.....313
 Datura Arborea,.....*
 317
 Dealers and Editors,.....13
 Death—Abraham Lincoln, 144
 —A. G. Hanford, 4—A. O.
 Moore, 239—Large Farmer,
 143—Ezekiel Holmes, 69—
 Joseph Frost, 334—Professor
 Lindley, 365—Sir J. Paxton,
 237—W. Buckminster, 239—
 W. J. Hooker,.....303
 Deutzia—Double,.....*
 252
 Diarrhoea Remedy,.....206
 Dictionary—Best,.....8
 Ditching Machines,.....270
 Dog Laws of New Jersey,.....142
 Dogs—Bells for,.....339
 Domestic Intelligence,.....269
 Doors—Sagging,.....254
 Doors—Self-shutting,.....286
 Draining Hard Pan,.....366
 Drains of Plank,.....2*
 308
 Drinks for Summer,.....221
 Drouth—Severe,.....333
 Ducks—Queries,.....70

E

Earth Closets,.....347
 Editorial Quarrels,.....36
 Education for Farmers,.....374
 Eggs—Keeping,.....270
 Elecmanpe—Killing, 106-173
 Embroidery—Beautiful,.....318
 Eriogrant Company,.....175
 Eucalyptus resinifera,.....303
 Evergreens—Austrian Pine,
 Pinus Pumilio 27-17—From
 Cuttings, 18—Pruning,.....186
 Exhibitors—Hints to,.....346
 Exhibition—French, 333—In-
 ternational, 226—Tables, at
 this Office,.....3-206-331
 Extravagance in Living,.....254

F

Fair—Agricultural 268—Am-
 Institute, 270-366—New Eng-
 land, 304—New Y. State, 304
 —Illinois State,.....304
 Fairs—Hints about,.....274
 Fallows for Wheat,.....204
 Falsehood about Agriculturist, 36
 Family Jars,.....156
 Farm, Calendar for Jan. 1—
 Feb. 33—March 65—April 101
 May, 137—June, 169—July,
 201—Aug., 233—Sept., 265—
 Oct., 297—Nov., 329—Dec., 361
 Farm—Clay, 40 Acres,.....237
 Farm Locations,.....236
 Farming—Fodder, 237
 Farmer Folks in War Time, * 15
 Farmers' Club—Live,.....48
 Farmers—Laboring,.....70
 Farms—Southern,.....204
 Fashions, Comfort, Health, 123
 Feed—Box and Barrow, * 12—
 Cutting for Stock, 279—Mix-
 ing Cut,.....302
 Feeding too Heavy,.....366
 Fence Posts—Concrete, 7—
 Preserving, 334-367—Remov-
 ing, * 77—Setting,.....70
 Fences along Highways, 242—
 Gates and Posts, 142—Infor-
 mation Wanted,.....336
 Fertilization—Insects & Wind 15
 Fetters for Cattle, etc.,.....213
 Field Horse Tail,.....4*
 250
 Field Work—Preparation,.....31
 Files—Sharpening,.....86
 Firewood—Preparing,.....2*
 82

Fish—Breeding Trout, etc. 3*
 312-343—Markets in N. Y. * 376
 Flag Leek—Use,.....236
 Flannel—Shrinking,.....124
 Flavor of Fruits,.....157
 Flax Culture—Prize Essay 13*
107
 Flies—Destroying,.....318
 Flower Beds—Form, 205—Col-
 linsia verna, * 19—Datura
 Arborea,.....313
 FLOWER GARDEN AND LAWN,
 Calendar for Jan. 2—Feb. 34
 March 67—April, 103—May,
 139—June, 171—July, 203—
 Aug., 235—Sept., 266—Oct.,
 299—Nov., 330—Dec.,.....362
 Flower—Garden Hints, 347—
 Gazania Splendens, 285—
 Markets, N. Y., 153—Pits, 2*
 214—Seed, Price, 303—Trito-
 ma Uvaria, 37—Everlasting,
 * 52-106-205—Fine Show, 143
 —For Shade, 174—For Work-
 ing Men, 15—Novelties, 71—
 Preserving, 256—Useful,.....87
 Fly Poison—Caution,.....254
 Foliage—Ornamental,.....188
 Food for Children,.....189
 Food—Variety in,.....88
 Foreign Intelligence,.....237
 Fountain—Drinking,.....*
 373
 Fox—The Red,.....*
 209
 Frog Exhibition,.....237
 Frost in Pipes,.....38
 Fruit—Early Ripening,.....334
 FRUIT GARDEN, Calendar for
 Jan., 2—Feb., 34—March, 67
 —April, 104—May, 140—June,
 171—July, 203—Aug., 235—
 Sept., 266—Oct., 299—Nov.,
 330—Dec.,.....362
 Fruit, vs. Vegetable, 49—
 Growers Ass'n, 174—House
 in Detroit, 303—In Bottles,
 206—In Minnesota, 365—
 Jars, Good, 237—Lists, Lo-
 cal, 347—Picking, 3* 305—
 Prizes, Greeley,.....71
 Fruit Trees—Ashes for, 271—
 Cultivation, 120—Trees,
 Dwarfing, 3* 17—Soda Wash,
 253—Trimming, 174—What
 to Plant,.....14
 Fruits for Illinois, 52—Naming
 New, 19—Preserving,.....155
 Fuller—Removal,.....71
 Fungi Abundant,.....171
 Furniture—Varnishing,.....257
 Fuchsia—Defective,.....205

G

Garden Edging, 271-302-313—
 Garden, Farmers' 118—For
 Children, 51—Herbs, 155—
 Implements,.....*
 219
 GARDEN, KITCHEN, Calendar
 for Jan., 2—Feb., 34—March
 66—April 103—May, 139—
 June, 171—July, 203—Aug.,
 234—Sept., 266—Oct., 298—
 Nov., 330—Dec.,.....362
 Garden Pit—Cheap, 33—Seeds,
 Secure, 53—Small, Profitable
 6—Succession in, 187—Value
 of,.....84
 Gas Line—Caution,.....366
 Gas Stoves—Leslie & Elliott's, 223
 Gas Tar—Use and Value,.....185
 Gazania Splendens,.....250
 Geese Eggs—Keeping,.....86
 Gift Repeated,.....364
 Geese—How to Pick,.....319
 Gladiolus—Seedling,.....7
 Gladiolus—Small Bulbs,.....106
 Gladders and Fancy, * 309-364
 Glass Windows—Substitute, 286
 Gloves—India Rubber,.....106
 Glycerin Described,.....157
 Goats—Value of,.....43
 Grafting Defined, 52—Herba-
 ceous, * 154—Wax—Good
 Substitute for,.....81
 Grain, Cradles, Best, 2 * 240—
 How to Bind, * 246—Raking
 and Binding, 246—Shrinkage, 7
 GRAPE VINES, Cold Grapery,
 Calendar for March, 67—
 April, 104—May, 140—June,
 171—July, 204—Aug., 235—
 Sept., 267—Oct., 299—Nov. 331
 —Dec,.....362
 Grape Vines—Culture, 19—
 Grafting, 72-73—Hillside
 Trellises, 271—In Pots, 2* 205
 —249—Mildew, 2 * 217-237—
 Moving, 366—New Disease,
 251—Planting, * 85-120—
 Pruning, 3 * 345—Trellises, 143
 Grapery—Experience with 84-120
 Graperies—Pruning in,.....239
 Grapes and Wine, 205—Best Lo-
 cality, 37—Delaware Cut-
 tings, 71—Dr. Grant's, 8-39—
 Fine Delaware, 302—Fine
 Show, 239—For Michigan, 71

—Knox's Experience, 365
 —Notes on, 19-155—For Newly Married, 13—In Spring, 143
 —Iona and Israella, 8-15-39
 37—Isabella, 143—Keeping, 302—Notes on, 19-283-311-346-379—Rogers' Hybrids, * 85
 Grass—China, 38—Grama, 270—Kentucky Blue, 115—Named, 71—Orchard, 114-214—R. I. Bent, 45—Seed, Covering, 142—Seeding down to, 182—Seeding with Millet, 205—Top Dressing, 178—Described, 4*45—Red Top, Orchard, Kentucky Blue, 5*79—Sweet Scented Vernal, Velvet or Meadow Soft, * 283* 115
 Gravel Wall Houses, 41-78-175
 Greasing Griddles, etc., * 54
 Greeley Prizes, * 236
 GREEN AND HOT HOUSES.
 Calendar for Jan., 2—Feb., 34—March, 67—April, 103—May, 140—June, 171—July, 203—Aug., 235—Sept., 267—Oct., 299—Nov., 336—Dec., * 362
 Green-Houses—* 2* 314
 Greens—Spring, * 72
 Ground Hemlock, * 345
 Groundsel—Common, * 220
 Growth—Unseasonable, * 375
 Gun Cleaner—Simple, * 11

H

Hair Crimpers, * 173
 Harness—Rats Gnawing, 37-70
 Hams—Keeping, * 158
 Harvest Prospects, * 269
 Harvest Time, * 247
 Hay Caps—Wooden, * 278
 Hay—Carrying by Hand, * 244—Chaffing, 270—Curing Experiments, 211—Drawing with Rope, * 212—Embargo on, 42—Fork Attachment, 2* 212—Fork, Horse, * 177—Fork, Hutchinson's, * 244—Pitching into Window, 178—Rigging, Wagon, * 212—Selling or Feeding, 4—Stacker, Horse, * 4-177—Stacks, Building Round, * 276—Stacks, Leaning, 277—Timothy in Iowa, 5
 Hearth Rug—Home-made, * 222
 Hedges—Barberry, 6—Evergreen, 85—In New Jersey, 37—Making Close, * 163
 Herb—L'Estragon, * 106
 Hoed Crops—Cultivating, * 210
 Hoos—Soufle, * 178
 Hoes—Sharpening, * 114
 Hog Disease in Virginia, * 302
 Hogs—Best Breed, 112—Killed by Bean Pods, 336—Lice on, 174—Poisoned by Salt, 36—Slaughtering, 2* 237—Slaughtering at West, 12—Turnips for, 36-174—Weakly Pigs, 4—Wintering, * 370
 Hollyhocks—Keeping, * 303
 Honeysuckle—Trumpet, * 49
 Hook for Buckets, * 72
 Hood Skirts—Use for, * 73
 Hops—Prize Essay, * 73
 Horse-Box, 5—Diseased, 141—Hitching to Rope, 177—Power Defined, 210—Radish, Grinding, 6—337, 500
 Horses at Pasture, 147—Baulky 270—Breaking, Colts, 10—Carrots for, 6—Chk Reins, 211—Draught, * 164—Driving with Oxen, 44—Feeding Young Colts, 366—Fitting Collars, 270—For Heavy Work, 183—Glandered, 69—Glanders, Detecting, * 309—Glanders, Preventing, 239-361—Halter for Pulling, 181—Heaves, Remedy, 302—Scratches, 174—Slabbering, 266—Spavins, 141—Tethering 335—Vicious, * 230
 Hort. Exhibition Am. Ins., 334
 Register, 237—Soc. Mass., 334—Soc. Penn., 333—Soc. Worcester, * 334
 Horticulture and Matrimony, * 13
 Hot-bed—Double, * 39
 House—Cheap, * 54
 Housekeeping—Beginning, * 53
 Household Notes, * 54
 Houses—Cheap, Convenient, 4* 177—Small and Cheap, 4* 78—Suggestions about, * 88
 Humbugs—Advertising, 106—Benefit Ass'n, 206—Circulars, 7—College, 7—Dr. Andrews, 103—Earth Glasses, 143—Farms in Iowa, 106—Gipsy's Charms, 106—Honey Recipe, 204—Horticultural, 27—Howard Ass'n, 106—Kosmos, 301—Lightning Rod, 7—Mart & Co., 106—Medical, 173-335—17 Merchants' Exchange, 235
 Microscope, 206—* Olefant Glass, * 7—Peddler, 37—Prophylactical Star, 303—Quack Doctors, 7—Quack Medicine, 367—Rev. E. Wilson, 367—Wine Plant, 336—Sundry, * 37-141-233

Hyacinths—Propagating, * 53

Hyacinths—Root Pruning, * 39
 Husk Tearing Machine, * 237

I

Ice Cream Freezer, * 141
 Ice Houses—Construction, * 270
 Ice—Removing, * 8
 Ice—Size of Blocks, * 8
 Implements—Farm, Cheaper, 56
 Implements—Price, * 141
 Indiana Agriculture, * 277
 Information Wanted, * 8
 Ink—Preventing Moulding, * 335
 Insects—Bean Maggots, 37—Benzine for, 188—Book, 335—Borer, 173—Canker Worms 238-2* 366—Caterpillars, 271—Cureulio Remedy, 271—Currant Worm, 141-237-303—Entomological Journal, 333—Experience with, 18—Hair Worm, 272—Killing, 271—Killing Ants, 22-191-258—Lice on Stock, 142—On Melons, 39—Potato Beetle, 2* 239—Poultry Lice, 334-335—Quasias for Ants, 335—Querries, 271—Red Locust, 335—Stings, Cure, 238—Soap-Waste for, 205—Striped Bug, 155-173—Tent Caterpillars, 72—Thrips or Fritters, 237—Unseasonable, 143—Upon Insects, * 271
 Inspector General, * 335
 Invalids—Suggestions to, * 22
 Iron—Galvanized, * 175
 Itching—Relieving, * 54
 Ivy—German, * 52

J

Jack Screws, Uses, * 371

K

Kale—How to Cook, * 37
 Kerosene Burner, * 173
 Knox's Farm and Festival, 378
 Kyanizing, * 38

L

Label—Bliss's, * 6
 Labor Saving, etc., * 343
 Labor—Skilled for Farm, * 144
 Laborers—Supplying, * 175
 Lamp Chimney—Best, * 22
 Land Advertisements, 5-107
 Lands on Atlantic Coast, 105
 Larkspur—New, * 4
 Lavender—Garden, * 213
 Law—Taxing Bird-killers, 142
 Lays—Making, * 137
 Layering, * 187
 Library—Farmers', * 5
 Lightning Rods, * 190-205
 Lilies—Blooming Twice, * 336
 Lilies—20,000, 303—Jacobean, * 156—New Japanese, * 153-281
 Lime—Burning, * 38
 Lime for Whitewash, * 88
 Live Oak in Iowa, * 233
 Locating—Where? * 205
 Locust Snekers, * 205
 Locust—Yellow for Timber, 142
 Lumber—Quantity from Log, 11

M

Machine—"Manufacturing", 38
 Magazine—Horticulturist, * 6
 Magazine—New, * 107
 Magnolia—Chinese, * 83
 Mangoes Defined, * 143
 Manure—Ashes for Potatoes, 35—Barley Sprouts, 174—Bone-dust for Wheat, 334—Coal Ashes, 174—Coarse, Applying, 70—Compost, 35-334—Flax Shives, etc., 33—For Gardens, 106—For House Plants, 334—For Onions, 71—Gas Lime, Caution, 366—Green Clover, 70—Green Crops for, * 244
 Hair for, 270—How to Pitch, * 149—Increasing, 306—Keeping, 270—Leather Scraps, 70
 Liquid, 204—Management, 182—Marl for Fruit Trees, 367—Marls, 334—Muck and Lime, 206—Phosphatic, 238—Increasing, 306—Guano, 204—Plaster, 142-204—Pump for Liquid, 2* 213—Salt and Lime, 334—Sawdust, 334—Slaughter House, 4—Sool, 302—Tan Bark, etc., 366—Tank and Cesspool, * 245—Top-dressing, 39—Use of Bones, 204—Wasted, * 334
 Maple Sugar, * 13-40-60
 Maple—White, * 155
 Maps—Lloyd & Co's, * 141
 Maps—Mounting, * 147
 Market Farm—English, * 81
 MARKET REPORTS, Jan., 3—Feb., 34—March, 68—April, 104—May, 162—June, 194—July, 226—Aug., 258—Sept., 293—Oct., 301-304—Nov., 332—Dec., * 363
 Marl Described, * 7-331
 Meadows—Pasturing, * 141
 Meadows—Renovating, * 270

Meats for Variety, * 88
 Meat, etc.—Tainted, * 124
 Meat—Preserving, 72-143
 Medicines—Quack, * 367
 Melons—Training, * 205
 Milk—Condensed, 22—Cooling, 239—Promoting Flow, * 243
 Missouri Land Co., * 204
 Mistakes in Taste, * 187
 Moisture in Air Needed, * 21
 Movements of Plants, * 330
 Moles—Castor Beans, * 71
 Money for Soldiers, * 72-173
 Mortar—Sand Required, * 7
 Mowers—Trial of, * 333
 Mowing Machine Knives, * 211
 Muehling and Ink, * 335
 Mulching and Shading, * 186
 Mushroom Culture, * 206
 Music—Good, * 141
 Musical Instruments, * 365
 Mutton for the Million, * 369

N

Names—Pronunciation, etc., 271
 Newspaper Box, * 8
 Newspaper—Newton's, * 72
 Newspapers—40,000,000, * 143

O

Oats—Bad Management, * 77
 Oats in Succession, * 70
 Oil, Gummed—Remedy, * 7
 O. Judd & Co., * 301
 Olives and Oil, * 317
 Onions—Culture, 71-143—Defective, 143—Good Crop, 6—Manure for, 71—Peeling, 22-88—Where to Grow, * 143
 ORCHARD AND NURSERY, Calendar for Jan., 1—Feb., 24—March, 66—April, 102—May, 158—June, 170—July, 202—Aug., 234—Sept., 266—Oct., 298—Nov., 330—Dec., * 362
 Orchard—Pioneer, * 48
 Orchard—Treatment, * 39
 Organ—Estley's Cottage, * 365
 Osage Orange Seed, * 303
 Oxen—Management of, * 147
 Oxen—Profitable Teams, * 305

P

Peonies—Cultivation, * 156
 Peonies—Removing, * 7
 Painting Old Wood Work, * 317
 Pansy—Cultivation, * 7-284
 Pansties and Violets, * 38
 Papaw Bark for Tying, * 205
 Paper—High Price of, * 334
 Papering Walls, * 137
 Park Row and Park Place, * 106
 Park with Five Acres, * 374
 Patent Rights, * 335
 Patterson & Bros., * 7
 Pea Brush, * 39-71
 Peaches—Hale's Early, 239—On Willow, 71—Orchard, Crop for, 37—Spring Budding, 14
 Tree Layers, 39—Trees, Injured, 38—Trees in Cold Climate, 18—Trees, Spring Budding, * 37
 Pear Culture Profitable, 314—Stocks, Quince, 143—Tree Blight, 2-30—Trees, Barren, 6—Trees, Dying, 85—Trees, Double Working, 218
 Trees, Exposure, * 35
 Pears on Thorn, * 71
 Pears—Sheldon, * 50
 Peas—Harvesting, 243—Named, 38—Soaking, * 71
 Peat for Fuel, * 183
 Perennials—Herbaceous, 117-282
 Perfumes—How made, * 190
 Periwinkle—Common, * 157
 Persimmon Seed, * 205
 Petroleum Advertisements, 5-69
 Photographs—Animal, * 204
 Pianos—Steinway's, * 333
 Pickles—How to Make, * 270
 Pigeons on the Farm, * 270
 Planting Deep and Shallow, 143
 Plants—Care of House, 21-319—For Shade, 205—Mixing, 174—Named, 7-71-173-206—238-271-376
 Plaster and Bone Dust, * 20
 Plow Beams Length of, 210—Draught of, 145—Hutchinson's, 2* 245—Right or Left Hand, 320—Subsoil, * 181
 Plows—Care of Steel, * 267
 Plowing—Best Soil at Top, * 242
 Plowing in Green Crops, * 244—Notion about, 38—Sward Ground, 4* 145—Wet Ground, * 341
 P. O. Money Orders, * 4-236-367
 Pomological Society, Ohio, * 365
 Potatoes—Boiling, 38—Buckley's, 38-70—Cuzco, 38—Dropping, * 148—Early Shaw, 141—Exhibition, 365—Experiments, 70-375—Fluke, 6-70—Good Yield, 238—How to Cook, 22—How to Dig, 307—How to Plant, 146—Large or Small, 38—Notes on, 6* 44—Productive, 6—Selecting

Seed, 280—Size of Seed, * 148
 —Tan Bark for, 155—Under Straw, * 11-342
 Poudrette—Curious Mixture, 205
 Poultry—Bantams, * 216—Black Spanish, * 4-309—Bones for, 117—Book, Saunders, 215
 Early Chickens, 4—Fountain, * 174—French, * 216—Henneries, Light, 4—House for Prairies, 36—Large Indian, * 241—Lice, 334-335—Marketing Directions, 365—Preocious, 302—Raising Chickens, 113—Report, 142-302—Show, Barnum's, 141-206—Sickly, 366
 Practical Farmer Dead, * 144
 Premiums for 1865, 2-24-104-172
 Premiums for 1866, 300-331-363
 Preserving Fruit, * 206
 Priurose—Chinese, * 143
 Productive Plot, * 38
 Propagating Case, * 7
 Protecting Plants, * 365
 Prunes—Smoky, * 54
 Putley—Uses, * 373
 Pumping Water, * 335
 Pumps—Best Kind, * 143
 Purchasing Agency, * 5
 Putty—Making, * 124
 Putty—Softening, * 124

Q

Questions—Difficult, * 143
 Questions—Sundry, * 367
 Quinces—Fine, * 367
 Quinces on Clay Soil, * 36

R

Rabbits and Trees, * 6
 Radish—Chinese, * 84
 Radish Culture, * 303
 Rags—Sell them, * 167
 Railway Accidents, * 5
 Rake Teeth—Form of, * 210
 Rake—The Buck, * 213
 Rats—Economy of, * 10
 Rats Gnawing Harness, * 67-70
 Receipts not Given, * 374
 Recipes—Bachelor's Opinion, 54
 Record of a Year, * 17
 Refrigerator—"Polar", * 144
 Report—Resources of N. Y., * 8
 Rhododendrons—Notes on, * 220
 Rhubarb for Medicine, * 37
 Road Scraper, * 45
 Roads—Repairing, * 11
 Roofing Cement—Coal Tar, * 4
 Roofs—Leaky, * 267
 Root Cutter, * 77
 Root Pruning, * 256
 Roots—Burying, * 342—Use of Surface, 19—Value for Feed, 6
 Ropes—Splicing, * 275
 Ropes—Tying Knots, * 305
 Roses—Buchanan's New, 143—Sport of, * 240—Hins on, 81—Manetti Stock, 143—Moss, * 284—Remontant, * 39
 Rural Embellishments, * 217
 Rustic Garden Ornaments, 4* 20
 Rustic Seat, * 217
 Rust—Removing, * 367
 Rusting—Preventing, 38-106-255
 Rye—Sowing Late, * 371

S

Salting Stock and Hay, * 240
 Sand Box Tree, * 188
 Sandy Land, Improving, * 204
 Sanitary Commission, * 253-335
 Sap Spouts, * 173
 Sausage Meat—Keeping, * 89
 Sawing with Horse Power, 38-71
 Saws—How to File, * 4* 14
 Scales for the Farm, * 205
 Scrap Books for Soldiers, * 8
 Scythe Sharpening, * 270
 Scythes—Correct Form, * 336
 Seal—Big Name, * 106
 Seed Time, * 152
 Seeds—Evergreen, etc., 5—Garden, Raising, 117—Getting Early, 75—None for Sale, 3—Number per oz., 71—Starting Early, * 121
 Selling—Best Time for, * 366
 Shade Trees—Size of, * 37
 Shading and Mulching, * 186
 Shaving Easy, * 22
 Sheep—Am. Merino * 75—And Fences, 106—At N. Y. Fair, 335—Beans for, 142—Breeders' Fair, 141—Care in Winter, 9—Diarrhea, 334—Dipping Compound, 142—Dog Laws, 42—Early Lambs, 75-366—Graining, 153—Hoot Root, 242—How to Shear, * 180—Laurel Poisoning, * 249-346—Management, 334—Mania, 43—Old for Wool, 142—Owning Lambs, 142—Profitable, 42-142—Prolific, 70—Pulling their Wool, 142—Racks Foddering, 3* 369—Selection for Breeding, 370—Shearing, Canadaigua, 269—Shearing Hints, * 180—Shears, Grinding, * 180—Show, 173—

Stretches, 142—Washing, 147—Weight of, 339—Winter Feeding, * 337
 Shelter—Expensive, * 45
 Shingles—Fire Proof, * 175
 Shingles—How to Lay, * 233
 Shoe String Tags, * 54
 Shoes—Wooden, * 50
 Shovels—How to Use, * 119
 Shrub—Daphne Inezerm*, 119
 Shrub—Exochorda Grandiflora, 20
 Shrubby in Spring, * 3
 Silk Worms—Ailanthus, * 76
 Silk Worms in France, * 258
 Sink—Convenient, * 54
 Sleigh Ride—Family, * 4
 Slippers—German, * 22
 Smoke House—Good, * 336
 Smoke House In-door, * 47
 Snow Tools, * 3* 372
 Soap—Hard, * 83-335
 Soap Making, * 222
 Socks—Cheap, * 123
 Soda, Saleratus, etc., * 124
 Soda Wash for Trees, * 253
 Soil—Best on Surface, * 242—Pulverizing, 151—Renovating Sterile, * 148-302
 Sotanium—Climbing, * 380
 Soldering Iron, * 124
 Soldiers' Chains, * 236
 Sorghum Ass'n Ohio, 5—Candy, 39—Convention, Wis., 26—Culture, 57—Early Kind, 303—For Green Fodder, 240—In China, 106—In Mass., 48—In New York, 4—Machinery, Good, 237—Planting, 106—Treatment, * 279
 Sorrel—Red, * 39
 Southern Region—Fine, * 366
 Sparrows—European, * 209
 Spots on Furniture, * 83
 Spring House—Prairie, * 239
 Squash—Custard Marrow, 2* 317
 Squashes—Large, 367—Mixing, 205-367—Prolific, 6-143—Yokohama, * 82
 S. S. Lesson Books, * 8
 S. S. Paper, Good, * 72
 Stable Brush Broom, * 341
 Stable Fork—Wooden, * 369
 Stain—Claret Wine, * 4
 Stains—Removing, * 124-206
 Stanchions vs. Chains, * 266
 Steam Engine—Glass, * 107
 Steel Trap—How to Set, * 238
 Stockings—Double Heeling, 55
 Stoves—Best, * 317
 Stoves—Gas, * 223
 Straw—Chaffing, * 270
 Strawberries—Culture, 254—First, 173—For New Jersey, 35—In England, 237—Notes on, 121-219-252—Premium, 36-141—Preserving, 173-191—Show 144-172-232—Propagation, 35—Querries, 6-237—Runners, 336—In New York, 22—Tri-bune, * 114
 Stump Machine—Cheap, * 71
 Subscriber—Smallest, * 7
 Subscription—First, * 8
 Subscription Letter—Form, * 365
 Subsoil Plow, * 181
 Subsoiling Wet Ground, * 181
 Sugar from Corn, * 44
 Summer Fallows, * 211
 Superphosphate—Plowing in, 70
 Sweet Potato Culture, * 144-154
 Sweet Potatoes—Starting, * 107
 Swill Barrel—Portable, * 80
 Swill—Fermented, * 239

T

Tanning Fur Skins, * 191
 Tapioca, * 381
 Tea—Taking in the Country, * 72
 Teachers' Agencies, * 72
 The Macaulay, * 366
 The Bunkei on Pickles, 46-50
 176-285—* Striking He, * 150—Visit to T. Oakes, * 372
 Timber Felling, * 252
 Toad Flax, * 252
 Tobacco Culture, 173—Preparing for, 151—Seed Beds, * 107
 Tomato—Label on, 318—New Varieties, 82—Seed, Saving, 237-271—Tilden, 336—Training, * 154
 Tools—Hanging up, * 39
 Touch-me-not—Jewel Weed, * 217
 Trailing Arbutus, * 377
 Tree Digger—Harkness, * 118-302—Labels, Tin, 39—Peddlers Taxed, 269—Protectors, * 205
 Trees—Bark-bound, 6—Felling, Problems, * 240—From Layers, 39—Injured by Horses, 3, 5—Lard and Tobacco on, 302—Medicated, 6—Upon Prairies, * 186
 Trumpet Honeysuckle, * 49-143
 Tuberose—Cultivation, * 3* 378
 Tucker, L. D.—Professor, * 303
 Turkeys—Pattening, * 326-338
 Turnip Seed per Acre, * 205
 Turnips—August, 241—For Horses, 366—On Heavy Soils, etc., 209—White French, * 335
 Turpentine—Pitch Pine, * 106

Ref 205
 271

U

Unseasonable Growth.....375
U. S. Bonds.....72

V

Varnish—Furniture.....191
Vegetables—New.....37
Venus's Fly Trap.....380
Verbenas—Seedling.....303
Veterinary College.....14-302-365
Vine—Alleghany or Climbing Pumitory,* 86—Climbing Solanum.....* 380
Vinegar in Cement, 106—From Cider, 271—Making.....* 221
Vineland Advertisement.....141
Vineland—Notes on.....365
Violet—Ever-blooming.....367
Visiting among Farmers.....253
Volumes—Bound.....364

W

Walks—Coal Ashes for.....185
Walks—Coal Tar.....347
Washing of Clothing, etc.350-382
Washing Machine—Doty's.* 87
Washington Monument.....232

Waspish Item.....173
Wasps and Gas Tar.....39
Waste Ground—Reclaiming 274
Water for Stock, 179—Hard and Soft, 8—Pines, Iron, 39—Useful and Ornamental,* 373
Weather Strips—Torrey's.....4
Weeding Hoe—Adams.....* 149
Weeding Implements.....* 3-51
Weeds—Bladder Campion,* 6-277—Canada Thistles, 6-70-205—Charlock or Field Mustard, 307—Chickweed, 143—Couch Grass,* 341—Elecampane, 106-173—Field Horse Tail, 4* 250—Groundsel, 220—Horse Nettle,* 283—In Fence Rows, 149—Indian Mallow, 314—Plants out of Place, 13—Red Sorrel, 39—Wild Morning Glory, 143—Toad Flax.....* 252
Well Curb—Good.....* 180
Wells—Digging, Stoning,3* 273
Wells—Side Hill.....76
Western Agriculture.....215-246-339-374

Wheat—Boughten White,238—Drilling Profitable, 278—Plant, Habit of, 2* 308—Preparing Soil, 279—Preparing to Sow, 112—Preventing

Smut, 270—Seed per Acre, 241—Smut Remedy, 270-335
Lime for, 270—Soring, Soils for, 112—Winter Killing, 278—Without Plowing.....70
Wheelbarrow for Boys.....11
White Mountains—Letter,* 272
Whitewashing—Directions.....123
Wild Cherry Stocks.....302
Wilder, M. P.....37
Willow Frauds, 106—Osier,106-269—White.....6-76
Wind Power—Accumulating.....7
Wine Making.....304-365
Wistaria—Chinese *83—Flowering of, 271—Fruiting.....4
Wolves and Gophers.....106
Woman—Patriotic.....46
Wood Anemone.....* 122
Wood—Splitting Block,2* 82-372
Wool-folding Table.....* 181
Wool—Greasy Fleeces.....* 118
Wool Grower's Ass'n—N.E. 304
Woolens—High Price.....367

Y

Yards—Laying Out.....4* 50
Yale College Ag'l Dept'l.....236
Yeast—How to Make.....287-350
Yew—American.....* 245

RECIPES.

Apple and Pic Plant.....158
Apple Jonathan.....158
Apple Sauce.....382
Beef—Keeping.....318
Bread at Sea.....315
Bread—Steam Cooked.....287
Beef—Pickling for.....54
Beet Hash.....223
Biscuit—Graham.....158
Blanc Mange—Chocolate.....85
Bread, 223—Rye and Indian,158—Unbolted Wheat.....54
Breakfast Dish.....153
Cake—Breakfast, 153—Farmers,* 54—Farmers' Fruit, 21—Gingerbread, 25—Hard Gingerbread, 318—Jumbles, 23
Mock Sponge, 158—Molasses Sponge, 318—Nutcakes, 54—Potato, 158—Soft Sorghum, 254
Carrots—Baked.....55
Codfish Balls.....55
Cooking without Milk.....153
Corn Bread.....89-381
Corn Bread—Steamed.....223
Corn Cake—Breakfast.....54
Crackers, 124—Butter, 223—Soda, 55—Tea.....223
Cream Substitute.....153
Crust Porridge.....89

Egg Puffs.....254
Floating Island.....223
Jams—Pickling for.....54
Johnny Cake.....158
Lime Spots—Removing.....255
Lime Water in Dough.....223
Meat—Keeping.....318
Milk Gruel.....69
Omelet—Cheese.....124
Omelet—Plain.....223
Parsnip Croquettes.....65
Pie—Cream.....83
Pudding—Apple, 150—Boiled Indian, 158—Bread, 88—Christmas, 318—Extra, 254—Green Corn, 287—Hasly, 54—Poor Man's 153—Pop-Corn, 159—Sauce for, 3* 2—Steam, 158—Steamed Indian, 255—Tapioca.....381
Pumpkin Dried.....125
Rusks.....159
Sauce—Chili.....287
Sauer Kraut.....23
Soup—Potato.....124
Spanish Cream.....68
Squash—Baked.....125
Squash—Dried.....124
Syrup—Sweet Apple.....124
Water Gruel.....69
Wheat and Indian Cake.....158
Yeast, 287—First, 350—Potato.....124

INDEX TO ILLUSTRATIONS IN VOLUME TWENTY-FOUR.

A

Apple—Porter.....315
Austrian Pine.....17

B

Balancing—Children.....160
Barn Door Fastening.....369
Barn—Illinois.....12
Beans—Varieties.....(4), 154
Barrow and Feed Box.....12
Bellows for applying Sulph'r, 217
Bees—Buried Stocks.....275
Bladder Nut Tree.....(2), 153
Bonnets—Fashionable.....(3), 21
Bread—Pictorial History.....156-248-372
Bridge—Rustic.....185
Broom—Brush for Stables.....341
Buckwheat Stock.....310
Buffalo—East Indian.....9
Bullock—East Indian.....9
Butternut Ornament.....349

C

Capei Plant.....285
Carlo's Portrait.....24
Carving Turkey.....381
Cattle Inspecting.....344
Celery—Management.....(3), 218
Chair—Home-made.....87
Cheese Factory.....340
Chestnuts—Improved.....577
Child Being Washed.....126
Child—Benevolent.....256
Children Left Alone.....192
Children Riding on Log.....352
Christmas Tree.....354
Cinnamon and Cassia.....(3), 349
Citron Flower and Fruit.....(2), 221
Corn—Diminutive.....51
Corn Husking Pin, 338—Marker, 149—Shock Binder.....343
Cow—Yoke for.....335
Cradle Finger—Right Position, 240
Currant—Fertile de Palmar, 252—Versailles, 281—Victoria.....282

D

Dandelion.....189
Drains—Plank.....(2), 308

E

Evergreens—American Yew,

345—Austrian Pine, 17—Pinus Pumilio.....17

F

Farmers in War Time.....16
Farmers' Study—(Vignette).....1
Fire Wood—Preparing.....(2), 82
Fisherman's Return.....56
Flax—Brush Harrow, 109—Gavel, 110—Gavel Holder, 111—Hand Brake, 111—Plant, (3) 108-109—Power Brake, 111—Power Scutcher, 111—Scutching Board, 111—Stack, 110—Stook, 110—Swingle, 111
Flowers—Cardinal Flower, 348
Claytonia, 122—Collinsia Verna, 19—Columbine, 156—Common Periwinkle, 177—Convolvulus Minor, 188—Datura arborea, 313—Grape Hyacinth, 316—Helipterum Sanfordii, 52—Jacobean Lily, 156—Lilium Anatum, 281—Spring Snow Flake, 316—Trailing Arbutus, 377—Trumpet Honeysuckle, 49—Tuberosa, (3) 378-379—Venus's Fly Trap, 380—Wistaria, 83—Wood Anemone.....122
Fountain—Drinking.....373
Fox—Real.....209
Frog Race.....288
Fruit Picker.....305
Fruit Picking Ladder.....(2), 305

G

Gauge—Prison Base.....383
Grafting—Herbaceous.....154
Grain Sheaf.....246
Grape Vine in Border, 249—Vine in Pots, 249—Vine Planting, 120—Pruning (3), 346
Grass—Flower Dissected, (4) 45—Kentucky Blue (2) 79—Meadow, Soft, 115—Orchard, (2) 79—Red Top, 79—Sweet Scented Vernal, (2), 115
Green-House—Section.....315

H

Halter for Pulling Horses.....151
Harrow—Brush.....109
Harvest Time.....248
Hay—Carrying by Hand, 244—Drawing with Rope, 212

Fork Attachment, (2) 212—Fork, Hutchinson's, 244—Rigging, Wagon, 212—Stacker, Horse.....177
Herb—Benne or Sesame.....348
Hoe, Adams' 149—Fork, 219—Missionary, 51—Scuffle, 51—Wheel.....51
Horse—Detecting Glanders, 309 for Heavy Draught, 184—Head of Vicious, 280—Hitching to Rope.....177
Hogs—Manner of Killing.....37
Hogs—Yat for Scalding.....337
Hook for Buckets.....72
Hop "Set".....74
Hop Yard—Collins'.....73
Houses—Cheap (5) 41-(4) 78.....(4) 177

I

Insects—Potato Beetle, (2) 239—Canker Worm Preventive, (2) 266
Ivy—German.....52

J

Jack Screws.....371

L

Landscape—Curious.....256-320
Lavender—Garden.....313

M

Magnolia—Chinese.....86
Manure—Pitching.....149
Manure Tank.....245
Map—Vicinity of Richmond 207
Map—Works around Petersburg 208
Maple—White.....185
Mildew—Grape.....217
Mountain—"Old Man of" 272
Mouths—Shut and Open.....(4), 23

N

Newspaper Box.....8

O

Olive Tree Branch.....317
Orchid—Butterfly Flower.....49
Organ Grinder.....90

Owl—Snowy.....13
Ox Yoke Attachment.....44

P

Pear Tree—Bush, 18—Dwarf, 17—Pyramidal.....18
Pinus Pumilio.....17
Plow—Chain Attachment, 244—Hutchinson's, (2) 245—Subsoil.....181
Plowing—Best Soil at Top, 242—Sward Ground, (4) 145—Wet Ground.....342
Posts—Removing.....77
Potatoes, (6) 44—Cutting, 148—Dropping.....148
Poultry—Asiatic Fowls, 241—Bantam Fowls, 216—Black Spanish, 309—Fountain, 174—French Fowls.....216
Prisoner and Birds.....283
Pulley—Use of.....573
Pump for Liquid Manure (2), 213
Puzzle—Figure, 159-191—Labyrinth, 353—Planting, 159—Wire, 253—Rebuses, 23-(2) 55-(2) 89-(4) 125-(2) 89-(2) 191-(2) 223-(2) 255-(2) 287-(2) 319.....351-(2) 382

R

Rake—Buck.....213
Rake For Couch Grass.....341
Road Scraper.....45
Root Cutter.....77
Roots—Fit for.....342
Ropes—Knots.....(6), 305
Ropes—Splicing.....(4), 276
Rose—Moss.....254
Rose—Sport of.....220
Rustic Vase.....(4), 20

S

Sand Box Tree Fruit.....158
Sap Boiler.....40
Saw Filing.....(4), 74
Scythe—Proper Form.....240
Seat—Rustic.....217
Seed Time.....152
Shackles for Bulls, etc.....213
Sheep—Am. Merino, 75—Lauzel, 249—Rack (3) 369—Shears, Grinding, 180—Shears, Holding.....180
Shoes—Woolen.....350
Shortening Tall Man.....160

Shovel—How to Hold.....340
Shrub—Exochorda Grandiflora, 20—Daphne Mezereum, 119—Double Deutzia, 252—Sheep Laurel.....249
Sink—Kitchen.....53
Sleigh Ride—Family.....48
Snake Nut.....(2), 49
Snow Plow, 373—Push, 372—Shovel.....373
Snow Storm.....(Vignette) 33
Socks—Cloth.....123
Solanum—Climbing.....380
Soldiers' Return.....224
Sparrows—European.....209
Squash—Custard Marrow, (2), 317
Stable Fork—Wooden.....369
Stack—Preventing Leaning, 276
Stitch in Time.....320
Stump Machine—Cheap.....114
Swill Barrel—Portable.....80

T

Tapioca.....381
Timber—Felling.....372
Tree Digger—Harness, 119—Felling, 240—Labels, Bliss, 6
Trout at Various Ages.....(8), 312

V

Vine—Alleghany.....56
Vine—Climbing Solanum.....380
Vinegar Apparatus.....221

W

Washing Machine—Doty's.....87
Weeds—Bladder Campion, 277—Field Horse Tail, (4) 250—Groundsel, 220—Horse Nettle, 283—Indian Mallow, 314—Toad Flax, 252—Touch-me-Not.....217
Well Curb, 180—Digging, Curbing, 273—Digging, Derrick, etc., 273—Digging, Wells.....274
Wheat Plant—Growth.....(2) 308
Windmill—Amusing.....319
Wood—Splitting Block.....82-372
Wool—Folding Table.....151
Wool—Oily Fleeces.....118

Y

Yard Plans.....(4), 50

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Notes and Suggestions for January.

A new year has come—may it be a happy one to all our readers, and may all the good plans made for the future be carried out. Our vignette is suggestive of the farmer's most valuable winter crop—the crop of ideas. Books are multiplying, and so are readers. Cultivators of the soil are every year realizing the advantages of gathering from books the views of scientific men, and a knowledge of the practices of other farmers, that they may, by comparing them with their own, improve their theories and their systems of farming. In this most interesting period of our country's history, no farmer can afford to neglect agricultural reading. The exigencies of the time make new crops profitable; they introduce new notions, open new markets, and give us new views upon agricultural as well as upon political and humanitarian subjects.

Farm Accounts.—No farmer is true to his own interests who does not keep just as accurate accounts of his business, as the best "business man." It is not so easy to keep accounts, as where every thing has a definite money value, but it may and should be done; and after a little practice we may soon get in the way of placing a just value on the labor of men and animals, our own time, etc. One of the most important things is a correct inventory of every thing that has value—of investments and stock in trade; of debts and dues; of live stock and implements; of manures in the ground and in the compost heap, etc., etc. Were a farmer only to take a good inventory once a year, and keep no other accounts, it would be an invaluable aid to him in regulating his future management.

Agricultural Reading.—Look over our book list.

Encourage the formation of an agricultural library in your neighborhood, where many books and periodicals may be kept for consultation.

Building.—Keep every thing neat and tidy, within and about the buildings; tools, chains, etc., left out may be covered up in the snow, and easily lost. Repairing and painting implements are always in order if the weather favors.

Cellars.—Open the windows and give change of air on warm, dry days; remove any decaying vegetables. Protect against frost and vermin.

Cattle.—Oxen ought to be shod, and kept sharp, whether the ground is slippery or not. Feed in accordance with the labor demanded of them, but on no account let them fall off in flesh. Oxen low in flesh are more liable to meet with accidents than others, and if a poor lousy steer breaks a leg, nobody wants the beef, and it is not fit to eat; not so with one in good condition. Young cattle ought not to be pampered, but well fed, and kept in growing order.

Cows.—Milk to within about six weeks of calving; young cows certainly to that time, if possible, to encourage a habit of holding out well. In icy weather be very careful of cows with calf.

Farmers' Clubs.—Hold frequent meetings.—Discuss the farming of your own neighborhood, and how it may be improved. Find out who has got the best seeds of various kinds, and secure the advantage for the club. Make observations on the care of stock, and see whose are wintered the best, and most conveniently.

Fencing Stuff.—Haul in that cut in the fall, and work it out. Poor fences make bad neighbors.

Frost.—Defend water pipes and pumps from frost. Horse dung packed round them in barrels or boxes is very good, if not allowed to reach the water. To clear a pipe from ice, see Basket.

Grain.—Grind all fed out, except for sheep. Shell corn only as fast as wanted for use or sale. Give rats attention, and phosphorus paste.

Harness and Carriage Tops.—Keep clean, and after they have been wet, oil them thoroughly.

Horses.—Be very watchful of breeding mares in icy weather. Keep horses used on the road well calked. See page 10 on breaking horses.

Ice.—The earlier ice is secured, the better. If well put in, in the coldest weather, it is a good job, out of the way. Use clear, good ice only.

Manure.—Use all diligence to increase the manure and compost heaps. Gather the dung in the yard, and compost it with muck. Absorbents in the stables should take up all the urine, and keep the air pure and wholesome.

Markets.—Hold no produce after a good price is offered. Grain shrinks, heats, or is destroyed by vermin very often, and beeves and sheep, after they are fit for market, are seldom kept with profit more than a few weeks at most.

Poultry.—Feed scraps of meat or pounded bones frequently. Give warm light quarters,

and dry ashes to dust themselves with, fresh water (but warm), daily, and keep the water and feed vessels scrupulously clean. Thus avoid disease among poultry, and get plenty of eggs.

Roads and Paths.—If every one does his full share (and a little more), towards breaking roads, and making paths about the neighborhood, general comfort will be enhanced. See basket item about clearing ice from steps, etc.

Roots.—Feed with care, so as to have some always on hand for animals with young, and for a change of diet if an animal gets off its feed.

Seeds.—Look out in advance for good fresh seeds of all kinds. Try all that are the least doubtful, in pots or boxes of earth, carefully attended, and neither too wet nor too dry. Never keep seeds in air-tight or very close vessels.

Sheep should not be confined in close stables; but, except during storms, should have the range of a large stock yard, or lot. Feed in well-constructed racks, and feeding troughs. Turnips and beets, fed freely, are very fattening and more economical generally than corn. Whatever grain is fed, should be given regularly; even a very small quantity is well, if it can be fed so that each sheep shall get its share. Salt ought to be kept constantly where the sheep can get at it. If, however, it has not been, they must be gradually accustomed to it. The notion that sheep do not need water in winter, is a mistake. It is much better for them to have access to water which does not freeze.

Swine.—The quantity of manure which a few hogs will make, if plenty of muck and litter be thrown from time to time into their pen, and the whole be kept under cover, is very great. Hogs, except for breeding, are of no value to Eastern farmers, with few exceptions, if they be not employed to work over manure. Feed some raw roots, potatoes, turnips, etc., to breeding sows.

Timber Land.—Clean the wood lots of crooked, broken or hollow trees, and secure firewood in this way, and do it at the present season.

Tools.—Get in your orders for mowers, and all heavy implements early, so as to be well and promptly served; and delay no needed repairs.

Work in the Orchard and Nursery.

No doubt that many new subscribers will this month read the calendar for the first time, and we ask them if they have all the fruit they need for their own use, or all they can market in a few years from the present. If they have not, let them at once resolve to plant trees the coming spring, and begin now to make preparations by deciding upon varieties and sending in their orders to some reliable nurseryman. Get the experience of the neighborhood as suggested on page 14, or bring up this subject in your farmers' club, if you have one, and take votes of those present on the different varieties.

Cut cions in mild weather and keep in sand in a

cool place. They should be taken from the thrifty growth of last season, and be carefully labelled.

The trees already planted need some care. The young orchard should be well fenced and cattle kept from browsing on the young trees. If a limb is broken by accident, the wound is to be neatly pared and covered with grafting wax or shellac varnish.

If the weather is mild, considerable preparatory work may be done, such as draining if the ground be not thoroughly dry, excavating holes for trees, etc.

The nurseryman will find occupation in root grafting and cutting back and shaping the stock grown last year. He should accumulate a store of labels, moss, and all the needed packing materials, and get thoroughly ready to attend to the spring trade.

Kitchen Garden.—There is little to do here except to take care of the few things wintered over, and to plan out and prepare for spring work.

If water stands on parsnips, spinach, and other crops left in the ground over winter, surface drains may be made to let it off. Keep fences tight and gates closed, so that no stray animals do mischief.

There is now sufficient leisure to review last season's work and see what may be improved upon. Map out the garden and determine on the location of the principal crops, ensuring proper rotation. Whenever the weather and state of the soil are favorable, drains may be laid and plowing be done.

Bean Poles, Pea Brush, and all similar stuff are more conveniently cut during winter. If the portion which enters the ground be dipped in coal tar, or in a solution of bluish vitriol they will last longer.

Cold Frames.—Give air on mild days, but keep all closed during severe weather and at night. Give water only when necessary to keep the plants from wilting. Trap or poison mice, if troublesome.

Hot-beds.—Repair and strengthen old frames; glaze and repaint sash if they need it, and make new ones. Accumulate an abundant stock of manure, and have a good supply of rich mould under shelter.

Seeds.—Keep nothing but good varieties and true to kind. If necessary to buy seeds, do so early.

Fruit Garden.—Things here are at rest, and there is little to do except to see that no harm comes to the plants. Those covered need the protecting material replaced if it blows or washes off.

Flower Garden and Lawn.—If the tender plants are properly protected, the chief care is to look after the injury done by gales or heavy snow which sometimes break down the limbs; snow is troublesome with evergreens and should be shaken out of the trees before it becomes compact.

Much can often be done in this month at making roads and paths, and other work of construction. In all projected improvements it will be found much more satisfactory to sketch the plans on paper and subject them to the criticism of judicious friends. The present is a good time to decide where evergreens shall be planted at the proper season.

Green and Hot-Houses.—Everything should be looking at its best in the houses for blooming plants; and in those where plants are placed merely to protect them from cold, and growth is not looked for, clean pots, neatly trimmed and tied up plants should be the rule.

Bulbs.—Proper management in bringing them forward in succession, secures flowers all winter.

Camellias.—Give more water and occasionally syringe the foliage; ventilate freely.

Cactuses.—Almost all of this family need to be kept moderately dry at this season of the year.

Caleolarias and Cinerarias.—Shift to the pots in which they are to bloom and water moderately.

Fuschias.—Prune and repot them in fresh soil.

Insects.—Fumigate before they get the mastery. Use tobacco smoke for green fly, and sulphur fumes for red-spider. In fumigating with sulphur it must not be ignited but simply laid upon the cooler part of the fire where its odor will be slowly dissipated.

Petunias and Verbenas—may be encouraged to grow and cuttings taken from them for propagating.

Roses.—Those coming into flower may have some liquid manure which should be made very weak.

Seeds of many plants for spring blooming may be sown now, and be grown in pots.

Ventilate whenever the weather will allow; use shutters at night for the green-house; during very severe cold weather they may be kept on all day.

Water.—This when applied to plants, should be of the temperature of the house or even a little higher. Plants which are not growing need but very little.

Apiary in January.—Prepared by M. Quincy.

—Bees must have access to their stores every few days. In colonies that have but little honey, it is quite sure to be further from where they have clustered than in those that are well supplied. Ice among the combs will prevent their reaching it. If moderate weather does not occur sufficiently often—say at intervals of two or three weeks—to melt the frost, the hives should be warmed artificially. The hive may be brought into a warm room for a few hours; the bees will then go to their sealed honey and remove into the cluster a supply for several days. Unless the room is dark, they should be brought in at evening. It is seldom that severe weather is sufficiently protracted to make this trouble necessary for strong heavy stocks, but if such weather should occur, and prevent the warmth of large colonies from thawing out the frost in their hives during the month, it would be necessary to warm them also. In handling the hives, avoid any jarring and any unnecessary disturbances. If there is sufficient snow to cover the hives entirely, it may remain, as it affords good protection in the coldest weather. When there is but little around the bottom, sweep it away. Keep the air passages free from dead bees, etc. If the weather be mild and the sun warm, bees may be allowed to fly—unless there is light snow on the ground, in which case the hive should be shaded by setting a board before it. Straw hives are not readily affected by winter sunshine, and when the air is sufficiently warm to entice them out, it will generally do to let them fly. If all frost leaves the hive at any time so that it may be raised without disturbing the bees, the filth, dead bees, etc., should be swept out. See if mice have not found or made a passage into the hive. They sometimes build a nest inside, and decide on spending the winter. To keep them out, cover all passages with wire cloth, except a space for the bees to pass. Bees that are housed should be disturbed as little as possible. Go among them occasionally to see that all is right.

Twenty Good Premiums For Volume 24.--1865.

We can not employ traveling or local Agents to solicit subscriptions, as is done by many other journals. There is no margin of profit out of which to pay commissions. The (new) terms are arranged to just meet the present cost of supplying the paper. We hope "in the good time coming" to make a reasonable profit; but while waiting for better times, our chief aim is to maintain and increase the present circulation. Even this will require some effort, for at the usual rate of mortality, 3000 or more out of every 100,000 die annually; while many thousands of our subscribers have volunteered in the service of the country. The enterprising men who take and read journals of this kind are foremost in every good work. We met many readers in the camps in Virginia, and we hear of and from them in almost every part of the country where the Union armies have penetrated.

We shall be glad to send the *Agriculturist* into many new families, believing that its mission will be useful. All who aid in this will do a good work.

To those who take time to collect clubs of subscribers, we offer below as premiums, some good articles purchased with funds derived from other resources than subscription money, for that will all be required in supplying the paper, unless printing paper and labor decline materially.—We invite every subscriber, everywhere, to make an effort to obtain one of the good articles offered as premiums. They are all worth securing.

Send along the names as fast as obtained, that the subscribers may begin to receive their papers promptly. When any list is completed notify us which of the articles is desired, and it will be promptly forwarded. To save mistakes and the keeping of money accounts, send with each name or list of names the exact subscription money.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designated for a premium list be so marked when sent in. (Such

names will be credited the sender in a separate book, as fast as received—ready for instant reference.)

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

**Table of Premiums and Terms,
For Volume 24.**

Names at \$1.00 each	Price of Premiums.	Names at \$1.00 each	Names at \$1.00 each
Open to all—No Competition.			
<i>Names of Premium Articles.</i>			
1—Good Books—See terms below	..... \$3 00	14	60
2—Case of Drawing Instruments	..... 10 00	17	70
3—Best Family Clothes-Wringer	..... 12 00	19	80
4—Doty's Washing Machine	..... 25 00	20	80
5—Sewing Machine, (Wheeler & Wilson)	..... 50 00	70	360
6—Four Octave Melodeon (best)	..... 97 00	80	400
7—Five Octave Melodeon (best)	..... 112 00	140	600
8—Brown's Baby Tender	..... 80 00	57	150
9—Brown's Baby Tender	..... 42 00	52	238
10—Woodruff's Mercurial Barometer	..... 10 00	17	70
11—Woodruff's Mercurial Barometer	..... 15 00	21	90
12—The Aquarius	..... 12 00	18	80
13—Ladies' Rosewood Writing Desk	..... 12 00	18	80
14—Gentleman's do do do	..... 14 00	21	90
15—Any back Volume Agriculturist	..... \$1 50	20	20
16—Any Two do do do	..... 3 00	25	25
17—Any Three do do do	..... 4 50	30	30
18—Any Four do do do	..... 6 00	11	40
19—Any Five do do do	..... 7 50	13	50
20—Strawberry Plants—See terms below	.....	

No charge is made for packing or boxing any of the articles in this Premium List. The Books, also Premiums 2, 15, 16, 17, 18, 19 and 20, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient all the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

NOTES ON THE PREMIUMS.

*** Premium 1.**—Good Books.—Any person sending a club of 25 or more subscribers, may select Books from the list on page 28, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 60 cents for each name at \$1 50. This offer extends only to clubs of 25 or more names. The Books will be sent by mail or express, prepaid by us.—This is a good way for the farmers of a neighborhood to get up an Agricultural Library for general use. Several Farmers' Clubs have done so.

Premium 2.—The Case of Drawing Instruments is a Rosewood Box, containing a dozen very excellent articles, of polished steel and brass—useful for sketching, drawing, plotting, laying out plans of land, buildings, etc. There are dividers with joints, points, markers, pencil holders, ruling pens, semicircles, etc., etc. Each piece is fitted into a velvet cushion. These instruments were part of those ordered from Paris for last year's premiums, which arrived too late. They could hardly be imported now for double the money. While useful to all, nothing better could be given to children to develop their tact, taste, and mechanical skill.

Premium 3.—The Clothes-Wringer is too well known to need description. No better or more useful labor-saving and clothes-saving implement has ever been introduced into the household. We give only the "Universal Clothes-Wringer," fitted with cogs, which we esteem essential to any good wringer. The one we offer (No. 2) is of the right size for general family use. It is a good Christmas or New-Year's present for your care-worn wife.

Premium 4.—Doty's Washing Machine we have tried thoroughly for nearly a year past, in competition with many others sent to us, and in its latest form this seems to be an improvement upon every previous machine we have tested. It is compact, and easily and naturally worked. Our "better half," who has been complimented with the gift of a score or more of different machines for trial, says this is taken to most kindly by the "help," and that she can not persuade them to use any other while this is at hand. The machines sent to those entitled to them as premiums will be forwarded from Janesville, Wis., to those living in Ohio and further west; and from the manufacturers' New York Warehouse to those living east of Ohio. Send to Messrs. Doty Brothers, Janesville, Wis., for a descriptive circular, which will be supplied free.

Premium 5.—Woman's Greatest Boon. We would advise a man to forego a thresher, and thresh wheat with a flail, rather than to see the wife wear her health, floor, and life away, in the everlasting "stitch, stitch, stitch," when a Sewing Machine can be obtained. The Wheeler & Wilson, or some other good machine, is an invaluable aid in every household. We have had several different machines on trial, and after six years' service the Wheeler & Wilson has taken precedence as the best where all kinds of sewing are to be done in the family. A large number of persons have in the past years secured one of these premium machines as Christmas or New Year's presents for the home circle.

Premiums 6 & 7.—We have had one of Geo. A. Prince & Co.'s large Melodeons in our Sunday School room for five years, where it has given the highest satisfaction, and in all this time it has not had the slightest repair or tuning. We can recommend this instrument very highly. Send a P. O. stamp to Geo. A. Prince & Co., Buffalo, N. Y., and get an illustrated descriptive catalogue, giving sizes, prices, etc. The Premium Melodeons will be forwarded direct from the manufactory ready boxed, by railroad, steamboat or express, as directed by the recipient. It is very easy for the members of a Congregation to make up a club of subscribers to the *Agriculturist*, and get one of these Melodeons for the Church or Sunday School room. Many churches have done so since we first offered this premium.

Premium 8 and 9.—The Baby Tender happens to be so well described in Dec. No., that we need add nothing further here. We select two styles that will meet the wants of the larger class. More costly ones, in a higher style of finish (though not more effective,) will be supplied for a proportionally greater number of names.

Premiums 10 and 11.—Woodruff's Mercurial Bar-

ometers. These are the best instruments we know of for the price. Send to the manufacturer, Charles Wilder, Peterboro, New Hampshire, for a circular giving engravings and a full description of the instruments. They are so portable that the manufacturer will warrant the safe delivery to the recipients of every instrument given by us as a premium, if not to be sent beyond the Rocky Mountains. We offer two forms, both of which are effective and accurate, differing mainly in the style of case. Both have a thermometer and vernier. The \$15 instrument is of course the most desirable, though either one of them will be highly useful. The barometer, as a weather indicator, is almost as valuable to the landsman as to the mariner. There are many times in a year when the warning of a barometer will save more than its cost, while the annual interest on the price will be only 75 cents or \$1 a year. The habit of observation, and of scientific study, cultivated in children, will repay the cost of such implements. A little effort will secure a premium one.

Premium 13.—The *Aquarius*, or Water-Thrower, is an excellent portable force-pump, useful in many ways—to water the garden or plants, to wash windows, carriages, etc. One can catch up the implement, carry it to any place, and from a pail throw a considerable stream of water 20 to 30 feet or more, and thus sometimes put out an incipient fire that could not be readily reached otherwise. It has a jet-pipe, and also a rose, or sprinkler. An air-chamber attached keeps up a steady stream. Send to W. & B. Douglas, Middletown, Conn., and get a circular giving full particulars.

Premiums 13 and 14.—These are very neat, portable *Rosewood Writing Desks*, which can be closed up and locked when not in use. When closed, No. 13 is 12 inches long, 9 inches wide, and 4 inches high, and will hold ordinary letter paper. No. 14 is just like No. 13, but larger, and will hold foolscap paper. They are both of fine rosewood, finished with brass corners and mountings. No. 13 is a fine present for a teacher or other lady, and either one is convenient for any person both to use as a writing desk on the table or even on the lap, and to keep documents, paper, pens, ink, etc., safely and always conveniently at hand when wanted.

Premiums 15 to 19.—Each volume of the *Agriculturist* is, to a certain sense, a *Cyclopedia* of information for the Farm, Garden and Household. Any volume, from 15 to 23 inclusive, can be supplied to neat new numbers, freshly printed from stereotype plates, with Index and Title page complete. They are necessarily sent post-paid. If desired bound, they will cost \$1 per volume extra for the binding and additional postage. A few of these volumes will make a good addition to any one's store of reading matter, valuable for reference on every topic connected with rural life.

*** Premium 20.**—The "*Agriculturist Strawberry Plants*."—Any person sending a club of 25 or more subscribers will be presented with one dozen of these plants, if applying before our stock is exhausted. We reserved only 40,000 plants for distribution, a part of which have already been called for. These will be sent out early in spring, free of expense to premium-takers. Independent of the above, any subscriber may call for a plant, if he send 5 cents for expense of packing and postage—but only on condition that the application comes with the subscription, to save looking up the name.

Commercial Notes—Prices Current.

New-York, Dec. 16, 1864.

Table with 5 columns: RECEIPTS, SALES, Comparison with same period at this time last year, Receipts, SALES, Exports from New-York, January 1 to December 15, Receipts of Breadstuffs at Albany, by the New-York Canals from the opening of navigation to Nov. 30th. Includes sub-tables for Flour, Wheat, Corn, Rye, Barley, Oats.

however, very irregular prices, closing buoyantly.... Wool has been in fair request, and held with much firmness, the present tendency being strongly in favor of sellers.... Cotton opened heavily, but closed rather briskly, prices ruling quite firm.... Seeds have been held above the views of buyers, and trade inactive.... Hay, hops and tobacco have been in good demand and buoyant in price.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month ending December 16, with other interesting comparative figures.

CURRENT WHOLESALE PRICES. Table with 3 columns: Nov. 16, Dec. 16. Lists various commodities like FLOUR, CORN MEAL, WHEAT, RYE, etc. with prices per bushel or barrel.

New-York Live Stock Markets.—The average weekly receipts for a month past have been 6508—about the same as the previous month. Prices were mainly unchanged until the last general market, Dec. 13th and 14th, when with 6,245 cattle on sale, and scarcity of other live stock prices advanced 1 1/2c. per lb., the best bringing 20c. per lb. for the estimated net or dressed weight, good steers about 18c., oxen and cows, 12@14c.—the average of all sold being 14 1/2c. The quality of stock is improving.

Milk Cows.—Average weekly receipts 93, with a better demand. Poor cows bring \$40@45, good milkers \$60@75, and extra or fancy cows \$90@100 each.

Calves.—Receipts lighter, amounting to 1,612 per week for the past month. Prices unchanged—12@13 per lb. live weight for fat calves, and 10@11c. for thin ones.

Sheep and Lambs.—Arrivals 21,075 per week for a month past, which is a falling off from the previous month. The market had fluctuated very much. With 25,512 the first week, prices fell off more than a cent a pound, from which they gradually advanced until Dec. 13th, when, with about 18,000 for the week, prices went up 2c. per lb., good sheep selling quick at 10@10 1/2c. per lb. live weight, thin stock 8@9c. Lambs brought 10@11c. with an insufficient supply of both to meet the demand.

Live Hogs.—Have also advanced to a very high figure—13@14c. per lb. live weight being the prices at the last market for prime corn fed hogs. Dressed hogs bringing 17@18c. per lb. from the boats and depots.—Weekly receipts for a month past averaged 24,539.

Exhibition Tables at the Office of the American Agriculturist.

Our large office, very centrally located, affords unsurpassed facilities for the exhibition of interesting Agricultural and Horticultural specimens, etc. Large numbers of these are sent in by our readers and inspected by thousands of visitors. At times the display exceeds that seen in many public fairs. All are invited to exhibit whatever of the kind will be of general interest, and also to visit and inspect articles on exhibition—the whole is entirely free. The following have been received since last report:

FRUITS.—Apples: Fall Pippin, Jas. C. Valentine, Glen Cove, N. Y.... White Bellflower, Northern Spy, Newtown Pippin, Pumpkin, Swaar, Baldwin, and Fall Pippie; Jacob Williams, No. Hempstead, L. I.... Newtown Pippin, (pear shaped), B. N. Ferdon, Closter, N. J.... Russet Apple from Newtown Pippin tree; R.

Ankettell, Oyster Bay, L. I.... Collection of several varieties; Andre Leroy, Belgium... Crab Apple, "H. L.," Flushing, N. Y.... 1 Doz. Prize Fall Pippins, S. Williams, Mount Clair, N. J. Pears: Lawrence, Orange, and Chinese Sand; Jacob Williams, No. Hempstead, L. I.... Columbia, excellent specimens; M. Varian, Jr., Williamsbridge, N. Y.... White Doyenne; T. S. Gold, Wt. Cornwall, Ct.... Grotes: Seedling of Chasselas, Clinton, and Heribemont; G. H. Hite, Morrisania, N. Y.... Catawba; J. Palmer, Greenport, L. I.... New Seedling; Mr. Hodges, N. Y. City. Miscellaneous: Fine Peaches; N. O. Randall, Yaphank, L. I.... Upland Cranberries; C. Dubois, Lakeland, L. I.... Lemon, superior, grown under glass; Mrs. H. P. Ayres, New Canaan, Ct.... Peanut plant in fruit; W. Lord, Morrisania, N. Y.... Pomegranates; T. Holt, Beaufort, S. C.

FLOWERS: Bloom of *Hoya Carnosa* and handsome collection of Dahlias; C. S. Pell, N. Y. Orphan Asylum.... Bloom of *Peristeria elata* or Dove Flower; Wm. C. Chorlton, S. 1... Beautiful collection of Cut Flowers, as usual; Miss M. A. Cortelyou, Westfield, S. I.... Collection of Chrysanthemums; Mr. Max, 9th st., N. Y.... Sunflowers; Mr. St. John, N. Y. City, and W. H. Bridgens, Oyster Bay, N. Y.

VEGETABLES, ETC.—Potatoes: Fine collection; Wm. S. Carpenter, Rye, N. Y., and Reisig & Hexamer, Newcastle, N. Y.... Union; J. H. Gilman, Monroe Co., N. Y.... Davis Seedling; C. H. Wheeler, New London, Ct.... White Peach Blow; P. C. Cortelyou, Westfield, N. Y.... Pinkeyed Rusty Coat; Jno. G. Hadden, Manaroneck, N. Y.... Peach Blows, extra; Mrs. A. G. Bronson, Islip, N. Y.... Prince Albert; J. Husson, Westchester, N. Y. Isaac L. Miller, Richmond, N. Y., and J. H. Scofield, Port Jervis, N. Y.... Buckeye, Isaac L. Miller, Richmond, N. Y.... Garnet Chili; S. Van Duzen, Croton Falls, N. Y., C. W. Dillap, Jr., English Neighborhood, N. J., and J. Husson, Westchester, N. Y.... Rocky Mountain; M. O. Whitcomb, Springfield, Vt.... Sweet Potatoes, 3, weighing 6 lbs., 5 oz.; J. W. Davis, Staten Island, also good samples; W. Lord, Morrisania, N. Y., S. W. Benedict, Rossville, Staten Island, and Isaac Miller, Richmond, N. Y. Turnips: Large, weighing 6 to 7 1/2 lbs.; L. Adams, Irvington, N. Y., I. W. England, Paranus, N. J., and Wm. P. Wright, Weehawken, N. J.... Aberdeen, 3 1/2 lbs., Asmus & Son, Hoboken, N. J.... Curious growth; Wm. B. Bradbury, Orange, N. J.... Double growth; "H. L." Flushing, N. Y. Beets: White Sugar, 10 1/2 lbs.; E. Chapman, Perth Amboy, N. J.... Red Turnip; Dr. J. H. Holden, Scarborough, N. Y., and F. L. Allen, Woodhaven, L. I.... Large Blood, Mrs. Dean, New Rochelle, N. Y. Carrots: Long Orange; G. W. Barnes, Mt. Vernon, N. Y., Benjamin F. Seaver, Et. Orange, N. J., and Hon. H. F. Clark, Far Rockaway, L. I. Onions: Large Danvers; H. W. Tyler, Caroline, N. Y. Parsnips: Very large, 5 lbs., "H. L.," Flushing, N. Y. Radishes: French; P. Fromil, N. Y. City.... Chinese Winter; E. S. Allen, N. Y. City, and H. E. Richards, Bloomfield, N. J.... Large growth; W. H. Bridgens, Oyster Bay, L. I., J. L. Quick, Brooklyn, L. I., and G. H. Lawrence, Palisades, N. Y. Corn: White Flint; G. H. Lawrence, Palisades, N. Y.; same variety, ears 16 inches long; G. H. Zabriskie, Paranus, N. J.... 20-rowed; G. Sussdorf, Woodside, L. I.... 8-rowed Flint, 15 inches long, George H. Moseman, Portchester, N. Y. Western, fine samples; Mrs. Schroeder, Woodside, L. I. 12-rowed Flint; I. L. Mosher, Portchester, N. Y.... Hominy; F. Holt, Beaufort, S. C. Miscellaneous: Okra; I. E. Chapman, Perth Amboy, N. J.... Variegated Kale of great beauty, T. S. Gold, Wt. Cornwall, Conn.... Large Pumpkin, Jas. McCabe, Orange, N. J.... Winter Kale, Peter Fromier, N. Y. City.... Giant Celery; Dr. Wm. Cockcroft, Stamford, Ct.... Liberian Coffee, Indigo, Cotton and Peppers; Freedmen's Society, N. Y. City.... Chicory; W. J. Spence, Edgeville, L. I.... Osage Orange, large fruit; W. M. Thompson, N. Y. city.... Sweet Chestnuts, E. Velie's farm, near Newburg, N. Y.... California Gourds; O. R. Nathansin, N. Y. city, and F. Heyer, Melrose, N. Y.... Fungus; Frederick W. Bond, Cypress Hills, L. I.... Rice and Rice plant; David Wington, St. Helena Island, S. C., and T. Holt, Beaufort, S. C.

MISCELLANEOUS ARTICLES: Sorghum Molasses; Brewster & Boak, Scottstown, N. Y.... Bantam Eggs; E. Blois, N. Y. City.... Curious Squirrel's Tooth; H. Fracks, Bristol, Ind.... Bow and Arrows taken from Kioway Chief, "Big Wolf," A. Buddee, Troy, N. Y.

SEEDS.—The numerous applications for seeds of various kinds make it necessary to repeat the statement that we keep no seeds for sale. All usually attainable varieties are kept by the regular dealers, most of whom advertise in the *Agriculturist*. It is not from any unwillingness to accommodate that we decline to answer where this or that seed can be had, but we can not afford either time or space to reply. Send to any of the principal dealers, and they will return the seeds by mail. Osage orange seed is not to be had at the present time.



Containing a great variety of items, including many good hints and suggestions which we throw into small type and condensed form, for want of space elsewhere.

The New Terms Imperative.—After a full month's notice, our new terms went into effect Dec. 1st. They were fixed as low as possible, and we think quite as low as those of any other journal. Those acquainted with the expenses of such an establishment, will see the necessity of strictly adhering to our published terms. Some continue to send in subscriptions at the old rates. When this is done, the usual method will be to credit the sender with so much time as his money will pay for at the regular rates. *The present terms are:* For ENGLISH Edition, \$1.50 a year; four copies for \$5; ten copies, for \$12; twenty or more copies, for \$1 each. For GERMAN Edition \$2 a year; four copies, for \$7; six copies, for \$10; ten or more copies, for \$1.50 each.

Sorghum in Orange Co., N. Y.—We have on the *Agriculturist* table a sample of very good syrup from Messrs. Brewster & Boak, of Scottstown, just north of Middletown, N. Y., where considerable experiments were made the past season, and with such success as to induce the further cultivation of this crop next year. The best cultivated plots yielded about 300 gallons of syrup per acre, worth now at least \$1.25 per gallon. Other plots yielded less than 50 gallons, owing to bad weather, late planting, and non-attention to the culture. The average is estimated at about 100 gallons, which Mr. Brewster thinks can be easily doubled after the past year's experience. Clark & Hedge's mills, and Cook's evaporators are established at three points in the county, where the cane is received from farmers, and worked on shares. From what we can gather, it seems probable that Orange Co. may readily and profitably produce its own sweetening. It is worth looking after.

Black Spanish Fowls.—A very beautiful pair of these aristocratic looking birds have been received from Louis Essig, poultry fancier, Canton, Ohio. He has our thanks. We will take good care of them.

Why Henneries should be Light, "C. M. W." does not understand. Fowls love warmth and sunshine. This they seek to enjoy whenever they can in winter, and when confined, ought to have the shelter of the poultry-house, and the warmth of the sunlight within. When they have this they do better, are more active, healthier, and lay more. All animals are healthier for being in the sunlight part of each day. Of course the hens will seek dark, secluded places for their nests.

"Early Chickens," says a correspondent, lay in winter, when old hens do not, because fowls will not lay while the new feathers are growing, after moulting, and with old birds this period often extends into the winter. Therefore look out for a good stock of early pullets, to furnish eggs next Christmas and New Year's time.

Feeding for Milk.—"Beginner" inquires the very best way to feed cows for milk. A very good method is that followed by some of the dairymen of Middlesex Co., Mass., as detailed by Dr. Reynolds. Those farmers who wish to sell milk the year round, have two sets of cows, one set coming in early in October, the other in April or May. Those which are dry in winter, are fed on hay or roots, and kept in warm stables, though let out into the yard twice a day for airing and drinking. Care is taken to keep them in good, fair condition, even while they give no milk. Those which are milked in winter have hay, oats, corn fodder, roots, with meal and shorts. The grain is often mixed with cut feed, and moistened before it is fed out. The feeding is done with great regularity and system, and so is the milking. The stables are kept neat, the cows are curried and brushed. As soon as the summer cows come in, they are fed more than before. They are turned out to pasture in May, but are stabled at night. In the morning they have cut feed and grain. In mid-summer, when the pastures dry up, they are foddered once a day with fresh cut corn-stalks. Sometimes, newly cut grass or millet is given. This, with various modifications, is substantially the practice of many good dairymen elsewhere.

Warty Teats—Cleanliness in Milking.—"S. G.," who has lived in the city until lately, but now is enjoying country life, thus gives his experience: "I bought two fine young cows. One of them had many warts on her teats and was very unruly and hard to milk. Besides, the teats of both cows were, at milking, often

dirty—sometimes very much so. Therefore my wife, taking with her at milking a little clean warm water, washed the teats and bag clean of all dirt before milking. These good effects followed: We have nice sweet milk, free of all disagreeable substances, the flavor of which we sometimes perceived in milk bought in the city. The warts on the teats of the unruly cow disappeared in a short time, the teats became smooth and soft, and the cow stands quietly at milking. I see some neighbors of mine practice the washing too, but using the milk of the cow instead of water."

Pigs—Sick and Weakly, and "off their Feed."—"A. T." of Amboy, Ohio, writes, that if his pigs are ailing, and look dull and stupefied, keeping their nests and not eating well, he gives them a good washing in warm soap suds, and two table spoonfuls of sulphur. He takes particular pains to wash out the "sweat pores" of the legs. The partial paralysis of the hind legs, which sometimes occurs, he finds is relieved by a "small" dose of copperas, (green vitriol). One of the best things we have found for keeping pigs in good order is a mixture of clean charcoal dust with their food, so that each hog shall eat half a pint or so once a week at least, especially if green food is lacking.

Slaughter-house Offal.—"O. M." Ottumwa, Iowa. Work the offal up with swamp muck, sods, or loam, using one-fourth to one-sixth offal, and apply it after it has come to a good heat, or let it lie in a heap, covered with a few inches of muck or mould, so that it shall lose nothing. Employ it just like barn-yard manure, according to its strength, using that which is most heating, that is the strongest, on the heaviest land.

Italian Bees—Good Results.—Bidwell Bros., of Minn., send to the *American Agriculturist* a statement showing what good workers the Italians are. "Last spring our apiary consisted of one Italian, and 58 stocks of black bees, all in frame hives. We have increased our one Italian stock to 15—our 58 to 181, principally by artificial swarming. We have forced our old Italian stock five times, and the first new one once. The parent stock weighs to-day 49 lbs. (less hive), and we have taken out one frame for each new swarm forced. The first new swarm weighs (less hive) 57 lbs., its swarm 54 lbs., the 2d 59 lbs., 3d 61 lbs., 4th 59 lbs., 5th 53 lbs. We have taken from the 1st new swarm, in boxes, 22 lbs. honey, 2d 126 lbs., 3d 88 lbs., 4th 74½ lbs., 5th 29½ lbs., making in the whole 7 hives, 383 lbs. hive honey, and 339½ lbs. in boxes. Total 722½ lbs. as the products of one Italian stock, and have given 8 sealed queens to 8 stocks of black bees previously swarmed. We shall Italianize our whole apiary next season. All of our 196 stocks have filled their hives, except two very late ones which came out the last of August and 1st of September. The average weight of our stocks, less hives, bees, &c., is about 58 lbs. of honey. We have taken off in glass boxes 1,208 lbs., and 1,301 in caps." Allowing 30c. per lb. for live honey, and 35c. for cap and box honey, the income of this apiary amounts to \$3,261 95.

"Nothing Venture Nothing Have."—"H. A. T." asks whether he shall sell hay or run in debt for stock to eat it up? He must of course judge for himself whether he can go with profit into the operation. Selling part of his hay, he may be able to buy stock to eat the rest up. The proposition he makes is of the character of perfectly safe business ventures, which good merchants make all the time. It is never best to go into such speculations to an extent that will embarrass one seriously should any thing go wrong.

Good Way to Keep the Cold Out.—We have been testing, and are now enjoying the benefits of an excellent invention for keeping the cold out, and saving fuel in these high-priced-coal times. The introduction of a furnace heater had shrunk the doors and windows so much, that for several autumns past there had been the annual discussion whether it was best to lay in three or four extra tons of coal, or have the joiners and painters around for a couple of weeks, piecing out the doors, and re-casing the windows—the discussion always ending in favor of the extra coal, until it got up to \$14 a ton. But the joiners and painters raised too, and wanted \$3 to \$3.50 a day, and ever so much more for the rise in paint. Just then an advertisement in the *American Agriculturist*, by E. S. & J. Torrey, led us to look into the merits of their "Weather Strips," and as the result, we ordered the whole house fitted up with them, four weeks ago.—Well, they are a cheap luxury that would not be spared to-day for five times their cost. As we write, the winter's blast (thermometer at 2°), whistles shrilly without, but not a breath of it penetrates unbidden into our sanctum, and not a shake or jar of the windows disturbs the train of thought. Of course we have ventilators to admit all needed air, though a constant stream

of fresh air, warmed and properly moistened at the cellar furnace, saves the necessity of admitting air from elsewhere. This "weather strip" is simply a neat beaded strip of wood, having a flexible narrow belt of rubber along one edge. This is placed at the top, bottom and sides of the doors and windows, or over the casings, and projects far enough to effectually close any opening. The rubber operates as a cushion also, to prevent shaking of windows, and jarring of doors in shutting. The cost is 8 to 12 cents per foot for windows, and somewhat more for bottoms of doors. A few feet even, placed against the worst openings, will soon save the cost in fuel, to say nothing of health and comfort.

Can Horse Hayforks be used in Stacking Hay?—No doubt of it, with suitable cranes, derricks, or shears. Will not some of the readers of the *Agriculturist*, who have experience, report for the benefit of inquiring readers in Minnesota, where the dry atmosphere renders shelter for hay and fodder an expensive luxury, which must needs be dispensed with.

Corn Fodder in Minnesota.—H. G. Danver, Goodhue Co., Minn., says they make a practice of putting up their corn stalks in large stacks, as we infer, without taking any especial care to have them very dry, and he has never yet seen them spoil. With the greatest care to have the stacks very dry, and well laid up to stand rain, large stacks will almost always heat, and mould badly in other parts of the country.

Coal Tar vs. "Gutta Percha Cement Roofing."—Mr. Urban Burrows, of Susquehanna Co., Pa., informs us that two or three years ago he procured from New-York City, four gallons of the above named "cement" at \$1 a gallon, and at the same time a barrel of coal or gas tar from Scranton, at 2½ cents per gallon. The two looked much alike, and when applied side by side, they operate exactly alike so far as he could see. No difference can now be discovered in their appearance.

Keeping Cheese in Winter.—J. S. Cox, who keeps a produce store in Delaware Co., O., says in answer to "Novice," p. 110, Vol. 23, that he buys his cheese in barrels in November usually, and putting the barrels in a dry, cool place, using them as needed, sometimes not opening the last before the 1st of April.

Claret Wine Stain.—Mrs. D. H. Jackson, Worcester Co., Mass. Javelle water, the recipe for which was given in the December *Agriculturist*, page 348, is a good application for removing fruit and other vegetable stains from cotton or linen garments.

Fruit of Wistaria.—English papers make a great talk about the fruiting of a Wistaria in that country. There are vines here which bear seeds every year.

A New Larkspur, *Delphinium Brunonianum* has been introduced into England from India. It is described as a very ornamental dwarf species, having a powerful odor of musk.

Death of a Horticulturist.—A. G. Hanford, Esq., died at Columbia, O., in September last. Mr. H. was identified with western Horticulture and contributed to the Wisconsin Farmer and other periodicals.

To Managers of Horticultural and similar Societies.—When these bodies are of sufficient importance, we should be glad to announce the time of their meetings, but the notice should reach us as early as the 10th of the month previous to that in which the meeting is to be held. Announcements of the recent meetings of the Illinois and Ohio Societies came too late.

Post Office Money Orders.—As previously announced, this new system has gone into operation at a limited number of Post Offices. Persons living near any post office named below, can procure money orders payable in New York City, or at any other one of the offices named, for an amount not exceeding \$30. More than this can be sent by getting two, three or more orders as needed. The charge is 10 cents for an order not exceeding \$10, and 20 cents for any amount between \$10 and \$30. The orders are made payable to the written order of the person to receive the money, so that this is a safe mode of sending money—the same as a draft on a bank. Subscribers remitting money can pay it in to any one of the following offices, or to others hereafter established, and send the order to the Publisher, according to the directions given on blanks furnished at each money order office. The following is the list of money order offices so far established, arranged alphabetically in States.

Maine: Augusta, Bangor, Eastport, Portland.—**New-Hampshire:** Concord, Keene, Nashua, Portsmouth,—

Vermont: Burlington, Montpelier, Rutland.—**Massachusetts:** Boston, Fall River, Lowell, Lynn, Pittsfield, Salem.—**Connecticut:** Bridgeport, Hartford, New Haven, New London.—**Rhode Island:** Newport, Providence.—**New York:** Albany, Auburn, Auburn, Binghamton, Brooklyn, Buffalo, Elmira, Hudson, Lockport, Newburg, New York City, Norwich, Ogdensburg, Oswego, Plattsburg, Poughkeepsie, Rochester, Saratoga Springs, Syracuse, Troy, Utica, Watertown.—**New Jersey:** Jersey City, Newark, Trenton.—**Pennsylvania:** Easton, Erie, Harrisburg, Honesdale, Johnstown, Lewistown, Meadville, Newcastle, Philadelphia, Pittsburg, Pottsville, Reading, Scranton, Williamsport.—**Delaware:** Wilmington.—**Maryland:** Annapolis, Baltimore, Cumberland, Frederick.—**D. C.:** Washington.—**South Carolina:** Port Royal.—**Virginia:** Alexandria, Norfolk, Old Point Comfort.—**West Virginia:** Wheeling.—**Ohio:** Chillicothe, Cincinnati, Cleveland, Columbus, Dayton, Lima, Marietta, Portsmouth, Sandusky, Toledo, Urbana, Wooster, Xenia, Zanesville.—**Indiana:** Evansville, Fort Wayne, Indianapolis, Lafayette, Madison, Terre Haute, Vincennes.—**Michigan:** Detroit, Grand Rapids, Kalamazoo, Lansing.—**Wisconsin:** Beloit, La Crosse, Madison, Milwaukee, Racine, Sheboygan.—**Illinois:** Alton, Bloomington, Cairo, Chicago, Elgin, Freeport, Galena, Ottawa, Peoria, Quincy, Rockford, Rock Island, Springfield.—**Kentucky:** Lexington, Louisville.—**Tennessee:** Chattanooga, Memphis, Nashville.—**Mississippi:** Vicksburg.—**Louisiana:** New Orleans.—**Missouri:** St. Louis.—**Iowa:** Burlington, Davenport, Des Moines, Dubuque, Keokuk, Mascatoe.—**Minnesota:** Red Wing, St. Paul, Winona.

Coal Tar for Stakes and Labels.—Stakes used in nursery rows, or for labeling plants in general, will by dipping the portion which enters the soil in coal tar, last four times as long as if not so prepared.

Where to Locate.—Among the difficult and almost unanswerable questions addressed to the *American Agriculturist*, are those of which the following is a specimen: "Will you give your opinion as to which is the best place for raising small fruit, New Jersey or Delaware?" We have before stated our inability to give definite replies to such questions, but they continue to come. In reference to the question above quoted, the choice would depend mainly upon one's object. If he wishes to raise early fruit for the New York and Philadelphia markets, he would naturally look towards Delaware. There is an abundance of land in both Delaware and New Jersey adapted to small fruit-growing, and one should first determine what market he intends to supply, and then locate with reference to marketing facilities. A few days of personal observation will be of great value to a person about to engage in such an enterprise.

Land Advertisements.—This class of business notices we admit with less strictness of investigation than almost any other, because it is not supposed that any one will buy a landed property without full personal investigation. Sometimes such advertisements may lead to needless traveling, but we always advise a man seeking a permanent homestead to visit a number of different points before deciding where he will finally settle down. The time and money thus expended will be fully saved in the long run, not only in securing a better location and better land, but in acquiring a knowledge of soil culture generally. Several New Jersey tracts are from time to time advertised. Concerning them, we have received a great variety of letters: some, who would seem to be good judges, speak of them in high praise, while others condemn them in unmeasured terms. We have long intended to give several of these tracts a thorough personal examination, but, so far, one thing and another has come up to interfere with the project.

A Government Agricultural Editor.—The wife of one of a firm celebrated for blacking making boasted of keeping a poet; so may the Department of Agriculture pride itself on keeping an editor—or at least some person whose business it is to engineer the agricultural press in its interests. We have received, under the frank of the Department, a "notice" of the Report of 1863, all nicely made up our hands by the Government scribe. As we happen to prefer to write our own notices—having one already in type when this official one came—we decline the kind offer. Has the Department so little confidence in its claims upon the favorable consideration of the press, that it must keep some one on hand to manufacture opinions for it? As we help pay for this Agricultural Department, we reserve to ourselves the right to commend or censure, as its acts may demand, and as a tax payer, we object to the employment of a Washington correspondent at public expense. Judging from the signature, we find the same ready writer appears in the *Prairie Farmer*, in an article which sets forth the wonderful mental and physical qualities of the head of the Department, in a style romantic and peculiar. The whole article is so funny that we regret we have not room for it. We can give only an extract: "At nine A. M., the Commissioner and his corps of clerks are at their desks, a page has placed before the Commissioner a pile of five hundred letters, more or less: these are all opened and read by him, contents noted and immediately

sent to the clerk in whose department they properly belong. Half an hour after, the string of daily visits commences—some to form his agreeable acquaintance, others for office, some for employment at putting up seeds, again a petition desiring his signature, then a subscription list for some charitable purpose, now an old friend claims recognition." Now we think we know something about opening letters, and have some clerks who are rather quick at the business, but 500 letters in half an hour is rather rapid work. It is over 16 a minute, and gives nearly four seconds to each. This is quick opening, but when we consider that they are at the same time "read and the contents noted," it becomes something superhuman. Well may the writer add, "None but one of great strength of both body and mind could persevere under such a herculean task"—to which we say, "just so."

Original Correspondence.—When is an editor like a greedy swine? *Ans.* When he steals from others' pens. Exchanges who take articles from the *American Agriculturist* without giving any credit, will please copy.

A Bad Case.—A friend in Connecticut has sent us a circular of a so-called "Purchasing Agency" in New York, of a character too indecent to particularize. Were we to expose the swindler by name it would only give him a wide advertising, which would just suit him. He is lost to shame, and the best we can do in the case is to hand the vile circular to the Chief of Police.

What is the Best Horse Book?—

We are often asked, and many times have answered, that for general use, for indicating the principles which should guide any one in breeding, buying, training and using horses, "*Herbert's Hints to Horse-keepers*" stands unrivaled among American books. "*Mayhew's Horse Management*," and "*Doctor*," are very English, but contain a vast deal of value to all horsemen, mixed with more or less which is of little use to American farmers.

The Cotton Planter's Manual.—This work, by J. A. Turner, was the first, and we believe the only work published on the culture of cotton. In view of the fact that many persons who have had no previous experience in cotton growing, are engaging in this branch of Agriculture, a new edition of this work is published to meet a growing demand. Aside from the author's own experience, the work embodies essays and letters from several other cultivators, and contains a great deal of useful, and interesting information.

Railway Accidents in Great Britain.—The London Artizan states that in 1861, 79 passengers were killed and 789 injured by railway accidents in the United Kingdom; in 1862, on an increased number of lines, 35 were killed, 536 injured; 1863, with still more numerous lines, 35 were killed, and 401 injured. These matters are managed differently in the United States, where as with other enterprises the slaughter of railroad passengers is conducted on a magnificent scale.

Cheese Manufacturer's Association.—The second annual meeting of the New York State C. M. A. is announced to take place at the City Hall of Utica, January 11th and 12th instant. In addition to the regular business, it is proposed to discuss the following important topics:—Improved Methods of Cheese Manufacture; Best Manner of Marketing Cheese, whether direct or through middle men; A Uniform Rate of Cheese Manufacture for 1865; The Best Manner of Organizing Factories, whether by private enterprise, by corporations, or otherwise; Best Breed of Cows for the Dairy; Summer and Winter Management of Milch Cows, etc., etc. There should be a full attendance of dairymen.

Barnum's American Museum.—Strangers in the city have asked us the question, "Shall we go to Barnum's?" "Will it pay?" Our answer has been, and is, "Yes." The Museum contains a large and rare collection of curiosities, to which Mr. Barnum is continually adding from every quarter of the globe, and from every kingdom of nature—giants and dwarfs, fat people and lean ones, whales, minnows, and queer fish, birds of many feathers, animals, minerals, specimens of the oldest, and the most beautiful productions; but it would require a book to enumerate them. There is enough to please, instruct, exercise and gratify curiosity, to repay for many hours of careful examination.

A \$25 Dollar Farmer's Library.—We are often asked to recommend a greater or less number of books, for a Farmer's Library. Our book list, (page 29,) is kept standing to answer such queries. Here is a list just made up for one who desires us to select from available books an assortment for \$25: American Farm Book; American Weeds and Plants; Allen's Rural Architecture; Barry's Fruit Garden; Bement's Poultry;

Dadd's Horse Doctor; French's Farm Drainage; Flint on Grasses; Flint on Milch Cows; Fuller's Grape Culturist; Fuller's Strawberry Culture; Herbert's Hints to Horsekeepers; Langstroth or Quinby on Bees; Our Farm of Four Acres (bound edition); Union Culture: Tobacco Culture (if wanted); Todd's Young Farmer's Manual, Youatt on the Hogg; Shepherd's Own Book; Watson's Home Garden; Younman's Household Science. This list comprises a variety on different topics, which would make a good foundation for a library, and be of far more value than any other permanent investment of \$25. The retail price, or if sent by mail, amounts to about \$30; but a lot like this, taken together and sent by express, could be furnished for \$25. Ten dollars more added, for Downing's Fruits and Fruit Trees of America; Bridgeman's Young Gardener's Assistant; Buist's Flower Garden Directory; Quinby or Langstroth on Bees; Goodale's Principles of Breeding; Youatt and Martin on Cattle; Thomson's Food of Animals, and Tucker's Annual Register, would make the list still better, and more complete. Thirty-five dollars in good books, placed before a son, would be of infinitely more value to him, than if laid up to be left to him by will, or put into an extra acre of land for him in the future.

Dadd's Horse Doctor.—We know of no better book for the price, as a guide to any one who must himself treat his horses for those ailments and accidents to which all horses are liable. It is adapted to popular use, and has given general satisfaction. Price \$1.50.

The Farmer's Manual.—We often felt the need of a hand-book of practical mechanical operations on the farm, and in the tool shop, before "*Todd's Young Farmer's Manual*" supplied the want. Do you want to know how to buy an axe and hang it? Would you like to "post" yourself as to how to examine and judge of various kinds of tools, how to frame a shed or barn, how to select a grindstone, hang a gate, make a fence, plain or ornamental, of wood, stone or wire, temper edge tools, survey a lot, lay out the site for a house, or plot a field for plowing? These things are all explained, and a great deal more, with numerous good illustrations, in the volume above named. Price \$1.50.

Keeping Rabbits.—This pleasant and instructive employment for young folks may be made more agreeable, perhaps, more profitable too, by greater familiarity with the principles of breeding, varieties, diseases, and general management. "*Bement's Rabbit Fancier*" furnishes much excellent information. Price 30 cts.

The Ohio Sorghum Association holds its annual meeting at Columbus, in the Hall above J. L. Gill & Son, Agricultural warehouse, on the 3rd of January. Samples of syrup and sugar will be exhibited.

A Happy Group.—The more we study Mr. Nast's beautiful sketch, on page 16, the more we enjoy it. Every touch of the pencil speaks. The joyous greeting to the returning patriot, is not only exhibited by the whole family group, but the animals appear as if participants—the dog, the poultry, the sheep—and even the sleek porker seems to be specially pleased.

Evergreen and other Tree Seeds.—Those who inquire where tree seeds can be had, will do well to notice that Mr. Thomas Meehan, of Germantown, Pa., advertises several desirable sorts. We understand that Mr. M. has seeds of several of the rare Rocky Mt. evergreens. We fear he will not meet with much sale for these, as the seeds of all such things first go to Europe, and the plants return as high priced novelties.

Petroleum is a good thing. Its general introduction into commerce just at the outbreak of the war may be considered Providential, as the immense export of the article has saved many millions of gold, and thus aided the country's finances very materially. There are good companies in operation, but there are also so many more bogus ones, or those without a sound basis, that it is not safe for a man to invest in them, unless he can go on the ground in person, or by a reliable proxy, and definitely ascertain where his money will be expended, and how. This was all we intended to intimate last month—not to discourage enterprise in this direction, as a few seem to suppose. As a rule, the most reliable companies say little to the public—they think too much of their possessions to let others come in for a share of the profits.

Timothy Hay in Iowa.—To show how false the notion is that cultivated grasses will not make good crops of hay in Iowa, J. Rhodes, of Marshall Co., assures us that he cut Timothy hay at the rate of 3½ tons per acre for the first crop, and one ton for the second,

Apples for Iowa.—D. W. Adams, Allumakee Co., Iowa, gives the following as his experience with apples in the Northwest: "I have a young orchard of about 1,400 trees, situated on a high swell of prairie, 650 feet above the Mississippi River, latitude 43° 20', fully exposed to winds from all quarters. It is composed mainly of the following varieties, and now after enduring seven of our fierce northwestern winters, I am ready to unite my opinion with the unanimous verdict of visitors, that it is as promising an orchard of its size as can be found East or West: **SUMMER**—Early Harvest, Red Astrachan, Red June, Sops of Wine, Augustine, Sweet June. **FALL**—Duchess of Oldenburg, St. Lawrence, Colvert, Golden Pippin, Bailey Sweet, Fameuse. **WINTER**—Jonathan, Yellow Bellflower, Wine Sap, Northern Spy, English Golden Russet, Talman Sweet, Rawle's Janette. The above sorts give a succession of fruit for the entire year, of unexceptionable quality, and *thoroughly tried hardiness*, having all (last winter) passed through the ordeal of—36° Fahrenheit. If confined to four sorts, take Red June, St. Lawrence, Fameuse and Jonathan."

Rabbits and Trees.—Various preventives to keep rabbits from injuring young trees, have been from time to time suggested by correspondents, and some have been published that others may make a trial of them. B. Sherman says that with him the sulphur and soap mixture has proved a failure; but that a composition of two parts of fresh cow manure, and one of wood ashes, mixed with water enough to apply readily with a stub broom was successful. He says, if spread on thickly, it will last six months.

Bark-bound Cherry Trees.—J. L. Holman, Dearborn County, Indiana, wishes to know if it is beneficial to slit the bark of trees, and when to do it. If the tree is liable to crack we should slit the bark in the growing season with a sharp knife. The cut soon heals, while a ragged crack often makes an unsightly seam.

Medicated Trees.—Some months ago we published accounts from correspondents who claimed to have prevented the attacks of insects by introducing substances into the circulation of the tree. Although we at the time disclaimed all belief in the efficiency of this treatment, we have had several letters asking the best time to introduce sulphur, etc., into the trunk of the tree. We refer to the matter to repeat that we do not advise the thing at all. If one has a worthless tree he can amuse himself by plugging it either before or after it is cut down.

Bliss's Patent Label.—This label, which was noticed some years ago, has, after standing the test of exposure through six or eight years, proved itself "indestructible" for that length of time. Its neatness and legibility will commend it to those amateurs who do not mind the slight expense. The cut shows the label of the actual size. The back is of zinc, with an edge turned over the label, which is clearly printed on white paper, and has over it a sheet of transparent mica. The whole is water-proof, and with ordinary usage is likely to remain perfectly legible for many years.



A Prolific Apple Tree.—Mr. C. W. Wright, of Westchester Co., N. Y., gives an account of a remarkable tree in his neighborhood. It is a greening, from which 26 barrels of fruit have been gathered in one year, which, assorted, gave 20 barrels of marketable fruit.

Non-bearing Pear Trees.—Upon looking over a number of letters complaining of a want of success with dwarf pear trees, we find the general remark that the tree is very thrifty but does not bear. Many kinds are a long while before they fruit, even when on quince roots. Frequently the early fruiting tendency which working on quince gives to the pear, is counteracted by setting the tree so low that roots start from the pear, and the main object of dwarfing is thus neutralized. Trees on quince may be kept dwarf by proper treatment when young. See page 17. Those which have been neglected and have become rampant may be brought into fruiting by a gradual shortening of both tops and roots.

White Willow for "Hedging."—Many inquiries come in regard to this subject. The willow does not make a proper "hedge," as the word is generally used, but a *live fence*, furnishing a considerable supply of timber or fencing stuff, either when it attains its full growth and is cut down, or when it is topped periodically. We have no doubt that there are a great many places where the willow will succeed well, and make a very rapid growth and a secure fence. The views of one of the editors who visited the most notable localities where the willow has been used for live fences, wind breaks, etc., are given at length in the *American Agriculturist* for December, 1863, and for January, 1864.

Barberry Hedges.—J. Schofield, Suffolk Co., Mass., observing that the barberry grows freely on rocky soil, asks if it would not be advisable to plant a hedge in two rows and place stones between them. We see no necessity for this, as we have known a fine hedge on land where not a stone was to be found. It makes a dense hedge if properly clipped, and, like all other hedges, should be cut back quite severely while young.

Large Beech Leaves.—H. C. Sanxay, Jefferson Co., Ind., sends specimens of remarkably large leaves from the lower branches of a beech. They measure a trifle over nine inches long and six inches wide.

"The Horticulturist."—This long established magazine is now entirely under the control of the Messrs. Woodward, who have engaged a corps of well known contributors, and in other ways display a commendable spirit of enterprise. We are assured that its columns will not be devoted to puffing the stock of any particular nurserymen, but that they shall express unbought opinions. Under its new management we hope that the Horticulturist will regain the tone and spirit which it lost with the lamented Downing, and that it will deservedly receive the patronage due to a well conducted Horticultural monthly of high character.

Upland Cranberries.—H. P. Thornton and others. We have not seen any very successful beds upon upland or ordinary garden soil, but have known cases in which the plants were a long while in determining whether to live or die. If any of our readers have a good and profitable fruiting bed upon any upland soil we shall be glad to hear about it, and if not too far away, to visit it.

Book on Nursery Culture.—W. R. Tipton, Monroe Co., Ohio. Barry's Fruit Garden is good for a beginner with a nursery of fruit trees. We do not recall any work published in English which is wholly devoted to the propagation of ornamental trees and shrubs.

Grinding Horse Radish.—Jessy A. Kelly, Canada West, wishes to know in what kind of a mill horse radish is prepared. The principal manufacturer in this city uses a cylindrical grater of tin, of large diameter, which has a balance wheel attached, and is revolved by means of a treadle, in the same manner as a lathe. This does not prevent the pungent odor from arising; but the workman gets used to it after a time, just as the girls who peel onions in the Desiccated Vegetable Establishments do not shed a tear, while a stranger finds the atmosphere of the room intolerable.

Canada Thistles Once More.—About every month we are requested to say how Canada thistles may be killed. We know that *frequent and persistent* cutting down the plant will kill it, for we have tried it. We know that in one instance a few plants were killed by cutting close to the ground, and putting a handful of salt on the root. They smother the thistle at the West with a heavy mulching of straw; we once partly succeeded thus. These are all the feasible remedies we know of. Good friends, if we learn anything new about the thistle we will tell it, but please don't ask us for the next three months "how to kill Canada thistles."

A New Weed.—Mr. J. F. Halstead, of Dutchess Co., N. Y., sends a specimen of the Bladder Campion, (*Silene inflata*), which he states is abundant as a weed. We have seen the plant frequently, but never in sufficient quantities to be considered as troublesome. Mr. H. says that fall ploughing will not kill it. It has a very strong root, and if the plants are not too numerous, they might be pulled one by one, and thus be eradicated.

Is Wild Buckwheat Poisonous?—C. E. Black, Olmstead Co., Minn., wishes to know if the seed of the wild buckwheat may be fed to stock with safety. We suppose that the Climbing Polygonum (*P. dumetorum*), with fruit looking much like buckwheat, is the plant referred to. Can any correspondent give the information? The different species of Polygonum vary so much in their properties, that it is not safe in this case to judge from its botanical relationship.

Thirty-nine Bushels for One.—W. H. Coleman, Orange Co., says that a neighbor who planted one bushel of peach-blow potatoes, cut in very small pieces, harvested thirty-nine bushels of good potatoes.

Club-foot in Cabbage.—E. Partridge, Waldo Co., Me. This most generally affects plants grown on ground which has borne the same crops several years in succession. Land should not be planted with cabbages oftener than once in three or four years. Plants on new land are seldom troubled with club-foot.

How Much Asparagus in a Bunch?—F. A. Schultz, Mo. The bunches are not put up by count, for the New York market, but by size. A bunching box is used, which is filled by a few large or many small stalks. The bunches are 6 to 8 inches in diameter.

The Fluke Potato.—T. F. S. The quality of this is excellent, and it is extensively grown in Western New York. We cannot speak of its productiveness.

Many Squashes from One Seed.—Mr. C. S. Coxhead, Fort Lee, N. Y. raised 13 squashes on a single vine of the Yokohama, the smallest of which weighed 8, the largest 16 lbs. The weight of the whole—141½ lbs.—shows that this excellent variety is also prolific.

A Large Bassano Beet.—W. F. Truesdell, Pike Co., O., has raised a 10 lb. beet, which is very large for the Bassano. They do big things in Ohio.

Value of Certain Roots for Feeding.—"J. W. P." Po'keepsie, N. Y. The value of roots of the same kind, though of different varieties, as of the several kinds of turnips for instance, may be ascertained by comparing their *specific gravities*. The heavier they are in proportion to the bulk, the better. Thus any one can tell without weighing that French turnips are heavier than the common white, and that Rutabagas are heavier than either. The rule does not hold so well when applied to different kinds of roots. These take rank about as follows:—turnips of the English and French varieties lowest; then Swedes and Russia turnips; next Field beets, mangel-wurtzels, parsnips and carrots.

A Good Crop of Onions.—W. R. Tatem, formerly with a Shaker Society in Pennsylvania, gives an account of his success with onions. The bed, 20x40 feet, had been plowed deeply the previous autumn. In spring it had a shallow plowing, after which three horse loads of fine old manure were spread on and thoroughly harrowed in. The bed was then covered with straw, ten inches deep, which was burned. The seed was sowed in drills 14 inches apart and rolled. As soon as the seed was up, the bed was sowed over with one bushel of a mixture of ½ hen manure, and ½ ashes, which application was repeated three times during the early part of the season. The onions were carefully hoed and weeded, and when as large as one's thumb, they were thinned to two inches in the row. The result was 30 bushels of large onions, equal to about 1,000 bushels to the acre.

Baked Beans.—A. J. Aldrich suggests that the kidney bean is much better when baked, than the common white field bean. True, and Lima is better still.

Carrots for Horses.—"J." Franklin Co., Mass. It is not worth while to feed horses carrots in very large quantity. The feed you refer to (corn and oats ground together, and used on cut feed wet up,) is very good. Carrots produce good effects, which cannot be attributed solely to their nutrient qualities, but are a little similar to those compounds which ostlers give to horses, called "condition powders,"—mixtures of ginger, gentian, and anise seed, with a small quantity of sulphur, antimony, or aloes. This effect is noticed when these roots are fed in small quantities, and does not seem to be increased, if they are fed very freely. Potatoes, sugar beets, and in fact any roots in moderate quantities, are good for horses, but none are equal to carrots.

Even a Small Garden Pays.—Mrs. E. Ripley, Crawford Co., Pa., gives us an account of the returns of a lot of ground, 20 by 25 feet, which yielded vegetables valued at \$15, and she had also sweet herbs and flowers, not included in the estimate.

Strawberry Queries.—"M. R.", Canandaigua, N. Y. The Wilson is a perfect variety. The question if the quality of the fruit of a pistillate variety is affected by the character of the staminate vine by which it is fertilized, is yet an unsettled one. We can give equally good authority to prove that it is, and that it is not. If M. R. would make some careful experiments in this direction, he would do something towards settling a disputed point in horticulture, that needs elucidation.

The Cut-leaved Blackberry.—H. P. Thornton, Lawrence County, Indiana. This is an old variety, concerning the value of which there is a difference of opinion. It is a great grower, and if allowed to have its own way will produce weak canes 15 or 20 feet long and but little fruit. It would not answer your purpose as a hedge plant, but if trained upon a fence or other support would prove a formidable obstacle to trespassers. When kept cut back, it produces abundant crops of large, rather late fruit, which is by some considered of fine quality, but to others again it has an unpleasant flavor.

Asphodel.—H. G. Tycer, Essex Co., Mass. Asphodel is a genus of plants of the lily family, some of which are occasionally cultivated for ornament. Some of the species are emetic, but we doubt if rats are so afraid of these or any other plants, that "they will die rather than pass over them." All the old herbals, or works on plants, are full of such stories about plants, which have of later years been proved to be fanciful or erroneous.

Seedling Gladiolus.—H. H. C., Mystic Bridge, Conn., planted some Gladiolus seed, and wishes to know if he is likely to get new varieties, and how to treat his young bulbs. If the seed was from good sorts there will doubtless be a great variety, but no one can foretell whether there will be any distinct from those now in cultivation. Take up the young bulbs and put them in dry earth or sand, and keep them in some place where they will be dry and always cool, but not freeze.

Removing Pæonies.—A. H. C., Rutland, Mich. Autumn is the best time; they may be transplanted very early in spring, but do not flower so well.

Miller's Propagating Case.—This was figured in the *Agriculturist* last year, and there have been numerous inquiries as to where it can be had. Mr. M. has left the city and we know of none for sale. They are of too small size for use except by amateur cultivators.

Pansies.—A. B. Spaulding, Windsor Co., Vt. Pansies will not do well in the house, unless kept very cool. They are best grown by sowing the seed soon after midsummer, and setting the plants in a cold frame to winter. When the snow remains on the ground all winter, plants from fall sown seed will give a fine bloom in early spring in the open air.

Camellias.—S. H. Harlan, Champaign Co., O. If a gardener told you that camellias "must have a peculiar soil found near Philadelphia," he told you a great piece of nonsense. They will do in any light, loamy soil, rich in vegetable matter. Sods from an old pasture, allowed to decay, and then mixed with clean sand, or good garden loam, with leaf mould from the woods, will answer. The pots must have ample drainage.

Daphne Odora.—C. G. Thompson has one that does not bloom. Cut it back early next spring.

Use up the Hoop Skirts.—A subscriber says:—"Tell your readers to throw ladies' old hoops into the fire, and when taken out they will be found perfectly annealed, and will stay twisted in any form, and be extremely useful as a substitute for wire in a thousand and one instances." Pray use up the old hoops in some such way, they are a nuisance if thrown out with rubbish.

Canary Seed.—A correspondent states that he successfully raised a quantity of this, giving the same soil and treatment as oats, but does not state the yield.

Plants to be Named.—H. Goering, Lorain Co., O. The very clever drawing is that of *Tecoma radicans*—sometimes called *Bignonia*—the Trumpet-creeper. It is often cultivated as an ornamental vine. . . . Adeline Howard, Lee Co., Ill., sends the fruit of the Spindle-tree, also called Burning-bush and Wahoo—(*Euonymus atropurpureus*). It is a fine shrub, and very showy in autumn on account of its brilliant crimson seed pods. . . . D. B., Volga City, Iowa, sends flowers and roots of *Mertensia virginica*, the Virginian Cowslip or Lungroot. It is frequently cultivated in gardens, and is a very pretty spring flower. . . . T. O. D. The plant is *Gentiana puberula*. . . . S. S. R. M., Lewisburgh, Pa. The flower is *Hibiscus Sinensis*, or close to it. It could be propagated from cuttings with bottom heat. . . . Irene Cole, White Co., Ind. The climber is *Quamoclit coccinea*, sometimes called *Ipomea*, figured in February last. The plant described is probably the *Leucium vernum*, the Spring Snowflake—the bulbs of which are sold by seedsmen. . . . M. S. Shaler, Brown Co., Wis. The vine is Virgin's Bower, *Clematis virginiana*. One Geranium is the oak-leaved; the larger one not recognised. Mr. R. Allen, York Co., Me., sends the Fringed Gentian,

Gentiana crinita. As there are over 30 species of Aster, we cannot tell the one described without a specimen. . . . N. Mason Gates, Middlesex Co. Conn. *Peleonium caeruleum*, or Greek Valerian, a pretty spring bloomer.

Marl.—"Please state what kind of soil is most benefited by the use of marl—the quantity used, and how to apply it?"—E. A. P. This name covers a great variety of materials of variable fertilizing value. It usually means deposits in swamps, or former lake bottoms, in which minute shells abound, mixed with vegetable and earthy matter (calcareous marls.) There is scarcely any limit to the quantity which may be used without injury to the soil, though a maximum good effect is often attained by a dressing of a few loads. It depends on the needs of the soil and the quality of the marl. It supplies lime, and a small quantity of phosphoric acid, together with the peaty substances usually found in swamp mud, and sometimes a notable quantity of ammonia. Dig it this winter, expose it to the action of frost, and apply 20 to 50 loads per acre, on various crops. The best effects are on heavy soils, poor in organic matter and lime.

How Much Does Grain Shrink.—A correspondent of the *Prairie Farmer* states that 75 lbs. of corn on the ear weighed when dried, including the cobs, only 60 lbs.—a shrinkage of 20 per cent. The decrease of each separately is not stated. Definite knowledge on this point will enable producers to properly graduate the price of corn according to the season of selling. Careful experiments with this and other grains are much needed. Who will make them and give the results for publication in the *American Agriculturist*?

How Much Sand and Gravel in Mortar, Concrete, etc.—Take a box and nearly fill it with coarse gravel; add to this as much of a quality, the stones in which will average 1-8th to 1-10th of the diameter of the coarser kind, as can be worked into the mass without materially increasing its bulk; then add all the fine, dry, sharp sand, free from dust or dirt, that can be worked into the whole. If the exact quantities used of each material be known, you will have a means of estimating the proportions you will need. To make such a mixture of sand and gravel a perfect mortar, it needs to be mixed with lime slaked to a creamy consistency, so that each particle shall be covered with the lime, and the spaces between them filled. This is the theory of a perfect mortar—rarely reached in practice.

Concrete Fence Posts.—"If concrete is strong enough for water pipes, why will it not make good fence posts?" This is in effect the inquiry of a subscriber in Bond Co., Ill. The material has strength enough, but would need to be protected to some extent against the action of frost on the surface; if made hollow, posts might become filled with water, and split by freezing.

Accumulating Wind Power.—A subscriber writes that he has an invention whereby the power of a wind-mill may be accumulated when the wind blows, and the power is not in use, in such a way that it may be used when the wind does not blow. There is no reason why some such thing should not be successful, and if so it would be very valuable; but many inventors have tried to do this and failed to make it practical.

Lightning Rod Hamburg.—Perry W. Clark, Onondaga Co., N. Y., writes that the following game was played in that vicinity last summer, by operators who quite likely are now at work in other parts: An agent agrees to put up lightning rods on buildings to remain a year on trial. He gives a written agreement that if they suit and are wanted at the end of the year, all right; if not he is to remove them without cost to the parties. He takes what he calls an "Order" for the rods, but what in reality is a promissory note, which he sells to the first note broker that will buy. In this way thousands of dollars were taken from the writer's section of country, and for no really good equivalent returned.

Look Out for the "Gas" Man.—There is a chap out West selling the right to "make and use Elephant Gas." He charges only one dollar for the recipe, which is as follows: 2 quarts alcohol, 1 pint camphene, 2 ounces of alum, 1 teaspoonful of "Cucuma" liquid. Mix, let stand 12 hours, then use.—This is not gas at all, but only the old and dangerous burning fluid with alum added, and colored by "Cucuma," which should be *Curcuma*—but these humbugs are generally illiterate. At the present price of materials, this would be a very expensive, as well as a very dangerous light.

Quack Doctors.—P. S. M., sends us a circular of wonderful cures, and asks if the man is reliable, alleging as a reason for his caution, that he was once humbugged out of \$25 by a "doctor" in New York.

Now if there is one thing that we have tried to set forth in language so plain that it could not be mistaken, it is that no physician who advertises certificates of cures is fit to be trusted. One lesson of experience ought to convince our correspondent of the truth of our position.

New Humbug—International and Home College.—An enterprising genius is sending out circulars from New York City, to induce young men to enter his "College," and stay at home at the same time. For \$50 he promises a "mail scholarship"—what that means we do not know, only that \$50 will not be safely invested in any such operation. It is nonsense to talk of fitting a young man for business by mail. No reliable business college, and many are reliable, professes to do any thing of the sort. Readers of the *American Agriculturist* will not be caught by such a transparent swindle. The "Professor" in this enterprise has been placed under police surveillance.

Don't be Humbugged by circulars from Fletcher Brothers; T. Sherboan & Co.; George P. Harper; Cosmopolitan Art Union Association; by the man who wants to have somebody in your neighborhood draw a lottery prize to help his business along; by the man who says "your ticket has drawn a prize, but you must send him ten dollars, and he will lie for you;" nor by any other man that wants to give you ever so many hundred cents' worth for a dollar paid him in advance.

American Weeds and Useful Plants.—This is an illustrated treatise upon those plants which are interesting to the cultivator, either as objects of his care, or as intruders upon his premises. The descriptions are both popular and scientific, and are interspersed with many interesting observations. A condensed account of the structure of plants, which prefaces the descriptive portion of the work, will, if carefully studied, enable any intelligent person to refer a plant to its proper family. We commend this work to those who have a desire to know something of the plants they daily meet. A new edition is to be issued Jan. 15. Price \$1.50.

Our Smallest Subscriber.—We have many young subscribers, little boys and girls, some of whom earn the money and forward it themselves, but here is one not so young: A man in Clark Co., Ohio, in renewing his subscription for 1865, writes: "I suppose I am the smallest subscriber the *American Agriculturist* has of my age. I am thirty-one years old, 46 inches high, and weigh 55 pounds."—About like a 6 or 7 year-old boy.

Gummed Oil which has thickened on wheel axles can be readily removed with a little kerosene.

Messrs. Patterson Bros., at 27 Park Row, are not only good men and excellent neighbors, but they keep a very convenient down town retail and wholesale establishment, where we always expect to find anything and every thing wanted in the hardware line, from a tack up to a whole chest of tools—not to specify a large assortment of skates; and we believe their articles are good and sold at reasonable rates.

The Pennsylvania Agricultural College.—It will be seen that the seventh session of this Institution is announced in our advertising columns. Dr. Wm. H. Allen, formerly president of Girard College, has been elected to fill the vacancy occasioned by the death of Dr. Pugh, the former president. We hope the college may have that encouragement and support which will ensure for it a useful and successful career.

The Massachusetts Agricultural College.—We learn that Massachusetts has sold a good portion of her land scrip and purchased 400 acres of land at Amherst, upon which it is intended soon to erect the necessary buildings. Judge H. F. French, well known as a writer on agricultural subjects, has been chosen as President by the board of trustees, and is engaged in the preparatory work of organization. An agricultural college worthy of Massachusetts should be entirely independent of existing institutions, be endowed with abundant means, and be able to command the very highest talent.

Report of the Department of Agriculture, 1863.—Now that the year '64 is just expiring, the report for '63 makes its appearance, a delay said to be caused in part by the great press of public printing. The work forms a handsome volume of 700 pages, which is about twice as large as need be, did the writers exercise ordinary conciseness. There are articles on a wide range of agricultural and horticultural subjects from writers, some of whom are well known, and others not known at all. Some of the articles are valuable, and others are mere talk, and they are illustrated by numerous wood engravings, part of which are

very good, and others very wooden. Upon the whole, it is the best specimen of Government book-making we have yet seen in the way of an Agricultural Report, and will doubtless be very acceptable to members of Congress to present to their political adherents. If we were not rapidly accumulating an enormous public debt, it might be well to publish volumes of essays, poetical quotations and all, at the expense of the general treasury, but just at present it does not strike us as wise. We would have the Department of Agriculture liberally enough provided for to secure the services of an able head, and to publish a well digested account of the agriculture of the country, but it is quite time that this "spinning of yarns" came to an end. Still, as long as the present plan of publishing a book of treatises and calling it a report, is adhered to, we may be thankful that the work is, upon the whole, so good. Mr. Newton prefaces the volume with an account of the operations of the Department and things in general, and closes with the following, which is about as pretty a specimen of "hifalutin" as one would need for a snapper to a 4th of July oration: "A mighty giant, resting firmly on the soil, and acquiring development and strength by toil, by thought, and by equity, our republic will dominate the western continent and adjacent seas, and command the fear and the respect of all nations." Now we call that good in the way of fine writing. It should have been accompanied by an illustration of the "mighty giant resting firmly on the soil," with "all nations" paying their respects to him.

The Great Union Victories are knocking down gold, and most kinds of produce are falling with it. Prices are considerably lower to-day than given in our table on page 3, which was stereotyped last evening.

The Best Dictionary.—F. Smith and others wish to know whether we consider Worcester's or Webster's the best dictionary. The war of the dictionaries is waged with sufficient vigor by their publishers, and it is too pretty a fight, as it stands, for the *Agriculturist* to throw its weight in favor of either. We keep both these works standing side by side, and find that each has some advantages over the other. The editorial staff keep up a private battle of their own over this question, and until they can agree among themselves, they will not undertake to indicate a preference.

Size of Blocks of Ice for Filling the Ice-House.—When ice is packed solid, there is no thawing except on the outside of the mass, hence it is best to cut the blocks as uniformly as possible so that they will pack snugly and regularly. Thus if the house is 12 feet square, blocks 2 x 3 would make a layer having six blocks one way and four the other. And the next layer might be placed to break joints with the first, and so on.

Ice on the Door-step.—Many a fall and severe hurt has been occasioned by ice on the door-step or in similar places. If it is frozen fast it may be covered with a little coal ashes and so made safe to walk upon, but this makes it dirty and the ashes are tracked into the house. Many persons use salt on such spots to thaw the ice; this is well, if properly done. Remember that a mixture of snow or ice and salt produces at once the temperature of zero of Fahrenheit. In fact, that is the way Fahrenheit fixed his 0 point. Every person stepping on the salted spots carries off upon his feet more or less of the salt which so long as it remains on his feet keeps the soles at or near a zero temperature—certainly much colder than they would be otherwise. In many towns where it is not forbidden by law, this salting the sidewalk is an intolerable nuisance. Salt may be used if necessary, but clear off every particle of it as soon as it has thawed the ice, which will be in a few minutes.

Sunday School Lesson-Book, No. 3, was unexpectedly delayed until Dec. 22. Few can appreciate the great amount of labor in preparing this book of only 112 pages, and getting it correctly through the printers' hands, with its many thousands of reference figures, etc. Very few books of any kind have required or received so much mental labor as is being expended upon this series. Nos. 1, 2, and 3, are now ready. No. 4 is mainly written, but will not be through the printers' hands in some months yet. The four books, each containing 52 exercises, entitled "Lessons for every Sunday in the year," go over the whole Bible history—the lessons being selected from nearly every book in the Old and New Testaments, with a running outline history connecting them all together. No. 1 extends from the Birth of Christ to the end of Acts. No. 2 embraces the whole New Testament, but is mainly upon the books following the Acts of the Apostles. No. 3, upon the Old Testament, extends from Adam to Elijah; and No. 4 will contain the history from Elijah to Christ. Nos. 3 and 4 contain lessons selected from the historical and prophetic books, the Psalms, Proverbs, etc., all arranged in order

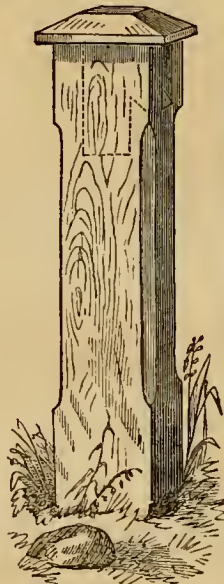
of time; with a running history, which presents a panoramic view of the whole Old Testament period—interesting to all classes, though expressly prepared for Sabbath Schools. An examination of the plan, and peculiar features of these books, is respectfully suggested. The price of each volume is 15 cents for a single copy; \$1.50 per dozen; \$12 per 100. If to go by mail, 4 cents a copy extra, or 3 cents each when in a package of 10 or more. Single copies of 1, 2, or 3, for examination, will be sent post-paid, for 18 cents; or three copies for 50 cents.

Valuable Legislative Document.

At the last session of the Legislature of the State of New-York, the State Assessors made individual reports upon the *Resources of the State*. The report of Mr. Theodore C. Peters has recently come under our particular notice, and it is gratifying to find evidence of a trust so faithfully executed. As an agricultural survey of the State, indicating the influences which have been in operation in different parts of this State (roads, markets, manufacturing interests, mining, etc.), serving to increase the value of real estate and personal wealth, it is most suggestive and important. Mr. Peters has certainly given an example which the Assessors in other States will do well to imitate. Since his appointment he has personally inspected every county and almost township in the State. The whole report is suggestive of grave faults in the systems of census taking employed by the National and State governments, and of improvements much needed.

Newspaper Box.

Many of the subscribers of the *American Agriculturist* receive their papers by news-carriers or post-men who leave them at their doors. When a house is distant from the highway it is a common practice to have the paper thrown out near the gate, or deposited in a rain box or similar contrivance nailed upon a tree or post. We have sketched and engraved a good substitute—a post with a hollow in the top and a hole in the side, as indicated by dotted lines, to be set near the road. This will be found excellent for receiving papers. The post is 10 inches square, solid, and 5 feet out of ground. The opening should be wide enough to admit a man's hand easily. Fasten the top on with wooden pins, and paint white or protect with a coat of linseed oil.



Hard and Soft Water for Cooking.

The effects of hard and soft water on different vegetables vary materially. Peas and beans cooked in hard water, containing lime or gypsum, will not boil tender, because these substances harden vegetable casein. In soft water they boil tender and lose a certain rank raw taste which they retain in hard water. Many vegetables (as onions) boil nearly tasteless in soft water because all the flavor is dissolved out. The addition of salt often checks this, (as in the case of onions,) causing the vegetables to retain the peculiar flavoring principles, besides much nutritious matter which might be lost in soft water. Thus it appears that salt hardens the water to a degree. For extracting the juices of meat to make broth or soup, soft water, unsalted and cold at first, is best, for it much more readily penetrates the tissues; but for boiling meat where the juices should be retained, hard water or soft water salted is preferable, and the meat should be put in while it is boiling so as to seal up the pores at once.

Scrap Books for the Soldiers.

Not long since some unknown person left a small package at the office of the *American Agriculturist* containing two "Scrap Books for Soldiers." They were neatly made from sheets of paper stitched together, on which were pasted all sorts of interesting reading cut from newspapers, and designed to be sent to the Military Hospitals for the use of sick and wounded soldiers. With a very little effort our young readers can, in a short time, make thousands of similar books, and send them through the Sanitary and Christian Commissions to the Hospitals and camps, where they will be most welcome. The selection of pieces should include plenty of lively and amusing articles, mingled with those of a more grave and thoughtful character. The books will be of more

service if sewed into flexible covers, made by pasting stiff, heavy paper upon dark colored glazed muslin

The First Subscription at the New

Terms, was sent by Mr. John Rall, of Cedar County, Iowa, Nov. 11th, with the remark that if we "could not afford the paper next month for \$1, we could not do it then," and that "if 20,000 others would do the same, it would help out materially in the expense."—Such expressions of appreciation of which many have been received, are grateful, and stimulate the editors to increased exertion. The new Terms were announced to go into effect a month later, so as to take no one by surprise, though they ought to have included all subscriptions received, as the present rates are none too high to meet the increased expenses. We hope those who availed themselves of the old terms, prior to Dec. 1st, will each send at least one new name at the new terms, and thus make the two subscriptions average \$1.25, the lowest rate at which less than 20 subscriptions can be well afforded.

Plain Men Should Write More.

As a rule, the best workers are the poorest writers. Those who do work the best are the least able, or rather the least willing, to talk or write about it. You, good farmer, gardener, fruit grower, stock raiser, and you good house-keeper, please talk to us on paper just as you would talk to us by word of mouth, if we were visiting you. We want to gather some hint from your successful mode of operation, to tell to half a million of others. Never mind fixing up the style of the words and sentences—it is the editor's business to attend to that. Give us the facts, and we will take care of the language and the grammar.

"Information Wanted" and "Given,"

might be the standing heading to this journal. Its proper sphere is, to gather and communicate all the information possible, upon all topics appropriate to its sphere; to examine, sift, and "boil down" all the facts, experiences, hints and suggestions that can be obtained from observation, from reading, from conversation, and especially from letters from our readers. We solicit these letters in unlimited number. No one should write merely for the sake of writing; but every fact—every hint drawn from successful or unsuccessful experience in cultivating grains, grasses, vegetables, fruits, flowers, etc.; in using and caring for animals; in marketing products; in conducting household labors—should be noted down, with all necessary details, and reported for the benefit of others. If one has a better implement than any of his neighbors, or a better or more successful method of conducting any operation, or of treating this, that, or the other thing, the chances are that tens of thousands of others elsewhere will be benefited by learning something about it; and an account should be sent to the *Agriculturist*. The letters may not always be used, for reasons which the editors can not take time or room to explain; but all these items go to make up a mass of information, of which every printed line is read by hundreds of thousands. We solicit suggestive queries from each of our readers as a help to our labors. Many questions go unanswered, because we can not at once give or obtain the information sought. But send along the items, the questions, etc., and we will do the best we can with them; always having an eye to "the greatest good of the greatest number."

The Grape Controversy—Dr. Grant and Mr. Bushnell, versus Mr. H. P. Byram.

Last month we published a communication from H. I. Byram, Esq., in reference to the Israella and Iona grapes. This came wholly unsolicited and unexpected. We had known Mr. Byram favorably as Editor of the *Valley Farmer*, and as a Horticultural writer, and from his general character and standing we supposed his statements reliable. Had we thought differently, or had we suspected him to be governed by any personal feelings, the communication would have been rejected; and had we ourselves harbored any ill-feeling or had any personal difficulty with Dr. Grant we should have been very careful not to admit into our columns any thing which would have even had the appearance of malice. The communication was printed as one of the items interesting in these days when the grape fever rages everywhere. We fully expected that any error of fact or observation would be corrected, and our columns were freely open for any such corrections. In the present paper Mr. Bushnell (Dr. Grant's foreman), in the reading columns, and Dr. Grant himself in the business columns, flatly contradict Mr. Byram's statements and deductions. The question is reduced to one of veracity between Mr. Byram on the one hand, and Dr. Grant and Mr. Bushnell on the other. We can hardly be considered a party to the contest, further than to publish what may be said on both sides, where we judge the public interest will be subserved by such publication.

The East Indian Buffalo.

An agricultural show was held last winter at Calcutta, at which prizes were awarded to animals of the native breeds, and among others to the domestic buffalo. We give herewith a picture of a prize buffalo cow, and as no animals of this kind have ever been imported to America, so far as we are informed, certainly not for economical purposes, it is well to consider their qualities. The buffalo (*Bos bubalus*) is a native of India, and is now found wild in great numbers, inhabiting the low grounds and swamps near the river banks, on the borders of the great forests, choosing the coarse, rank vegetation of such localities in preference to other food. The wild animals are of immense size, sometimes measuring 10½ feet from muzzle to rump, and standing 6 feet to 6½ feet high. They are shaped much like oxen, but are coarse and ungainly, large-boned, heavy, thick limbed, very powerful and vindictive, and do not hesitate to attack a tiger or even an elephant, which according

to reports they sometimes do with success. The horns are perhaps the most remarkable feature. These grow horizontally from the frontal bone, curving a little backward, and upward, and forward toward the tips. The bases of the horns are flattened and corrugated, and the distance from tip to tip sometimes measures ten feet.

This animal loves to wallow in the mud, like the swine and rhinoceros, and in its wild state is never found far from water. In a state of domestication, buffaloes of both sexes are valued for the yoke and for their hides, and the cows for yielding very good milk. The beef is of poor quality. It is said that the wild ones are always fat, and the domestic always lean and skinny. This can only be the result of poor care, for there is scarcely another animal which has changed so little after thousands of years of domestication. The buffalo is found in Italy, Greece, and Turkey, and is valued for great strength in the yoke and ability to live on very coarse fare. The Cape buffalo of South Africa is another species; the American Bison which we commonly call Buffalo, is really no buffalo at all. The great swamps which abound

among the lowlands of Louisiana, Florida, and other parts of the Southern States, would doubtless afford congenial and excellent pasturage for these animals, and it has repeatedly occurred to us that they might prove a valuable kind of stock for those extensive districts,

which are now inhabited chiefly by alligators, turtles, a few deer, bears, opossums and copper-heads. This is the only one of the bovine genus (except its brother the Cape buffalo) which thrives in low and marshy ground. Cattle left to their own choice will seek their pasturage

been frustrated by the rebellion. These, so far as we know, and we have seen several of the animals, were of the short-horned breed, so much esteemed in the East as saddle and carriage beasts. The one here represented was engraved from a photograph, hence it doubtless

represents the animal coarser and heavier limbed than it is naturally. As a race, they are not coarse legged, but very flat-sided—narrow between the hip bones and narrow breasted—long legged, active and strong. The ears are pendant, and they are characterized by a hump of fat upon the shoulders, of varying size in different animals. They cross readily with other cattle, and when fat, the beef is said to be very good. The prevailing color is mouse, inclining to dun and gray; they are sometimes called blue. Some India cattle are very diminutive—smaller even than those of Breton, if we are correctly informed—and among them are some polled breeds. These are the varieties which prevail throughout Southern Asia, Arabia, and more or less in Eastern Africa. We learn from a gentleman inter-

ested in promoting the prosperity of the Republic of Liberia, that an experiment is to be made to test the value of these cattle on the west coast of Africa, where horses will not live. If they do well, the result will be of great value, and go far toward civilizing the whole coast. As to their having any especial value for the United States, we doubt. With good care in breeding and feeding our common breeds do very well, even in Louisiana and in Florida.

CARE OF SHEEP IN WINTER.

—Fattening sheep should not be allowed much range, in fact the more closely they are confined the better, so long as their good appetites give indications of continued health. Sheep confined in close, dark quarters, 4 to 8 in a pen, having nothing to do but eat and sleep, lay on fat much more rapidly and economically than if allowed even the range of a small yard. Breeding ewes ought to be in the sunshine more or less daily, and have a walk of considerable extent. The leaves and twigs of our common evergreen trees, especially of the hemlock, are palatable to sheep, and they may very profitably be fed frequently. The resinous and astringent substances

contained in this kind of food appear to exercise an excellent effect, promoting the health of the flock, besides affording a relishable variety of diet, and tolerable substitute for roots. All sheep ought to have occasional change of diet if possible, especially the breeding ewes.



BUFFALO COW FROM RAGOON, INDIA.

and make their lairs, not far from water, but in dry meadows, in valleys or on the hill-sides.

Neat Cattle of Southern Asia.

At the Calcutta cattle show, the same at which the buffalo cow, mentioned above, took



LONG-HORNED BULLOCK OF OUDE, INDIA.

a prize, some long-horned oxen were exhibited from the Province of Oude. We have had several importations of India cattle into this country, attempts having been made to test their adaptation to the Southern States—some, if not all of which experiments have certainly

Milk, Beef, and Labor.....I.

MILK.—We here name the three purposes for which neat cattle are bred, and first we consider the production of milk. The question is often asked, "How may a man soonest establish a good dairy herd?" By purchase of cows. But then, how to purchase? Let him go into a good dairy region, and buy the best young native or grade cows he can, without reference to any thing but youth, *soundness*, and the *dairy qualities* he desires. If he wish quantity of milk, he must look out for that, taking testimony and guarantees in black and white, in addition to his own best judgment, or that of an expert. If quality (richness in cream for butter) be the mark, he should examine the milk, see it set, and examine the skim milk and the cream, trusting no cow for rich milk that is not a good "handler"—that is, having a soft, pliable, unctuous hide, that can be grasped in the full hand over the ribs. Soft, fine hair is not essential. Parting the hair to see the skin, it should have a buttery yellow or almost orange color, and in the insides of the ears, and about the eyes, and under the tail, the same color should appear brightly. The buyer should never fail to inquire and receive definite assurance in regard to the length of time a cow will hold out in milk; and whether marked diminution of flow takes place after she has come in heat once or twice, or after she has been got with calf again. A good cow ought to give an undiminished flow of milk (varying somewhat according to the feed and time of year,) for four months, and a gradually diminishing flow for four months more; then (supposing her to have been got with calf three months after calving) from one fourth to one fifth the quantity given soon after calving, for two months more. The best cows we have ever known were hard to "dry off" six weeks before calving, and in careless hands we have often known them to be milked till the new milk "sprung,"—showing as great excellence in the cows as culpability on the part of their owners. These were cases of noble cows and prize-takers at fairs, sold to city gentlemen. No man has a right to own a cow and remain in ignorance of what is her proper treatment under all ordinary circumstances. Mистер Michael O'Flaherty is too apt to profess a wisdom which he does not possess upon these and kindred subjects, and do much harm ignorantly.

Cows selected as we have advised will cost a good deal—not only money, but care and patient investigation. They will, however, repay the cost. The herd will be a motley one, unless pains shall have been taken to select the cows with some reference to similarity of color and form. This is seldom worth while, though we would by no means advise the purchase of deformed animals, yet some of the best cows for milk we have ever known, were of very poor shape, bony, pot-bellied, hollow backed, crooked legged, and coarse enough; but some were very handsome. It is not best to attempt to find among any thoroughbred stock such a herd of cows as would be considered very profitable dairy animals. They would cost too much, and would disappoint expectations besides.

The herd once established must be maintained. To do this a thoroughbred bull of good quality should be used. Shorthorns as a breed are beef producers, and this is not the object in view. Some families of Shorthorns, however, are famous for *quantity* of milk. A Shorthorn bull of such a family would be excellent for a milk dairy, but, on the whole, probably not superior

to an Ayrshire, to which the preference for a cheese dairy would probably be justly given. For a butter dairy an Alderney bull would be the best. In the choice of a bull for a sire of dairy cows, his dam's milking qualities should be carefully ascertained, as also those of his sire's dam. The progeny of a thoroughbred bull may be calculated upon with considerable accuracy; not so with a "native," "scrub," or grade bull. By the use of such sires, though they may be very handsome, a rapid deterioration of the herd is very sure to follow.

How to Break a Colt.

The word "break" seems to imply that the young horse has a temper which must be *broken*, rather than a will which should be *trained* to act in unison with that of his master. The training of a horse should always proceed upon the principle that he is a rational animal—that is, that he has a will, affection, love of approbation, of caresses, and of sugar—intelligence, ability to comprehend cause and effect, to understand language and tones of voice, quickness to detect the temper of the man who handles him, to know if he is kind and loves him, or fretful, malicious or passionate, and likely to hurt him. The horse is naturally timid, and his fears, if aroused, not only make him less manageable, but impair his judgment, making him see harm in almost every thing.

The whip should be used as a wand of authority, as giving the trainer's arm a longer reach, and as a means of giving signals—very seldom as a rod of correction. When it is used to chastise, never threaten, or let the horse know he is to be whipped, but, having him perfectly under control, so that his springs and struggles will do no harm, give him one or two severe, quick cuts. This must be done without the least spite—"more in sorrow than in anger"—and the training should be resumed exactly as if nothing had happened. If a man is never spiteful and angry with the colt, the horse will rarely or never show any real viciousness.

A colt, properly trained, comes to the age of 3½ or 4 years, halter broken, kind, fond of being handled and petted, and glad to see his master, who should have been in the habit of giving him an ear of corn, a sweet apple, a carrot, or lump of sugar, so frequently that he will follow him like a dog whenever he goes to the pasture. For the good of the horse, even unpleasant familiarities, such as his nose over one's shoulder, or in one's pocket, ought not to be sternly rebuked. Three ounces of sugar will, in our opinion, go further towards breaking a colt, than a day's work with the whip, and even at present prices, sugar is a good deal the most economical. The colt being of such a character, he may be harnessed, putting on each piece of harness carefully, so as not to cause alarm, taking care always, should he show any alarm, to let him smell the article and look at it to his heart's content. The best place to harness a colt is a loose box, 9 or 10 feet square. The trainer should be deliberate, even tediously slow perhaps, if the colt is high strung. If he is very fractious, he may be Rarey-fied, so that he shall know definitely who is master. No person who is the least afraid of him, or who would jump or start when an attempt to kick, bite or strike might be made, should be allowed to have any intercourse with a horse in training. First put on a strong bridle, having measured his head and made it fit beforehand. It should be of a size to be put on and off easily, and have

a smooth bit, wound with cotton cloth. It is well to accustom him to take a piece of wood into his mouth like a bit, repeatedly before putting on the bridle. This done, let him stand an hour not fastened, or give him a few turns about a circle, holding him by a 20-foot rein or rope. Previous lessons should have accustomed him to take various paces at the will of his trainer about such a ring, sugar or other dainty having been the reward of well-doing. At the second lesson in harness, let an assistant take the line in centre of the circle, while the trainer takes the reins behind the colt, at first merely holding them, then letting him feel the weight of the hand on them, and finally guiding him, little by little, until he may be driven independently of the assistant, and beyond the circle.

When accustomed to the harness, standing and being exercised in it during one or two lessons each day for two days or a week, according to the disposition of the animal, he may be put into the thills, but neither the traces nor holdbacks hitched. Now let an assistant rock, rattle, and move the wagon a while, and then aid the trainer to move it forward, while the colt is made to walk slowly, letting him have his head and look at the wagon. Before attaching the traces, at the second lesson in harness perhaps, the trainer on the nigh side, and his assistant on the other, may grasp the thills each with one hand, just in front of the tugs, letting the horse step forward and draw the wagon by the thills, and letting him feel its weight as much or little as desired. He may be backed somewhat in the same way. By his actions, one may easily judge when it will be safe to hitch him to the wagon. The vehicle selected should be one not heavy but strong, and which will run with little noise. One simple thing should be taught at a time, seldom two distinct ideas at one lesson. They should be daily repeated at each lesson until perfectly familiar, and, after each good performance, the horse should be caressed and rewarded. What a horse learns in this way he remembers, and he will quickly exhibit a really remarkable confidence in his master and alacrity to serve him.

Economy of Keeping Rats.

The habits of vermin are almost if not quite as important subjects of study as those of more valued live stock; and some statements derived in part from a professional rat-catcher, who has made a life-business of studying the vulnerable points of rats, so that he can flank the enemy, storm and take his strongholds, and economically maintain his prisoners alive, may be of much practical value to the readers of the *Agriculturist*. The common brown rat is the *Mus domesticus*. It appeared in this country about the period of our Revolutionary war, and has increased with great rapidity, having almost if not entirely exterminated the black rat (*M. rattus*), which was common before, and which is smaller and not so sharp a fighter. The *brown* is the only proper rat at the North, but at the South two species are not uncommon—the Florida or white bellied rat, and the cotton rat; and in Mexico and Texas we find the roof rat living in thatch, etc., and the Mexican or bush rat. These all breed very rapidly, but none more so than the common rat. They begin to breed at two to three months old, and will have six to eight litters a year, of eight young each on an average under favorable circumstances, males and females being about equally divided. Were there no natural lin-

drances to their multiplication, a single pair would increase to no less than 6,000 in a single year, and this, if they breed only once in two months. There is, however, one way in which they are destroyed by wholesale, for not only will rats devour the weakly and sick of their companions as soon as they are unable to defend themselves, but if very hard pressed, as they doubtless often are, they will eat their young. The destruction by cats, dogs and men is as a general thing inconsiderable. The very happy results often attributed to the use of dogs and cats, are usually due to the rats having multiplied so as to overstock the premises at the time their foes are introduced, when they scatter, emigrating, as is their instinct, in families to other localities. The rat is eminently a social animal, and short commons, or any cause of especial discomfort, or strange noises, as the cry of Guinea hens, perhaps the discharge of fire arms, or a wide-awake terrier will cause a stampede. It is this trait which makes the effect of the phosphorus paste so efficient. Comparatively few rats are poisoned, but their actions alarm the others, and when the poisoned ones run away it brings on a general flight, so that often not a single rat is left. The least amount of food which will sustain rats may be very accurately estimated, but not so all they will eat if they can. In this city great numbers of rats are kept for the purpose of baiting dogs in "pits," similar to those used for cock and dog fighting. These are fed only just enough to keep them from killing and eating one another, and it is found that 100 rats will live on one bushel of sound corn a week, if it be fed with great care at two feedings a day. A bushel and a half of corn, fed once a day, will bring them through, and wheat or rye will go further than corn. When rats have their "full swing" at corn in the bin or grain in the mow, then the quantity they will eat is limited by their capacity; yet they will carry away a great deal, besides damaging and gnawing much more. Suppose there are 1,000 rats on a farm—and this is no extravagant supposition. During the time when they can not get much in the field, they will consume 10 bushels of corn, or its equivalent, per week. Calling this period 4 months, the amount consumed is 170 bushels, which, even at 75c. per bushel, comes to \$175½. This loss is not apparent; for it is not all corn, but it is hay seed, buckwheat, oats, pig feed, eggs, chickens, etc., and thus divided around it is overlooked. The number of rats in any single locality is almost always under-estimated. They live in families, and send out scouts and spies, which are the only rats seen, unless great pains be taken, and a person remain quietly upon the watch from early in the evening, so that he is neither seen, nor heard. Then they are often seen in scores, and often fierce battles are witnessed. The rat does not see very well by day, being a nocturnal animal, but his hearing and sense of smell are very acute. A rat will never jump higher than about 30 inches, but will climb rough walls, posts, etc., easily.

Potatoes under a Straw Mulch.

Mr. H. Holbrook, of St. Clair Co., Ill., has practised raising potatoes under a covering of straw for the past six years, and thinks that he gets "from two to four fold" more than is obtained from adjoining land on which potatoes are grown in the old way. The ground is plowed in the usual manner and the potatoes are planted in shallow drills and covered with an

inch of earth. The surface is then covered with straw to the depth of a foot. The potato stem readily penetrates the straw covering, but the weeds are effectually kept down and the crop is raised without hoeing and plowing. Mr. H. has his doubts if this plan will succeed in more northern localities, but thinks it better adapted to those in which the potato does not flourish well in the ordinary method of cultivation. This is not according to our experience in a single experiment, as we have been successful in growing them under straw in New England, with the result of a crop fair in quantity and excellent in quality, but with nothing like the increase in yield stated by our correspondent.

How Much Lumber from a Log?

J. E. Hardisty, Harford Co., Md., contributes to the *American Agriculturist* the following table for ascertaining the amount of lumber which can be made by a careful sawyer from logs of different dimensions:

Diameter.	Square.	No. ft.	Diameter.	Square.	No. ft.
10 inches.	7 inches.	4	24 inches.	17 inches.	24
11	7½	5	25	17½	26
12	8½	6	26	18½	28
13	9½	7	27	19	30
14	10	8	28	19½	32½
15	10½	9	29	20½	35
16	11½	10½	30	21½	37½
17	12	12	31	22	40
18	12½	13½	32	22½	42½
19	13½	15	33	23½	45
20	14½	16½	34	24	48
21	15	18½	35	24½	51
22	15½	20	36	25½	53½
23	16½	22			

The first column is for diameters of logs, from 10 inches to 3 feet. The 2d column shows the number of inches which each log will square. The 3d column gives the number of feet, board measure, (1 ft. square, and 1 inch thick) which each foot in the length of the log will make. Thus: a log 10 inches in diameter will square 7 inches, and if 1 foot long, it will make 4 feet; if 10 feet long, will make 40 feet of boards. Again, by the table, a log 36 inches in diameter, will square 25½ inches; if 1 foot long, will cut 53½ feet board measure; if 10 feet long will contain 535 ft.—allowing the usual thickness of saw.

If the logs are to be sawed into lumber with squared edges, of the same width and thickness at each end, and no wane-edged boards allowed, then the logs will make 1-9th part less than the amount named in the table. If for lumber ¾ inch thick, add about ¼ part more. If the log is crooked, reckon the diameter less to allow for straightening. For the calculations in the table, measure the *small* end clear of the bark, but if the log is to be sawed tapering or as large as each end will make, then measure for the diameter about ⅓ the distance from the small end.

A Wheelbarrow for the Boys.

L. L. Fairchild, Dodge Co., Wis., writes to the *American Agriculturist*: "A light wheelbarrow for the boys will not only please them, but will be found a very convenient and a paying institution to have about the premises. Lots of little chores and errands can easily be done by a boy with his little wheelbarrow, which would take up the more valuable time of older persons if he did not have this vehicle to assist him. I made my boy one in half a day's time that has paid for itself many times over in gathering wood and chips for the summer fire and keeping the yards clear of rubbish. It is simply a basswood wheel made of one and-a-fourth-inch plank, with a two-inch maple axle-tree mortised through the plank and cut down at each end for gudgeons to run in two side pieces for handles. The wheel is secured in the center of the

axletree by a half-inch pin driven through a hole bored each side snug up to the wheel and left to project from the axle a couple of inches. A dash board and boards for a bottom secured by nails, keep the handles in place and complete the barrow. It has been in almost constant use for two years, and is good for two years more."

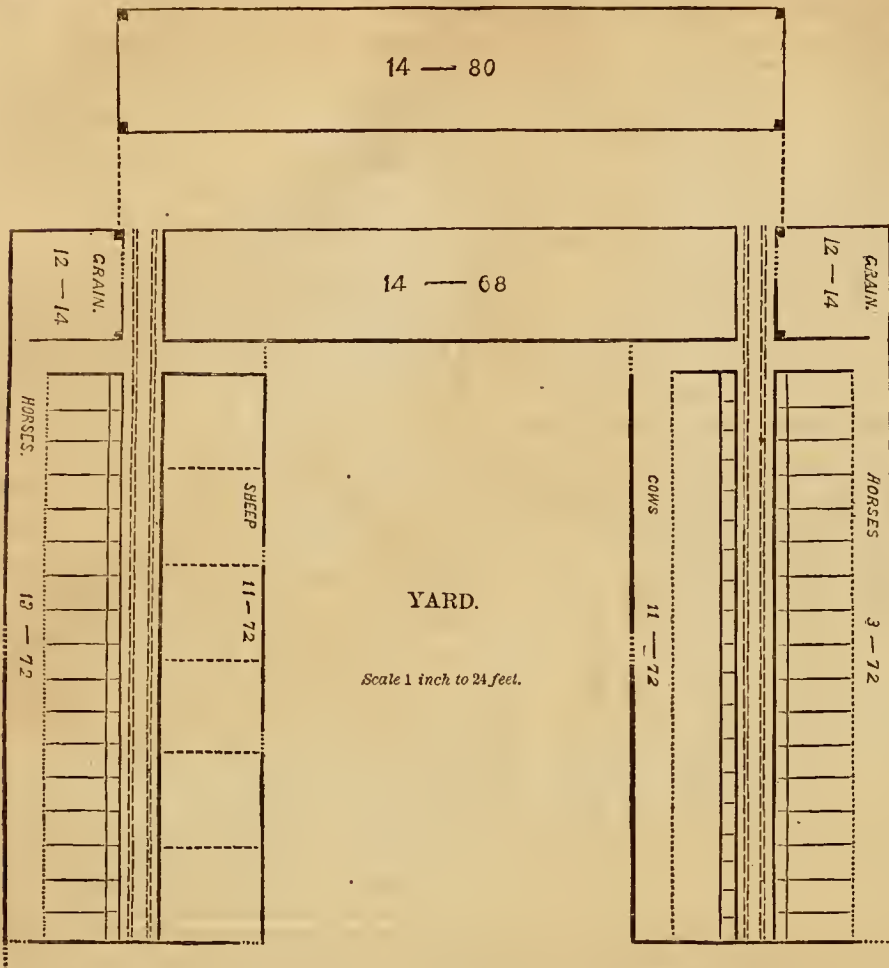
How to Repair a Road.

The first requisite is to have a dry bed for the road. Without this, the superstructure of whatever material it may be composed, will soon become rough and uneven. Some soils are naturally drained and the gravelly subsoil thrown upon the surface and rounded a little, makes as good a path as need be. Others need draining, and no amount of gravel upon the surface will make a good bed without it. We frequently find bad places upon a hill-side where the water is always bursting out in rainy seasons. A three inch tile drain four feet deep just above these wet places would make them dry up permanently, and save a large expenditure every year. If tiles are not available, stones or wood should be used. There is no help for these mud holes but in draining the bed. A single dollar spent at the bottom is worth ten at the top in gravel. Roads are so constantly in use and the prosperity of the farmer so much depends upon them, that no pains should be spared to have them of easy grade and as smooth as possible. All classes in the community are benefited by good roads, but the farmer most. All his surplus crops must go over the road to market, and it makes a great difference with him in the course of the year, whether he be able to take a ton and a half at a load, or only half that quantity. Good roads add to the value of every acre he owns and of every thing that he produces, to say nothing of their influence upon his manhood. They are a mark of the progress of civilization, and a pretty good index of the moral culture of a people. A team stuck in the mud, the snapping of whiffletrees and braces, the cursing and bad temper of the driver show that "there is something rotten in Denmark." The mud holes in the highway undo the work of the schoolhouse and the church. There is an intimate connexion between the highways and the moral ways of a people. In mending either it is a very safe maxim to "begin at the bottom."

Novel and Simple Gun Cleaner.

Mr. I. W. Parmenter, of New York City, recently brought to the office of the *American Agriculturist* a simple and efficient gun cleaner, that he had been using in lack of tow, which he could not readily obtain, and to which it proved superior. A bit of corn cob about three inches long was whittled down small enough to enter the barrel readily, but not so much as to entirely cut off the rough projections—these serve admirably to scour the interior of the barrel. The lower end of the cob was split up about an inch, and the two-halves were kept sprung apart to fill the bore, by a small wedge across the upper end of the opening. The interstices on the surface of the cob may be filled with ashes, emery powder, or other scouring material to remove rust, etc. The cob so prepared and screwed to the wormer of the ramrod was used as a swab, and in a very short time the gun was thoroughly cleansed. This is not patented.

VIRTUES confessed by our foes, and vices acknowledged by our friends, are probably real.



An Illinois Barn.

The plan herewith presented was prepared by Mr. A. J. Aldrich, of Worcester Co., Mass., for his brother in Illinois, and as it meets his requirements very well, we give it for the benefit of our Prairie readers. A large amount of space is devoted to horses, more than is usual on other farms, but the allotment of stable room to different kinds of stock may of course be made to suit the requirements of any particular farm, for which a barn similar to this may be constructed.

The main building is 40x80 feet, with 20-foot posts, (this height is not objectionable as they use horse pitchforks,) and the whole of it is devoted to hay, with the exception of a 6-foot way on each end to pass through into the wings. The cattle wings are 30 feet wide, and can be made as long as is required for the stock kept. In this case, they are each 72 feet long, cheaply built with 8-foot posts, and used only for stock, though if one chooses, they might be made higher to get room overhead for straw, corn fodder, hay, etc. A good grain room is made on each end of the barn with a roof of the same pitch as the cattle wings. A railway runs past the grain room doors, through each wing, to convey feed easily to the stock. A horse-power is placed on the barn floor, for cutting up the hay; and meal is mixed with the hay before feeding. In Mr. A's experience it pays well to grind his grain.

It is obvious that the cattle stables may be mere close sheds, furnished only with feeding boxes and racks; or they may be floored and well fitted up. In this case there are cellars under the whole barn, wings and all, those under the wings being used for manure, leaving the one under the main barn clear for young cattle or sheep, or for any other purpose. The

capacity of the barn for hay is calculated to be 125 to 150 tons. The barn-floor is 12 feet wide.

A little different arrangement would make room for loose boxes for the horses, rooms for tools, carts and waggons, etc. Western farmers do not make much use of nice carriages and harnesses, and space for these things is not provided. They are however beginning to wake up to the importance of housing their stock in cold weather, and of saving their manure, to keep their land up in good condition, and there may be ideas in this plan that will suit some persons, should no one adopt it as a whole.

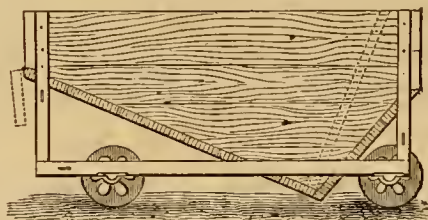


Fig. 1.

Barn-Barrow and Feed Box.

The implement which we figure is one for which almost every farmer may have use. It is simply a feed box, made with a sloping bottom, and placed upon a four-wheeled truck. When one end is turned down, as indicated by dotted lines on the left of the figure, the contents may very easily be taken out with a shovel. The truck is framed of oak stuff, light and strong. The wheels are cast iron, 1 inch wide, and about 6 inches in diameter, set fast or loose on the axles, as may be considered best. The front pair are so located that the rear end may be

lifted and the barrow rolled upon them, and wheeled easily about corners or through doors, or ended up as in fig. 2, for thorough cleaning out, or that it may occupy less room. It will run easily upon a floor, but when it is necessary to shove it through a narrow passage, as in the feedways between the mangers in the barn just described, it is desirable to have rails laid to guide the wheels.

Simple strips of hard wood, an inch high and two inches wide, one placed on each side, at such a distance apart that the wheels will run outside of them, are all that is necessary for straight tracks. (Such a car is technically called a "tram," and a railway which does not require flanged wheels—that is, where the cars do not run on the rails—a tram-way.)



Fig. 2.

A ROOT CUTTER may be very conveniently made out of this feed box, by putting in a piece of plank, as is indicated by dotted lines, at right angles to the sloping bottom, and fastened in that position by strong pins or otherwise. The roots being thrown in, they may be rapidly cut up by shoving a sharp spade back and forth upon the bottom against the plank at the end.

A Western Way of Slaughtering and Cutting Up Hogs on the Farm.

Last month we described the method of slaughtering and cutting up hogs in vogue in this part of the country. Mr. G. W. Smith, writing from Kalamazoo Co., Mich., describes the following practice, which prevails in Western Missouri and Kansas, and probably elsewhere at the West: "They first build a large fire out-doors, and pile on a lot of stones to heat. They have a platform of convenient height, and at one end place a trough six or eight feet long, and large enough to seal in, filling it partly full of water. The top of the trough should come a few inches above the platform. When the stones are hot, they put them into the trough with a shovel, and when the water is hot enough, they shovel them out, and put them on the fire again. When the water gets too cool, all that is needed is to put in a few hot stones. I have tried both the Missouri style and the old way of beating the water in a kettle, and like the former much better.

As to the cutting up, the Western plan is better yet: Lay the hog on his back, and cut off the head; then turn him down on the right side, place the left hand on the hog, take a sharp knife in the right hand, and split him from the back of the neck, straight as a line to the root of the tail. Then turn him on his back, and take an axe or cleaver, and cut each side of the backbone as close as convenient, take out the backbone by itself, and your hog is evenly cut in two. You will now find it easy to take out the ribs, and can do it more nicely than if the backbone had been split open. The advantage is here: a hog's backbone has many short, flat bones running up from the central bone, and if you split through them you have the meat full of fine bones, split bones, slivers of bones, etc."

Our correspondent might have added that this

method of cutting up leaves the sides in the best shape to be cured as bacon—a practice common at the West, seldom used at the East, and almost unknown over most of New-England.

Maple Sugar.

There is more than usual profit to be expected from sugar making this year. The Sorghum growers have realized very handsomely for the crop so far as we have learned, except in a few isolated cases of failure from late crops or early frost, and the letters of inquiry we receive indicate an interest on the part of the owners of sugar trees, which will probably result in securing a very large crop of maple sugar. The sap of trees grown upon different soils and exposures, is found to vary considerably in the quantity of sugar it contains, and in earthy impurities also. These impurities are not of much importance. They are salts of lime and magnesia for the most part. Besides, the sap contains some albuminous substance, part of which is coagulated by the boiling, and may be skimmed off from the boiling syrup after it becomes considerably concentrated, and another portion with some of the earthy salts may be removed by straining through flannel before "sugaring off." When the sap yields much seum, and is seen to be impure, it is usually clarified by the addition of a few eggs beaten together with milk, and stirred into it, all of which is subsequently removed by skimming. Tin or wooden sap-troughs, buckets and spouts, or "spiles" ought to be prepared during the present month. A good evaporator is made by riveting together two or three sheets of Russia sheet iron, turning the edges up so as to make a large flat pan. This must be provided with a large faucet, and set nearly level, supported by bars of iron, to prevent sagging and warping. Some of the evaporators invented for making Sorghum syrup have been used, as we learn, with very good results. They certainly are well adapted to the purpose. We shall be glad to hear from some of the large maple sugar makers, among the readers of the *Agriculturist*, in regard to any improvements in the way of making sugar, recently introduced, with a particular description of their apparatus of all kinds, for it is some years since we have been in the "sugar bush" at sugaring time. Letters received the first week in January, may be in time for February No.

Relations between Editors and Dealers.

An editor of an agricultural journal has two important duties: he has to urge his readers to adopt such new principles, to try such new implements, and to test such new fruits, seeds, etc., as seem in his judgment to be worthy of a trial. On the other hand, if faithful to the requirements of his position, he is obliged to warn his readers against the many schemes of speculators upon their credulity, and if a thing is recommended to the agricultural community as worthy of their adoption or purchase, to examine it, and give his opinion. This latter course, while it saves his readers many thousands of dollars, makes the editor many hundreds of enemies, and long lists of makers of super-humbug manures and unpractical implements, of nurserymen who look at their stock through glorification spectacles, and seedsmen who sell seeds or plants at prices out of all proportion to their value—in short, all that class of persons who are included in the very comprehensive

term of "humbugs," are no friends to the editor. The *Agriculturist*, having done its share in this unpleasant work, has made hosts of friends on one side, and a corresponding number of enemies on the other, as most naturally follows from the course it has pursued. There are two ways in which those having ends to serve, attempt to manage an editor: the one is to buy him up, and the other is to frighten him down. We do not recollect that the buying up process has been very recently tried on us, though it has been attempted with some of our neighbors; but the other style has been manifested in various forms, from blowing up letters to threats of personal violence, and prosecution. In the absence of positive law defining an editor's duties and responsibilities, he is obliged to be "a law unto himself," and in case an aggrieved person brings him before the courts, he has to rely upon the intelligence and discrimination of a jury to sustain him in what he conceives his duties to the public. It will be very difficult to convince them that because a nurseryman exhibits a yellow apple, and calls it a red one, that the editor is obliged to say that it is red, or if he is presented with an elongated and poorly filled bunch of grapes (which thereby become his own property), that he is precluded from saying that the bunch is badly grown. We have gone upon the principle that a book, no matter by whom written, or a fruit without reference to whose grounds the seed grew upon, when offered for sale, becomes public property, and as such is subject to criticism. If one owns a tree or vine which the originator states perfects its fruit very early, and he finds that it does not ripen until late, it is his duty to say so, no matter if the nurseryman should lose the sale of the plants, and we think it would be difficult to find any law or court that would prevent him giving the results of his experience and observation, or knowledge on the subject.

Horticulture and Matrimony.

According to the New York Observer, the Rev. Dr. Aul, of Ohio, believes in having good things go together. The reverend gentleman is a cultivator of grapes, and always has a plentiful stock of young vines on hand: "He said that whenever any of his young friends got married and went to housekeeping, he loved to give them a grape vine to set out at the beginning of their domestic life. The idea was to me very pleasant. His pleasure was not merely in raising fine grapes, of which he had great quantities, but in giving the blessing of a vine to cover the arbor or the door of his neighbors." A pleasant way this parson has, and his gifts more sensible than many wedding presents.



The Snowy Owl, or Harfang.

This large and very showy bird is found throughout northern portions of both hemispheres. It is a day bird, but most active at morning and evening, feeding upon all sorts of small animals and birds, and taking unwary grouse, and sometimes ducks and chickens, much as a hawk does. Field mice, rabbits, and small birds are their principal food, and when they are bold enough to come in the vicinity of barns and grain stacks, they are among the most persistent enemies of rats. The perfectly noiseless flight of the owl enables him to drop without warning upon his prey, if he has not been seen. In the winter, among the snows, this bird is particularly inconspicuous, on account of his color, which is white, more or less sprinkled, particularly on the back and breast, with half-moon shaped, dark-brown or ash-colored spots. These owls weigh four or five pounds, but they are so profusely covered with feathers that they appear to be much larger.

Plants out of Place.

The old definition, that a weed is "a plant out of place," is illustrated in the grounds of an intelligent correspondent in Connecticut, who finds some plants prized in the flower garden to be quite unwelcome in his fields. There are some plants which, like fire, are excellent servants, but most deplorable when they acquire the mastery over us. It is notorious that most of our worst weeds are of foreign origin, which very often make themselves more at home than the native sorts. We extract the following from a communication by the gentleman above alluded to.

"Fumitory (*Fumaria officinalis*).—A delicate garden flower, sown in the flower garden about twenty years since. Though soon banished from good society for its arrogant claims, it holds on so tenaciously among currant bushes and fence corners that we have relinquished the hope of

extirpating it and accept it as an evil in perpetuity. Quack grass, which came in the roots of some shrubs from the nursery, holds the same ground. *Blumenbachia* and a species of Catchfly were sown as flowers and destroyed as soon as their worthlessness was known, yet they give a few specimens every year, as if just to keep up the breed until some more favorable opportunity occurs to possess the land. A species of *Lamium* (Dead Nettle), came in seeds from the Patent Office. The first year it was viewed with curiosity as a new plant, now we have ten feet square to watch and hoe often, as it comes up by hundreds. A species of *Rudbeckia* or Cone-flower (*R. hirta*), appeared some six years ago in a field sown to timothy. It is a tall showy yellow flower with a purple center. We now find it quite plenty, having come in grass seed from Illinois where it is common. Every one with a quick eye will detect such strangers lurking about his premises getting ready a crop of seeds for a larger claim. Before the seeds shell out, put them in the stove or make a bonfire of them, and in destroying one plant you prevent the growth of thousands."—A horticultural friend of ours was some years ago on business at the Patent Office, and saw a box labelled *Echium vulgare*. Upon inquiry he learned that the box contained seeds, which had been imported from Russia, at a cost of \$100, and were to be distributed over the country as a valuable plant for bee pasture. Our friend took down a volume of "Weeds and Useful Plants," and showed the officials the description beginning "This showy but vile weed," and thus saved a still greater dissemination of what is already a serious pest in some parts of the country, and at the same time illustrated the importance of scientific knowledge on the part of those who have it in their power to do so much good or evil to the agricultural community.

A Veterinary College in New York.

The necessity of having good veterinary practitioners in this country is every day increasing. The immense draft of horses for the army has made horseflesh very valuable property both in town and country. Their term of service is very short, as they contract disease from overwork, and have improper medical and surgical treatment when they are sick and wounded. The war also increases the value of cattle for work, to supply the labor of horses sold to the Government, as well as the demand for beef. Never before has there been so general an interest in sheep breeding, and the value of this stock has risen very much of late. The diseases of animals are increasing in number, in fact, in proportion to the care and "good treatment" that animals receive, beyond a certain point, domestic animals are prone to contract disease. The truth is, the most profitable systems of farming require such early maturity in animals used for food, and other conditions tending to secure the most economical consumption of their food, and rapid fattening, that they are peculiarly liable to the attacks of disease. This makes it very desirable that breeders and feeders in all parts of the country should be able to secure medical advice, if they would not suffer severe losses from the sickness and death of the stock.

We are gratified to know that the Institution chartered as the "New York College of Veterinary Surgeons," is in the hands of earnest, high-minded scientific gentlemen and physicians, some of whom are devoting themselves with zeal to its interests. A portion of the endow-

ment required has been already secured, and the gentlemen expect soon to announce their readiness to receive students and patients. Lack of suitable endowment is all that prevents the immediate institution of a course of instruction. The faculties of the medical colleges of this city have, in the spirit of true liberality, offered to establish the same reciprocity between their own and the Veterinary College as exists between the medical colleges of the country.

We shall be happy to give individuals any further information, or facilitate the communication of any persons with the Committee on Subscriptions to the endowment fund.

Saws and How to File Them.

Every farmer and almost every man has occasion to use a saw, and ought to know how to keep one in good order, and this can not be done without some notion of the principles involved. Should we attempt to cut a board in two by repeatedly drawing a knife-point across it as at *a* or *b*, fig. 1, we should be simply using a saw with one tooth. If the blade be held in the position indicated at *a*, it may be moved with much less power, and will cut deeper and make a cleaner cut than if held as at *b*. This is true, and it leads us to the conclusion that cross-cut saws, with teeth shaped as at *c*, do their work easier and better than those shaped as at *d*. Rip-saws operate in a different way, which we may illustrate on another occasion. Fig. 2 represents a good cross-cut saw for soft wood, the teeth being quite sharply beveled alternately on different sides; *b* shows the broadside view of a single tooth, and *c* the same tooth seen edgewise, or a perpendicular section of the same; while at *a* is represented the

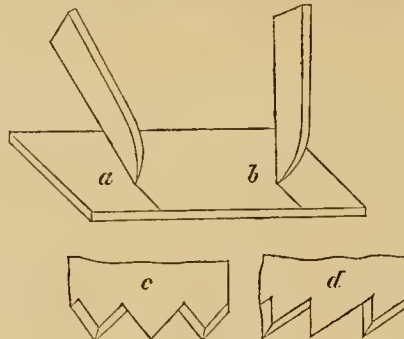


Fig. 1.—ACTION OF SAW TEETH.

proper position of the file in filing such a saw. The filing should be so done as to leave the edges of the teeth clean, sharp and good cutting surfaces. The next tooth will, of course, have the bevels on the other side, and so on alternately. This brings the cutting points of the

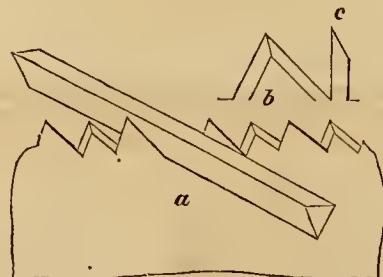


Fig. 2.—CROSS-CUT SAW FOR SOFT WOOD.

teeth on the outside of the cut, on each side. The best saws are now made thinner at the back, so that the cutting edge is always the widest, and such saws clean well and do not bind at all, without having the teeth "set," pro-

vided of course, that the teeth are properly filed. An irregularly filed saw, or a dull one, leaves the cut so ragged and fibry that it will bind frequently, no matter how much it is set. Setting is bending the teeth slightly to one side and the other, alternately, so that the cut shall be made so wide that the saw will slide easily through it. It is best done by means of a saw-set.

Figure 3 represents a cross-cut saw for hard

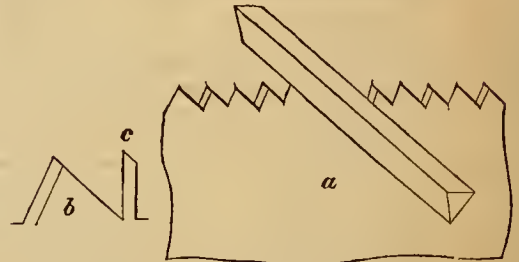


Fig. 3.—CROSS-CUT SAW FOR HARD WOOD.

wood (*a*), the side view (*b*), and the edge view (*c*) of one of the teeth. It will be noticed that the teeth are smaller, having the bevel on one edge only, and the point of the tooth less acute, as more strength and ability to stand harder wear are needed. Between saws for soft wood and

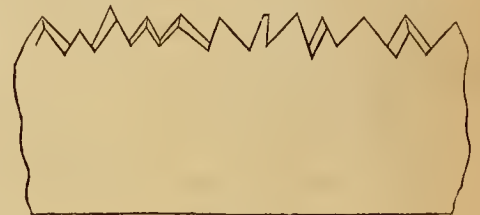


Fig. 4.—BADLY FILED SAW.

and those for very hard, one or two intermediate grades are used. Filing should be done with a strong hand, guided by an accurate eye. A poor, unsteady filer will soon get a saw into the condition shown in fig. 4. The illustrations we have employed above are from a capital little book, by W. H. Holley, "The Art of Saw Filing," published by Wiley, price 60 cents, and placed on our list.

What Fruit Trees Shall I Plant?

No question is more frequently asked of the Editors of the *American Agriculturist*, than the above, and none more difficult to answer. There are certain varieties which can be recommended for a wide range, and others which are very local in their character. The transactions of any State Society will show that the greatest diversity of opinion exists with regard to the fruits adapted to a single State. The Illinois Horticultural Society have been obliged to district their State into three different fruit regions, as will be seen by referring to page 50 in the *Agriculturist* for February last. It is evident that it is impossible for any one man, or any association of men, to indicate the varieties of fruit suited to each particular locality. Now what is to be done? If one has the means he can make a series of experiments. If he is wise he will make use of the experiments of others. If one wishes to set out any considerable plantation of fruit trees, he can not make a better investment, than to take a week of time and the necessary money, and visit the fruit-growers of the neighborhood. It is one of the beauties of horticulture that its true disciples have large and liberal views, and are always glad to communicate their experience to others. A few days spent among the nearest fruit-growers

in observing their trees, and discussing their merits, will be of more service to one designing to plant an orchard than all the advice that distant horticulturists can give. One of the most distinguished fruit-growers in the country, and one who has probably tested more varieties of fruits than any other, recently said to us that he had been all his life in gathering information and needed another life to make this knowledge useful to him. It is not possible for one who wishes to grow fruit for profit to make such experiments as these, but it is in his power to avail himself of the results of others' experience.

Agency of Insects and Winds in Effecting Fertilization.

In referring to our statement that the "Agriculturist" strawberry did not fruit under glass, B. C. Townsend, Esq., of Long Island, writes:

"As this is a perfect variety, there is only one cause which can be fairly assignable, provided the blossoms were fully developed and ordinary care exercised, and that is, the absence of bees and insects at the season you speak of. This is evident from the perfection of the same plant blossoming in the open air at the natural period in early spring, when these humble workers are abroad.

"It is to these diligent seekers after nectar that we are principally indebted for the fructification of nearly all our fruit blossoms; and in forcing fruits under glass, the process not being natural, but artificial, it follows that artificial means of impregnation must be resorted to, to scatter the pollen. Under glass, in severe weather, but little ventilation is allowed, and the atmosphere is in some measure stagnant; while out of doors, at the natural season of blossoming, light, balmy breezes scatter the pollen from each blossom, even without the aid of the bees. I have found it effectual to take a light pair of bellows, and when the blossoms in the forcing house were well matured, to blow gently among them, creating a light breeze, and the fruit set as well in each case as when growing in the open air."

Our correspondent has probably suggested the true reason for the failure to procure fruit from the strawberry in the green-house. Insects play a much more important part in fertilization than is generally supposed. Careful observation has shown that there are some plants, the structure of which is such, that it is impossible for the pollen to come in contact with the pistil of the same flower, but it is so arranged that an insect, in going from flower to flower, conveys the pollen from one to another. This cross fertilization of the pistils of one flower with the pollen of a different one, tends to prevent the perpetuation of individual peculiarities, and to thus ensure uniformity throughout the species.

Flowers for Working Men.

The *American Agriculturist* is a paper for working men and women, and it takes special pleasure in ministering to their wants. Why should not our farmers and mechanics, with their families, take more interest in raising flowers? In England, and on the Continent, laborers of all classes are devoted to floriculture. You see pots and boxes of them in their windows, all ablaze with beauty, and beds by the doorstep and patches in the garden are filled with the flowers which all hearts love. Gardening as a profession or calling is the favorite choice of many. At the agricultural fairs, carpenters,

blacksmiths and machinists often carry off prizes for flowers and small fruits. We are glad to discern the beginning of such tastes here, and are more pleased to see the small gardens of working people, than the large parterres of our men of wealth. They send sunshine into many hearts. They indicate contentment and beget it; they indicate taste and an increase of it. If any of our readers, toiling hard for daily bread, have no flower garden, not even a flower pot, we beg them in some way to contrive a change for the better. Begin in a small way, with something cheap and common, and then advance to something rarer and better. The passion will grow with what it feeds on.

The Iona and Israella Grapes.

To the Editor of the *American Agriculturist*.

In your number for this month I have read an article under the above heading, the character of which not only much surprised me, when I saw it was written by one so generally well informed as Mr. H. P. Byram, but I was also astonished to find such an array of misrepresentations had found their way into the columns of your very valuable paper, to go forth with it into each family of your one hundred thousand subscribers, and be perused by the half million readers, over whom you so justly exercise a great influence.

Now, Mr. Editor, in view of the fact that I have been employed as foreman, and general agent for Dr. Grant, during four seasons, and have meanwhile watched carefully the developments of all the fruits here, including particularly the Iona and Israella grapes, I feel called upon to correct some misstatements made in said article, and speak what is the truth. Having had also the carrying out in detail of all the experiments which have been tried here during that time, and knowing how well calculated the article to which I refer, is to mislead the public, I cannot believe my duty is less than to give, through your paper, a statement of facts—facts which can be substantiated by every one who has lived here, and by all who have any knowledge of them whatever.

Mr. Byram hinges his article particularly upon the merits of the Israella grape, and the means, which he claims, Dr. Grant employed to secure its early ripening, concerning all of which I might perhaps be excused from speaking, were I not generally supposed to be one of the "intellectual persons" of whom he speaks.

First, as to his right to express an opinion to the public concerning its quality. He first came to live at Iona in October, 1863, which was six weeks after the fruit of the Israella became fully ripe, and more than four weeks after all the best of it had been distributed for testing by fruit judges. Remaining here until some time in July last, he went to Sag Harbor, Long Island, and did not return again until nearly the first of October. At that time I had been absent several weeks, exhibiting the fruit of this and the Iona, and was then in Ohio. When I returned, he told me he had never yet seen a bunch of the Israella, and wished me to show him one. This was fully six weeks after the Israella ripened. Not knowing the fruit had been so nearly all cut in my absence, I proposed to get him a bunch from the vine, but it was found none were then remaining, except one or two very imperfect specimens. He fairly admitted they were improper specimens to judge from, and expressed a regret that he had not seen the fruit in its perfection. That these grapes were shown

in good, well ripened state, the first week in September, was witnessed, and the specimens tested by more than five hundred different individuals at the New England Agricultural Fair at Springfield, Massachusetts, among whom were many of the leading pomologists in the Eastern States. More than one thousand persons can give evidence that they were exhibited, and fruit of them distributed at the New York State Fair, at Rochester, and all who visited the grape show at Cleveland, Ohio, were afforded specimens of each variety for tasting. At each place of exhibition, the grapes received high expressions of merit from those who had ample opportunity, and were best qualified to judge. So much for Mr. Byram's opinion of the Israella, and his opportunity of judging of its merits.

Second, as to manner of producing said fruit. Mr. Byram asserts that Dr. Grant has forced every "good bearing vine of Iona and Israella," and gives the public to understand that all he (Dr. G.) has written concerning their time of ripening has been done with a view to mislead. He admits however the excellence of the Iona, and concedes to it all the merits of quality its proprietor has ever claimed, giving other persons credit of having raised finer specimens than have been grown here.—But to his assertions regarding what he termed a "forcing process." In his article he states that "early in the season in front of each good bearing vine of both the Israella and the Iona, was first placed a large glazed sash, and then on the back or north side and twelve or fifteen inches from the vines was erected a large wooden screen or wall to break off the wind on the one side and to reflect the heat of the sun upon the vine and fruit on the other." This statement is incorrect in every particular, for within the past four years no such experiment has been tried upon any one vine on this Island, of any variety whatever. The time of ripening of the Israella as set down in Dr. Grant's catalogue is, as I have observed it here, standing unprotected winter and summer in the open vineyard.

Mr. Byram does positively know that numerous visitors were at Iona during all parts of last season, and that very many made pilgrimages here for none other than the express purpose of seeing these new grapes. He knows further, that not only were all who came here shown freely about by the proprietor and employees, but that every person, whether visiting here, or on business, has had free permission to walk everywhere about the Island, as he chose, and further, that the Iona and Israella vines in bearing were particularly pointed out to all.

It is perhaps generally known, but I will briefly state that numerous experiments upon vines and trees have been and are being tried here each year. Such have embraced different methods of training, pruning, choice of exposure, varieties of shelter, etc., but in no single case within the past four seasons, has there been one vine protected on two sides, nor has there been protection given any vines, equal in effect to a continuous board fence six feet high. The nearest approach to this is a shelter commenced but not complete for a system of vines mostly Delawares, on the Thomery plan.

Iona, near Peekskill, N. Y., ALVAH BUSHNELL.
Dec. 1864.

He who admits that he has a secret to keep has, by doing so, revealed one-half of it, and the other will be likely to very soon follow.

A physician is an unfortunate gentleman, who is every day called upon to perform a miracle—to reconcile good health with wrong living,



FARMER FOLKS

IN WAR TIME.

The Record of a Year.—Our Picture.

The year 1864 was one of great events in the history of our country and of the world. Providence has wonderfully sustained us—our armies have been maintained in full numbers, and victorious, our crops have been garnered, our manufactures have been flourishing, the markets good, domestic commerce active, and labor well rewarded. The earth has yielded from the gulches of the mountains vast quantities of precious gold; and the no less precious iron, and copper, and deadly lead have been raised to the surface in great measure,—coal, also, more than ever before; while a new source of immense value, the wonderful petroleum, comes welling up from the depths of the earth, pouring wealth into the hands of thousands.

The farms over the broad North have parted with their strong men, that they might go to do battle for the honor of the flag, the integrity of the country, and for the principles of free government. There, far away in the field, on the perilous picket line, watching, scouting, fighting, foraging, or perhaps sick, or in prison, or beneath the blood-soaked sod, are the men who wielded the axe, and swung the cradle and scythe—the heads that planned, and the hands that sowed, and hoed, and harvested. Re-enlisted veterans and heroes recovering from sickness or wounds, have spent a few quiet weeks at home. (How much those weeks were prized—how long to be remembered!) Some things change a great deal in two or three years—children grow fast and need a father's care, and the pets of the stock-yard and fruit-garden grow too. Many a farmer, after his years of service, war-worn, and wounded perhaps, has this autumn returned to his home to be gladdened by the full barns and granaries, and the ample provision of pork and provender for the winter, thanking God for an intelligent thrifty wife, under whose good management, with the labor of old men, women and boys, the farm has been worked. These are the women who, though bent upon giving a good account of their stewardships, stand behind the Sanitary Commission. Blessed women, they have spun the wool, or knit the stockings, made garments, stewed and canned the fruits, and sent off to the army stores of good and useful things—a precious freight of woman's labor—a token of the sincerity of her prayers for the absent loved ones, and the dear distracted land.—Such thoughts are embodied in the strikingly beautiful and original picture with which we embellish our New-Year's number, and seldom, if ever, has the vigorous pencil of our townsman, Mr. Nast, more delicately and vividly illustrated any subject. These scenes with which we are now so familiar, will soon be historic, and in future years this picture may quicken our patriotism by the memories of the year just past. Every point of the picture is suggestive. The good wife exhibits the result of her management. An ambitious boy shows the tools he has wrought with; the little girl pulls Papa off to see her poultry; and Grandpa with two stout girls is found hard at work among the turnips. The hay-making scene on the farm contrasts finely with that of the returning foraging party passing the picket line; and the two pictures of the source and use of the Sanitary stores are in no less beautiful contrast. May the New Year which opens so brightly, and promises so soon an honorable termination of the war, bring us the happiness of a united people, and for farmer folks the realities of peace, and not of war.

Some Hardy Evergreens.

In planting trees we are apt to "run to sorts." If one kind of tree is found to do well, it is common to see a whole neighborhood planted with the same species. A maple is a beautiful tree, but we have seen a fine landscape spoiled by a constant succession of round headed maples. This sameness is strongly manifested in the matter of evergreens. The Norway Spruce and Arbor Vitæ are hardy and grow well, but that



Fig. 1.—AUSTRIAN PINE.

is no reason why we should have nothing else, while there are other species which are equally hardy and each having a 'character of its own. We hope to be able to give our readers from time to time engravings and descriptions of those evergreens which are suited to general culture.—THE AUSTRIAN PINE, *Pinus Austriaca*, is a tree which is worth growing for its expression of sturdiness and vigor. It looks as if it had a right to the soil and intended to stay there. It generally does remain where it is put, as it is perfectly hardy and is not very particular as to the kind of soil, provided it be not too wet. The leaves are in twos, slender, straight, 4 to 5 inches long, erect when young, but spreading and curved toward the branch when old. The buds are large, being about an inch long. The branches are arranged in regular whorls,



Fig. 2.—PINUS PUMILIO.

spreading, with the ends curved upward. The cones are 2 to 3 inches long, an inch and a quarter broad at the base, and tapering gradually to the point. The tree grows rapidly, and in its native country reaches to the height of over 100 feet, and when old has a flat and wide spreading top. The timber is tough, strong and resinous, and is highly valued for joiners' work.

THE DWARF PINE, *Pinus pumilio*, Fig. 2, is a native of the Alps and other mountains of Europe, and there prefers a somewhat swampy soil. It forms in cultivation a slow growing, compact bush, with its lower branches close to the ground. The compact, vigorous habit and dark green color, render it a desirable pine for small grounds. The leaves are in twos, curved, 2 inches or less in length, very thickly set on the branches. Cones 1 to 1½ inches long, pendulous and bluntly egg-shaped. The accompanying engravings are from drawings taken from specimens growing upon the N. Y. Central Park.

Fruit Trees as Dwarf Pyramids or Bushes.

The dwarfing of trees by a systematic course of pruning both the roots and branches, has been practised by Thomas Rivers, the venerable English Horticulturist, for nearly half a century. In a recent edition of his "Miniature Garden," he still enthusiastically advocates this method of culture as peculiarly suited to those who wish to grow fruit in a small space. We are not aware that his system has been fairly and thoroughly tried in this country, but if all its conditions are complied with, there seems to be no good reason why it should not be as successful here as in England. Dwarf fruit trees do well in pots, and this is only another method of confining the roots within a limited space and furnishing them with an abundance of nutriment. For those who wish to experiment with this mode of training, the following condensed account is given. For a dwarf pyramid, the young tree must be on a dwarfing stock, as pear on quince, etc.

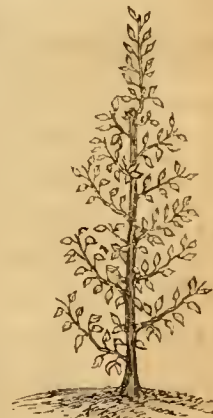


Fig. 1.

A tree one year old from the bud or graft, with a straight stem, well furnished with buds, is selected, cut back to 18 inches, and planted in good soil. Numerous shoots will start, and one, the upper one if strong, must be chosen for a leader, and if it does not naturally grow upright it is made to do so by tying to a light stake, and the side shoots, if necessary, made to assume a regular shape by tying. When the leading shoot is 10 inches long, stop its growth by pinching the growing point, and if it pushes side shoots, pinch all but the leader back to one to three leaves. At the end of August or early in September, each side branch is cut back to eight buds which will leave the tree as in fig. 1. This ends the treatment for the first season.—The second year the side branches will push several vigorous shoots, which as soon as they have made four leaves are to be pinched off to three, and if these again throw out shoots they must be pinched back to one leaf, and this is to be done with all but the leading shoot of each side branch. The upright leader is to be pinched as soon as it has grown ten inches, and if it throw off side shoots pinch off all but the leading one as directed for the first year. The tree as it will appear in mid-summer is shown at fig. 2 (next page), where cross lines show the places for shortening the shoots about the end of August, and *a, a*, the spurs which have been pinched back in

June, and will form from fruit spurs. The same system of pruning is followed in subsequent years. Every young shoot when it has made four or more leaves is pinched back to three



Fig. 2.—PYRAMIDAL PEAR TREE.

leaves except the leading one of the side branch which is to be cut back in August. This treatment alone will produce a well shaped pyramid tree; but when it is desirable to keep the tree dwarf and confine the roots to a limited space, root pruning is practised. When the tree has reached the height of about six feet, a trench is dug around it in autumn, 18 inches from the stem, and all roots inclined to grow perpendicularly are cut off with a sharp spade. The horizontal roots are cut with a sharp knife to within a circle of 18 inches, and the trench is filled with a mixture of equal parts of well rotted manure and good mould. The surface over the roots is covered with coarse manure which is left to enrich the soil and serve as a mulch. In rich soils the root-pruning is repeated annually, and in poor ones once in two years. The result is that in a few years the entire circle of three feet around the tree is filled with fibrous roots. If the roots are found to be too crowded,



Fig. 3.—BUSH PEAR TREE.

a portion of them may be thinned out. With those varieties which naturally have a straggling habit, bush training will answer better than the

pyramidal. In this, no leader is preserved to secure a pyramidal form, but the shoots are all treated alike and pinched as above directed. A bush pear tree is shown in fig. 3. Root pruning is practised with the bushes as well as with pyramids, or the tree may be removed every second year to a new situation which has been enriched with well prepared compost. The advantages claimed by Mr. R. for root-grafted dwarfs are: 1st. The rendering of the trees eligible for the smallest gardens. 2d. The facility with which blossom buds and fruit may be thinned and the fruit gathered. With shy bearing sorts the flowers may be artificially fertilized. 3d. The cultivator can be independent of the natural soil of the garden, as with a small quantity of rich compost and surface manure the tree can be kept in full vigor in a poor soil. 4th. The ability to remove old trees with as much ease as furniture—a great consideration with tenants. Of course this system can not be recommended for general culture, as it requires that care which can only be given to fruit in gardens. Any one making experiments in this direction should faithfully carry out the plan in all its particulars, to secure full success.

Peach Trees in Cold Climates.

Some months ago a western nurseryman, who had a plan for protecting peach trees during severe winters, consulted us with reference to patenting his process. Considering that patenting a mere process or way of doing a thing in horticulture was, to say the least, inexpedient, he was advised to give his simple discovery to the general fund of knowledge. He had all his life profited by the accumulated experience of thousands of others, and we considered it only right that he should make this small return. The gentleman would not consent to make his discovery public, but wished us to advertise that he would communicate his secret for a compensation. This proposition was declined for the reason that, while the secret might be worth the sum asked, most persons, when they found out how simple the thing was, would consider that they had been "sold" and would blame us accordingly. The process in question having been described to us under circumstances implying confidence, it was not given publicity and the matter dropped. In a recent number of the *Country Gentleman* another person, "V. W. S.," has hit upon almost precisely the same expedient as the one alluded to, and as every liberal horticulturist should, he communicates his experience for the benefit of the public. The method is simply to lay down the trees and keep the tops covered with snow. It is done as follows: dig a trench on one side of the tree, about a foot from the trunk and sufficiently deep to uncover the roots. The lateral roots on this side are to be cut off at 12 or 15 inches from the tree, and those roots which run downward are to be severed by thrusting a sharp spade directly under the tree. The tree may now be bent over and the branches brought close to the ground. The roots upon one side being severed, and the remaining ones being undisturbed, this can be accomplished without difficulty. It is important to save all the roots possible and yet allow the tree to be bent down, and only those should be severed which interfere with this object. The upturned roots have sufficient earth placed over them to protect them from frost, and the tops are lightly covered with refuse vines from the garden or similar litter. When snow falls, it is heaped up over the top

of the tree so that it will be covered to the depth of six inches or a foot, and the covering kept on all winter. In spring when the buds are about to start, the tree is brought up to its natural position and secured by pressing the earth firmly around the roots. The work of laying down is done before the ground freezes, and the first snow is put over the top, taking care to keep the covering repaired from time to time. It is advised that the tree be pruned in something of a fan shape, in order to bring the mass of branches as near the ground as possible. The writer above alluded to states that he has followed this method with five trees, for two years, with the most satisfactory results. The plan seems well worthy of a trial in those localities where the limbs of peach trees are liable to be winter-killed. The experiments should be made with young trees. The incidental root pruning will promote fruitfulness.

Cone-bearing Plants from Cuttings.

The general interest now felt in propagating evergreens of the Pine family has led several to ask the method of raising them from cuttings. With some, such as the *Arbor vitæ*, plants may be readily grown from cuttings, while the Pines usually strike root with the greatest difficulty, if at all. Mr. W. S. Carpenter has had excellent success with both the American and Siberian *Arbor Vitæ* in the open ground. He makes the cuttings in May, taking twigs from three to six inches long. These are cut "with a heel," *i. e.*, with a small portion of the branch from which they came adhering to them, and are set out in well drained soil, in rows a foot apart and six inches distant in the rows. Most of the cuttings root the first season, while those which do not, usually survive the winter, and make roots the next year. Mr. C. thinks that 90 per cent. of his cuttings live and make plants. The usual way of striking cuttings in the greenhouse is, to take the points of the same season's growth just as it is ripening, about 2 or 3 inches in length, set thickly in pots of pure sand, and cover with a bell glass or glass-top box. They are kept cool until spring, when they are placed where they will have a very gentle bottom heat. Most of the Spruces, Firs, Junipers, Cedars, and some few of the Pines have been grown in this way. Some propagators have excellent success, while others make a total failure with cuttings of the more difficult ones.

Experience with Insects.

Mr. David Lawrence, Sciota Co., O., in communicating some of his gardening experience, states that he prevents borers from attacking his peach trees by setting them about 9 inches deeper than they stood in the nursery, thus putting the portion of the tree usually attacked, below the reach of the insects. This deep setting of trees is so contrary to general practice that we can not advise it; besides, the borer, though it prefers the base of the tree, will frequently deposit its eggs several feet from the ground; but we give the suggestion for those who wish to experiment. Mr. L. states that the trees do not grow very vigorously the first year, but do well afterward, and being set so deep, they are not readily affected by drouth. The same writer finds suds, made strong with soft soap, and applied hot, to be efficacious in destroying all kinds of insects. Hot water for killing the woolly aphid was noticed in December.

Naming of New Fruits.

Now that new varieties of fruit are rapidly coming into notice, it is very desirable that care be exercised in giving them names. A pleasant sounding name, of a single word if possible, is much easier to remember and less likely to get corrupted into something else, than long names, of several words. We are led to notice this subject from seeing in a recent English journal a description of a new pear, which bears the name of Pitmaston Duchesse d' Angouleme. Now Duchesse d' Angouleme is a name already so inconveniently long that popular usage has reduced it to Duchess; but to prefix a word to this, is simply intolerable. It is bad enough for the French to send us fruits burdened with such labels as "Beurré Gris d' Hiver Nouveau," and the English are following in this polynominal style. We hope that American horticulturists will not be led to copy their example. Such names as Bartlett, Buffum, and Baldwin, are in much better taste and more serviceable than those we have above quoted. A rhyming correspondent of the Horticulturist, several years ago, uttered his protest against long names in humorous verse, a portion of which is as follows:

Beurre de Kuckingheim! Brown Beurre!
Tis a wonderful jargon, yes sir-ree!
Fits to utter, cramps to spell,
Dutch, English and French in a Jargonelle!
Doyenne d' Alençon d' Hiver Gris!
Van Mons Leon le Clerc! dear me!
Bless the branches and save the root,
If all that talking should turn to fruit!
Elect me king, and I'll make a law
Entitled "An act for your lower jaw,"
Syllables two shall name a tree,
And the pear shall perish that carries three.

Are Surface Roots of Any Use?

A correspondent complains that when he digs up his garden he finds the soil full of the roots of his pear trees, and, as they are very much in the way, he is obliged to cut them off, and he asks "If these surface roots are of any use?" The inquirer is, doubtless like many others, under the impression that the deeper the roots go, the better the tree will flourish. In a garden where the ground is spaded over each year, or in an orchard that is annually cropped, these surface roots have but little chance, and roots must be formed below the reach of injury in order that the tree may live at all. The feeding roots will grow where there is the greatest supply of nourishment, and in a soil annually manured to no very great depth, they will have a tendency to seek the richest portion, and the soil near the surface will be filled with fibrous roots. Surface manuring, now practised by good cultivators, has the effect to cause the roots to grow near the surface. Where this is done, coarse manure should be used and the litter left on the ground during the summer, or a heavy mulch of some other material must be supplied, otherwise, the roots being so near the surface, will suffer from drouth. Surface manuring and mulching must go together.—To come back to our correspondent's case. He can not successfully grow fruit trees and other plants in the same soil, and it is much better to give up either his fruit or his vegetables than to have an indifferent crop of the two together. We have frequently advised having the kitchen and fruit garden distinct when there is sufficient land to allow it. Where fruit trees must be grown in the general garden or not at all, then they should be only dwarf trees, which must be kept

dwarf by proper pinching; as the root growth bears a direct relation to that of the branches, we have it in our power to control it in good measure. An article on root pruning in another place will give some suggestions to those who wish to grow fruit trees on a small plot of soil.



A Pretty Native Annual—*Collinsia Verna*.

The English horticultural papers have during the past year made quite a talk over one of our wild plants, the *Collinsia verna*. They consider it valuable for massing, as it comes into flower very early, and when planted closely covers the bed with a sheet of lively blue. The plant was first discovered by Nuttall, on the borders of Lake Erie, in 1810; but having lost his specimens he in 1816 made a journey of over a hundred miles for the purpose of procuring it again. He was fortunate enough to find the plant, but only in seeds. These he secured and raised specimens which he described, dedicating the new genus to Zacheus Collins, Esq., a botanist of Philadelphia. The plant grows in rich and rather shady places in Western New York, and further westward. It is about a foot high, and blooms in May. The general appearance of the plant is shown in the figure, which, being taken from a cultivated specimen, is somewhat larger than the plant appears in its wild state.

It belongs to the Figwort family and is closely related to the Pentstemons, though most persons at first sight mistake it for a species of violet. The lower lip of the corolla is three-cleft, of a bright, beautiful blue, while the upper lip is two-cleft and somewhat bent backward, white with yellow markings. The capsule produces only three or four seeds. The *Collinsia verna* is noticed in order that those who live in those States where it grows may be able to recognise it and introduce it into their gardens. The seeds ripen in June and must be sown in September; the young plants should have a slight protection of leaves during winter. *Collinsia bicolor*, a Californian species, is a well known and favorite annual.

Notes on Grapes and Grape Culture... I.

As a few nurserymen who have a large stock of some particular grape for sale, have accused us of being prejudiced in favor of some fruits and against others, we would remind them that the writer of these notes, though he has bought a good many vines, has never sold one in his life, and has no possible motive or interest to give anything but his unbiassed opinion. Our views on varieties are not expressed for the benefit of those who have vines to sell, but for those who wish to purchase. Several times, a half dozen or so of some new seedling or alleged hybrid have been sent for an opinion, in some cases evidently with a hope of getting an approval which might be used to help the sale of the variety. We shall try not to get caught in this way. No fruit can be fully recommended for general culture until it has been proved for several years and in different locations.

The Adirondac.—This variety has fruited in several localities this year. While Mr. Brehm, of Waterloo, N. Y., unqualifiedly condemns the Adirondac, Mr. Rogers of Maryland, gives it unreserved praise. This only shows that the grape does well near Baltimore, and does not flourish near Seneca Lake. Letting these two reports neutralize one another, we add one from a widely different region. Mr. W. C. Thurlow, of Newburyport, Mass., planted several strong vines of the Adirondac, in the spring of 1863. He says: "These all grew well, ripened their wood early, and appeared free from mildew. A branch of one vine I left tied to a stake, unprotected, last winter; the others were covered with the soil. The exposed vine was not injured; however, the winter was not severe enough to kill peach blossoms. One vine bore five bunches of grapes last season. The vine was severely taxed—forty good layers having been made from it the same season, still the fruit ripened very early—at the same time as the Hartford Prolific, and was of excellent quality."

Mr. Walter Coe, of Washington Co., Iowa, finds crushed corn stalks better than earth for winter covering. He uses them also to mulch his entire vineyard, thus keeping the ground in fine condition, and saving much labor in cultivation.—A correspondent in Brooklyn, N. Y., propagates the Delaware in a small way without the aid of a regular structure for the purpose. He says: "Over the range in my kitchen, the stone supporting the chimney breast projects and forms a shelf, which is always quite warm. On this shelf, last spring, I placed boxes of clear sand, and in this I planted cuttings of Delaware vines, of one eye each, and covered over the boxes with a pane of glass. The sand was kept damp, and in a short time the vines rooted and formed leaves. I then removed the vines and planted them in small pots of rich earth

mixed with sand, and placed them in the shade. When well established, I planted them in beds, and nearly every cutting lived and formed a vine."

Notes on the *Exochorda Grandiflora*.

This plant was sent from China to England, about ten years ago, by Mr. Fortune, the traveller, to whom we are indebted for so many floral contributions. The Weiglas, Dicentra, and others of his introductions, are now among our most common and



deservedly popular plants, but for some reason the *Exochorda*, which is in its way equally beautiful, seems to have been very sparingly distributed. Mr. F. at first supposed it to be a species of *Amelanchier*, and sent it as a *A. racemosa*. Sir Wm. Hooker, considered it as a remarkable *Spiraea*, and described and figured it as *S. grandiflora*, but this was before the fruit was known. Later, the name *Exochorda* was given it (by Dr. Lindley, we think), as its fruit is very different from that of *Spiraea*, and has, when ripe, a peculiar cord-like attachment, which suggested the new generic name. Though related to the *Spiraeas*, which furnish us so many ornamental shrubby and herbaceous species, this plant has not only a different habit, but presents botanical characters which separate it from them. While this plant was formerly called *Spiraea grandiflora*, it must not be confounded with one commonly bearing that name in the catalogues, which is only a large flowered variety of the common *S. salicifolia*. The *Exochorda* seems disposed to grow tree-like, and does not, like the shrubby *Spiraeas*, throw up suckers from the base. The engraving was made by our artist from a specimen in the grounds of A. S. Fuller, of Brooklyn. It shows a small branch in flower

with the parts of the natural size. The leaves are of a very tender green, and the flowers of a pure white. When in flower the bush appears as if covered with snow flakes. When first introduced, it was cultivated as a green-house plant, but it has been found to be perfectly hardy around New-York and Boston. Thus far the plant has been found rather difficult to propagate, but we believe that it may be had of almost all of the principal nurserymen.

Cannas in Groups.

The common Indian Shot, *Canna Indico*, has long been grown in gardens, and of late years many others have been introduced, until our seed catalogues enumerate some two dozen varieties and species. These vary in height from two to six feet, and have different shaped leaves, which in some are tinged and striped with red and other colors. A slightly elevated mound in a lawn planted with cannas, the tall kinds in the centre, and the lower growing ones near the circumference, produces a fine effect. The foliage has a decidedly tropical character, and the flowers, ranging in color from yellow to bright scarlet, are very showy. In order to get the plants well advanced, the seed should be started in a hot-bed, after soaking in warm water for 12 hours. Transplant in May, or when the soil is well warmed. The roots may be preserved over winter in a dry cellar, if lifted and stored before they are injured by frost, and again planted the following spring.

Ornaments for the Garden and Lawn.

It is rare that we see in gardens vases, statues, seats, etc., in good taste, and unless they are introduced in keeping with the surroundings, they are better omitted altogether. Statues and artistic vases are only tolerable where the house is a fine specimen of architecture, and the grounds highly kept. On the other hand rustic vases and seats may be judiciously introduced into the most unpretending grounds with good effect. As the leisure and stormy days of winter afford abundant opportunities for those who are handy with tools to contrive such articles for use next spring, we give a few suggestions regarding them. If the grounds are small, we must be very sparing with ornaments, or they will look over-embellished, like a parlor we once saw in Mexico, which contained half a dozen Connecticut clocks and more than twice

that number of cheap looking glasses. The more rustic such ornaments are, the better; we have seen an old and rough hollow stump made to serve as a vase and clothed with vines, which was a much more pleasing object than many that are very costly. In the present article we notice vases only, as these seem to be just now very popular. One general fault with the attempt at building rustic vases is, that the workman does not consider the great weight



Fig. 1.—RUSTIC VASE.

they must sustain when filled with earth and plants, and in a short time they become rickety, out of the perpendicular, and unsightly. Strong workmanship should be a prime consideration. A rustic vase should be either circular or octagonal; a square one looks too angular and box-like. Two feet in diameter, with the sides six inches high, is a good size; or if wanted larger, three feet across and eight inches deep. To make a circular vase, cut out a circular bottom board, and as it will be in at least two pieces, batten it firmly together, and make the sides of narrow stuff, with the edges bevelled inward to make a better joint. The top is to be strengthened by nailing on a split sapling, and one of the same kind at the bottom to make a finish. The sides are then covered with longitudinal strips of rough bark neatly nailed on. For an octagonal vase, an eight-sided bottom is made, and the sides with the contiguous edges planed to fit neatly. This may be covered with

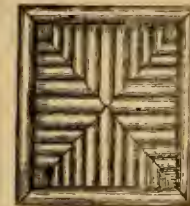


Fig. 2.

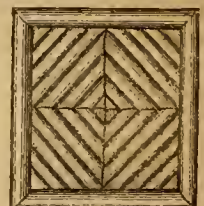


Fig. 3.

bark as before mentioned, or be made rather more elaborate by covering the sides with split twigs so as to make a sort of inlaid work. Figures 2, 3 and 4, will suggest some styles for

this ornamentation, and a little ingenuity will contrive others. After all is done, cover the twigs with a coat of boiled linseed oil. The pedestal should be very firm. It often happens that a tree must be removed from the very place where a vase would be desirable. If the tree is sawed off at the proper height, a very firm pedestal will be secured, to which the vase can be spiked. The design at

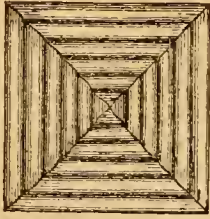


Fig. 4.

fig. 1, was furnished by "A Subscriber," in Queens Co. He strengthens the support by the addition of brackets sawed out of plank. Ivy or Virginia Creeper, may be planted to climb upon the pedestal. When a stump of this kind is not available, a portion of the trunk of a tree can be set firmly into the ground. Sometimes baskets are built around the trunk of a living tree, and filled with flowering plants. This we do not consider in good taste. A tree is an object of beauty in itself, and any addition of this kind detracts from it, and spoils its expression. The vase may be filled with earth and planted with flowering plants, or pots may be set within it and covered with moss. During hot weather care should be taken that the plants do not suffer for lack of water.

House Plants in Winter.

The attempts to grow plants in close rooms, overheated by hot air furnaces, are generally failures. The plants become sickly and "drawn up," in the parlors of our first-class houses, while in those of less pretension we frequently see them vigorous and flourishing. In houses without "modern improvements," the air is not heated until its capacity for moisture is such as to greedily take it from the plants, as well as from the persons who dwell there, nor are the windows sealed so tightly that the plants can not have a breath of fresh air from without. If people will make a climate in their houses like that of a desert, they must content themselves with such plants as are naturally adapted to arid regions. Cactuses, Crassulas, Sedums and such thick-skinned plants will endure an amount of roasting and drying which would kill a Camellia or a Rose. Supposing the plants to be well established in good soil, the three points to be attended to are: air, water and cleanliness. Plants need fresh air, and every day when the weather is not too cold, the sash should be let down at the top, and on very mild days kept open during the warmer part of the day. In the first place, cleanliness is to be observed with the pots. If they have become covered with a green film, they are to be set in a pail of water and soaked a while, and the green matter washed off with a cloth or scrubbing brush. The inside of the pot should be clean down to the earth, and the surface of the soil free from moss and fallen leaves. As to the plants themselves, the two great troubles are dust and insects. A paper or light muslin screen laid over them while the room is being swept, will keep off a great deal of dust, but even this will not obviate the necessity for washing and syringing. Broad and smooth-leaved plants may be washed with a soft sponge, or what is better, placing the hand over the earth, turn the plant upside down, and move it briskly about for a few seconds in a vessel of water. Then set the plant upright, wash each leaf between the

finger and thumb, and afterwards give it another rinsing. A plant too large to be treated in this way, may be syringed; or lay it down and let water fall upon it from a considerable height from a watering pot. This can be done out of doors in mild weather, and in cold weather in a sink or bathing tub. If plants are frequently washed, they will be but little troubled by insects. The red spider is quite averse to moisture; the green fly, however, likes it, but may be destroyed so readily by tobacco smoke, that only neglected plants will suffer from this cause. The mealy bug is so large that it may be easily picked off. Watering must be properly attended to, and while the plant must not suffer from lack of moisture, the roots must not be kept saturated with water. The sound of the pot when struck by the knuckles is quite different, when the ball of earth is wet, from what it is when dry. This and the lagging look of the plant will indicate that water is needed. A little practice will soon enable one to anticipate the wants of the plant, and to supply water at the proper time. When the ball of earth becomes dry, it takes water a long while to penetrate it, and surface waterings do not accomplish the object. In this case, set the pot in a pail of water, and let it soak until the earth is thoroughly wetted through. If proper care in the respects above mentioned fail to induce a healthy growth, then the plant must be repotted with fresh earth, and have a portion of its top cut back. Irregularities in shape must be corrected from time to time by pinching off the shoots which may start to grow out of place.

THE HOUSEHOLD.

Putting Moisture in the Air Important.

Every person should understand this scientific fact, viz.: that whenever air becomes warmer, it secretes or hides a certain amount of moisture. To illustrate: In a room 14 feet square and 10 feet high, the air will hold $2\frac{3}{4}$ gills of watery vapor, when it is just at the freezing point (32°). But heat the air up to the comfortable warmth of 70° , and it will then hold 8 gills of watery vapor. The air will obtain this extra $5\frac{1}{4}$ gills of water from some source if possible. If not supplied artificially, it will absorb the particles of moisture from the furniture, drying and cracking it, and especially from the skin and the lungs, causing one to feel a sense of husky dryness, and often faintness and drowsiness will be experienced. A room 10 feet square and 10 feet high contains 1000 cubic feet of air. A gill of water weighs 1750 grains. The following table shows the number of grains of watery vapor required to saturate 1000 cubic feet of air when at the different temperatures named:

1000 feet of air at 65° ,	contains 180 grains of water.
1000 feet of air at 32° ,	contains 230 grains of water.
1000 feet of air at 40° ,	contains 360 grains of water.
1000 feet of air at 50° ,	contains 430 grains of water.
1000 feet of air at 60° ,	contains 520 grains of water.
1000 feet of air at 70° ,	contains 790 grains of water.
1000 feet of air at 80° ,	contains 1070 grains of water.
1000 feet of air at 90° ,	contains 1450 grains of water.
1000 feet of air at 100° ,	contains 1910 grains of water.

The Practical Lesson to be learned from this is, that if we would have the atmosphere of a warm room pleasant and healthful, and save the furniture from becoming dry and cracked, we must always provide moisture. A wide pan of water should always be placed on the stove, or in the heating furnace, at a point where it will be heated enough to send off vapor into the air, and it should be kept supplied with water at all times. Towels, napkins, or other cloths hung near the fire, and wetted as often as they become dry, will impart an agreeable feeling to the air of a warm room. Every lady must have noticed how pleasant the change from the dry sitting or dining room, to the laundry or kitchen where damp clothes are hanging around,

if not in so large quantity as to produce overdampness. The objection to stoves and hot-air furnaces has no doubt resulted from the absence of sufficient moisture-supplying apparatus.—The above hints are important for school-rooms and churches, and if attended to will promote health and comfort, and often remove dullness from the pupils, and drowsiness from the worshippers.

A Short Chapter on Bonnets, etc.



The Fashion in 1860.

The Fashion in 1863.
What Next?

"That's what we have come to," exclaimed our artist, as he finished the "Fashion Plate" below. He had been walking through Broadway in this city, noticing with more surprise than admiration the fantastic forms of dress, particularly of head-gear, exhibited by the extra fashionables. He may have exaggerated just a little for artistic effect, and, being a man, perhaps he does not know exactly how to view such things. He, however, declares that ladies do wear large, stuffed birds on



Our "Fashion Plate," for 1865.

their "pork pie" hats, bags of something on their shoulders, and we have been assured privately that they certainly sometimes carry "rats" behind their ears. The artist did not quite succeed in hiding the one in the picture; the ladies manage to keep them concealed.—Seriously, in some of the recent styles of dress, novelty and display are more sought than comfort and elegance. Fashion is a powerful tyrant, but we trust that the good sense of free American women is stronger than any despot, and that they will leave absurdities of dress to those have no higher aim than "to be seen of men."

Taking Tea in the Country.

We have undergone many trials in our life, but none have more thoroughly tested our powers of endurance than the attempts we have made to do full justice to the hospitality of our country friends—or rather to fulfil the expectations of our hostesses—who have invited us "to tea." We have very vividly in memory certain tables, which would

have held more had there only been room for it. So many sorts of cake and varieties of sweetmeats, such a promiscuity of pickles, with meats, pies, cheese, crullers, and numerous other et ceteras, were crowded in such profusion, that one was appalled at the display of the resources of housekeeping. There are, however, other recollections connected with these "teas;" they are of hot yellow salernus biscuits, uncomfortable rest, and morning headaches. The conversation of the guests, mainly carried on by the ladies, seemed to be a sort of battle of cook books, and may be summed up in "pound for pound, four eggs to a quart of milk, and season to your taste." To give one of these set teas must require days of preparatory labor and needless expense. Each hostess strives to equal, or outdo, her neighbor in the magnificence of her table, and thinks quantity and variety more necessary than quality, in maintaining a reputation as a good housekeeper. We object to these elaborate teas altogether.

"Spare, Oh! spare your evening meal,
And sweet shall be your rest."

We believe in these social gatherings, but do not believe in stuffing the guests. It is not hospitality to press one to try fourteen kinds of cake after he has had enough. Almost every one who lives in the country can give a tea which shall be good enough for the best in the land, and yet be so simple that the guests shall not go to bed in fear of nightmare. The essentials are tea, bread, butter, cream and fruit, and the chiefest of these are bread and butter. Whoever can give a slice of light, white, sweet bread, with fragrant, golden, not over salted butter, need not trouble her head about cake. Let whatever else be indifferent, these being good, the meal is a success. With these, and good tea, some cold meat or chicken, and nicely canned fruit, with cream, all served neatly, every sensible guest will be better satisfied, and the hostess will not be overwhelmed with the labor of preparation. Who will introduce the reform? At the same time introduce punctuality—no invite to a 6 o'clock tea which is tardily served at 8—and abolish all cooking talk, especially while at the table.

A few Words to Pulmonary Invalids.

BY ONE OF THE NUMBER.

MR. EDITOR:—Our country abounds with persons suffering from some disorder of the lungs or respiratory organs. In almost every second family, are those affected more or less seriously. Some are under the care of physicians, going through "regular courses of medicine;" others are suffering from neglect, and others are in despair. A few words of counsel and cheer to the many of these feeble folk among the readers of the *American Agriculturist*, will not come amiss, at this cold season of the year which is so hard on the lungs. Here is counsel of one who, as you know, has had long and successful experience in battling with this disease.

First, then, of certain things to be avoided. Avoid taking much medicine. If the disease is recent, it may yield to medical treatment. Give the doctor a fair trial, but if after a reasonable time medicine does not reach the case, dismiss the physician until wanted, and fall back upon the powers of nature and a good regimen. The long protracted taking of medicine weakens and injures the stomach and other organs, and then it is a hard matter to contend with disease in the lungs. Therefore, avoid taking much medicine. In acute attacks, the physician must sometimes be called and his doses taken, but when such special demands for his services are past, let medicine alone.

Avoid thinking much about your disease. Beginners are apt to watch their symptoms closely, to count their pulse daily, to scrutinize the character of their expectorations, to weigh themselves often, so as to see whether they are wasting in flesh, etc., etc. Symptoms should be looked after, enough to enable the patient to take care of himself, but should not be continually thought of. To do so, begets a morbid, unhealthy state of mind which will react hurtfully upon the body. Be as self-forgetful as possible. Bear no unnecessary

burdens. Think of anything but your symptoms. Provide some kind of pleasant amusement, or have some light business which will fully engross the thoughts, and keep the mind from preying on itself.

Avoid excitement. Nothing but experience will teach the importance of this. Avoid all passions, especially those which depress. The excitement of political debates, of fashionable parties, all agitations of fear, resentment and anger—nothing can be worse. Avoid feelings of despondency, do not look on the dark side of things. Cherish an equitable frame of mind, not easily elated or depressed, hoping on, hoping ever.

Avoid taking cold. Of course, with all our precautions, colds will sometimes come; but much can be done to prevent them. Keep the skin clean and vigorous by occasional sponge-baths and the use of the flesh-brush. Wear flannel next to the skin all the year round. Over the chest wear an extra thickness of flannel or chamois leather. (See engraving and description in October *Agriculturist*, 1863.) The feet should always be kept dry and warm. In wet weather, overshoes, removed whenever going in-doors, are better than thick soles, for the latter will often become damp. Be careful how you cool off after beaming overheated. Beware of damp beds, damp concert halls, lecture-rooms and churches, and carefully avoid every place where there is direct exposure to currents of wind.

II.—*Live well.* Your disease, if real, is draining the fountains of strength: keep the fountain well supplied by generous food. Use every means to build up the system, and to keep yourself in high condition. If you cannot expel the intruder which has got fast hold upon you, keep him in subjection. For food, eschew delicacies, and chew substantial. Put aside rich gravies, sweetmeats, highly spiced pies and cakes, and take to good beef, mutton, poultry, fresh fish, oysters, bread, and the like honest kinds of food.

Exercise in the open air. The tendency with pulmonary invalids is to yield to their bodily feebleness and their weakened resolution, and sit down in the house. This tendency must be resisted, or the invalid will surely and speedily decline. Every day, exercise twice in the open air. Do not be afraid of the weather. Dress warm, and then go out, rain or shine. In summer, the care of a small garden will afford pleasant exercise. In winter, walk or ride, and ride on horseback, if possible. The saddle is better than anything in a doctor's saddle-bags: at least, so thinks the writer, after long trying. Agreeable exercise, every day, will be quite sure to give you a good appetite, good digestion, and good spirits. And with these, you may hope to keep consumption at bay a very long time.

CLERICUS.

Books in Farmers' Families.

Many farmers' families in comfortable circumstances are almost destitute of books, and the children are growing up in ignorance. No one should consider his house furnished until it contains a library of at least twenty to one hundred volumes. When this is once supplied, let there be yearly additions to it. After a man has secured his farm and stock, why should he not devote the produce of at least one acre each year to the purchase of books and other means of intellectual culture? Let it for the present be an acre of corn or wheat, and in the mean time set out an acre of choice fruit for this particular purpose. Will not the boys and girls be very ready to assist in the care of the educational acre, when they see it really brings to them promptly, books, pictures, philosophical apparatus, etc.—The farmer's profession is really susceptible of being made one of the noblest. Bring intelligence and culture to the aid of the plow, and the smart boys will not all desire to be doctors, lawyers, and presidents. Let the God-made country, vie with the man-made town, in the march of mental improvement, and its superior physical attractions will not only retain its own best population, but draw from the cities many who prefer the town mainly for its intellectual and business advantages.

German Slippers for the House.

L. L. Fairchild, Dodge Co., Wis., writes to the *American Agriculturist*: "Economy is the order of the day, so I purchased me a pair of wooden soled slippers for three shillings, at a "Dutch store." The soles are of basswood, about an inch thick, and lined with leather and cloth. The fronts are of calf skin secured to the soles by a strait wire running around the margin, secured by wire staples driven into the wood sole. When I come into the house I doff my boots and don my slippers. My feet are well ventilated and kept from the cold floor by a good non-conductor, basswood. They are easy to my feet, easily slipped off if I wish to take a siesta on the lounge or sofa, and the thick wooden soles keep my feet from dampness if I am suddenly called from the house. In short they are every way convenient. My boots are not dried up or burned by trying to warm my feet at a hot fire, so that they give a good account of themselves by a few months' longer service. I recommend my economical friends to try the German slippers."

Practical Odds and Ends.

Sent by Subscribers to the *American Agriculturist*. Please send plenty more of the same sort.

TO LIGHT A NEW CANDLE QUICKLY.—Dip the wick in the melted tallow of one already burning.

KEROSENE LAMP CHIMNEYS wide at the bulb or lower part are less liable to break than if narrow.

SHAVING HINT.—Suspend the glass so that only the part of the face to be shaved will be visible: there will be less danger of cutting the skin. Reason: a sight of one's eyes distracts attention from the razor.—Place the mirror where it will not reflect the light of a window into the eyes. The best place is where the light will fall upon the face, and not upon the glass.—When done, wash off all soap, and finish with a little diluted vinegar, or alcohol, or cologne water. This will neutralize the effects of the alkali, preventing it from chapping the skin, or affecting the color of the whiskers.

REPELLING RED ANTS.—Try setting the safes, closets, etc., on new bricks; a subscriber says this proved effectual.—A sponge with a little sugar sprinkled through it, will attract and hold hundreds of the insects, which may be killed with hot water.

CAST IRON STOVES are preferable to sheet iron: they radiate heat more freely and equally, do not cool off so quickly, and are much more durable.

CONDENSED MILK is the pure article made purer, that is, with a large proportion of its water evaporated. It is preferable to most milkmen's milk. Each consumer can add water to his liking, grading it from the cream point down to the "sky blue."

PEELING ONIONS is tearful employment. A lady says it will be made less annoying by putting them in cold water and immersing often while peeling.

TO COLOR BUTTER.—For every 4 quarts of cream, grate 1 middling sized carrot, pour on it $\frac{1}{2}$ pint of boiling water, let it stand until cool and strain the liquor into the cream. It does not hurt the flavor.

CURRIED CABBAGE.—How is it prepared?

POULTRY.—How can it be cooked, speeded, and canned for sending to the army or elsewhere. Will somebody who has done it successfully please give necessary directions for publication?

Christopher Crowfield on Potatoes.

Mrs. Harriet Beecher Stowe has contributed a series of "House and Home Papers, by Christopher Crowfield," to that excellent journal, the *Atlantic Monthly*. The articles, as the title suggests, are upon domestic economy, and convey a great deal of sound common sense in a pleasing manner. The paper for December is upon cookery, and contains so much sound doctrine that ought to be read and pondered by every housekeeper, that we wish we had room for the whole of it, but as we have not, we must be content with extracting what relates to the common, but rarely well cooked, potato:

"A good roasted potato is a delicacy worth a dozen compositions of the cook book; yet when we ask for it, what burnt, shriveled abortions are presented to us! Biddy rushes to her potato basket and pours out two dozen of different sizes, some having in them three times the amount of matter of others. These being washed, she tumbles them into her oven at a leisure interval, and there lets them lie till it is time to serve breakfast, whenever that may be. As a result, if the largest are cooked, the smallest are presented in cinders, and the intermediate sizes are withered and watery. Nothing is so utterly ruined by a few moments of over-doing. That which at the right moment was plump with mealy richness, a quarter of an hour later shrivels and becomes watery—and it is in this state that roast potatoes are most frequently served.

"In the same manner we have seen boiled potatoes from an untaught cook coming upon the table like lumps of yellow wax—and the same article, the day after, under the direction of a skillful mistress, appearing in snowy balls of powdery lightness. In the one case, they were thrown in their skins into water, and suffered to soak or boil, as the case might be, at the cook's leisure, and after they were boiled, to stand in the water till she was ready to peel them. In the other case, the potatoes being first peeled, were boiled as quickly as possible in salted water, which, the moment they were done was drained off, and then they were gently shaken for a minute or two over the fire to dry them still more thoroughly. We have never yet seen the potato so depraved and given over to evil that could not be reclaimed by this mode of treatment. "As to fried potatoes, who that remembers the crisp, golden slices of the French restaurant, thin as wafers and light as snow flakes, does not speak respectfully of them? What cousinship with these, have those coarse, greasy masses of sliced potato, wholly sogged and partly burnt, to which we are treated under the name of fried potatoes *a la America*? Our city restaurants are introducing the French article to great acceptance, and to the vindication of the fair fame of this queen of vegetables."

Farmers' Fruit Cake.—Contributed by Mrs. E. Smith, Plymouth Co., Mass.: Soak 3 cups of dried apples over night in warm water; chop (slightly) in the morning and then simmer 2 hours in 2 cups of molasses. Add 2 eggs, 1 cup of sugar, 1 cup of sweet milk, $\frac{1}{2}$ cup of butter, $1\frac{1}{2}$ teaspoonsful of soda, flour to make a rather thick batter; spice to suit the taste. Bake in a quick oven.

Sauer Kraut.—Contributed to the *American Agriculturist* by M. S. Baldwin. Cut cabbage fine, sprinkle with brown sugar at the rate of 4 lbs. to the barrel. Leave out salt, which may be added to suit the taste when used. Place it in a barrel and pound down well as the filling proceeds. It should be pressed so tight that the juice shall cover the cabbage. It will be fit for use in 10 to 15 days.

BOYS & GIRLS' COLUMNS.

"A Happy New Year"

To all the Girls and Boys of the *Agriculturist* family, including the grown-up ones. Hearts need not grow old, though heads whiten and hands tremble with age. None of us can lift the curtain which hides the events of the year 1865, but if we start with the purpose, as well as the wish, that the year shall be a happy one to all, we need not fear what coming time will bring. Suppose that every reader resolves to add to the happiness of some one, each day of this year; there will be not less than 500,000 persons benefited daily. It need not cost a great effort to do this. There is John, just entering his fifteenth year, and grown almost as tall as his mother, who is proud of her manly looking boy. But John begins to think himself too big to mind his mother, and that it is manly to answer her rudely; sometimes he contradicts her, and he is also disrespectful to his father as far as he dares to be. If he knew how each unkind word wounds like a sharp knife, cutting down to the very heart of his parents, he would here discover a way to make them happier than though he could bring them bags of gold and

silver. Will you try it John? Resolve that from this day those who have done so much for you, who love you better than their own lives, shall have only pleasant words and ready obedience. *Perhaps* this will be good counsel for others besides John! Mary, it will please your mother if you will think less of dress and more of duty. Don't let her be a slave to housework while you are displaying your finery at balls and parties. Perhaps your little brother will be one of the happiest fellows alive, if you will be more patient and less selfish toward him. In short, all, both young and old, can do something toward making this a pleasanter world, for themselves as well as others. The surest way to enjoyment is through the joy made for others. Whoever has the will, can find many ways for carrying out our **NEW YEAR'S RULE**:
Make somebody happier every day this year.

About Keeping the Mouth Shut.

Which is the best looking, Fig. 1, or Fig. 2? It does not take long to decide. The one with the lips closed appears more manly, intelligent and every way attractive. The other shows a man who has a habit of keeping his mouth open, which spoils the expression of the whole face, and makes him look inferior. Even a good horse looks better with his lips brought together, as is shown in the engraving below. A pleasing countenance is a valuable card of introduction everywhere, and it is worth some care to keep all the good features which nature has given. The habit of keeping the mouth open, like most other habits, is formed early in life, and at that period it is easy to become used to having the lips closed.

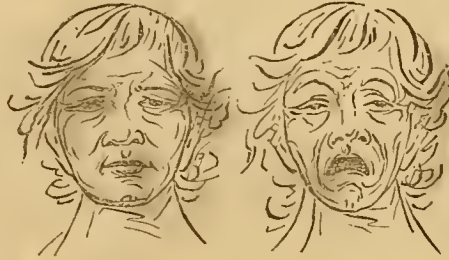


Fig. 1.

Fig. 2.

Besides spoiling good looks, a constantly open mouth is unhealthful. The air, especially in shops, houses, and the streets of cities, contains large quantities of dust from various substances, none of which are fit to be taken into the lungs. Fine particles of wood, charcoal, cloth, sand, iron, glass, and numerous other articles are floating in the atmosphere and are drawn in with every breath. When this is taken through the nose, very little except pure air goes to the lungs. The other matter is stopped by the mucous lining of the nasal passages, and removed by using the handkerchief. Through the mouth, the way to the lungs is more direct, and much more foreign matter can go in with the air. Those who work in manufactories where dust of any kind abounds, are very liable to diseases of the lungs from this cause, much of which may be prevented by the proper use of the nose in breathing. The teeth also suffer by constant exposure to currents of air. Observing men think that open-mouthed breathing causes much of the toothache, and decay of the teeth found in civilized communities. The North American Indians enjoy remarkable health, much of it no doubt from living so much in the open air, and their simple food and dress, but it is a remarkable fact that from infancy, the mother teaches her children to keep their mouths closed, especially in sleep. Mr. George Catlin, the noted traveller and author observed that when laying their "papooses" down to sleep, they always drew the little one's lips close together, and placed their heads in such a position that they would not readily open. He thinks this has much to do with their robust health. The death of an Indian child under ten years old, is a very rare occurrence except from accident. Mr. John



Fig. 3.

Wiley, of 535 Broadway, N. Y. City, has published an interesting book on this subject, full of curious illustrations by Mr. Catlin, from which the above engravings are taken.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the December number, page 344.—No. 108: *Illustrated Rebus*. This has been almost answered by scores, and correctly by many. The proper reading is: *The American Agriculturist, in twelve months, gives over 1,500 excellent and instructive articles, or more than ten for one cent. What can be cheaper?* Tens of thousands answer, "Nothing!"...No. 109.—*Mathematical Puzzle*.—As but few have answered this correctly, (their names are below), we give now only a clue which will make it easier, viz: the different letters employed in the problem, when properly arranged, give the name of a noted English statesman of the present day...No. 110.—*Historical Questions—Answers*; 1, New Albion. 2, Sir Francis Drake. 3, in February, 1848, at Columa (Sutter's Mills.) 4, Lord De la War. 5, Verazzano, who named it New France. 6th, 1670, at Detroit. The word English should have been European; the French settled the State; the English took it from them, and ceded it to the United States at the close of the Revolutionary war. The following have sent in correct answers up to Dec. 9: Emma Foss, 109; Frank Robbins, 107; "G. D. B." 106, 107; Miota Beyea, 107; Dick and Affa, 107; E. Prevost, 107; Margaret Thompson, 107; William H. Jordan, 107; Ellen F. Taber, 107; Ethelbert Selden, 107, Lucius S. Keaton, 106 (by an original and ingenious method); Francis M. Priest, 106, 107; G. G. Crowley, 106, 107; Frank B. Bourne, 107; W. Henry Yates, 107; Elvin Rees, 106, 107; Lear C. La Fetra, 108; John H. Peek, 108; Date Barrie, 108; J. C. B. Taylor, 108; H. D. Bartholomew, 109; Howard Bowman and Earnest Campbell, 108; Stewart Farquer, 107; John Thomas Phillips, 108; William A. Collins, 108; Ebenezer J. Bridge, 108; Rebecca D. Bengless, 108; Harry Granger, 108; T. E. Milliken, Harry J. Stone, 108; Frank H. Willis, 108, 109; Louie R. Bennett and Emily J. Bennet, 108; R. W. Robinson, 108; Thomas Coulter, 108; Julia A. Peabody, 108; Maggie N. Barkalov, 108; George W. Peabody, 108; Ralph M. Mead, 109; Thomas Mullen, 108, 109; Edward C. Woodruff, 108; Annie C. Green, 108; J. B. Daniel, 108; Wm. P. Jones, Jr., 108; John C. Welles, 108; Elma M. Faber, 108; Henry M. Clayton, 108; John W. Gaston, 108; M. B. Eshleman, 108, 109; "S. W. P.," 109; D. G. Jones, 109; George Mills, 108; W. M. Isaac, 108, 109; Frank Hayward, 107; Asahel C. Smith, 108; H. L. Hogue, 108; P. Mason, 108; Francis M. Priest, 108, 109; George F. Forbes, 108, 109; "George S.," 109; Louis A. Arthur, 108; Wilhelmina Burger, 108; John Atwater, 109; Wm. H. Allison, 109; Fred. Johnston, 108 (read the notice about strawberry plants); Andrew W. Middlesness, 109, with a clear explanation; P. S. Libido, 108, 109; J. J. Gaetschins, 108; Hattie Goffe, 108; Thomas J. Bead, 108; "H. M. D.," 108, 110; Israel Camp, 108; William H. Jordan, 108, 110; E. J. Bentley, 108, 109; George M. Clark, 108; E. A. Root, 108.

New Puzzles to be Answered.



No. 111. *Illustrated Rebus*.—A beautiful Sentiment.

No. 112. *A Curious Word*.—Try to discover what it is.

There is a word of plural number
An enemy to peace and slumber;
Now other words you chance to take,
By adding "S" you plural make,
But if you add an "S" to this,
How strange the metamorphosis!
Plural is plural now no more,
And sweet what bitter was before.

No. 113. *Novel Subtraction*.—Take three letters from a word containing five, and leave but one.

No. 114. *Question for Planters*.—A gentleman proposes to plant a vineyard of ten acres. How many more vines can he plant in the "Quincunx" than in the square order, provided the vines are set six feet apart, and no vine is set nearer than one foot to the edge of the field? In each case the plot is to be square. Please give the method of finding the solution, with the answer.

No. 115. *Mathematical Problem*.—Suppose a circular field to contain 30 acres, How wide a strip around it must be added to enlarge it by 10 acres? How wide a strip must be taken to diminish it by 10 acres?



TAKING CARLO'S PORTRAIT. — Engraved for the American Agriculturist

Something About Making Pictures.

As our young readers look at the beautiful engravings which are published every month in the *American Agriculturist*, do they ever think how much skill and labor are required to make them? First the artist must draw the picture. Usually he makes a sketch on paper, and when satisfied with its looks there, he copies it on a very smooth block of wood. Box wood is generally used, because of its superior hardness. The block is sawed so that the drawing is made on the end of the grain. For large, coarse pictures, such as you see on handbills, maple or pine may be employed. Before drawing on the wood, its surface is whitened with "Paris white;" or if the block is not large, a white enameled card is moistened and rubbed over it: this enables the draughtsman to make the lines clearer. Next comes the engraving. The workman uses sharp tools like very small chisels of different shapes, with which he carefully cuts out all the parts which are to appear white in the picture, leaving the dark lines raised up like type, to receive the ink and make the impression. When finished, the block is put in the press and printed from, the same as from types.

It requires years of patient practice to become expert in either drawing or engraving. Some are naturally so gifted that they learn very easily. The boy in the above engraving appears to be one of this class. He is taking his first lessons by sketching familiar objects, which is the best kind of practice. If any of you have a taste for drawing, you may profitably imitate him. It will be fortunate if you have a sister so willing to help as the one who is here kindly keeping Carlo still while his portrait is being drawn; but kind brothers make pleasant sisters, so that can be easily managed by those who have sisters.

The Small Loaf of Bread.

At a time of great scarcity, a certain rich man invited twenty poor children to his house, and said to them, "In this basket there is a loaf of bread for each of you; take it, and come again every day at this hour until God

sends us better times." The children seized upon the basket, wrangled and fought for the bread, as each wished to get the best and largest loaf; and at last they went away, without even thanking him. Francesca alone, a poor but neatly dressed child, stood modestly at a distance, took the smallest loaf which was left in the basket, gratefully kissed the gentleman's hand, and then went home in a quiet and orderly manner. On the following day the children were just as ill-behaved; and poor Francesca this time received a loaf which was scarcely half the size of the rest. But when she came home and her mother began to cut the bread, there fell out of it a number of bright new silver pieces. Her mother was perplexed, and said, "Take back the money this instant; for it has, no doubt, got into the bread through some mistake." Francesca carried it back. But the benevolent man said, "No, no! It was no mistake. I had the money baked in the smallest loaf in order to reward you, my dear child. Always continue thus contented, peaceable, and unassuming; the person who is contented with the smallest loaf rather than quarrel for the larger one, will find blessings more valuable than money baked in bread."

A Few Words to Skaters.

The word "skate" was imported from Holland, where the *schaat*, as the Dutch call it, is almost a necessity in winter. In many places there they have canals instead of roads, and when these are frozen, market-men and women with their loads of vegetables, merchants transacting their business, boys and girls going to school, and almost all foot passengers glide swiftly along on skates. It is probable that the Dutch first learned the art from their more northern neighbors of Norway and Sweden, where the first skates were made of the shin bones of the deer or sheep, bound upon the foot with strips of skin. This must have been hundreds of years ago, as mention is made of skates in one of the oldest Scandinavian poems. In Northern Europe there is less snow than in this country, and skating is a universally popular amusement. In this country it has recently become fashionable for both

sexes and all ages to skate, and ponds for this purpose have been prepared near most of our large villages and cities. We have seen clergymen, lawyers, doctors and their families enjoying this recreation, and all agree that when properly indulged in it is a most healthful as well as pleasant exercise. It has its dangers, however, against which our young readers especially should guard. Skating should not be allowed to interfere with work or study. Teachers often say they dread smooth ice and pleasant weather; lessons are neglected and the minds of their pupils go skating off during school hours; and not a few mothers have had reason to complain that their daughters found the skating pond too attractive for the performance of home duties. Some care is needed to prevent injury to health from this exercise. Physicians report a large increase in some diseases in winter, since skating has come into fashion. Avoid great exertion, as in racing, by which the body becomes heated, and then suddenly cooled by the keen air when the exercise is over. Never sit down out of doors "to cool off." A friend of the writer nearly lost his life from this cause, and is yet subject to a troublesome throat disease. Keep the mouth closed while skating. Cold air freely taken into the lungs while a person is exercising violently, may produce sudden and serious illness. No

sensible boy or girl will under any circumstances endanger life by venturing into known danger to show bravery. It is foolhardy, not brave, to skate over thin ice, daring others to follow, or to go because others have given the challenge. Keep your courage to face necessary evils and be brave enough to bear foolish taunts.

Underground Railroads are having a trial in England; not the sort known by that name in the United States, but the real article, with track and cars complete. For one without a locomotive, a brick tunnel 9 feet high, 8 feet wide, and nearly a third of a mile long, has been made under the surface near the Crystal Palace, in which the track is laid. To the rear of the car is attached a frame work of boards forming a piston nearly filling the tunnel. The space between its edges and the brickwork is made partially air-tight by a thick fringe of bristles. Near the entrance of the tunnel a stationary engine drives a fan wheel 20 feet in diameter, which forces air into the tunnel and against the piston, by which means the car is driven along at the rate of 26½ miles per hour, with an atmospheric pressure of only 2½ ounces. A somewhat similar arrangement is in use in London, for forcing packages through smaller tubes, by exhausting the air in front of the piston. This is the first attempt to carry passengers underground by wind power. It may be successful, but the prospect is dark, at least to the passengers.

A Sharp Customer.—A teller in one of the N. Y. City Banks relates that one of the depositors made a practice of bringing considerable uncurrent money on which he was charged one-tenth of one per cent discount. One day he gravely informed the teller that he had found a broker who changed his money into bankable at a cost of only one eighth of one per cent, and insisted that the bank should do as well by him. The teller accordingly agreed to take the money on the same terms, and the man went away entirely satisfied.—How much did he lose on each one thousand dollars? He was probably of the boys who didn't like his arithmetic at school.

Boys and Girls in Business.

Thousands of subscribers are sent to us every year by young pe. ons, often by very little boys and girls. There is always peculiar pleasure in receiving names furnished by these young voluntary "agents."

But there is another good reason for desiring to receive subscriptions from the young. We like to see little girls and boys learning to do business. We know families where each child old enough to write is furnished with a little book, in which they put down every penny received or spent, and what it was for.

Table with columns: 1864, Mr. Cash, Dr., Mr. Cash, Cr. Rows include: To balance from last month, Money from Papa for gathering 16 bush. leaves, Beading Papa in dressing, 4 above leaves as above, Weekly allowance, By money for ball, Paid yesterday to S. S. Missionary Society, Contribution to Soldiers in Hospital, Admission to Museum, Candy bought.

All the money received is put down on the Dr. side, and all the money paid out, on the Cr. side; then at the end of the month these columns are added, and the balance, or what is left on hand, is placed at the beginning for another month. It would be of great service to every boy and girl in the country to keep such an account, even though their spending money were no more than a dime a year.

Was he Tippy?—An officer in Georgia relates the following conversation as occurring one evening in the army: (Artillery Captain.) "Corporal, do you see that light yonder? (Corporal.) "Yes sir." (Captain.) "Can't you train your gun to put a hole through it?" (Corporal, looking carefully through the trees in the direction of the light.) "Why, Captain, that's the moon just rising." (Captain.) "Don't make a dit o' bifference, put a hole right through it!"

God's Organ.—During a terrible thunder storm, the scholars in a country school-house gathered round their lady teacher, and as many as could do so, buried their heads in her lap. Presently the lightning struck a barn near the school-house. The children all screamed but little Hattie, a sweet four-year old maiden, who, turning to her sister, said in a clear voice, "Don't be frightened, sister Mary, it is only God playing on his organ."

(Business Notices, \$1.25 Cents per Line of Space.)

FROM THE INDEPENDENT, OCT. 27, 1864.—"It is no part of our business to advocate the merits of advertisements in our paper; but having used Mr. Pyle's Saleratus, Cream Tartar, Soap, Blueing Powder, etc., for several years in our families, with satisfaction, we feel called upon to encourage deserving enterprise by directing our readers to the source from whence we think their household interest may be best served. A long and tried acquaintance with Mr. Pyle gives us unqualified confidence in his integrity, as well as in the quality of his produc-

tions. He, like scores of our citizens, came to New-York friendless and penniless, and by persevering honesty has attained an eminent position in his line of business."

Fashions and Firesides.

A neat thing for the ladies to look at over the family fireside is Demorest's "Illustrated Monthly and Mirror of Fashions," containing a little of everything, from the latest novelty in New York costume to the latest effusion of the American Muse. The number for January is issued in the highest style of pictorial illustration, together with valuable literary contributions from famous writers, including a gem from a popular living poet—N. Y. Tribune.

Something New—For Every Lady.

THOSE WHO HAVE TRIED IT, SAY THEY LIKE IT.

THE SEWING RIPPER recently invented takes out a seam faster than a sewing machine can make it, with less danger of cutting than by knife or scissors.

Try One.

Price FIFTY cents, sent post-paid by mail. Reasons for advance. 1st, a superior article is furnished. 2d—At 30 cents they will not pay. Liberal discount by the dozen. Address H. LEE, 111 Fulton-st., New York City.

P. S.—The admission of this advertisement to the business columns of the Agriculturist will, of course, be considered a sufficient guaranty to the Public of the advertiser's responsibility and integrity.

For Coughs, Colds and Throat Disorders, use "Brown's Bronchial Troches," having proved their efficacy by a test of many years. The Troches are highly recommended and prescribed by Physicians and Surgeons in the Army. Soldiers and officers being exposed to sudden changes, should always be supplied with "The Troches," as they give prompt relief.

Holiday Presents of Affection and Charity.

WHEELER & WILSON'S HIGHEST PREMIUM



SEWING MACHINES.

No. 625 Broadway, New-York.

See Wheeler & Wilson's Button-hole Machine.

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Patent Melodeons and Organs,

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Price List sent free on application. All orders and communications should be addressed to

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Rats, Cockroaches and Bugs

are infallibly exterminated or driven away by Isaacsen's Remedies, and they leave no scent behind,—so says Mr. Judd in the American Agriculturist. For rats, mice and cockroaches, try a box of Phosphoric Paste, 60 cents, large size \$1.25; for bugs, ants, etc., use a bottle of Insect powder, at same prices. Send to

ADOLPH ISAACSEN, 40 Fulton-st., New-York.

Principal Depot for Chicago and the Northwest at BURNHAMS & VAN SCHAACK, Wholesale Drug Store, 16 Lake-st., Chicago, Illinois, Sole Agents for the North West.

Henry A. Heiser & Sons, NO. 44 PINE-STREET.

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BUY AND SELL QUARTERMASTERS' CHECKS AND VOUCHERS, 5-20 BONDS,

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7-30 LOAN, AND EVERY FORM OF U. S. SECURITIES.

We invite the attention of Banks and parties desiring short investment to our assortment of United States Six per Cent. Debt Certificates. We have them on hand due in every month of the year, at rates that pay better interest than any other security in the market.

FOR SALE—The undivided half of a well established nursery, near Rochester, N. Y. Capital required, from \$5,000 to \$8,000. Address P. O. Drawer, 96, Rochester, N. Y.

WANTED 1500 to 2000 Am. Arbor Vitae Hedge plants, 2 1/2 to 8 ft. WM. DAY, Morristown, N. J.

JANUARY NUMBER of the 20th Annual

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Are a certain cure for Chapped Hands, Salt Rhenm, etc., and an excellent protection for the hands in Housework, Gardening, etc. Sent by mail on receipt of \$1.50 for Ladies' sizes, \$1.75 for Gentlemen's, by

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Further Contributions to the American Agriculturist Sanitary Fund for Soldiers.

FOR U. S. SANITARY COMMISSION.

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Advertisements, to be sure of insertion, must be received BEFORE the 10th of the preceding month.

N. B.—No Advertisement of Patent Medicines or secret remedies desired. Parties unknown to the Editors personally or by reputation, are requested to furnish good references. We desire to be sure that advertisers will do what they promise to do. By living up to these requirements, we aim to make the advertising pages valuable not only to the readers, but to the advertisers themselves.

TERMS—(cash before insertion):

One Dollar per line, (14 lines in an inch), for each insertion. One half column (74 lines), \$65 each insertion. One whole column (143 lines), \$120 each insertion. Business Notices, One Dollar and a Quarter per line.

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Amusements for Old and Young, MORAL AND INSTRUCTIVE, all that is WONDERFUL AND CURIOUS IN NATURE, ANIMATE and INANIMATE, gathered from the **Four Quarters of the Globe,** MAY HERE BE SEEN.

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Use **Bassini's Art of Singing:** an Analytical and Practical System for the Cultivation of the Voice. This work is prepared on a rigidly scientific basis, and universally admitted to be the most desirable work for teachers and scholars. Price, for Soprano Voice, Complete, \$4.00. Abridged, \$3.00. For Tenor Voice, \$4.00. Mailed post-paid. OLIVER DITSON & CO., Publishers, Boston.



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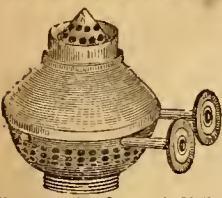
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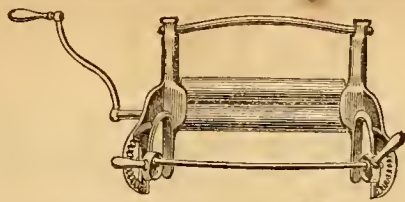
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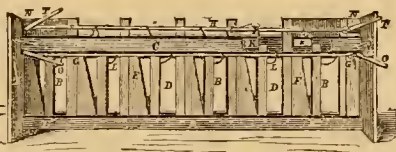
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Before the cattle are let into the stable, the lever O is moved to the right, then lever F is thrown to the left. When the cattle have taken their places, lever O is moved to the left, which fastens them all at one time. To fasten them over night, a pin may be placed over the lever O, or a book may be used. This works at either end. One or more can be opened by raising chain L. When they are open, one or more can be shut by pushing up stanchion B, as without it. The bar H is hung higher at one end; by this means the cattle are let out one at a time by moving lever H slowly to the right. Pin E, should be put near the inner edge, so when block K rises stanchion B will fall back. Any girl or boy can work this and keep dry and clean. This arrangement can be placed on any stanchions. Warranted to work 150 feet long.
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A pamphlet will be sent free of charge by writing.

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TESTIMONIALS.

HUNTINGDON, Penn., March 26th, 1861.

Messrs. Mallory and Sanford:

GENTLEMEN,—It gives me great pleasure to testify to the general excellency of your Patent Flax Brake. I have been operating one for the past four months, and am satisfied it will do all that is claimed for it. They readily break the number of pounds per day which you claim in your pamphlet, and the flax leaves the machine perfectly straight. The Brake can readily be adjusted to hard or tender flax as the case may be, and with ordinary attention, I consider the probability of the machine getting out of order very remote.
I am very truly yours, **HOBART G. FISHER.**

STITTSVILLE, N. Y., March 28th, 1864.

Messrs. Mallory and Sanford:

GENTLEMEN,—You ask our opinion in regard to your Flax Machine; we can say with pleasure that we are highly pleased with it; we find no difficulty in breaking for four dressers, and they say they never dressed after so perfect a machine for breaking. As this is the first season of our experience in the Flax business, we are not qualified to speak of our own knowledge of its superior qualities over the old machines.
Yours truly, &c.,
ATWOOD & BRIDENBECKER.

KINGWOOD, HUNTERDON CO., N. J., April 3, 1864.

Messrs. Mallory and Sanford:

GENTLEMEN,—I have been using your valuable Patent Flax Brake for the last three months to my entire satisfaction. I have more than realized my expectations both in regard to the quantity and quality of work done. I regard it as one of the greatest inventions of the present day. From experiments made I believe the saving to be fully one fourth in fibre over the old hand-brakes heretofore in use in this part of the country; it not only increases the quantity but it greatly improves the quality of flax, which enables the spinner to obtain the highest market rates. Another important consideration is the small amount of power it requires to break a given amount in a given time.
Yours respectfully,
WILSON BRAY.

WOODSTOCK FLAX FACTORY,

MILTON, Morris Co., N. J., March 26th, 1864.

Messrs. Mallory and Sanford:

GENTLEMEN,—I have used one of your Patent Flax Brakes (No. 3) since the first of January last, and can say that it far exceeds my expectations; it not only breaks the straw thoroughly but it keeps it perfectly straight without any waste. Another great advantage it possesses is that two boys, 11 and 13 years old can break as fast as one man can scutch the same. I consider it one of the greatest saving machines of the age. Wishing you success in this great invention.
I am truly yours, **ELIAS C. TALMADGE.**

OFFICE OF THE COOKSBURGH FLAX WORKS,

John W. Quincy, Esq. March 26th, 1864.

DEAR SIR,—Your favor just received asking my opinion of your Brake. It affords me much pleasure to do this favorably. After running five of your No. 1 Brake in the Flax district of Ireland and successfully competing with sixteen different machines, I returned to this country and started a mill in Albany County, New York. We worked all kinds of straw, rotted, unrotted, and over-rotted, never injuring the fibre, giving the Flax a soft silky feel and better spinning quality than could be obtained on any other Brake. We have run our Brake nearly six months, part of the time night and day, and have had no breakdown; we consider the machine as good to-day as when we purchased it. I am confident that there is a large saving in fibre and the value of the flax is very much enhanced by its use. I think it useless to say more on the subject; all that is necessary is for a man to see it work to be convinced that it is the best Brake in use. Wishing you success, I remain yours truly,
EDGAR FOWES.

Comstock's Rotary Spader.

Having purchased the exclusive right to manufacture and vend this great Agricultural want (throughout the United States, excepting the New England and some of the Atlantic and Pacific States), which has been so thoroughly and satisfactorily tested, I am now prepared to receive orders for them.

A boy 15 years old with 4 good horses can spade 6 to 8 acres per day, 8 inches deep, leaving the field in the condition of a garden bed when forked.

Depots will be established at Chicago, Milwaukee, St. Louis, Cincinnati, Indianapolis, and other Western and Southern Cities, and I shall endeavor to meet the demand by manufacturing extensively, but orders should be sent early to avoid delay and disappointment.

For further information, price, &c., send for circular.

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A real guano, containing from seventy to eighty per cent of Phosphate of Lime; to which has been added by a chemical process, a large percentage of actual Ammonia, so fixed that it can not evaporate, making it equal, if not superior to any other fertilizer. Price \$30 per nett ton. A liberal discount to the Trade.

Pamphlets with copies of analysis by Dr. Jackson, Mass. State Assayer, and Dr. Liebig, of Baltimore, and testimonials from scientific agriculturists, showing its value, can be obtained from
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For the Farm, the Garden, the Vineyard, and Lawn.

Bruce's Concentrated Manure is no longer an experiment. Three years' trial has proved its superiority over all other fertilizers. It is not because of its

VALUABLE COMPOUNDS

alone, that we claim its

Great Fertilizing Power ;

it is also in the **Patent process through which it passes in its manufacture**, by which we are enabled to **CONCENTRATE** the **NECESSARY FOOD** for **VEGETATION**.

Bruce's Concentrated Manure

was first brought to the notice of the Agriculturists of this country in the year 1862. About **Fifty Tons** were sold during the year, direct to farmers, with satisfactory results. The following year (1863) orders came in to the amount of **Four Hundred Tons**, only **Two Hundred** of which could be furnished. The past year (1864) we sold nearly **Six Hundred Tons**, and notwithstanding the severe drought it has more than met our expectations. In order to supply the demand the coming season, we have been obliged to enlarge our Factory, and with improved Machinery and enlarged facilities, we hope to be able to manufacture,

Two Thousand Tons.

Those who have already proved the value of **Bruce's Concentrated Manure**, and those desirous of testing its

Fertilizing Power,

are **CAUTIONED** from purchasing an article bearing the name of Bruce's fertilizer; supposing it to be simon pure, as sold by us. The article sold by us is branded on each barrel,

Bruce's Patent Concentrated Manure.

C. W. VAN DOREN & CO.,

GRIFFING BROTHER & CO.,

58 & 60 Courtlandt-st., N. Y.

We give below a few of the many testimonials sent to us.

READ AND BE CONVINCED :

GLENS FALLS, N. Y.,
Nov. 14th, 1864.

Messrs. Griffing Brother & Co.

GENTS,—The "**Bruce's Concentrated Manure**" which I purchased of you I used on corn in this way. I mixed two bushels of Nova Scotia Plaster, to one of the manure, and dropped about a tablespoonful in the hill before planting. Its effect was equal to my expectation, and I think added one-third to the crop. I had other corn raised in the same field upon shares, to which the manure *WAS NOT APPLIED*, and the difference between the two crops was perceptible during the entire season. I also used the same mixture upon my garden. It made the cabbages snap while growing, and crack when fully grown. The eight barrels you sent me were burned in our great fire, but I saved the manure and used it after it had passed through the fire. I shall want **Ten Tons** for next spring's use, and would like to know if I can have it on the same terms as last spring.

The corn I raised on a light sandy soil, and the crop manured with "**Bruce's Concentrated Manure**," was the subject of wonder to every one who saw it.

Yours truly,

E. H. ROSEKRANS.

NORTHFIELD, Richmond Co., N. Y.,
Nov. 9th, 1864.

Messrs. Griffing Brother & Co.

GENTLEMEN,—The two tons of **BRUCE'S CONCENTRATED MANURE**, which I purchased of you, I applied to my oats last spring, at the rate of *TWO HUNDRED POUNDS* to the acre, on nine acres. The ground, having previously produced a crop of wheat, was in tolerable condition. The yield of grain and straw **exceeded** anything of the kind I have ever seen; the **OATS WEIGHED THIRTY-FOUR POUNDS** to the bushel, and the straw was upon an average five feet in height. The balance of the two tons I have this fall applied to a portion of my wheat crops, the growth of which has been thus far, rapid and luxuriant. I also applied a small quantity to corn and beans in May last, with satisfactory results. From my experience, I consider *THIS MANURE THE BEST AND CHEAPEST OF ALL THE CONCENTRATED MANURES IN THE MARKET*.

Very Respectfully Yours,

DAVID L. GARDNER.

MOUNT LEBANON, Columbia Co., N. Y.,
Nov. 2, 1864.

Griffing, Brothers & Co.

FRIENDS—Your favor asking our opinion about "**Bruce's Concentrated Manure**" is received. I in reply would say that we have used it the past season with the most gratifying results. The season was so dry that we could not test it as we would have wished. We used it on our potatoes, hoeing it in after they were up, and the yield was greater than by any concentrated manure we have ever used. It has well paid the investment on our gardens. For most crops we prefer it to the *No. 1 Peruvian Guano*. We shall want more of it the coming season. Have you it on hand? and what is the lowest price.

Respectfully yours,

D. C. BRAINARD.

Mr. D. C. BRAINARD, the writer of the above letter, is one of the *New Lebanon Shakers*—a practical man, and one who thoroughly understands agriculture in all its branches, and can appreciate a good fertilizer. Mr. Edward Fowler, also one of the *New Lebanon Friends*, who is known throughout this country as an expert in *Agriculture* and *Horticulture*, a large producer of all kinds of seeds for the farm and garden, also herbs for medicinal purposes, in answer to our enquiries says, *send me another ton*, and puts down the money to pay for the same. Mr. F. had already used several tons; we want no better proof of its value from one so well posted.

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Notwithstanding the heavy advance of from **TWENTY-FIVE TO FIFTY PER CENT.** in the price of materials, we shall sell

BRUCE'S CONCENTRATED MANURE,

at the low price of

\$50 per Ton.

It is packed in barrels weighing 270 lbs. each.

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PROMPTLY DISPOSED OF
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QUICK RETURNS MADE
on very advantageous terms.
Orders for Soda Ash, Sal-Soda, Caustic Soda, and all kinds of Alkalies, Caudle Wicks, and all materials used by Soap and Candle makers, promptly filled, at the lowest market prices.

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Our present stock of plants is the largest and best we have ever offered for sale.
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Among them are

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Iona.....	\$1.50	\$15.00	\$100	
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They offer PEAR TREES of extra size.
They commend to the special attention of nurserymen their stock of choice

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UPAIGHT YEW, quite hardy.....	35 " "
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STREET TREES, large and handsome,
FLOWERING SHRUBS in great variety.
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CAMELLIAS, in excellent health.
STOVE PLANTS in variety.
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For varieties and prices they refer to their Catalogues for which address them at

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IONA ISLAND VINES.

The price list for Spring of 1865 is now ready, and will be sent for a two-cent stamp, either alone or with a proposition for formation of clubs, or with the sixteen page pamphlet which gives an account of our four best native kinds, including a full description of the Iona and Israella.
In this connection I would call particular attention to an article in the December number of American Agriculturist, page 311, signed H. P. Byram, in which he makes very grave charges against me, which, if true, would not only justly destroy my reputation and business, but render me liable to prosecution by every purchaser of Israella Vines.
He says "I state these facts from my own personal observation, and they were known to every intelligent cultivator on the place at the time."
Now I would declare that all of his allegations against me are utterly false.
In the first place he never saw an Israella vine in bearing and never saw a bunch of the fruit. He never tasted any except a few very imperfect berries and long out of season.
No such "forcing process" as he describes, or any other, was employed last season, or has ever been employed for hastening the maturity or improving the quality of the Israella Grapes. These vines have always "been grown in the open ground and in the usual manner," except that the mother vine has been greatly exhausted by having layers taken from it through a succession of years for propagation.
The sheltering process of which H. P. Byram attempts to speak, has been fully described in my illustrated Catalogue during the past five years, but has never been applied to one Israella vine.
Now I have thought "It an act of simple justice to the public" and all concerned, first to ask Mr. Byram to publish a full retraction of these and all the other false statements which he has made concerning me, and on his refusing to do this I have thought in the second place that justice require that I should commence prosecution against him and those who have uttered his statements, which has been done accordingly.
The Illustrated and Descriptive Catalogues are bound together in flexible paper covers and constitute the most thorough and complete treatise on the vine in the language. Sent for fifty cents. They contain more than one hundred and forty of the best engravings ever prepared for illustrating the treatment of the vine. Illustrated Catalogue, eighth edition sent for twenty-five cents. Descriptive for ten cents. The last contains more than sixty fine engravings. Pamphlet of sixteen pages with price list sent for two-cent stamps.
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C. RAUX,
86 Cedar-st. New-York City.
Will receive and transmit to Europe, as usual, orders from American Nurserymen. Will, also, contract to import nursery stocks, at his cost and risk, and to deliver them safely at specified prices, times and places.—**For Sale.** A complete copy, 14 years, of the Floré des Serres et des Jardins de l'Europe. Fresh Pear and Mahaleb seeds.

50,000 CONCORD VINES.

5,000 ROGERS' HYBRID'S.
Send stamp for Wholesale or Retail Catalogue, containing out of Rogers' No. 19. The Special Premium Grape of the Penn. Horticultural Society, which is the best new hardy Black Grape yet introduced. We have the whole stock from original vine. Address
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Contents for January, 1865.

Barn-Barrow and Feed Box.....	2 Illustrations..	12
Barn—Plan of an Illinois.....	Illustrated.....	12
Bees—Applary in January.....		2
Bonnets, etc., Short Chapter on.....	3 Illustrations..	21
Books in Farmers' Families.....		22
Boys and Girls' Columns—"A Happy New Year"—		
About Keeping the Mouth Shut—Problems and Puz-		
zles—Taking Carlo's Portrait—Something About		
Making Pictures—The Small Loaf of Bread—A few		
Words to Skaters—Underground Railroads—A Sharp		
Customer—Boys and Girls in Business—Was he		
Tippy?—God's Organ.....	5 Illustrations..	23, 24, 25
Buffalo—East Indian.....	Illustrated.....	9
Cattle of Southern Asia.....	Illustrated.....	9
Cone-Bearing Plants from Cuttings.....		18
Editors and Dealers—Their Relations.....		13
Evergreens—Hardy; Austrian and Dwarf Pines, 2 illus.		17
Exhibition Tables at American Agriculturist Office.....		3
Farm Work in January.....		1
Farmer Folks in War Time.....	Illustrated.....	16
Fertilization—Agency of Winds and Insects.....		15
Flower Garden and Lawn in January.....		2
Flowers—Cannas in Groups.....		20
Flowers for Working Men.....		15
Flowers—Pretty Native Annual.....	Illustrated.....	19
Fruit Garden in January.....		2
Fruit Trees as Dwarf Pyramids, etc., 3 Illustrations..		17
Fruit Trees—What to Plant.....		14
Fruits—Naming New.....		19
Garden—Kitchen in January.....		2
Grape Controversy.....		8
Grapes—Iona and Israella—Answer to H. P. Byram..		15
Grapes—Notes on.....		19
Green and Hot-Houses in January.....		2
Gun Cleaner—Novel and Simple.....		11
Hogs—Western Mode of Slaughtering and Cutting up,		12
Horses—How to Break a Colt.....		10
Horticulture and Matrimony.....		13
Insects—Experience With.....		18
Lumber—Measurement of Saw Logs.....		11
Maple Sugar—Suggestions on Making.....		13
Market Review, etc.....		3
Moisture in Air Important.....		21
Milk, Beef, and Labor.....		10
Notes and Suggestions for January.....	Illustrated.....	1
Orchard and Nursery in January.....		1
Owl—Snowy, or Harfang.....	Illustrated.....	13
Plants, House in Winter.....		21
Premiums Offered for 1865.....		2
Peach Trees in Cold Climates.....		18
Potato Cooking—Christopher Crowfield's Suggestions..		22
Potatoes Grown Under Straw.....		11
Practical Odds and Ends for Household.....		22
Pulmonary Invalids—Suggestions To.....		22
Rats—Economy of Keeping.....		23
Recipes—Farmers' Fruit Cake—Sauer Kraut.....		20
Record of a Year.....		17
Roads—How to Repair.....		11
Roots—Use of Surface.....		19
Rustic Ornaments for Gardens, etc., 4 Illustrations..		20
Sanitary and Christian Commission Contributions.....		25
Saws, and How to File Them.....	4 Illustrations..	14
Sheep—Care of in Winter.....		9
Shrub— <i>Ezochorda Grandiflora</i>	Illustrated.....	20
Slippers—German, for the House.....		22
Tea—Taking in The Country.....		21
Veterinary College in New York.....		14
Weeds—Plants Out of Place.....		13
Wheelbarrow for Boys.....		11

INDEX TO "BASKET," OR SHORTER ARTICLES.

Agency, Bad.....	5
Agricultural Report, '63.....	7
Apple Tree, Prolific.....	6
Apples for Iowa.....	6
Asparagus Bunches.....	6
Asphodel Described.....	7
Beans, Baked.....	6
Bees, Italian, Results.....	4
Bret, Large.....	6
Blackberry, Cut-Leaved.....	7
Book, Cotton Manual.....	5
Buckwheat, Wild.....	6
Camellias, Treatment.....	7
Canada Thistles.....	6
Carrots for Horses.....	6
Cheese Makers' Ass'n.....	5
Cheese, Wintering.....	4
Chickens, Early Layers.....	4
Claret Wine Stain.....	4
Coal Tar and Roofing.....	4
College, Ag'l., Mass.....	7
College, Ag'l., Pa.....	7
Concrete Posts.....	7
Conundrum, Original.....	5
Corn Polder in Minn.....	4
Cows, Feeding for Milk.....	4
Cows, Warty Teats.....	4
Cranberries, Upland.....	6
Death of Horticulturist.....	4
Dictionary, Best.....	5
Evergreen, Seeds.....	5
Farm, Locating.....	5
Farmers' Manual.....	5
Fowls, Black Spanish.....	4
Garden, Profitable.....	6
Glaucous, Seedling.....	7
Government Ag'l Editor.....	5
Grain Shrinking.....	7
Hay, Selling or Feeding.....	4
Hay, Timothy in Iowa.....	5
Hedges, Barberry.....	6
Hedges, White Willow.....	6
Henneries, Light For.....	4
Loop Skirts, Old.....	4
Horse Book, Best.....	5
Horse Forks for Stacking.....	4
Horse Radish, Grinding.....	6
Horticulturist.....	6
Humbug Circulars.....	7
Humbug College.....	7
Humbug Doctors.....	7
Humbug, Gas Man.....	7
Humbug, Lightning Rod.....	7
Ice on Door-steps.....	8
Ice, Size of Blocks.....	8
Information Wanted, etc., 8	
Land Advertisements.....	5
Larkspur, New.....	4
Leaves, Large Beech.....	6
Legislative Document.....	8
Library, Farmer's.....	5
Marl, Treatment.....	7
Mortar, Good.....	7
Museum, Barnum's.....	5
Newspaper Box.....	8
Ofal for Manure.....	4
Oil, Gummed.....	7
Onions, Good Crop.....	6
Pansies Indoors.....	7
Pear Trees, Barren.....	6
Petroleum Companies.....	5
Fig, Happy.....	5
Pigs, Remedy for Weak.....	4
Plants Named.....	7
P. O. Money Orders.....	4
Pæonies, Removing.....	7
Potatoes, Fluke.....	6
Potatoes, Prolific.....	6
Propagating Case.....	7
Rabbits and Trees.....	6
Rabbits, Keeping.....	5
Railway Accidents.....	5
Roots for Feeding.....	6
Scrap Books for Soldiers.....	8
Sorghum Ass'n, Ohio.....	5
Sorghum in Orange Co.....	4
Squashes, Prolific.....	6
S. S. Lesson Book.....	8
Stakes, etc., Coal Tar for.....	5
Strawberry Queries.....	6
Subscriber, Smallest.....	7
Subscription, First.....	8
Terms of Subscription.....	4
Tree Labels, Bliss.....	6
Trees, Bark Bound.....	6
Trees, Medicating.....	6
Water for Cooking.....	8
Weather Strips, Torrey's.....	4
Weed, New.....	4
Weeds, American, etc.....	7
Wind Power, Saving.....	7
Wistaria, Fruit.....	4

GREETING!

Now is a time for mutual congratulations, and nowhere do kinder feelings prompt these, than among a company associated for a twelve-month. With a full heart the Publisher tenders the Compliments of the Season to each and all of his large circle of patrons. The past year has had its serious drawbacks, its struggles against advancing prices after contracts for a year at a fixed rate had been entered into with such a multitude of readers, and this too amid the calls of duty to the field of strife, and the subsequent bodily sufferings experienced. But the year closed without serious pecuniary difficulty, and indeed more prosperously than expected—thanks to the good will of our readers manifested in extending the circulation of the *Agriculturist* quite beyond any former limit.

Our good Agricultural Ship now begins its Twenty-Fourth Annual Voyage, well refitted, and with more passengers, fuller freight, larger crew, and more complete appointments in all respects, than ever before. May the favoring gales of a just public opinion waft it onward to a more than ever successful cruise. No efforts are spared by the Publisher, or by his unsurpassed Editorial Staff, to make this a first class periodical. That these efforts have been successful and duly appreciated, is evidenced by the fact that the *Agriculturist* has risen to a circulation at least three-fold that of any other agricultural periodical in the world, and to many thousands more than the combined circulation of all other similar journals in this country. This furnishes the facilities for still further improvements, and a wider field for gathering material from the experience and wisdom of our readers, who are scattered through all parts of our broad continent. We respectfully solicit a continuation of the favor and support, so generously bestowed hitherto. A feast of good things is in store, an instalment of which is presented herewith. Our accommodations are ample, and every present guest is invited to bring along a friend or two, to enjoy and to profit by what may be spread out before them in our pages during 1865.

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The great demand for practical information upon the culture of Flax and Hops, has induced the Publisher of the *Am. Agriculturist* to offer the following cash prizes:

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The essays should not exceed 15 pages of foolscap each, and should be written on one side of the paper only.

Those will be considered best which give the greatest amount of information, clearly expressed, in the smallest space, including all necessary items from preparing the ground to marketing the crop, in short, such information as is desirable for novices to the business. The pamphlets on tobacco and onion culture, published at this office, will indicate what is wanted. The essays should be accompanied by drawings or sufficiently clear explanations, so that when published they may be illustrated by engravings as fully as can be desired.

The Essays must be received at the Office of the *American Agriculturist* before the 15th day of January, 1865; the name and Post Office address of the writer to accompany each in a sealed envelope. They must be written by practical men. Good information from experienced men will be considered of more value than mere literary style, which, if necessary, can be amended by the editors. All manuscripts offered will be considered the property of the publisher, one or more to be printed in the *American Agriculturist*, and if desirable, in a book or pamphlet form. If used in the latter way, half a dozen copies of the publication will be presented to the writer of each essay contained therein. The essays will be submitted for careful examination and for the award of prizes, to the best Committee of practical men that can be obtained.

Is it Worth a "York Shilling!"

The highest cost of this number to single subscribers, is a "York shilling," (12½ cents), and currency at that. To clubs, the cost is only 8½ to 10½ cents. Please look through the whole of this January number, for example, —at the scores of items and articles, and at the thirty or more engravings, and then say whether the shilling or less that it cost, was well invested. We know what the verdict will be. The Publisher would be glad to have each reader show the paper to a neighbor who has not taken it, and explain to him what the paper is, and what it costs. There are eleven numbers more to come this year, and no one of them to be of less value than this. Please help us roll up the list of those who will be pleased, and benefited by reading the *Agriculturist*. The larger the list, the better for all. Take an illustration: That beautiful engraving on page 16, costs more than all we will receive for 1,000 copies; yet we can afford such things, when the cost can be divided among a hundred thousand or more. The more there are to share the expense, the more can we do for all, and this is a strong reason why it is advantageous to concentrate the mass of readers upon a few leading journals. Will the reader please help swell the list by adding a name or two?

Money Letters—Curiosities of One Day's Mail.—Allusion has frequently been made to the letters received at the office of the *American Agriculturist* containing subscriptions, without giving the addresses of the subscribers, and to those which say "address as before," "as usual," "address unchanged," etc. A few days since, to satisfy curiosity, an account was kept and we found 32 money letters in which no Post-office address was given; 2 without signature; 1 without signature or address (in this letter the name of a town was mentioned but the postmark was different), 1 unsealed and the money safe, and 1 was unsealed but the money gone. Such letters are received by the thousand in the course of a year, but an account of those received in any one day has never before been taken. If the writers of these letters all receive their papers, they must thank the very persevering gentlemen in charge of subscription books, and the kindness of sundry postmasters who take much pains to ascertain for us the omitted information.

The Advertisements—How far Endorsed.—Our readers understand that a considerable class of advertisements are rejected from this paper, and many have hence concluded that every advertisement inserted is indorsed by us. This is partly true and partly not. While we shut out humbugs, patent medicines, etc., we insert the advertisements of articles concerning the utility of which we differ in opinion with others, as for example, books on Phrenology and other "ologies," certain classes of fertilizers, etc. Our rule amounts to about this: Things positively reprehensible are excluded. Next we shut out all parties whom we have reason to believe will not do just what they advertise to do; in other words, we admit only those we would be willing to patronize and to forward money to if we wanted anything in their line, of the kind and quality, and at the price advertised.—The readers will find it profitable to look through all the advertisements carefully, and see what is for sale, by whom, and at what prices. When ordering, or sending for a circular or catalogue, please always state where the advertisement was seen, both as a source of gratification to the advertisers and as an assurance to them of confidence in their upright dealing from the fact of their advertising in this journal.

American Agriculturist.

For the Farm, Garden, and Household.

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Address communications to the Publisher and Proprietor, ORANGE JUDD, 41 Park-Row, New-York City.

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FOR THE

Farm, Garden, and Household.

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Notes and Suggestions for February.

Winter wanes slowly. The early riser finds the dawn gradually encroaching on the prolonged darkness; here and there an untimely lamb sends forth a pitious wail, and occasionally an hour of sunshine speaks warmly of advancing spring; but lowering clouds and fitful storms quickly warn the impatient buds to bide their time and not trust the apparently relenting heart of winter. These hints of the coming season should not be lost. If a full plan of operations for the year be not perfected, lose no time in its completion. A map of the farm will be of great assistance in this work. It need not be an accurate survey of each lot, though this would be more satisfactory; a plain outline of boundaries and measurements taken with a marked pole, will be sufficient. Great caution should be exercised in making radical changes. Many have been tempted by the high price of sheep to sell out an established dairy, or to seed down their green fields, and are up to their eyes in wool, if indeed it has not been pulled over their eyes. An article on this topic in the present number contains timely hints. Equally unwise is an immovable conservatism, that can not be attracted from following the "good old ways." Many will find sorghum culture worth a trial; an acre or more of roots for next winter's feeding should not be forgotten; perhaps less grain and more fruit will give better returns. The most successful campaigns are always first developed on paper in good plans.

Animals of most kinds kept on farms at the North are in an artificial condition, to which however they have become habituated by long training. It should be the aim of the owner to make their circumstances as nearly natural as the case will permit. Thus, succulent food, in

the shape of roots, should accompany dry fodder; shelter should not preclude fresh air; opportunities for exercise should be allowed; warm litter for comfortable rest is essential; in short, comfort and profit are almost inseparable. The morals of the stock yard should be carefully watched. A vicious horse or unruly steer is intolerable. Prevention is easy; train up young animals with kindness, and they will return it with interest; send to the slaughter pen incorrigible brutes, though made so by bad management.

Advertisements are profitable reading. They usually indicate what progress the world is making. To farmers they are invaluable. Notes on tools, seeds, stock, trees, plants, etc., should be made, and further information gained by sending for circulars of trustworthy parties. The *Agriculturist* aims to admit no other class.

Ashes, fresh from the fire, should not be emptied into wooden smoke-houses. A few smouldering sparks may be sufficient to fire the structure, destroy its contents, and cause great loss; at least the lower part should be brick or stone.

Apples.—Sort over those commencing to decay and feed, if no better use can be made of them.

Bags, Barrels, Baskets, etc., used for marketing, or kept at home, should be plainly marked with the owner's name and residence. A branding-iron or marking-plate and brush, will save much loss. Improve leisure by putting all in repair. For convenient bag-string, see p. 139, last year.

Buildings.—Clear roofs from too heavy snow, stop leaks, keep eaves-troughs free, paint where needed, fasten loose boards, keep manure away from sills, oil rusty hinges, see that fastenings are in order, and all repairs promptly made. Get out timber for sheds sufficient to shelter all stock. Study economy and convenience in plans.

Birds.—Prepare neat houses for martins, bluebirds, and wrens, to be put up about the house, fruit yard, and farm. The occupants next season will pay good rent by destroying multitudes of insects, and sing grateful thanks.

Butter brings golden prices; make the product of the same color, with carrots strained into the milk through the stomach of the cow.

Calves dropped in February will bring large prices in March, but at present prices of butter and milk, will cost largely to fat. If to be raised, wean early, and feed well with skimmed milk, clover tea and gruel. Keep well sheltered. Wheat flour boiled in milk checks scours.

Cows.—Dry off six to four weeks before calving. Give generous feed of hay and roots, but not much grain. Cut hay or straw steamed, and a little bran or meal added, is profitable. Keep the skin healthy by frequent carding and brushing. Those about to calve should be turned loose into separate, roomy stalls. Watch their time, to give assistance, if needed, but do not interfere, unless absolutely necessary, and then use gentle means. Allow the calf to have

the milk for a day or two. Its effect is medicinal and necessary to the new-born animal. After calving, give the cow a warm bran mash, made with scalding water, and afterward her ordinary feed, increasing the amount of roots and grain to promote the flow of milk, and prevent the exhaustion of the animal.

Debts contracted before the war can now be paid at half price; that is, owing to high prices half the produce required then will suffice now. Lift mortgages rather than buy carriages or other non-essentials. A pinching time will come.

Dogs.—Unite with your neighbors in urging your representatives at the Legislature to protect sheep raising from the ravages of destructive curs, by strong laws. See article on page 42.

Farmers' Clubs.—The meetings may be made interesting by committees appointed to investigate and report on various subjects; as new crops proposed, new implements, the condition of farms in the vicinity, etc.; by correspondence with other similar associations, and occasional joint meetings of the clubs of a township. New facts and experience worthy of general notice, should be communicated to the public journals.

Food for cattle and hogs will be improved and economized by steaming. A good apparatus, especially for this purpose, will pay where many animals are kept. A large kettle will do.

Grain.—Carefully study price lists, and improve good weather for marketing produce.

Horses.—A few carrots with their grain will aid digestion and appetite, and improve their coats. Exercise daily. Train colts so that no breaking will be needed, either of spirit or of harness. Keep working and carriage horses sharp shod, well groomed, and blanketed when standing out, or in cold stables after exercise. Ventilate stables, and abolish high feeding racks.

Ice.—Secure a full supply, if not already done. In good weather an ice-house may be made and filled within a week. One will pay on a dairy farm, and be convenient everywhere.

Manure.—Mix plenty of muck, especially with that from the horse stable, to prevent fire fanging; or, in absence of this, fork over the pile to prevent too great heat. All deposits now made in readiness for use in spring, will respond to drafts to be made for good crops next fall. Keep a heavy balance in your favor to draw upon.

Money lent to the government on its bonds, repays good interest, is safe, and may be readily called in under any emergency, in addition to furnishing strength for crushing the rebellion and securing permanent peace and prosperity.

Maple Sugar.—The high price of sugar should stimulate the largest possible production. The first flow of sap is the richest; make preparation to secure it during the open weather, which often occurs in February. See article on p. 40.

Poultry.—Insist on having eggs. Warm, clean quarters, cooked grain and potatoes, scraps of

meat, powdered bones, or lime, gravel, ashes and warm water, are the convincing arguments.

Roots.—Sort over, remove decayed ones to be cooked and fed immediately, and keep a supply of the soundest for breeding animals, or those failing in appetite, as spring approaches. No decayed turnips, rutabagas, or cabbages should be fed to milk cows, or bad flavor will be imparted to the milk.

Sheep.—Exercise and fresh air are essential to their health. Shelters must be well ventilated, not crowded, and the sheep turned out daily, except in severe storms. Roots, fed with grain, will be returned in wool and mutton. Pregnant ewes should have little if any grain, but roots with hay. Those yearning early will need separate, clean, not overlittered apartments, and careful attention, that the lambs be not fatally chilled. See pages 42, 43.

Swine.—Keep them at work among the muck and manure. Allow breeding sows, near farrowing, potatoes or other succulent food, with bran or linseed meal. Give them clean, well littered sties, but not straw enough to endanger the young by overlaying of the mother. A projecting shelf, eight inches high, on the sides of the pen, will allow the pigs to escape much danger from this source.

Tools and Implements.—Have all in repair and readiness for spring work. In the end, buying is cheaper than borrowing. Consult advertisements, send for catalogues and circulars for information about new implements, and always get the best.

Wood.—Save many late dinners, and much needless scolding, and annoyance in the household, by having a year's stock cut and stored under cover.

Work in the Orchard and Nursery.

—Read over the notes of last month, and see if there is not some hint there given that may be followed with advantage. The season precludes much in the way of work, but allows time for abundant planning. Do not postpone selecting fruit trees, and sending orders, beyond this month. Take advantage of a damp, warm spell, if one occurs this month, to give old trees a good washing and scraping. A thorough application of soft soap, made thin enough with water to work with a broom, will be death to insects and moss, and will make the old trunk look like a new one. Continue root grafting, cut cions, and look after seeds stored in sand for spring planting; see that mice do not trouble them. Among other applications to prevent rabbits from gnawing trees, we find a wash made with lime and strong tobacco water recommended. Apply a poultice of cow dung and loam to barked trees. Do everything now that will save a day in April.

Kitchen Garden.

—Generally the gardens are, during this month, covered with snow, or frozen so hard that nothing can be done. The work of preparation hinted at last month, ought not to be forgotten, and everything that can be done in getting tools, seeds, manures and all implements in readiness, should be well attended to.

In family gardens it is not necessary to start the hot-bed until next month, but where very early vegetables are required it may be done sooner. The market gardeners around New York start their hot-beds about the middle or end of February. The plants are, however, transplanted into other beds, or potted and kept under glass until the weather allows them to be put into open ground. Six weeks in advance of the time at which the plants can be set out, is a safe rule for the hot-bed in the family garden. Stable manure is the main reliance as a heating material, but may be mixed with leaves or spent hops from the breweries. Sash 6 feet long and about 3 feet wide, are usually employed, but the width is governed by the size of glass. The frame is of stout boards or plank, 1 foot high at front and 2 or 2½ feet at back, and of a sufficient length to accommodate 2, 3, or more sashes. A detailed description was given in March last. The bed of manure should be at least 18 inches wider and longer than the frame, and built up at least 2 feet high, the manure being spread evenly, and made compact by beating the layers down with the fork. Set on the frame, and put in

6 inches of rich earth, which should have been made ready last fall. The temperature of the bed will at first be too violent, and the sash must be raised during the day for several days. When the temperature moderates to about 70° the seed may be sown. The manure, by using it for a hot-bed, is brought into most excellent condition for application to the garden later in the season.

Forcing of Asparagus and Rhubarb may be practiced by those who have the conveniences. Roots of either may be placed in a hot-bed, or fermenting dung may be placed around them where they stand in the beds. We have seen excellent rhubarb stalks from roots placed in a barrel in a warm cellar.

Dig Horseradish, Parsnips, and Salsify whenever the ground is open. Lay in a stock of seeds for the reason suggested on page 53. Haul out manure while the ground is still hard.

Fruit Garden.—The out-door work is limited to few things. If grape vines were neglected last autumn, they may be pruned in mild weather this month. If any dwarf trees are of unsatisfactory kinds, look out for cions of choice varieties to graft them with. Cuttings of currants and gooseberries may be made and saved in the cellar until planting time. Pruning dwarf trees may be done with the knife. See that the covering of strawberry beds does not get removed by the storms.

Flower Garden and Lawn.—Make and perfect plans for the improvement of the grounds. Some hints for front yards are given on page 50. Draw all plans to an exact scale. Give air to plants in cold frames on mild days. Prune and thin out shrubbery that has become overgrown. Rhododendrons and other broad-leaved evergreens need protection from the great alternations of temperature which occur as spring approaches. Evergreens must not be allowed to break down from the weight of snow. Trellises, vases, and other garden ornaments and appliances can be made at leisure. See designs given last month. Hot-beds for starting annuals, etc., should be prepared for, but next month will be early enough to start them.

Green and Hot-Houses.—Admit air freely to all hard-wooded plants, whenever the atmosphere is clear and the outside temperature is 8 to 10 degrees above freezing. During damp, foggy spells, a little fire should be used, even if the temperature does not appear to require it.

Achimenes, Gesneras and Glorinias.—Place some in pots, give bottom heat, and start for early bloom.

Azaleas and Camellias.—Those intended for late blooming should be kept as cool as possible, without injury by frost, and shaded. Those just opening their buds, put in warmer part of the house, and give manure water. They repay any attention.

Bulbs.—A succession of flowers should be kept up. These will like liquid manure.

Cinerarias.—These bloom best in small pots. Those intended to bloom later should be kept growing, by shifting them to larger pots. Give weak manure water to those already in bloom.

Deutzia gracilis and Scabra.—These hardy shrubs make fine green-house plants, when forced. They need a warm place to start them.

Dicentra.—Plants of this in pots may be brought into a warm part of the house, and they will soon show their beautiful bloom.

Fuchsias.—Some of these may be started for early flowering by cutting back freely, and giving them a little bottom heat at first. Do not repeat until they have made a new growth.

Insects.—Cleanliness and cultivation will do much towards keeping them down. Crush each one as soon as seen. If necessary to resort to fumigation, do not wait until they have half killed the plant.

Manure Water.—This is beneficial to growing plants, if not used too strong. Half a bushel of sheep or cow droppings to a hogshead of water will be strong enough. It should be clear when used.

Primulas.—The Chinese Primroses, especially the double ones, are fine ornaments to the house,

They keep long in bloom, if not exposed to extremes of temperature and are benefited by manure water.

Scarlet Geraniums.—Old plants which have been stored away for the winter are apt to become damp and mouldy. Remove all decayed portions and bring to a drier and warmer place.

Succulents, such as Cactuses and Mesembryanthemums, need little water, except they are growing.

Water only when the soil is getting dry, and then copiously with that at the temperature of the house.

Apiary in January.

—Prepared by M. Quincy.—If the weather is sufficiently warm for the bees to come out when there is a newly fallen snow, the directions for last month should be observed. Keep open the air passages. Sweep out dead bees and filth, whenever all frost leaves the hive. If any stock is to be changed to a new stand, arrange it now before the bees fly out to mark their present locality. Place stands at least six feet apart wherever there is room. A less distance is allowable only for want of room, or when a fertile queen can be provided for swarming hives. Indeed, ornamental bee-houses, so strongly coveted by some, in which the hives are set quite close together, can be made nearly as profitable as any, if queens are furnished; but the movable comb hive of some kind is required for this purpose. When standing thus, the hive may be allowed to swarm, and seven days afterward, before any of the young queens hatch, the royal cells should be removed, and the queen introduced. If this system of management is contemplated for the coming season, or if the Italians are to be propagated, the boxes for raising queens should be made now. Make a miniature hive less than six inches square, of the pattern of any movable comb hive used, and containing not less than three combs. Fit clean worker combs in the frames, and expose to severe freezing, to kill all moth eggs that may be in them. For method of Italianizing bees in box hives, see page 43.

Twenty Good Premiums For Volume 24.--1865.

The following excellent premiums are contained. They are worthy of strong effort. For full particulars, see page 2nd of January number. There is no change in the terms, except that the Book list of this month (page 63,) is to be referred to instead of that of last month, as prices have changed somewhat.

Names of Premiums	Price of Premiums	Names of Authors	Names at \$1.00 each
Table of Premiums and Terms, For Volume 24.			
Open to all—No Competition.			
<i>Names of Premium Articles.</i>			
1—Good Books—See terms last month.....			
2—Case of Drawing Instruments.....	\$8 00	14	60
3—Best Family Clothes Wringer.....	\$10 00	17	70
4—Doty's Washing Machine.....	\$12 00	19	80
5—Sewing Machine, (Wheeler & Wilson).....	\$55 00	10	350
6—Four Octave Melodeon (best).....	\$67 00	80	400
7—Five Octave Melodeon (best).....	\$112 00	140	600
8—Brown's Baby Tender.....	\$80 00	37	180
9—Brown's Baby Tender.....	\$42 00	52	236
10—Woodruff's Mercerial Barometer.....	\$10 00	17	70
11—Woodruff's Mercerial Barometer.....	\$15 00	21	90
12—The Aquarium.....	\$12 00	13	50
13—Ladies' Rosewood Writing Desk.....	\$12 00	18	80
14—Gentleman's do do do.....	\$14 00	21	90
15—Any back Volume Agriculturist.....	\$1 50	..	20
16—Any Two do do do.....	\$3 00	..	30
17—Any Three do do do.....	\$4 50	..	30
18—Any Four do do do.....	\$6 00	..	40
19—Any Five do do do.....	\$7 50	..	50
20—Strawbery Plants—See Terms last month....			

Commercial Notes—Prices Current.

NEW-YORK, Jan. 20, 1865.
We give herewith seven very condensed and convenient tables, the first two referring to the transactions in the New York markets during a month ending January 16, to which date they are made up. These tables have been carefully prepared, specially for the American Agriculturist, from official and other reliable sources, including the notes of our own reporter. They will be found highly interesting, as showing the course of trade and giving a general view of the condition of our breadstuff supplies. They will also be valuable for reference in after years.—During the past month, there has been little noteworthy in the Breadstuff Markets. The prices have varied from day to day, with the rise and fall of gold. The price table herewith, shows a little decline, and as gold is "weak" just now, rates are tending downward rapidly. The same is the case with other produce, cotton, etc. If the military successes continue as they

promise to do, gold must go down materially, and carry down with it the prices of farm produce, dry goods, etc.

TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
 28 days this mth 231,000 11,000 137,000 10,500 24,000 178,000
 24 days last mth 357,500 1,782,000 317,000 63,000 688,000 2,643,000

SALES. Flour, Wheat, Corn, Rye, Barley.
 28 days this month 267,000 461,000 384,000 33,500 141,000
 24 days last month 416,000 1,051,000 655,000 104,000 434,000

2. Comparison with same period at this time last year.
RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
 28 days 1865 231,000 11,000 137,000 10,500 24,000 178,000
 24 days 1864 357,500 1,782,000 317,000 63,000 688,000 2,643,000

SALES. Flour, Wheat, Corn, Rye, Barley.
 28 days 1865 267,000 461,000 384,000 33,500 141,000
 24 days 1864 416,000 1,051,000 655,000 104,000 434,000

3. Exports from New-York, January 1 to January 20.
 Flour, Wheat, Corn, Rye, Oats.
 1865 47,742 43,854 5,530 141 1,825
 1864 50,984 633,800 4,793 647

4. Exports from New-York during each 6 years past.
 Flour, Wheat, Corn, Rye, Barley, Oats.
 1864 1,913,592 12,193,483 846,821 588 150 42,135
 1863 2,527,338 15,424,889 7,333,431 416,869 52,430 136,556
 1862 2,951,518 25,564,755 12,020,489 1,041,549 42,061 210,689
 1861 3,110,846 28,893,814 12,889,550 1,000,405 3,927 160,825
 1860 1,926,202 13,888,039 4,085,983 450 820 103,076
 1859 938,516 297,587 497,882 6,580 2,568

5. Stock of Flour in New-York City, January 1.
 1862, 1863, 1864, 1865.
 Western Canal Flour, bbls. 447,675 721,383 557,057 465,836
 Canadian Flour, bbls. 11,000 2,405 15,100 4,950
 Southern Flour, bbls. 39,596 25,500 35,100 37,463
 Total 488,271 750,288 607,257 508,248

6. Stock of Grain in New-York, January 1.
 1861, 1862, 1863, 1864, 1865.
 Wheat, bushels 3,533,741 2,045,032 4,334,817 5,540,144 1,807,356
 Corn, bushels 2,712,000 5,573,911 4,233,013 1,731,820 464,414
 Rye, bushels 28,400 58,500 32,270 37,409 212,288
 Barley, bushels 169,574 435,472 91,835 584,700 594,164
 Oats, bushels 494,730 734,753 531,312 341,836 3,018,301

7. Receipts of Breadstuffs at Albany, by the Erie and Champlain Canals in each of the last five seasons.
 Flour, Wheat, Corn, Rye, Barley, Oats.
 1860 1,149,100 11,176,000 14,155,500 2,967,600 6,490,900
 1861 1,436,238 39,896,684 23,312,334 832,792 2,233,850 5,974,328
 1862 1,826,090 33,967,886 23,899,882 748,897 2,562,659 5,990,028
 1863 1,560,500 22,205,300 20,603,600 470,500 3,190,500 12,438,500
 1864 1,184,300 15,465,600 10,352,400 630,300 2,465,900 12,177,500

CURRENT WHOLESALE PRICES.
 Dec. 16. Jan. 20.
 FLOUR—Super to Extra State 80 85 @ 10 60 90 50 @ 10 40
 Super to Extra Southern 10 85 @ 15 10 10 @ 15 10
 Extra Western 10 25 @ 13 50 10 10 @ 13 00
 Extra Good 10 10 @ 13 25 10 10 @ 13 00
 Superior Western 9 85 @ 10 10 9 50 @ 10 85
 Rye Flour 8 50 @ 9 50 8 25 @ 9 25
 CORN MEAL 7 75 @ 8 60 7 75 @ 9 00
 WHEAT—All kinds of White 2 50 @ 2 75 2 50 @ 2 70
 All kinds of Red 2 25 @ 2 50 2 20 @ 2 50
 CORN—Yellow 1 70 @ 2 00 1 80 @ 1 82
 Mixed 1 50 @ 1 75 1 50 @ 1 75
 OATS—Western 1 06 @ 1 07 1 06 @ 1 07
 State 1 03 @ 1 04 1 05 @ 1 06
 RYE 1 72 @ 1 72 1 68 @ 1 70
 BARLEY 1 75 @ 2 00 1 85 @ 2 05
 COTTON—Middle 1 92 @ 1 33 98 @ 1 09
 HOPS, crop of 1864, per lb. 20 @ 50 23 @ 52
 FEATHERS, Live Geese, p. lb. 80 @ 80 80 @ 80
 SEED—Clover, per lb. 24 @ 25 25 @ 26
 Timothy, per bushel 5 75 @ 6 12 5 75 @ 7 00
 FLAX, per bushel 3 45 @ 3 70 3 60 @ 3 85
 MOLASSES, New Orleans, p. gal. 16 3/4 @ 24 3/4 17 @ 23
 COFFEE, Rio, per lb. 1 10 @ 1 25 1 30 @ 1 50
 TOBACCO—Kentucky, &c., p. lb. 12 1/2 @ 14 12 1/2 @ 16
 Seed Leaf, per lb. 16 @ 65 16 @ 65
 WOOL—Domestic fleece, p. lb. 90 @ 1 12 90 @ 1 12
 Domestic, pulled, per lb. 70 @ 1 02 72 1/2 @ 1 02 1/2
 California, unwashed 25 @ 67 25 @ 65
 TALLOW, per lb. 17 1/2 @ 18 17 1/2 @ 17 1/2
 OIL CASE, per ton 80 50 @ 92 50 75 @ 80 60
 POAK—Mess, per bbl 37 50 @ 41 50 40 50 @ 41 50
 Prime, per bbl 35 00 @ 36 50 33 50 @ 34 00
 BEEF—Plain mess, per lb. 18 50 @ 21 50 20 00 @ 22 00
 Lard, in cans, per lb. 21 @ 24 20 @ 24
 BUTTER—Western, per lb. 35 @ 50 35 @ 48
 State, per lb. 45 @ 58 45 @ 60
 CHEESE 15 @ 24 15 @ 24
 BEANS—per bushel 2 75 @ 2 90 3 00 @ 3 50
 PEAS—Canada, per Bushel Nominal, 2 20 @ 2 35
 EGGS—Fresh, per dozen 37 @ 42 35 @ 50
 FLOURY—Fowls, per lb. 18 @ 21 15 @ 22
 TURKEYS, per lb. 29 @ 23 18 @ 24
 POTATOES—Mercers, p. bbl. 3 00 @ 3 75 3 50 @ 3 50
 Peach Blow, per bbl. 2 75 @ 3 00 3 00 @ 3 50
 APPLES—per bbl. 5 00 @ 7 00
 Apples, R. I. Greenings, per bbl 9 75 @ 5 50 6 00 @ 7 00
 Apples—Russets, per bbl. 8 75 @ 4 50 5 00 @ 5 50

N. Y. Live Stock Markets.—Beef Cattle have been less abundant, averaging 4,942 head per week, or 1,566 less than in previous month, with small supply Jan. 17. Prices range at 21c. @ 23c. per lb. estimated dressed weight, for best or extras; 19c. @ 22c. for very good; and so down to 14c. for the poorest. Average of all sales 15 1/2c. or 16c.

Milk Cows.—Average weekly receipts 63, with small demand. Very good milkers \$70 @ \$90. Extras, \$100 and upwards. Common to poor, \$65 @ \$43 each.

Veal Calves are in less supply, averaging 511 per week, and higher this week. The best 15c. @ 14c. lb. live weight, and thence down to 10c. for poor.

Sheep come in freely for the season, averaging 14,594 per week. With a good demand the last sales were 14c per lb. live weight for extras; the poorest 9 1/2c.; other grades between these figures, according to quality.

Live Hogs not abundant, receipts averaging only 14,962 per week for the month past. Last sales at

14c. @ 14 1/2c. per lb. live weight for best corn-fed; 13 @ 14c. for inferior to good corn-fed; 11c. for poorest still-fed.

Live Stock Trade in N. Y. City, for 1864.

As a matter of general interest, and for future reference, we give our usual summary of the Live Stock Trade during the past year, taken from the records of our own reporters who have been at the principal markets every Monday and Tuesday, the regular days of sale. These figures we have already furnished to other journals, but repeat them here for the benefit of the readers of the *American Agriculturist*, and to thus preserve them in a permanent form. The principal places of sale are at Allerton's Yards on 44th-street, near 4th Avenue; at Brownings and O'Brien's, on 6th-street, near 3d Avenue; at Chamberlin's, on Robinson-street, West of the City Hall; at the Bergen Yards just over the Hudson river, where they are landed from the Erie Railroad; and at the Western Hng Yards, foot of 40th-street, on the Hudson. Our tables include only the receipts at these regular market places. Many Calves and Sheep are sold from barges at the wharves, and some animals of all kinds are taken directly to the butchers. These are probably balanced by those taken out of the city again on Government account and by farmers, and by butchers in neighboring towns and cities, so that our figures below give a fair showing of the actual consumption for food and for packing purposes, in New-York and its suburbs, Brooklyn, and Jersey City. First we have the

WEEKLY RECEIPTS OF LIVE ANIMALS FOR 1864.

Week ending	Rece of Cattle.	Net Price.	Milch Cows.	Veal Calves.	Sheep & Lbs.	Live Hogs.
Jan. 5	4,022	10 1/4	115	621	9,561	9,938
Jan. 12	4,149	11	118	468	10,473	6,568
Jan. 19	4,455	10 1/2	150	401	15,304	6,150
Jan. 26	5,303	10 1/4	144	329	7,751	6,640
Feb. 4	5,200	10	168	369	14,979	15,736
Feb. 9	4,852	10 1/4	143	496	11,132	5,977
Feb. 16	4,679	12	156	367	12,251	6,297
Feb. 23	4,845	12 1/2	146	389	12,562	7,603
Mar. 1	3,291	13	212	499	11,777	8,544
Mar. 8	4,623	13 1/2	213	510	9,015	7,926
Mar. 15	5,527	12 1/2	264	598	14,672	9,266
Mar. 22	3,859	13	237	508	5,511	6,776
Mar. 29	5,058	13 1/2	179	834	12,430	8,861
April 5	3,474	14	150	832	8,673	6,562
April 12	4,244	15	163	1,872	9,676	11,379
April 19	4,596	15	203	1,732	7,525	11,232
April 26	4,108	14 1/2	124	1,379	10,130	8,514
May 3	3,900	14 1/2	134	1,206	10,917	13,832
May 10	3,971	15 1/2	196	1,270	7,405	13,598
May 17	4,969	16	129	1,203	5,687	12,577
May 24	3,814	16 1/2	173	1,000	5,162	11,113
May 31	8,579	15	216	1,397	8,043	10,614
June 7	4,629	17 1/2	188	1,521	8,613	14,221
June 14	4,447	16 1/2	229	1,404	18,326	13,542
June 21	4,669	16	203	1,824	11,952	10,059
June 28	4,718	14 1/2	143	1,511	13,372	11,364
July 5	3,854	16	110	1,555	14,229	14,287
July 12	4,978	15 1/2	168	2,409	11,134	18,876
July 19	3,765	16	162	2,705	14,147	13,360
July 26	5,202	16	144	2,312	19,720	8,894
Aug. 2	5,561	14 1/2	158	2,888	15,047	5,550
Aug. 9	4,466	14 1/2	134	2,704	16,339	8,920
Aug. 16	5,290	15	137	2,836	15,440	6,577
Aug. 23	5,273	15 1/2	89	2,999	19,620	6,143
Aug. 30	5,714	15 1/2	130	2,948	21,279	9,538
Sept. 6	5,865	15 1/2	122	2,013	16,996	6,281
Sept. 13	7,162	14 1/2	140	2,370	21,115	8,036
Sept. 20	5,567	15	149	2,799	27,051	11,105
Sept. 27	6,395	14	127	2,183	20,603	14,240
Oct. 4	6,260	13 1/2	101	2,192	22,614	14,585
Oct. 11	6,947	14 1/2	108	2,078	22,247	14,140
Oct. 18	7,638	14	140	1,508	24,707	11,733
Oct. 25	6,511	13	113	1,953	23,840	19,704
Nov. 1	5,115	14	94	1,058	17,062	23,659
Nov. 8	7,134	13	97	1,886	23,271	32,385
Nov. 15	6,476	13 1/2	117	2,029	19,432	28,725
Nov. 22	7,413	14	102	1,965	25,512	24,973
Nov. 29	6,597	13 1/2	93	1,814	21,351	22,479
Dec. 6	5,777	13 1/2	93	1,275	19,274	26,496
Dec. 13	6,245	14	80	1,393	18,165	24,267
Dec. 20	7,021	15	79	1,025	22,637	15,884
Dec. 27	4,757	15 1/2	73	844	16,486	16,496
Totals	267,068		7,576	76,861	777,990	657,092
Weekly av	5,136	14 1/2	146	1,469	14,961	12,636

The second column gives the average net price of all the beef cattle sold each week, the prices for the different grades, running 2 to 5 cents per pound above and below this average, according to quality. The prices here are always based upon the estimated net or dressed weight of the four quarters, or the cost of the dressed carcass to the butcher. The skin, head, feet, loose lard, etc., called the "fifth quarter," in the market, are reckoned against the expense of killing, dressing, etc.

	Total	Milch	Veal	Sheep &	Live	All
	Beeces	Cows	Calves	Lambs	Hogs	Kinds.
1864	267,068	7,576	76,861	777,990	657,092	1,786,087
1863	263,229	6,115	36,238	522,311	1,076,773	1,924,598
1862	295,660	5,259	39,258	175,722	98,712	2,445,605
1861	226,423	5,516	33,383	527,351	58,599	1,967,327
1860	226,747	7,154	49,163	514,191	819,623	1,107,852

COMPARATIVE RECEIPTS.—The above table shows the annual total receipts of each kind of animals for

five years past, and the total of all kinds of animals. *Beef Cattle* have increased in numbers each year.—*Milch Cows* decreased in supply after the war upon the swill-milk establishments in 1860-1, but during the past year the receipts have exceeded even those of 1860.—*Veal Calves* were crowded in very freely last summer, owing to the high price of beef, the short pasturage, and the advance in dairy products, which led farmers to save all the milk possible. The receipts exceeded those of 1863, by over 40,000 head. This will tell materially upon the future supply of full-grown stock, especially in 1867-8 when these calves, if raised, would appear as beef cattle, working oxen, and milch cows—40,000 being nearly one-sixth of the total number of beef cattle received during a whole year.—*Sheep and Lambs* have also been sent to market more largely than in previous years, but the increase is about in the ratio of the increased product of sheep throughout the country.—*Live Hogs.*—The receipts for 1864 fell off to less than two-thirds those of each of the two preceding years—due partly to the lack of corn to fatten them, and partly to the resumption of pork-packing in Western cities, especially along the Ohio river where the incursions of the enemy in 1861-2-3, materially diminished this branch of business.

	Beeces	Cows	Veals	Sheep	Swine	All Kinds
1864	5,136	146	1,469	14,961	12,636	34,348
1863	5,062	129	698	10,044	21,092	37,017
1862	4,532	101	5-2	9,149	21,120	35,492
1861	4,265	110	630	9,950	11,292	26,176
1860	4,360	138	772	9,888	6,147	21,805

AVERAGE WEEKLY RECEIPTS.—This table gives the average weekly receipts for the whole of 5 years. The first table, above, shows the receipts at the different seasons. It will be seen that the supply of beef runs pretty uniform for this standard meat, seldom sinking below 4,000, and a few times running up to 7,000, but usually running only a little above or below the average of about 5,000 head, as given in this table.—*Veal calves* of course come in most freely when they had a few weeks' growth, and especially when the dry pasture season arrived. The receipts of sheep began to be large soon after the June shearing. Hogs were sent forward in unusual numbers in May, June, and July, when farmers began to fear the failure of the corn crop—the largest receipts being of course after the cooler packing season opened in autumn.

PRICES OF BEEF CATTLE.—The following figures show the average wholesale price of all the Beef Cattle sold during each of the past five years, the figures being the cents per pound for the estimated dressed weight. It

1864.	1863.	1862.	1861.	1860.
14 1/2c.	9 1/2c.	7 1/2c.	7 1/2c.	8 1/2c.

will be noticed that during the past year the price was fully 50 per cent above the preceding year, and very nearly double that of 1862. Other meats have advanced in about the same proportion, excepting swine, of which, in 1864, the average price nearly doubled that of 1863.

TOTAL SUPPLY OF BEEF.—Estimating the cattle to dress an average of only 700 lbs., the 267,068 head yielded over One Hundred and Eighty-six million pounds of beef (**186,947,600 lbs.**). This at the average wholesale price of 14 1/2c. is nearly Twenty-seven Million Dollars (**\$26,795,823**)—a nice sum to go to the country from this city for beef alone—to say nothing of mutton, veal, and pork.

WHERE THE BEEF COMES FROM.—Of the 267,068 Beef Cattle recorded, 185,556 were yarded at 44th-street, and of these we have records showing the States to which they were credited, thus:

From	No. of Cattle	From	No. of Cattle
Illinois	93,210	Michigan	1,250
New-York	37,774	Pennsylvania	1,148
Ohio	24,215	Connecticut	920
Kentucky	9,345	New-Jersey	858
Indiana	6,979	Massachusetts	292
Missouri	3,351	Kansas	149
Iowa	3,282	Wisconsin	126
Canada	3,016	New Hampshire	11

Here we have 93,210 set down as coming from the single State of Illinois. Some of these were doubtless from Wisconsin and Iowa, but many more of those credited to New-York, Ohio, Indiana, and Michigan, came originally from Illinois, and were pastured for a season in the former States. Illinois is a great State in more respects than one. If any doubt, let them ride over her magnificent lines of railway, running North and South, East and West, indeed in all directions, and they will see where the cattle grow, and where the corn is raised to fatten them with. Our citizens who learn where the beef comes from, and our Western farmers who see where it goes to, and the money that it returns, will know how to appreciate the great lines of railroads stretching from this city away to the Mississippi, and beyond, and to be thankful to those who have invested their funds, and often sunk them in building up these great public enterprises.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

A Wisconsin Sorghum Convention is to be held in Madison, Feb. 7, at 10 A. M.

Michigan Agricultural College.

The announcement of this College is given in our advertising columns. This is the oldest institution of the kind in the country, has an excellent corps of professors, and ample means of instruction. To Western students it offers opportunities for acquiring a scientific and practical education, which they should not allow to pass unheeded. As compensated manual labor is a feature in this college, a student is able to complete his course with comparatively little expense.

Agricultural Colleges.—“Sophomore,”

Louisville, Ky., asks how these differ from other colleges and what are the principal studies taught in them. The course of instruction in Agricultural colleges is arranged with special reference to the wants of the farming population, and will be more or less extensive, according to the views prevailing in the community where the college is situated. Chemistry, animal and vegetable physiology, and such other sciences as have a relation to agriculture, are thoroughly taught, while the languages and the purely literary studies receive less attention or are altogether omitted. The only Agricultural colleges yet in operation, as far as we know, are that of Pennsylvania, advertised in the *January Agriculturist*, and that of Michigan, advertised in the present paper. There is also one in Maryland, but, judging from its catalogue, its course does not essentially differ from that of other colleges.

What Constitutes a Good Compost

Besides Stable Manure?—H. M. C., Middlesex Co., Conn. A compost is a manure from a mixture with the excrements of other ingredients than the litter bedding of animals. If the dung and urine of animals is the basis of a compost, it will, of necessity almost, be mixed with the litter and the waste of the fodder, etc. To this may be added three or four times as much dry swamp muck or peat broken down quite fine, parings of roadside turf or headlands, or any other vegetable substances, as sawdust, chip dirt, etc. A smaller quantity of good soil does very well, and even sand is often employed as an absorbent of liquid manure, and as an ingredient of the compost. Bones pounded pretty fine, gypsum (plaster), leached ashes, leather scraps, bone or horn turnings, woolen waste, hen manure, house slops, chamber lye, brine, etc., are all valuable additions, and make the thorough working over of the heap, and a corresponding increase of more inert substances desirable. Lime or unbleached ashes are not suitable to mix with animal manures, but may be previously mixed with the muck to lie awhile before adding it to the manure compost, etc.

Editorial Quarrels—True Ambition.

The long time readers of the *Agriculturist* will bear witness that we very seldom have any disputes with our contemporaries. We confess to an ambition, in common with others, to have our journal occupy the highest rank, but we scorn to seek to stand uppermost, by pulling others down below our own standard. That is a low ambition which leads one to carp at and pick flaws in his neighbors, in order to show off by contrast his own superior merits. If any one sees the slightest leaning in that direction in this journal, he will do us a great favor by pointing it out. The true way to pre-eminence is through superior energy, enterprise, and intrinsic merit. We repeat then, that we will not, and can not stoop to fault finding, to prying into the concerns of our contemporaries, and as a rule, only refer to them and their doings when some error of statement or opinion is likely to lead the public astray.

Stop That Falsehood.

We notice that a few jealous journals, in the spirit referred to above, have industriously circulated a falsehood in regard to this paper, which we have so far passed by as unworthy of notice; but as it is kept up, and concerns the integrity of the Publisher, we notice it briefly now. It is asserted that “last winter, when the price of paper rose, this journal was reduced to ‘half size.’”—Another says “greatly reduced,” that the “half sheet was advertised at full rates;” and, increasing in the boldness of the statement, it is next asserted that “the half”—“the reduced” sheet—is offered at an advanced price. The truth is, no reduction was made “last winter,” nor until September, and then but a slight one, in three numbers, and it

was then stated that the advertising space would be lessened, and extra efforts be made to condense the matter, so as to give about the usual amount of information. So little was the contraction, that only two readers complained of it, and one of these said he did not notice it until informed of it through one of our jealous contemporaries. The whole reduction of size during the entire year amounted to just three-fourths of one number. SECOND: When the small advance in price was made, it was distinctly stated that it was done in order “to be able to maintain the full size of the paper, and keep up its progressive character,” and this size was restored before the advanced price took effect, and before any of our jealous friends uttered their slurs—or to be plain, their falsehoods. Until September, and since November, the paper has been as large as it ever was. We have no idea of making it smaller, and think it is improving in intrinsic value with each number. We have no hopes that the vilifiers will retract their false statements, but we shall not quarrel with them, nor, if they behave civilly, point out their numerous deficiencies, the kind of advertisements they admit, to meet expenses, etc. One of them would better let others alone, and attend to his own business, so as not to stop his paper again when the subscription money is all in for a year ahead, and also settle up his unpatented patent operations, so as to die in peace.—If our readers are satisfied, it is enough for us. If they are not, they will of course go where they are better treated, and they ought to. We shall not complain, and scold our contemporaries for being superior, but rather praise them for it. Fortunately for us, our readers seem to be more than satisfied, which they manifest by bringing along many others—for which we thank them.

Ashes on Potatoes.

Hard wood ashes are one of the most valuable kinds of manure, especially adapted to potatoes, which nowadays are so sensitive to decaying manures. Chester Belding, of Orange Co., N. Y., writes that he applied “unleached ashes to the potato hills after first and second hoeings, at the rate altogether of about 15 barrels per acre. Two rows through the center which were not ashed, yielded at the rate of 197½ bushels per acre, while the others produced at the rate of 280 bushels per acre. There was no perceptible difference between rows ashed once and those ashed twice. Will ashes continue to be beneficial if applied? and how many years will one application be beneficial? A dressing of ashes will show its good effects several years on grass, grain, etc., and marked good effects will be noticed from liberal applications each year on the same land—but this is usually not an economical practice.

Farm Implements Cheaper Now

Than Three Years Ago.—The manufacturers of the Buckeye Mower have prepared a table showing that their \$175 machine costs the farmer less now than in 1861, when a similar mower was sold for \$100. Taking from the November *Agriculturist* of 1861 and 1864, the New York prices of the farmer produce, they reckon that it required to buy the mower in

	lbs. Hay.	Wheat.	Corn.	Butter.	Cheese.	Wool.
1861 (\$100)	14,300	77 bush.	152 bush.	625 lbs.	1667 lbs.	233 lbs.
1864 (\$175)	11,000	69 bush.	92 bush.	330 lbs.	800 lbs.	175 lbs.

Similar figures apply to other produce and other implements, as well as to relative prices in other places.—They apply still more forcibly to our own subscription rates. While improvements have been made, and printing paper costs nearly three times as much, the rates are raised but one quarter to clubs, and one half to single subscribers, owing mainly to increased circulation. Thus a single subscription, cost (at N. Y. prices) in

	Hay.	Wheat.	Corn.	Butter.	Cheese.	Wool.
1861 (\$1.00)	1.143 lbs.	25 quarts	48 quarts	6 lbs.	16 lbs.	2½ lbs.
1864 (\$1.50)	94 lbs.	18 quarts	25 quarts	3 lbs.	7 lbs.	1½ lbs.

Barley on Light, Gravelly Soil.

“Subscriber.” Barley delights in a gravelly loam, not very light, however. Sown as early as the soil can be worked, on ground manured last year for some hoed crop, or on a sod turned under last fall. The crop will not bear heating manure, but on land in poor heart, such applications as seaweed or muck compost, marl, leached ashes, gypsum, or lime, are useful. Barley is liable to smut and rust, but less so than most varieties of wheat.

Apples for Hogs.

Daniel Emerson, of Summit Co., Ohio, writes to the *American Agriculturist*: “In my youth, my grandfather, one autumn weighed four shoats and put them up to fat. I gathered sweet apples and fed to them. At killing time the hogs were again weighed and were found to have gained two pounds per day each. They were fattened only on apples, and the pork was very nice, sweet, and sufficiently firm. This year I kept my pigs penned, and during the summer daily gave them weeds from the garden. From the first of August for two months they had nothing but sweet and grafted sour apples, and since then, apples and corn.

The largest came to the knife before the first of December, very fat, and made most beautiful and sweet pork. A farmer in a neighboring town pronounces an acre of even indifferent orchard to be equal in value for hogs to an acre of the best corn, year by year.” Why not plant sweet apple orchards for hogs and for cows also?

Hogs Poisoned by Salt.

“U.” Westchester Co., N. Y., says many hogs have been lost in that County, through having too much salt fed to them ignorantly, and asks a cure. Old brine is very poisonous to swine. Salt can hardly be called poisonous unless it is taken in large quantities. In either case, we would give the hog a warm bath, clean nest, and a diet of raw roots, especially potatoes, mashed to a pomace. If any of our readers have been successful with any particular treatment, they will favor the inquirer and others by communicating it to the *American Agriculturist*.

Wintering Hogs on Turnips.

“D. D.” Lake Co., Ind., proposes wintering his hogs on turnips, and asks “Will it do?” We think so. Why not?

40 Acre Clay Farm—Ayrshire Bull,

etc.—C. A. Bruce, Fulton Co., Ill., who has such a farm, naturally good for fruit and wheat, asks: “Will it pay to haul ashes which have been exposed to the action of the atmosphere for two or three years, a mile and a half, for the purpose of enriching or loosening the land?”—Yes. “Will subsoiling without underdraining be of any permanent value?”—Doubtful—certainly not if the land is wet.... “Can you inform me at what price I would be likely to obtain a good Alderney or Ayrshire bull calf, or a yearling, next spring?”—\$25 to \$75, according to quality.... “I have an interval of 2 years in my file of the *Agriculturist*, at what price can I obtain the volumes for 1858 and 1859?” Sent by mail, bound for \$2.44 each, unbound, \$1.74 each. He adds: “The December and January Nos. of the *Agriculturist* are splendid, and I wish I could send you a hundred subscribers.”

A Chicken House for the Prairies.

Mrs. R. J. Trine, writes to the *American Agriculturist*: “A very good, but cheap chicken house can be made thus: Build a rail pen, leaving an opening at one corner for access; and cover, and stop the cracks with prairie hay or straw. With such a hennery, and with plenty of fresh meat, vegetables, grain, fresh water, gravel, etc., hens can be induced to lay all through the winter.”

How to Break Steers.

In answer to J. W. Brown, of Cecil Co., Md., and others: Steers have by no means so nervous a nature as horses. They will sooner yield to force, and accommodate themselves to what appears to them unavoidable necessity. So they do not need so much careful reasoning with, so to speak. It is best to begin with them as calves, and let the boys play with them, and drive them tied or yoked together, taking care that they are not abused. When a pair of old steers are to be put together and broken to the yoke, or a pair of bulls, as not unfrequently happens, it is usually best to yoke them, and tie their tails together, in an extempore stall, in a well fenced yard, and then turn them loose in the yard, which should not be large enough for them to run in and get under much headway. If the tails are not tied together, they will frequently turn the yoke, which is a very bad habit. After half a day's association, the lesson of “ye up” and “whoa,” may be inculcated—and when well learned—probably the next day, “haw” and “gee.” The daily lesson should be given after they have stood yoked awhile. They should not be taken from the yard until they have become used to the yoke, and are no longer wild and scary, as they are apt to be at first. Each day all previous lessons should be repeated. Put them before an ox sled or a pair of cart wheels at first, rather than to a stone boat, as they are apt to step on the chain, and that frightens them. All treatment should be firm but mild, and no superfluous words should be employed.

Quinces in Clay Soil.

C. Holland, Peoria Co., Ill. A rich, deep loam is to be preferred, but the trees will doubtless do well on the clay, if it is ameliorated by draining, deep working, and by the use of coarse manure. The addition of salt would be of doubtful utility. Experiment with it in moderate quantities.

Strawberry Plants for Subscribers—Explanation.

To the numerous inquiries from new subscribers, we answer generally: The “*Agriculturist Strawberry*” was offered free, and sent to all subscribers for 1854, who applied for it according to the rules. This done, the new growth of autumn was sold to Rev. J. Knox, of Pittsburg, Pa., who, being by common consent the “*Strawberry King*” of the country, was anxious to secure this Queen of the strawberries, and

have the plants for sale. All orders sent to us are turned over to him. The plants remain in our grounds, whence they will be taken in spring, as called for by customers. He will, doubtless, meet with ready sale for all the plants he will have, as, by universal consent, this is the most remarkable variety of this fruit that has yet been produced. In the sale, we reserved a limited number for distribution among our readers the coming spring, a large portion of which have already been called for by new subscribers and others. When an application comes along with a subscription letter, so as to be entered down with it, and accompanied with five cents for postage and packing, the name is recorded. The plants will be sent in order of application, as soon as spring weather admits, until the reserved supply is entirely exhausted. Rev. J. Knox, box 155, Pittsburg, Pa., will respond by circular, or otherwise, to all inquiries in regard to purchasing plants.

Spring Budding the Peach.—J. B. Richardson, Ill., asks if buds can be cut in winter and successfully preserved and inserted in spring. Spring budding is sometimes practised, but we never knew it to be done with the peach. The buds are apt to remain until late before they start, and the wood does not become sufficiently ripened to endure the following winter. If any have experience, we shall be glad to hear of it.

Black Naples Currant.—J. Grable, Buchanan Co., Mo., wishes to know if this variety is worth cultivation. It depends upon whether one likes black currants. While some consider them a valuable fruit, others (including the writer), regard them as disagreeable and worthless. Naples is the best of the black.

Crop for a Peach Orchard.—N. A. Halbert, Erie Co., N. Y. Cultivators differ as to the propriety of taking any crop from the land except peaches. In New Jersey it is the general custom to grow buckwheat in the peach orchard, to keep down weeds. Plowing it in before it matures would increase the fertility of the soil.

Eastwood on the Cranberry.—This is probably the most complete work on the subject, and the Department of Agriculture seem to think so, as two of the engravings are taken from the work to illustrate its report for 1863. This, considering that the work is copyrighted, is rather cool. There is a new edition now in press, and it will be ready in a few days. Price, 75 cts.

Maggots in Beans.—J. S. Brower, Monmouth Co., N. J. It is difficult to say why these insects should suddenly appear. It is not probable that anything used upon the soil has anything to do with it. We know of no remedy, except to destroy all infested seed before the grubs turn into beetles, and procure seed from localities where the insect is not known.

Rhubarb.—S. H. Mitchell, Perth Co., C. W., asks what kind of Rhubarb to cultivate for medicinal purposes. We doubt if it is worth while to cultivate any sort for its root. In England, a cut-leaved species (*Rheum palmatum*), is grown, but it gives a very indifferent product, and one which has but little value, except to use in adulterating the powder of Asiatic Rhubarb.

Shade Trees.—It is a great mistake to choose large trees from the forest. Take, instead, small trees, and those from open fields. By careful treatment, they will soon overtop the tall spindling trees from the woods, and will be handsomer and better specimens. It would be better still, for them to have a year or two of nursery culture before being set in their final position.

Hon. Marshall P. Wilder.—All who are interested in horticulture will be glad to know that this distinguished pomologist still retains his interest in rural affairs. In renewing his subscription to the *Agriculturist*, he says: "My health is slowly, but my physician says surely, improving. I hope that it may prove so, and that my mission is not yet ended."

Tritoma Uvaria.—This is a very pretty plant, and the Prairie Farmer, of January 7th, has a very pretty picture of it, but it would have been pretty in the Farmer to have said that it was taken from the *Agriculturist* of November last. Mr. Farmer, it isn't pretty for you to gobble up our original pictures, and never say thank you.

Locality for Grape Culture.—A subscriber, in Buffalo, sends us a detailed description of a certain locality, and then asks us if grapes grown there will yield a juice which will make wine without the addition of sugar. It is impossible for any one to answer this, and many other similar questions, in any other than

the most general terms. The Delaware and the Catawba, where they will ripen, will make wine without sugar. The Concord varies in value as a wine grape, the sugar seeming to increase the further West it is grown.

Hedges in New Jersey.—W. T., Monmouth Co. We think that the Honey Locust will do best in your locality. The Osage Orange would be hardy, but it is almost impossible to get drier seed or plants.

New Vegetables.—From inquiries among seedsmen, there seems to be an unusually small number of new varieties of vegetables to be brought out the coming spring. Of course there is the usual assortment of new Peas—those we have in numbers every year—but the only novelties we have noticed, thus far, are Evergreen Pole Beans, said to keep well in the pod for use in winter, and the Valencia Cluster Tomato, which is said to be large, smooth, red, and very fine.

Don't Send Money to Thomas Boul & Co. (an illegal lottery operation)—to George C. Kenneth, the promises to lie for \$10, and no doubt will)—to S. B. Goodrich (another lottery swindle)—to C. W. White (he says he has made \$50,000 by selling recipes, and wants to sell more—for almost every thing, from yellow butter to white brass and gold coins)—to James Conway (he has a package in his care, for which he wants 48 cts.)—to Hammett & Co., Seymour & Co., Brown, Sherman & Co., (professed lottery dealers)—to J. T. Small (Union Relief Association, with lots of prizes)—to Charles A. Herbert (another \$10 liar)—nor to any other humbugging sharpers who flood the mails with their circulars, promising to give more than a hundred cents worth for a dollar. They can't afford to do it, and they will not do it: let no *Agriculturist* reader be caught with such chaff.

Look Out for the Generous Pedler.

A subscriber, in Western New-York, gives an account of how some of his neighbors were "taken in and done for," by a smart chap, who is yet on his travels. He drove into the village, dressed in burlesque Yankee style, and commenced selling worthless jewelry. To each purchaser he returned the money, and allowed them also to keep the article bought. Presently he sold a \$5 green-back (genuine) for \$4, then \$1 for 90 cents, and 50 cents for 25, after which he scattered a lot of small change among the crowd, and drove on slowly. People thought him crazy, and a throng followed to watch his operations. Presently he stopped again, and began selling gilt lockets for \$5 each, which were rapidly taken as before. When about forty were thus disposed of, he said: "Gentlemen, I have sold you those goods at my price; I am a licensed pedler; and now, if I give you your money back, you will think me a lunatic; I wish you all success in your ordinary vocations." And away he drove, leaving his dupes in doubt whether to rave at him, or laugh at each other. The lockets were worth, perhaps, 10 cents each.

How to Cook Kale.—A Simple Way.—Take the leaves and the head or heart (which is the most tender part) wash all sand or dust carefully off, by using fresh water, three or four times. Then put in boiling water, with a handful of salt to about a painful of kale, till it is cooked perfectly tender, place in a cullender, press the water out, and put into a stewing pan, with a piece of butter, gravy, or fat, according to the quantity cooked, or richness required: let simmer for ten minutes, and then serve for dinner.

Hard Soap.—If any one has a process by which good hard soap can be easily and economically made in the family, he will confer a favor on many others by communicating it, with full particulars.

Catalogues Received.—The nurserymen and seedsmen seem to be unusually late with their catalogues this season. James Vick, of Rochester, N. Y., sends his "Illustrated Catalogue and Floral Guide," which is a work of more importance than seed catalogues usually are. It has two colored and numerous uncolored engravings, with descriptions of the best varieties of flowers and vegetables, and directions for their culture. Peter Henderson, of Jersey City, N. J., issues his 17th annual catalogue of plants, which includes all the standard varieties and many novelties. Mr. H. has recently succeeded Mr. Davidson, in the firm of Fleming & Davidson, and, as one of the firm of Henderson & Fleming, carries on the business of seedsmen, in addition to that of florist. F. Trowbridge, Milford, Conn., sends a catalogue of trees, and a treatise on the culture of the cranberry. F. K. Phoenix, of Bloomington, Ill., is out with his catalogue of general nursery stock. He is very much in earnest about planting trees on the prairies. He says: "Buy or not, but plant! O, Reader! at least seeds, cuttings, or trees from the forest! They grow while you sleep!"... The old and well-known house of

J. M. Thorburn & Co., New-York, have published their catalogue of vegetable and agricultural seeds. A glance at it shows that prices average about fifty per cent. higher than in former years, but this was to be expected. Don't buy poor and old seeds at any price.

"Wet Days at Edgewood: WITH OLD FARMERS, OLD GARDENERS, AND OLD PASTORALS," is the title of a work by Ike Marvel (Donald G. Mitchell) just issued by Scribner. Those who have read the author's pleasant account of his "Farm of Edgewood," will have a desire to possess these gleanings from his holiday readings. The work gives sketches of the writers on rural affairs, from Hesiod and Homer down to Cobbett and Charles Lamb, and all told in the charming style so characteristic of the author.

"Lessons for Every Sunday in the Year."—A series of 208 lessons (52 in each of four books), taken from the whole of the Old and New Testaments, all arranged in order of time, with a brief, but comprehensive history of the entire Bible, and accompanied by appropriate and suggestive questions and instructive rules, references, etc.; adapted to scholars of all ages. No. 1, on the Four Gospels and Acts; No. 2, from the Birth of Christ to end of Revelations, mainly on the second half of the New Testament; No. 3, the Period from Adam to Elijah; and No. 4, from Elijah to Christ. The value of these books is indicated by the fact that though but recently published considerably over 100,000 copies have been asked for. Nos. 1, 2, and 3, are now ready. Price of each, 15 cts., \$1 50 per dozen, or \$12 per 100. If sent by mail, 4c. per copy extra for postage, or 3 c. each in packages of 10 or more. No. 4 is not yet in print. Superintendents, teachers and parents are invited to examine the peculiar plan and merits of this series. Nos. 1, 2 and 3 will be sent post-paid for 50 cents.

Woodlawn Cemetery is the latest born of these rural repositories for the dead. It is upon the line of the Harlem Railroad, seven miles beyond Harlem River, and can be reached in a half hour from the depot in Twenty-sixth-street by the cars. It is designed to accommodate New-York City and the numerous villages along the lines of the Harlem and New Haven Railroad. Facilities are furnished to attend funerals by steam cars, which are found to be very much more comfortable, as well as more economical, than the ordinary mode. We learn that the association has already expended some fifty thousand dollars in improvements, besides the purchase price of the land, of which they have over three hundred acres, with the permission to hold five hundred. We are specially interested in this new enterprise in our suburbs, as it is under the supervision of one of our editorial corps, Rev. W. Cliff, recently of Stonington, who has been for many years associated with the *Agriculturist*. Our readers will profit by his removal to this new field for the exercise of his rural tastes.

Works on Flax and Hop Culture.

—The offer of premiums for essays upon the culture of flax and hops has been responded to by a good number of writers, and the essays are now being read. We have no doubt that we shall be able to offer a manual on each of these subjects that will be of great practical value.

Sorghum Culture and Profit.—Many reports come to us of success with this important crop. S. P. Jones, of Hamilton Co., Ohio, cultivating like corn and using a good dressing of stable manure, obtained of good thick molasses at the rate of 225 gallons to the acre, which at the retail price there (1.50 per gallon), would be worth \$337 50. Another subscriber has made 5,000 or 6,000 gallons, much of it from cane of excellent quality, but some from green, frosted and mouldy lots, and all purified without the addition of "chemicals." Another reports 14,000 gallons made in the town of N. Haven, Ct. ... 5,000 gallons were made in Meriden, Conn., 3,000 in Berlin, 1000 in Southington, and large quantities in New Britain, and in other towns in the same State.

Husk-Tearing Machine Wanted.

—Several subscribers inquire if there is any good machine for tearing corn husks to prepare them for bed mattresses, etc. We can not answer—perhaps others can, and give cost, etc. Mr. Thos. E. Pearsall, of Brooklyn, L. I., speaks of a contrivance got up by himself, and unpatented, which is somewhat similar to a threshing-machine, but it does not tear them quite fine enough for beds.

To Keep Rats from Harness.—E.

Snow, Poweshick Co., Iowa, asks: "Will some reader of the *American Agriculturist* tell me what to put into harness oil that will prevent rats and mice gnawing the harness?" Won't it do for the *Editor* to suggest the admixture of a moderate quantity of good strong snuff? We shall be glad to hear from our readers also.

Caked Bags—Garget.—Many of the applications which are used effectively to relieve the acute diseases of men and animals savor strongly of quackery: yet they are so efficient that the recipes are treasured as of great value. Here is one such: "Take chamber lye, hot as hand can bear, and bathe the parts. Then take a large, smooth stone, wrap it in flannel, and rub firmly all over for ten minutes. Then rub well with hot lard and molasses. Do this every hour. Cows with very tender bags give every evidence of enjoying the operation." We would substitute brine for urine, and gentle rubbing and kneading with the hand for the stone, and effect the same results. Bathing in warm arnica water—either the aqueous extract or the tincture dissolved in water—we have found very efficacious.

Kicking Cows.—J. P. W., Tipton Co., Ind., writes: "A leather strap buckled tightly around the loins of the 'kicking cow' succeeded admirably with me, and I recommend it as simple and easily applied."

Flax Shives—Lime Waste of Paper Mills and Gas Works.—"Enquirer," Livingston Co., N. Y., asks the value of these articles. We advise this experiment. Take three-fourths or four-fifths flax shives, and one-fourth or one-fifth lime of either sort, or both mixed, and lay up a compost heap, which open and work over after a few weeks, working in more shives, according to your judgment. Gas lime needs thorough pulverization, and months of exposure to the air before it will do to bring it in close contact with growing crops. And we presume bleachers' waste needs similar exposure.

Broom Corn Brush.—C. G. Eggleston, Peoria Co., Ill., asks about the price and demand for this article in our market. There is a brisk demand for a good article. It should be bright, light colored, long and put up in compact, strongly wired bales. The prices quoted for medium to prime are \$16 to \$18 per cwt.

The Cuzco Potato.—This one of Goodrich's seedlings seems to have given large returns in many hands. E. C. Allen, of New Haven Co., Conn., reports 11 bushels from 4 quarts, cut to single eyes as nearly as possible—equal to an increase of 80 from 1.... J. Tracy, of Grant Co., Wis., received by mail 4 potatoes of this variety, which cut up into one-eye pieces, yielded 400 potatoes averaging larger than the original four, and measuring 3 bushels. This is 100 for 1.

Potatoes—Large or Small Seed.—W. H. Cook, Suffolk Co., N. Y., reports 260 bushels of large potatoes to the acre, raised from small seed.

Bulkeley's Seedling Potato.—J. T. Maps, Orange Co., N. Y. We have not heard of this variety for the past two years. Perhaps some of our readers can tell about it.—We knew it by no other name.

Injured Peach Trees.—G. R., Berrien Co., Mich., has bought a place, upon which is an orchard of peaches, the trees in which have been injured by cattle, and asks what he shall do with them. The treatment will depend upon the age of the trees, and the extent to which they are injured. If they are young and vigorous, and shoots can be obtained from above the junction of the bud with the stock, they may be headed back, and one or three shoots allowed to grow to renew the head. It is no objection that the head is formed close to the ground. The work may be done at the time the buds swell, as at that time the dead and living portions are best distinguished.

Exposure for Pear Trees.—"Young Orchard," Sandy Hook, Conn. Any other than a full Southern or Eastern exposure is to be preferred, it being generally admitted that one source of disease in pear trees is the sun's action upon the naked and frozen limbs.

A Productive Plot of Ground.—We receive statements of the great returns from small parcels of ground, too numerous for publication, but they are all interesting as showing how much good management, with high manuring, will produce from a small area, and teach a lesson that may be profitably considered by farmers as well as gardeners. One of our correspondents forcibly states that "retail manuring and wholesale cropping don't pay." A subscriber, in Westchester Co., obtained from a plot of ground, 12x24, tomatoes which sold for \$14.50, at which rate an acre would yield over \$2,000. In statements of this kind, we seldom have the cost of production given, nor any intimation whether the crop was sold at wholesale or retail prices.

Horse-Power Saws.—James A. Mitchell, Park Co., Ind., inquires for a horse-power saw, for cross-

cut work, which does not require to have the logs drawn to and moved up to the saw, but which may be drawn to the logs and will cut them as they lie. It may be there are such saws. If so, they should be advertised. At any rate, here is an opportunity for inventors.

A Machine for grinding or tearing up clods, bogs and other such like things, used to increase and improve the manure product of the farm, is called for by J. Hodges. We know of none such in this country. It is not unusual to make the compost heaps so large and flat that they may be plowed and harrowed. The advantage to be gained by having these materials made fine by one operation, and at once, as in the way suggested, is a gain of time only; for in the course of 6 to 12 months the use of lime, or fermenting manure, or often by the weather alone, tough bogs and sods may be made fine and soft.

A "Manufacturing Machine."—That is, a machine which makes things by hand; for manufacturing means simply making by hand. True, we use these and similar words very carelessly, but really a manufactory is a factory where hand labor is chiefly employed. The above curious expression we notice used in a mechanical journal of wide circulation, and similar expressions are common, but none the less incorrect.

Burning Lime.—"D. B." asks for information in regard to the most economical way he can burn lime with wood. Practical hints on this subject will doubtless be acceptable to many.

Ashes for Asparagus.—John Millen, of Highland Co., Ohio, covers his beds with 3 or 4 inches of leached ashes, and finds the crop better than with any other manure—weeds are completely suppressed.

Harness Buckles and Trimmings.—A subscriber asks how harness trimmings which have lost their plating may have their beauty easily renewed.

Is it a False Notion?—An Old Farmer, of Brady Co., Pa., says he plants his corn upon land plowed, the last time, East and West (probably not harrowed), and holds the opinion that fields thus planted come forward earlier and yield better than those planted on furrows running North and South. It may be that soil plowed thus receives more warmth from the sun.

Keeping Cions.—J. Woodward, Wayne Co., Pa., says that cions cut "in the old of the moon in February," put in a large glass bottle, corked tight, and placed in the cellar, will keep better than in any other way. Without any reference to the age of the moon, a bottle may often be the most convenient vessel in which to put grafts, to keep them from drying, when it is not practicable to bury them. When sent by mail, cions should be wrapped in oiled paper or cloth, and if packed with a little damp moss there will be less danger of their drying. If to go great distances, pack in sand in a tin case, which is to be soldered up tight. Cions put up in this way usually come from Europe in good condition.

Strawberries for New Jersey.—The Fruit Growers' Association, of West Jersey, held an exhibition of Strawberries, in June last, at Morristown, at which the value of the different varieties for cultivation was discussed. Mr. Clayton Lippincott, one of the officers of the society, sends the following account of the vote taken to test the estimation in which the varieties were held by the members: Russell's Prolific, 11; French's Seedling, 15; Downer's Prolific, 15; Wilson's Albany, 4; Cutter's Seedling, 14; Lady Finger, 7; Hovey, 7; Leed's Prolific, 6. The vote was taken by each member selecting the five he considered best. There being a tie upon Hovey and Lady Finger, another vote was taken on these two, which resulted in 17 for Hovey and 9 for the other. Russell's Prolific, French's Seedling, Downer's Prolific, Cutter's Seedling and Hovey's Seedling are considered by the West Jersey Association as the five best market varieties for cultivation near Morristown.

What are Remontant Roses.—J. L. Reimontant is a name given to those roses which bloom more than once in a season. They differ from the perpetuals in having several distinct periods of flowering.

China Grass.—A. J. Aldrich, Worcester Co., Mass. The fibre is evidently that of China Grass, and is from a nettle-like plant, *Boehmeria nivea*. It is largely cultivated in India, but we are not aware of any trials here. The fibre is from the tough bark of the stem.

Strawberry Propagation.—T. R. Payne, of Scott Co., Iowa, asks us if it is true that plants from lateral runners will produce fruit inferior to those from the main runners. Without having tested this point by growing beds propagated in both ways, side-by-side,

we should, on general principles, say, that one runner was as good as another, if as strong and healthy.

Bulbs.—W. H. Orr asks what he shall do with a lot of Hyacinths, etc., which were received too late to plant out of doors. Pot them and keep them in a dark and moderately warm place, until the ground opens, and then turn them out without disturbing their roots.

Pansies, etc.—Francis W. B. Robbins, Suffolk Co., N. Y., asks if Pansies, Forget-me-nots, and Violets, are the same plants. Pansy is *Viola tricolor*, and the cultivated blue and fragrant Violet is *Viola odorata*. They are both violets, but different species. Forget-me-nots is *Myosotis palustris*, of an entirely different family.

Pea for a Name.—E. C. Clark, Harford Co., Md. The pea called "Coffee" is the old Chick-pea, *Cicer arietinum*. Though considered less digestible than ordinary peas, there is nothing deleterious about it, and it is largely used as food in various parts of the world. It is said to be a good substitute for coffee, and as such the seed has been sold at a high price. We have no experience with it as a "coffee" plant.

Massachusetts Coffee.—J. L. has seen a notice in a Worcester paper, that some one in that vicinity had raised four pounds of good coffee, and asks us how to cultivate coffee. The "coffee" in question cannot be the true article, as in our climate this can only be raised under glass. It is impossible to guess which one of the many substitutes for coffee may have been referred to.

Kyanizing.—"M. P.," Concord, N. H., writes to the *American Agriculturist*: "My method of 'Kyanizing,' may be more practicable for farmers or gardeners who wish to prepare a few stakes, than that given in the *Agriculturist* for October. I dissolve blue vitriol in water, at the rate of one pound to five gallons, in an iron kettle. Then take well seasoned stakes and stand them in the liquid for four or five days, a little deeper than they are to stand in the ground, and they will come out well impregnated. Sometimes, when I have wished to prepare long poles, I have cut the trees when the leaves were on, and put them without much trimming, immediately into the vitriolized water. In a few hours the vitriol will have colored the wood and leaves to the top of a twenty-foot pole. The saturation of the wood will of course become more perfect if it remains in the solution two or three days. The poles should then be allowed to dry in the air before setting them into the ground."

Re-sharpening Files.—V. V. Deys, Jackson Co., Ill. The best way is to take the old files to a file-cutter, and exchange them for new ones, or let him make new files of them. One will thus realize all that the worn files are worth. There are a good many file-cutters in the country, but they are found mainly in large towns, and we think, do not put themselves sufficiently in business communication with their neighbors who use files. There is no acid or "solution" in which files may be dipped and re-sharpened. If a file is made very clean with lye or soap, and then dipped into nitric acid, for a few seconds, it will appear to be sharper, but a little use very soon will wear it down smoother than before.

Ice Water Cistern.—"J. C. B.," Fond du Lac, Wis. writes: "While in Iowa, last summer, I drank cold cistern water which was very acceptable in those hot days. Bye the bye, almost all, or at least a great many use cistern water—one hundred feet not being an unusual depth required for wells. The cistern spoken of was filled with snow last winter, and was kept closed; the family could draw ice water at any time."

Frost in Pipes and Pumps may be removed by conducting hot water upon it, through a rubber tube, such as is used for gas tubing now-a-days. The best size is that with about 3-16 bore, and 3/4 inch walls. Put a funnel in one end, and a piece of goose quill in the other, (to prevent the pipe closing), then bind this end to a stiff, but flexible wire, or piece of ratan, or willow, long enough to reach the ice. Pour in boiling water, keeping the tube close to the ice, which will thaw most rapidly. Two pieces of rubber tube may be joined by using a goose quill, or short piece of glass or tin tube, to unite them, slipping the ends close together upon it.

Keeping Iron Vessels from Rusting.—"Subscriber" wishes to know how culinary vessels may be kept from rusting on the inside. It has been recommended to give them a thin film of beeswax. Heat the vessel and rub on enough wax to fill the pores.

Boiling Potatoes.—Where does the water go? Potatoes contain from 70 to 80 per cent of water. We boil them in water, and this all disappears. Does water extract water? No, but the starch grains (which

any one can see by rubbing a bit of raw potato on glass, and letting it dry) absorb it, just as when starch or flour paste is boiled, only the starch in the potato is in cells, which, with the albumen also, prevent it forming a jelly. When all the 75 per cent of water in the potato is absorbed they boil dry; if some of the cells burst they are "mealy," but when all of the water is not absorbed, and the cells do not burst, they are "waxy." Potatoes are more digestible when boiled, steamed or roasted than when fried, which makes the surface tough, and slowly permeable by water or the fluids effecting digestion.

Candy from Sorghum.—A subscriber asks how to make "Taffy" candy from Sorghum syrup. The method with New Orleans molasses is, to boil 1 pint of molasses and $\frac{1}{2}$ lb. of butter together until it hardens when cold. Those who have experimented with sorghum molasses can say if any different way is necessary.

Old Hoop Skirts.—C. T. Starr, Chester Co., Pa., suggests that old hoop skirts may be used to make trellises for climbing and other plants, in the same manner that rattan is often used. That will dispose of a few, but what shall be done with the rest?

Hang Up the Brooms and Tools.—"W." says: "Why do 99 in every 100 housekeepers set their brooms in the corner brush down? Miserably slack practice! Put a half-cent screw eye in the handle of each broom, and suspend it by a nail; and then tell the man to serve every rake, hoe, etc., in the same way."

Water Pipes.—W. B. Waldo, Dutchess Co., N. Y., does not wish to use lead pipe through which to pump water from his well. Iron pipe, "galvanized," as it is called, that is, coated inside and out with zinc, is probably the best pipe you can use. There is a kind of wooden tube, bored out of 3x3 or 4x4 joists which might do if coated inside and out with paint or cement.

Clean Bottles and Vials.—A correspondent writes to the *Agriculturist*: "No vial or bottle should ever be put aside, without cleansing it, ready for use, and fitting it with a cork to keep out dust. Few houses contain any convenience for draining bottles, etc. Every one should have a board say 8 inches wide, and long enough to reach across the sink, containing holes bored 5 inches from centre to centre with a 1 5-8 inch bit, interspersed with smaller ones, varying in size, or with upright hard wood pins, 4 or 5 inches high, for vials."

Tin Tree Labels.—"A. M. W." says he uses them and likes them. The names must be scratched with an awl. The weather rusts the iron, laid bare by the scratch, and thus brings out the writing clearly. They will no doubt last several years, but the rust will finally spread, and make the inscription quite indistinct.

Peach Trees for Pea Brush.—D. Emerson, Summit Co., Ohio, says that he grows peach trees in his garden for furnishing pea brush. The same roots last for several years, and throw up a new crop of shoots each year. In localities where suitable brush can not be obtained, it may pay to raise it in this way. We once used a lot of overgrown nursery stocks for peas, and found them, as Mr. E. states, "handy and symmetrical."

Protection of Melon Vines Against Bugs.—E. B. Ester, of Essex Co., N. Y., states that last spring he employed *Benzine*, such as is used by painters instead of turpentine, dipping rags in it, and setting them, held in split sticks, near each hill of cucumbers, squashes, melons, etc. Before, the striped bugs or beetles (*Galeruca vitatta*) were abundant, and doing great harm. Afterwards, they all disappeared.

Gas Tar for Wasps Nests.—A small quantity of gas tar poured into the nests after dark, is said to destroy the wasps before morning. A bit of turf is laid over the hole after pouring in the tar.

Maple Trees and Peach Trees Growing from Layers.—W. B. Waldo sends the following statement to the *American Agriculturist*: "Years ago I got maple trees for the front of my house. They were quite large and tall. I feared they would lean, on account of length and weight. My hired man requested the privilege of planting, and I consented. He set them so deep that the surface roots were a foot or two below the surface. Every limb was pruned off, except some little watery sprouts. The first year they were leaved out. The second, again. So for seven consecutive years, I do not believe these trees added to their weight three pounds apiece. The eighth year they started and made limbs six or seven feet long. On examining below, I found the surface roots had started

very thriftily. The trees grew rapidly, and are now large, healthy trees. I do not believe there is an original root about the trees, but that every one is a genuine layer. "I once planted a lot of peach pits, very carefully. Some in the garden were six inches under ground. On taking these up, I found roots protruding from the stem several inches above where they should be. On splitting them down through the pith, I found it dark yellow, rusty, and unhealthy in appearance. I rejected every one of these, for they were layers too, if stems striking root are so. A peach pit, stuck point foremost in the ground, throws a straight, smooth stem up, and its tap root downward. Lay the pit on its side, it forms a crook and plants badly, exposing in the short bend a convenient place for the worm to attack."

A Double Hot-Bed.—Mr. J. McAfee, Bristol Co., Mass., encloses his hot-bed in another frame. His outer frame is 6x6 feet, 2 $\frac{1}{2}$ feet high in front, and 3 $\frac{1}{2}$ feet at rear, with sash in the usual manner. About the middle of February he fills this to within 8 inches of the top of the front with manure and leaves. When the heat is up the manure is covered with rich loam, and another frame, about a foot shorter and narrower, is placed upon it. This inner frame is covered with sash, and has a space of about six inches all around between it and the outer one, which may be filled with manure, or left as an air chamber. Mr. M. finds that his seed bed, arranged in this way, is better protected from frost, requires less frequent watering, and that the plants are not so liable to be scorched by the sun.

Top Dressing.—A subscriber in Washington Co., O., expresses concisely a principle which farmers are very apt to overlook, viz.: "In autumn the ground takes up manure; in spring the air." Top-dressings of solid manure are of much greater value in autumn than in the spring. Fermenting manure ought really to be covered, at least lightly, with soil if we would obtain the full benefit of it. When top dressings with animal manure are desirable, the loss may to a great degree be prevented or compensated by employing an extemporaneous compost of manure and soil or muck. The kind of top-dressings which have an equal or superior effect in spring to fall, are, liquid manure and salts of various kinds which are readily dissolved and carried down into the soil, such as gypsum, nitre, soda, saltpetre, sulphate of ammonia, unleached ashes, etc.

Clover Sown with Oats.—C. L. Kinman, Morgan Co., Ill., asks if it will do to sow red clover with oats. We have never done it; but clover is sometimes sowed with other spring grains, being bushed in after harrowing in the grain, or even left on the surface for the next rain to cover. It may be sowed by itself in the spring, and do well on many soils, and we would not hesitate to sow with oats as above, if desirable. Any testimony on the subject will be acceptable.

Four-leaved Clover.—Mrs. M. L. Strohm sending specimens of leaves, writes that she plucked from a single clover plant 22 leaves of 4 or 5 leaflets each.

Red Sorrel.—N. P. Mix, Franklin Co., Ohio, imported some red sorrel in clover seed a few years since. Now it covers more or less a quarter of an acre, and as it is the only locality, in his neighborhood, of this pest of eastern farms he desires to extirpate it. Whether this can be done or not is very doubtful; but the best thing to do is to keep the patch in hoed crops, taking no grass or small grains from the ground for some years—nor removing the tops of potatoes or other roots in which the seeds might be concealed. This will confine it to the locality, and go a good way towards ridding the land of it.

Cranberries.—P. Birkenmayer. Cranberries, from a very wet bog, would probably be less likely to succeed on upland than those from a drier locality. We have heretofore expressed our doubts that cranberries can be grown upon ordinary soil with certainty and profit. Mr. G. N. Wright, of New London Co., Conn., states that from two square rods of good garden soil he gathered, in 1863, four bushels and six quarts of cranberries. Some of his plants were taken from upland and others from low ground. They increased rapidly and soon covered the ground. Last year drouth and worms prevented a good crop on his ground.

Treatment of the Orchard.—J. J. Richardson, Bay Co., Mich., revives the old question as to the cultivation of orchards. The general practice of good orchardists is to cultivate the ground, while the trees are young, with hoed and heavily manured crops, and when the trees become large to sow it to clover or grass, leaving a clean circle around each tree. In cultivating an orchard, every precaution should be used to prevent injury to the trees from whiffletrees or chains.

The Israella and Iona Grapes—An Explanation, and a Wrong Righted.

It would be strange indeed, if in an independent journal of the character of the *Agriculturist*—discussing as it does a great variety of topics, and its Editors receiving every year many thousands of communications—there should not sometimes occur an error of statement or opinion. It is a source of special gratification to us, that not half a dozen times in twice as many years, has there been any retraction needed. While seeking first the public good, we aim to be always just to individuals, and if through oversight, a wrong impression is conveyed to our readers, no pride of opinion or position will prevent a proper correction. We hold that a higher, nobler courage is indicated by a change from false opinions, or by the correction of one's own errors, than by a dogged persistence in them. With these views, we hasten, on understanding the facts, to offer the following explanation.

In the December *Agriculturist*, appeared a communication over the signature of H. P. Byram, the material point of which was, that Dr. Grant's new grape, the Israella, would not prove elsewhere so early as had been promised for it, or as it did at Iona Island, because, as Mr. Byram alleged, the vines were forced into two or three weeks earlier ripening by the use of glass in front, and protecting and heat-reflecting wooden screens at the back. In the January *Agriculturist*, both Dr. Grant, (in an advertisement), and his foreman, Mr. Bushnell, (in the reading columns), denied *in toto* Mr. Byram's statements and allegations. We had published Mr. Byram's communication in good faith, supposing him to be a man of truth, as he had for a long time stood in good repute as an editor, and among horticulturists generally. He professed to write only for the public good, and exhibited no appearance of being governed by malice or ill-will. The question of the value of these new candidates for public favor, the Iona and the Israella grapes, was a proper subject for discussion *pro* and *con*. When Mr. Byram's letter was received and passed to the printer, it did not occur to us that it contained statements which, taken in connection with what Dr. Grant had published elsewhere, implied want of integrity or honesty on his part. With his advertisements, Catalogues, and other information now before us, Mr. Byram's letter appears in a very different light, and we are satisfied that its publication by us was wrong, and are glad to avail ourselves of this opportunity to make reparation, and to set Dr. Grant right before the public.

After the above positive denial of Mr. Byram's statements (last month,) we suspended judgment, and asked the public to do so, and we set about an inquiry into the facts. Mr. Byram adhered to his former statements, and referred us for proof to persons employed at Iona. We sought the evidence of these persons, with that of others, which is given below in a positive, verified form. We confess to surprise, mortification, and indignation, at the result of these inquiries, and at the strong evidence that Mr. Byram had previously threatened to injure Dr. Grant through his own influence with the press of the country. An attempt by any man to covertly use our columns for any such ends, is a fraud and imposition, upon the publisher and editors, and upon the readers. We leave Mr. Byram, in view of the testimony below, to settle the matter with his own conscience, and with Dr. Grant.

We should perhaps add, that Dr. Grant, while not excusing the motives of Mr. Byram, is yet charitable enough to explain that sashes and screens were used with a few Delaware vines for experimental purposes, but none with the Israellas, and none on any vines in the manner alleged by Mr. Byram.

[Copy.]

WESTHESTER Co., ss.—We, the undersigned, being duly sworn, do depose and say, that we were employed at Iona Island, through the growing season of 1864, and daily saw the management of the vines there; we have also read the letter of Mr. H. P. Byram, in the Dec. No. of the *American Agriculturist*, and declare all his statements in regard to the use of "glass and screens," for hastening the ripening of the Iona and Israella grapes, to be entirely false.

Subscribed and sworn to before me, this 13th day of Jan., 1865. ALVAH BUSHNELL, Foreman, JACOB HEAFLEY, Carpenter, PATRICK SAUOGE, Propagator, THOS. A. WHITNEY, WOLSEY WYANT, Planter, Justice of the Peace. RALPH ISHAM, Trainer of Vines.

[Copy.]

NEW YORK, Jan. 17th, 1865.

To whom it may concern:—I would state that I have read the communication of Mr. Byram, in the *Agriculturist* of December, and also the one signed "Pecunia," in the *Ohio Farmer*. I have been at Iona Island from early Spring to late Autumn, and during the growing season almost weekly, from two to four days in the week, engaged in the critical study of the vines, making accurate drawings of them. I know that no such appliances as Mr. Byram asserts to have seen in use there, were so. My visits to the vines have been so frequent, and my observation so thorough, that I could not have overlooked the matter by any possibility. I have read Dr. Grant's statements and know them, in this respect, to be true.

HENRY HOLTON.

Sworn to before me, this 17th day of January, 1865. WM. M. MARTIN, Notary Public.

About Advertising and Advertisements.

*Some Hints to Business Men, to Contemporaries,
and to Our Readers.*

A man may have good and useful things to sell, but of what benefit will they be to himself or others, if he only knows of it? It is a duty to himself to advertise his wares in some way; and if they are specially useful to the public, it is his positive duty to advertise them as widely as possible. In illustration, take the history of this journal. It was one of the first good papers of its class issued, and had it gone into every family in the land, it would have awakened thought and experiment, and have benefited the country untold millions. Yet for ten years, comparatively few thousands knew of its existence, or that it would be beneficial to them, and its influence was therefore limited. A few years ago the Publisher concluded that if patent medicine men could thrive by boldly advertising nostrums, then something really worthy of public regard should succeed by the same means. He therefore began to advertise largely in other journals, and by handbills, posters, etc. To enlist others in introducing the paper, desirable premiums of good kinds were offered. By these various efforts, together with the fact that the journal itself has been maintained and increased in excellence, it has secured a far larger circle of readers than any other similar journal. Is it too much to claim that this has been a public benefit, as well as to the advantage of the proprietor? The millions of copies of this paper, sown broadcast over the land, have without doubt done much to awaken interest and promote improvements, and thousands have actually thanked the publisher for leading and almost compelling them to read, and to think about their own calling. Thus our double object is gained; we advertise, offer premiums, etc., "to do good and make money."

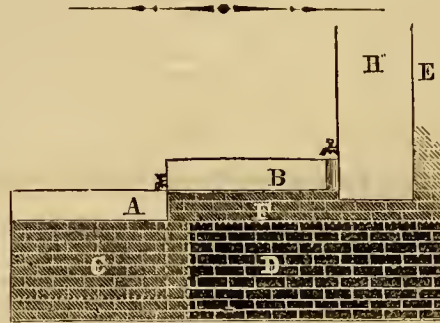
In further illustration of the desirableness of advertising, take the case of a good nurseryman—one who starts with the determination to do a straightforward, honest business. It may cost him \$10,000 a year to keep up his establishment, and he may sell just enough to meet expenses. If he had customers he could produce and sell \$10,000 worth more of trees without increasing his annual expenses by \$3,000. Would it not pay to spend \$2,000 or \$3,000, or more even, in making his business widely known? There are plenty of people already interested in horticulture who would like to know all about his stock; others would be led to think about trees and then buy them, if our good nurserymen would advertise so strongly as to compel attention. An honest nurseryman should above all others advertise so largely as to get the start of dishonest dealers. So with seedsmen, and almost every other class of respectable business men.

In these remarks we have no "ax to grind". All our available space for advertising is taken up early, frequently overcrowding the reading matter more than we desire. This would not be permitted were not the advertisements valuable to our readers. As it is, we are compelled to shut out many for want of room.

And now a word to some of our contemporaries. If they would only exclude worthless advertisements, good dealers would more readily patronize their columns—those who dislike to appear among quacks, "gift enterprise men," etc. Some say they can not live without taking such advertisements. Better die at once than live as the agent of such parties. Others

say they can not decide between the good and the bad. If an editor can not, with all his means of information, it is hard for his readers. But it is not difficult. The editor in charge of our advertising department is instructed to admit no person whom he would not be willing to patronize, if wanting the articles advertised. By scrupulous care in this respect, this department of the paper has come to be relied on by the readers almost as much as the reading columns. And in this matter honesty has proved the best policy. To our agreeable surprise, what we thought at first would be a sacrifice, when refusing advertisements which could pay us best, has really proved the most profitable course, for reasons already set forth.

A word more to the readers. At the urgent request of customers we have omitted some reading matter, to make room for business notices. But perhaps the space is best filled thus. By this means a great 'variety store' is brought to the door of each reader, from which he can select what he desires, and easily procure it by sending according to directions given. Advertisers are always gratified to know where their advertisement were noticed, and readers will confer a double favor by always mentioning the name of the paper that gave them the information when addressing parties for circulars, or sending in orders.



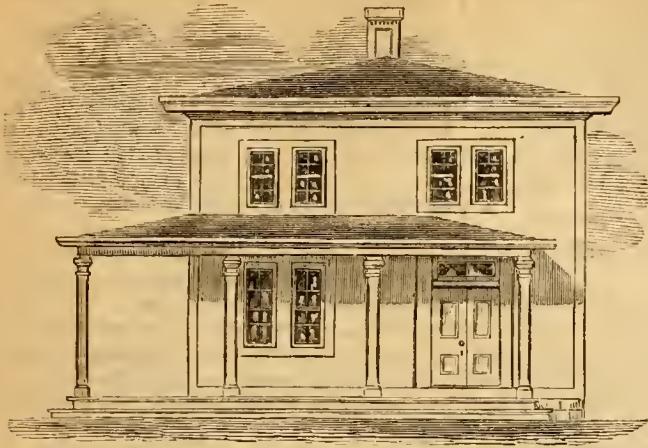
Maple Sugar Making.

In answer to a request last month from practical sugar makers, W. B. Wentworth, Allegany Co., N. Y., writes to the *American Agriculturist* as follows: "I make from 1,400 to 2,000 pounds of maple sugar per year, according to the flow of sap. First, for spouts: I think the sumach best, the pith of which can easily be burned out with a piece of wire of proper size. The spouts are then sharpened to fit a $\frac{1}{2}$ inch hole. I bore the trees with a $\frac{1}{2}$ inch bit (a little smaller will answer as well), and put two spouts in a tree, unless the tree is quite small. When the holes become dry, I ream out the holes with a pod bit a little larger than the first, and the sap will often flow as freely as at first. The sap is gathered and boiled in sheet iron evaporators, the best of which I think are made of two sheets riveted lengthwise, and one across the end. This is turned up six inches, and if made of good iron, with a $\frac{1}{4}$ inch wire put in around the top, or a strip of band iron 1 inch wide and $\frac{1}{4}$ thick riveted around in place of the wire, it will need no other support. Bars of iron should not be put under the pan, as they would cause it to burn out much sooner. An evaporator made in this way, of good material and well taken care of, will last fifteen years. The syrup should be boiled until it will break in scales from a sheet iron dipper. Then strain through flannel into a tub largest at the bottom, and let stand a few hours to settle. Milk may be used to clarify the syrup when sugared off. The milk should be put in

when the syrup is cool, and thoroughly mixed with it. A good vessel to finish off sugar in, is made also of sheet iron, about 2 $\frac{1}{2}$ feet long, 14 inches wide on the bottom, and 1 foot high—a little larger at the top—with wire put in to strengthen it, and handles on the ends.

"A very nice way to prepare the sugar for market is to run it in moulds made in boards of cherry (which I think best), or good pine will do. They are made with a tapering center-bit, which makes them 1 $\frac{1}{4}$ inches on the bottom and enough larger at the top to make them come out readily, and nearly one inch deep. It should take about twenty such cakes to weigh a pound. Pour hot water over the boards, and then let them get nearly dry. The sugar should be done quite dry, and then stirred until it is just cool enough to run smoothly. Let it stand in the moulds until nearly cold, then turn them over and rap on the board, and they will come out nicely, and can be packed in boxes for market. Saleratus and candle boxes for packing in can usually be bought at the stores and groceries cheaper than new boxes can be made."

A Sap Boiler.—Joel Page, Windham Co., Vt., in a long and interesting letter, for which we have not room, sends a description of an arrangement for boiling down sap, which he says is much used and liked in that vicinity. The engraving gives a side view. *C, D* is an "arch" or walls of brick work. *C* is open within to receive the fire, and *D* is solid, except a flue at the top (*F*), to allow the smoke to pass to the chimney, *E*. Cast iron bars are placed lengthwise of *C*, a few inches from the ground, for the wood to lie upon. The fire box, *C*, is opened and closed by an iron door in front, not shown in the engraving. A sheet iron pan, *A*, of 65 to 75 gallons capacity, is set with the bottom about two inches below the top of *C*. A second sheet iron pan, *B*, of like capacity, is set on the part *D*; and back of this, next to the chimney, *E*, is a heater, *H*, holding 15 or 20 gallons. *H* rests in the opening of an iron plate made for the purpose, just as a boiler is set in a cook stove. Faucets in *H* and *B* allow the hot and partially reduced sap to pass into *A*, where the boiling is finished. The flow may be regulated so that a small, constant stream will just supply the loss from evaporation. The mason work of the arch should be carefully put up to support the weight of the pans, and also to ensure a strong draft through the flue. The best situation to place such an apparatus is on a hill-side, where the top of the arch may be 7 or 8 feet below the store tubs which receive the sap as it is brought from the trees. One of these properly placed may be furnished with a faucet, through which a regulated and continued stream may be discharged into the heater. The whole should be properly protected from the weather. Such an arrangement will answer equally well for boiling sorghum syrup. Mr. Page says that cast-iron pans require less continued watching to prevent their being spoiled by burning, but sheet iron are the best evaporators. The above arrangement is greatly superior to the old-fashioned, huge, open kettles, slung on a stick supported by crotches, which were formerly used; probably, however, some of the evaporating pans introduced for sorghum boiling are better yet. Those who engage largely in the business of sugar making will find it convenient to study the various plans offered, and adopt the one best suited to their circumstances.—At the present and prospective prices of sweetening, it is worth while to provide in season for producing all the maple sugar possible.



Cheap Frame House, with Specifications.

The house plan herewith presented is sent to the *American Agriculturist* by a practical builder, Mr. J. P. Hopper, Godwinville, N. J., and is, with a few slight modifications, precisely as furnished by him for a house in Hoboken Township. The specifications were calculated on prices prevailing here a year ago, so as to bring

all work to be done in a good and substantial manner, and the ground cleared of rubbish and left in good shape, etc., etc.—*Cellar* to be made 4½ feet deep; foundation walls to be stone, laid in lime and sand mortar, 18 inches thick and 7 feet high, and neatly pointed. Windows in cellar 4, 10 by 15 glass, 3 lights wide. . . . *Frame*, 26x28 feet, with 18 feet posts and hip roof, of sound, spruce or hemlock timber; posts and sills 4 by 8 inches; the ties and plates 4 by 6; rafters 2 by

6; studs 3 by 4, and 2 by 4; all beams 3 by 8; second floor ceiling pieces 2 by 6 inches. The whole to be well framed and braced; all beams and rafters 24 inches between centres; studding and second story ceiling pieces 16 inches between centers. . . . *Outside*, to be of good narrow siding, say 5 or 6 inches to the weather, and lapping 1 inch, with close joints, and nailed to each post, brace and stud.—*Water-table*, cor-

windows with 7-inch mullions, lights 10x21, 8 in each half, and windows of 12 lights each, of same size. All 1½ inch sashes, counter checked,

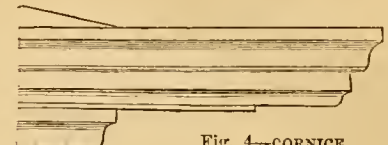


Fig. 4—CORNICE.

hung with cord weights, and provided with sash fastenings. Glass, first quality American. . . . *Stairs*, to have 1½ inch string and steps, ¾ inch risers, wedged, glued, blocked, and strongly back nailed, with a 2½ by 3½ moulded black walnut rail, 6 inch fancy-turned newel post, and 1½ inch fancy-turned baluster. . . . *Trimnings*.—Parlor and front entry trimmed with 5½ inch casing "coved out" to the bead; moulding and back band 7 inches wide; kitchen, bedrooms, etc., with beaded casings and back moulding. Base 7 inches wide, with Grecian ogee moulding. Closets, with plain casing and base, shelved and furnished with clothes hooks, as owner may direct. Step-ladder to scuttle in roof.

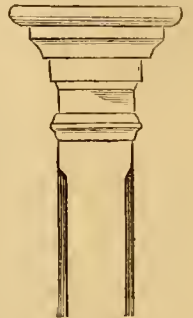


Fig. 5—COLUMN.

. . . *Plastering*.—All the rooms and closets plastered throughout; parlor and entry receiving a good sand "skim." All other rooms, two coats, even laid. . . . *Chimney* carried up from cellar, with two 8-inch flues, topping at 20 by 28 inches, and 3 feet 8 inches above the roof. . . . *Hardware*.—Locks all mortise locks; porcelain knobs and key plates, and 3½-inch loose-joint butts to first story doors; mineral knobs and 3-inch butts to second story doors. Bolts to outside doors. Judd's axles and pulleys, and Japan sash fasteners. Five doz. clothes hooks. . . . *Painting*.—Two coats white lead and oil outside and inside."

These particulars will be of value and interest to many readers, and the technical expressions will be easily understood by those at all familiar with building terms. The house would be made warmer were it lined with brick between the lathing and clapboarding. This would add considerably to the expense, but more than proportionately to comfort. The bricks for filling in may be laid in a clay or "dirt" mortar.

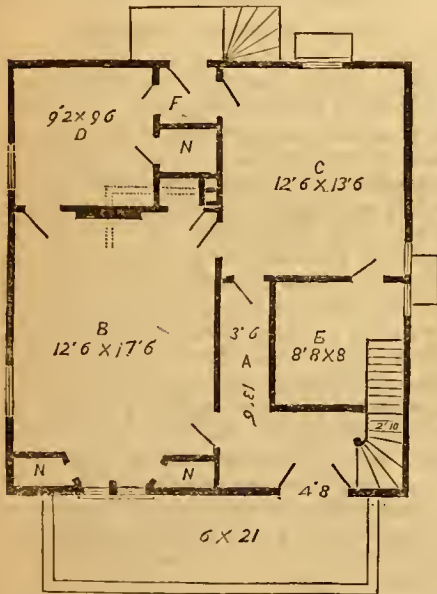


Fig. 2.—FIRST FLOOR, OR GROUND PLAN. A., Hall; B., Sitting Room or Parlor; C., Kitchen; D., Bedroom; E., Bedroom or Store Room; N., N., Closets, sizes indicated.

the cost within \$1,600, which price would, however, be considerably exceeded now. The house fronts toward the north, having a piazza on the front and east sides, shown only on the front in the plans (figs. 2 and 3). The front door, 4 feet 8 inches in width, opens into an entry sufficiently capacious, containing the staircase. From this we enter the sitting room or parlor on the left, or pass through to the kitchen in the rear. On the right of the passage is a room entered from the kitchen, answering the double purpose of store room and kitchen closet or buttery. A small bedroom on the same floor communicates both with the kitchen and the parlor. There is a cellar under the whole house, the stairs to which descend just outside the back door. The house is 26 by 28 feet; height between joints is as follows: cellar 7 feet, first floor 9 feet, chamber floor 8 feet.

"SPECIFICATIONS

of materials and workmanship required in the erection and completion of a dwelling house to be built according to accompanying plans; all materials to be of merchantable quality, and

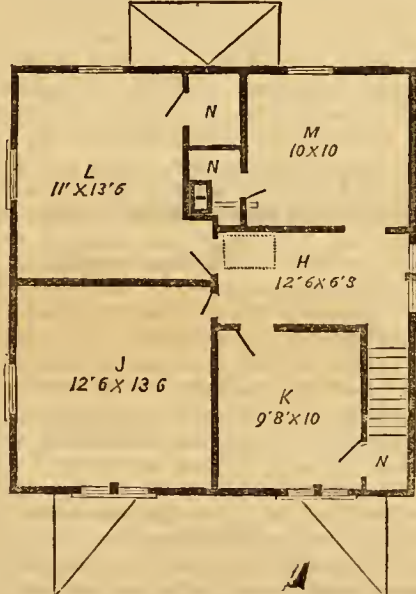


Fig. 3.—SECOND FLOOR, OR CHAMBER PLAN. H., Hall; J., K., L., M., Bedrooms of the sizes indicated; N., N., Closets.

ners, window and door casings, 1½ inches thick, the water-table rabbeted. The cellar stairs to be inclosed with narrow beaded ceiling boards. . . . *Cornice*, according to plan (fig. 4); that on piazza ½ smaller than that of main roof. . . . *Piazza*.—Rafters 2 by 4, planed smooth, covered with narrow beaded ceiling stuff; gutter formed to discharge the water at two points. Columns and caps according to fig. 5. . . . *Roof* and back stoop rafters, covered with 1 inch spruce or hemlock boards, with close joints and well nailed on each rafter. Gutters formed to discharge the water at two points by leaders to the ground. *Roofing*.—Any good cement or other roofing, the cost not to exceed 5 cts. per square foot. . . . *Floors*.—1½-inch spruce or pine, wedged tight and well nailed. The divisions into rooms, etc., to be according to the plan. . . . *Doors*.—All 1st story doors to be 1½ in. thick, double faced and moulded, and 7 feet high; 2d story doors, single faced and moulded, 6 feet 8 in. high. Fixed lights over front and back doors. . . . *Windows*.—2 first story windows with 7-inch mullions, lights 10 by 15, 8 in each half; 3 windows with 12 lights of the same size each; 3 second story

Gravel Wall Houses and Barns, Etc.

Winter is the time when farmer folks discuss building, and we have numerous letters asking our opinion of gravel wall and concrete houses. The subject is a very important one to all who build dwelling houses, or erect any masonry structures in a country where stones and gravel are abundant. At sundry times we have consulted good masons and house carpenters in regard to the value of concrete for house walls, and invariably had assertions like the following most authoritatively made: That the whole thing was a humbug; that the walls would not stand; that they would absorb moisture like a sponge, and go all to pieces after a severe freezing and thawing; that, even if they stood, the houses would be damp, the walls "sweating" on the inside; that they could not be built with any regularity or evenness; that they would always look unfinished and patchy if indeed, they stood at all, and it was clearly proved (if we would accept their premises) that

they would cost a good deal more than wood—fully as much as well laid stone or brick, and not be nearly so comfortable. This is, we believe, the experience of those wishing to employ this material, who consult builders about it. The few who persevere, and because they can not get regular mechanics to do the work at reasonable prices, do it themselves, often meet at first with the accidents and mishaps to which all inexperienced persons are liable when they undertake to do work at which a regular apprenticeship ought to be served. The walls being carried up too rapidly, crush with their own weight; sufficient care not being taken in regard to a dry foundation, water freezes in the wall and makes trouble; and so careless work produces its legitimate effects in other respects.

The writer's knowledge of this mode of building is founded upon the testimony of friends and acquaintances who have used it, and now occupy concrete houses. We advise no one to undertake to build a concrete house who can not superintend it himself, and in fact do a good part of the work, and no one who is in a great hurry should even think of it. The work should be done in fine weather, and in stormy weather the walls should be well covered. The lime used should be uniform in quality and fresh; the sand and gravel clean, and trials should be made beforehand, to know the most desirable proportions of lime, sand and gravel. The quality of lime varies very much, but when the best quality of building lime is employed, (which is not advisable, because too expensive,) one part (say a bushel) of unslacked lime is said to make 25 parts (bushels) or more of concrete.

A friend of large experience, whom we have consulted, says: "By all means advise whoever wishes to build a gravel wall house to put up some small building or an L first, so as to learn all those little matters of manipulation which can not be well described; and fairly get his hand in before he undertakes to put up a house of considerable size," and we entirely believe in the wisdom of the suggestion. The subject can not well be treated in the limits of a single article in our crowded columns. Another month we may discuss some of the methods of putting up the walls, materials, etc.; adding here that we have repeatedly seen properly built houses of this kind where the objections specified above were without foundation. Mr. W. B. Waldo, one among many witnesses we could cite, writes: "I have had some experience with concrete or gravel wall, having built a small house for a tenant, and a fence around my barn yard. I am no mechanic, but I did the work with the help of a young German (who had never laid a stone except to repair an old fence), who has since occupied the house five years. We did the whole, wood work and all. Any common, neat workman can build a very good-looking and desirable house for himself, buying only a little lime, some joists and planks, floor boards and nails. The best large barn, and the best two-story dwelling house in our town are built of this material. I think you cannot better serve your readers than by instructing them in the art of gravel building. It is far easier than to lay a commonly good stone fence, which neither the German nor I could have done."

EMBARGO ON HAY.—The Maine Farmer reports that the War Department has issued special orders prohibiting the exportation of hay from that State, except for Government account. The immense supplies of hay required for forage in the army makes this step

necessary. The Government will purchase all hay not needed for consumption in the State, paying therefor a fixed rate per ton. Several large lots in process of shipment for Europe were recently taken possession of and immediately forwarded to the army. The price paid is \$26 per ton, for common pressed hay, and \$32 for Beater-pressed, the latter being preferred for transportation. See last volume, page 236.

Milk—Beef—Labor... II.

ADAPTATION TO THE LAND.—For whatever purpose cattle are raised, regard should be had to the character of the soil, the climate, and the topography of the country. Although the various breeds of cattle will maintain their peculiar characteristics for several generations, whether they be kept on the rich plains or rough and sparsely grassed mountains, yet as we all seek the greatest profit, we must know the adaptation of each breed to our own locality, and be guided accordingly in their selection.

The adjective *lordly* has been well applied to the Short-horns—the breed which may be considered as showing the greatest effects of culture. They are of the largest size, well boned, but not coarse, with small heads, large carcasses, straight backs, wide in the pelvis, deep in the flank, maturing very early, laying on flesh and fat with great rapidity, and when slaughtered, remarkable for the smallness of the offal. In order to exhibit these qualities in any thing like perfection, they need good feed and plenty of it, all the time, shelter in cold weather—in fact, good stabling—and the better care they have, the more rapidly will they grow and fatten. There is no reason why the breed should not be perpetuated in perfection on the blue-grass pastures of the West, or in the clover and red-top of the rich intervals of the Middle States, and in other such choice spots as occur in the valley of the Connecticut, and elsewhere in New-England. As it is, within the past 50 years the Short-horns have been gradually disseminated more or less all over the United States and Canada, producing a great improvement upon the common stock of the country. The "grades," that is, half-bloods, quarter-bloods, etc., being the product of crossing the bulls upon common or half-blood cows, possess the external characters and feeding qualities of their sires to a great extent.

Very different are the characteristics of the *Devons* (sometimes called North *Devons*, though the South *Devons* as such are not known in this country nor bred distinct in England.) They are much smaller, much more active, tougher, able to get a good living where a Short-horn would almost starve, not so early in coming to maturity, but being serviceable proportionately longer. The cows give richer milk than the Short-horns, and a good supply; they require less care, and with fair treatment remain productive and healthy to a great age. This breed adapts itself peculiarly to the rough parts of New England, and many portions of the Middle and Northwestern States—especially where the steers are used in the yoke or find a ready sale as working oxen. Their qualities in the yoke will be discussed in a subsequent article. When put to feed, they fatten rapidly, and many connoisseurs think they furnish the most delicious beef which we ever have in our markets.

The *Ayrshires*, *Alderneys* and *Dutch* cattle are peculiarly milk breeds, having been bred chiefly for Dairy purposes for many generations. The Dutch cattle are large, great milkers, slow and

logy in their motions, good feeders, and are adapted for similar situations to the Short-horns. The *Ayrshires* are much more active, smaller, not above medium size, thrive in good pasturage, but sustain themselves very well on "short commons." They give large quantities of milk, but not rich in quality. The *Alderneys* are even more active than the *Ayrshires*, but are great eaters; they need therefore good and abundant pasturage, not of the juicy succulent sort, but sweet and fine. They are not adapted to general dairy use, but particularly for families keeping one, two, or three cows for their own use, or for dairies where very choice butter, a "fancy article," is made. The oxen of these breeds are not esteemed, because too small for heavy work.

The *Herefords* are adapted to a wider range of pasturage than the Short-horns, not so active as the *Devons*, but are large, excellent for beef, of not much account for the dairy, but good workers. They mature early, and of course like the Short-horns are most profitable on fat pastures. On good fair farming land, any of the breeds will do well, but as we depart from this toward either extreme—toward the rich prairies and intervals, or sparse pasturage—we must exercise judgment in selecting a proper class of cows, and suitable bulls for their improvement.

Profits of Sheep—Dog-laws.

Sheep raisers have found the business very profitable for the past few seasons. Fine wool sheep have been in great demand, and immense numbers have gone westward from New-York, Pennsylvania, Ohio, and Vermont. There has been a very nearly equal demand for mutton breeds. The markets for wool and mutton have been good and the seasons favorable on the whole. A correspondent in Susquehanna Co., Pa., writes to the *American Agriculturist*:

"I know a farmer in the township of G, in this County, who had a flock of twenty-four sheep at the setting in of the winter of 1863-4. They all lived through and had a common increase in the spring. Immediately after shearing, a part of the wool was sold at what proved to be a low figure, but brought \$37.60, and 28 lbs. was used in the family, which at the former price was worth \$19.60. During the summer sheep and lambs were sold out of the flock to the amount of \$35.00. All the above amounts to \$92.20, and the flock now numbers 26. What is there that pays better than sheep? Yet the damage done and liable to be done by dogs deters many farmers from entering extensively into sheep raising. There has been a law passed within a few years past for this and several other counties in this State, levying a tax on dogs; but the tax is so low that it has reduced the number of the dogs very little. The fund so raised goes to pay in whole or in part for sheep killed by dogs, any surplus going to the school fund. Now if every man who reads the *Agriculturist* would interest himself in this matter and circulate petitions to the Legislatures of the several States for laws levying a tax so heavy that it would materially reduce the number of dogs it would be far better for our country."

Our correspondent subjoins a form of petition which may be used in bringing the subject before the law-makers of any of the States. There has not as yet been a single State throughout which a good dog-law has been well enforced. That the thing is not impracticable has been proved by the enforcement of dog-laws in certain counties, to the great advantage of the agricultural interest. The half-way work of

permitting towns or counties to legislate on the subject for themselves—that is to enforce a law against dogs, or not, according to whether the dog interest or the sheep interest is strongest, is making a farce of legislation.

FORM OF PETITION.

To the Honorable Senate and House of Representatives, of the State of

The undersigned, inhabitants of the County of, in the State of, respectfully represent: That many of us suffer directly and personally, and all of us indirectly, from the destruction of sheep by dogs, and that the ravages of dogs are so great as to be a serious detriment to the prosperity of this State, by preventing farmers from entering largely into sheep raising. We therefore earnestly request your Honorable body to pass a law for the registration of all dogs, imposing a tax upon every dog and dog pup of not less than one dollar, and upon every slut and slut pup of not less than five dollars; and at the same time urge that the law be so framed as not to be easily evaded, and that its accurate carrying out be secured by rigorous penalties. To this end your petitioners as in duty bound will ever pray.

The Sheep Mania.

For several years there has been a gradually increasing interest in sheep raising, which seems now to have reached nearly its height in a mania for paying most extravagant prices for fine wool sheep of different breeds. The rise and course of this mania—for such it now really amounts to—has been marked by much more common sense, practical views, than those which prevailed when the delicate little Saxony sheep sold for so much, and infused their next to worthless blood into most of the best flocks in the country. The exquisite fineness of their wool had been produced at the expense of the constitution of the breed, and the result of this extensive importation and dissemination of the Saxons in this country was to degrade the vigor of our merino flocks, reduce the weight of the fleeces, not increasing the fineness in proportion, and on the whole greatly to discourage the efforts making for the improvement of our fine wool flocks. This taken in connection with the uncertainty of our tariff laws, was sufficient to bring the fine wool sheep into discredit.

Now, however, it is very different. A breed of very great excellence has been virtually originated among us, and become extensively disseminated. This breed of American merinos we have before repeatedly alluded to—combining as it does the excellences of the Spanish merino, with larger size, better form, heavier fleece. It is not remarkable that upon the increased demand for wool, and the inflation of prices brought about by the war, the trade in sheep should have received a great impetus. At the same time almost, one of our enterprising breeders obtained at a World's Fair in Germany the highest prizes for some of these same sheep, thus giving them a world-wide reputation, which brought to a certain extent a foreign demand, in addition to greatly increasing the demand for the American Merinos at home. We hear of sales of rams for \$800, \$1,000, \$2,500, and ewes and lambs in proportion. It is even reported that Mr. Edwin Hammond, of Vermont, refused to take \$10,000 for his ram "Golden-drop."

Many people have taken to sheep raising who were entirely ignorant of the business, and every animal which had the look of a Merino and a greasy fleece has had a ready market. If

a young man, with a good farm, well adapted to sheep culture, with a free capital of \$50,000 to \$200,000 to start business, and withal having knowledge of farming, a good business education, and love for animals, wishes to begin to breed sheep, with a view to establishing a flock, and making breeding and improvement of sheep a life-business, he can afford to pay very high prices for his original stock, and for such animals as he deems, necessary to improve his flock in any important points. Others, who breed for the current profits less than for ultimate reputation, can not afford to pay these high prices. They will never get their money back, except in the cases of some owners of extensive flocks, upon which the influence of a few rams of good quality may be very great.

In view of the fact that the use of well-bred males is the surest method of improving any of our domestic animals, it is safe to assume that there will constantly be a demand for good rams at remunerative prices. Sheep raising within easy reach of good markets ought to have reference to them, and to the production of flesh, rather than wool. The price which the coarser kinds of wool have brought the past season will impress this upon sheep breeders. So great has been the demand for certain grades of coarse wools that they have brought higher prices than superior grades of Merino and other fine wools, and have met with a much quicker and more advantageous market. The price of sheep for slaughter has been high, keeping pace fully with the cost of corn and hay.

What are Goats Good For?

"Good for nothing!" exclaims the down-town citizen, as he takes his airing along the Avenues leading to the Park, and spies the beasts nibbling stramonium, dock, thistles, and other coarse herbs in the vacant lots. "A perfect nuisance!" cries the up-town housekeeper as she ejects them forcibly from the front yard, or snubs their noses with a broom stick, when they are poked through the fence. She is about half right. An animal out of place is a nuisance, as a plant out of place is a weed. A pig in a flower garden snuffing the perfume of mignonette and roses is decidedly objectionable, though he might be a gem of a brute thrusting his unjewelled snout into a muck heap, and feasting upon larvæ and bugs.

There can be no doubt that the thousands of goats that roam unmolested in all the suburbs of our cities are great torments to all civilized, orderly citizens. They are thieves and burglars breaking into your premises at night, crawling through the smallest possible hole, and climbing over the most exemplary fences. You plant a favorite shrub in your yard, the gate is left open by some careless visitor, the goat enters, and your darling is stript in an hour of every thing that made it valuable. If it escape death not a flower bud is left upon it; and hardly a twig smaller than a pipe stem. You have goat tracks, filth, and destruction, instead of your pretty flowers. Unless you are a Christian very much subdued and resigned to earthly losses, you will have indignation and wrath, heart burning and harsh words for the poor Bridgets who pasture their untidy flocks on your green area. No doubt this nuisance ought to be abated as much as mad dogs.

But the question has another aspect to the Squatter Sovereigns who rule in our suburbs. "In faith sir, the baste gives the richest of milk, and what d'ye think is a poor man's tay worth

widout a sup of milk? Don't ye see that the goat turns every praty peeling into milk, and it don't cost me a penny." Patrick's view of the case from his side of the question is a very sensible one. These animals turn every foul weed, and every waste of the shanty into wholesome food for his children, and their chubby cheeks, flaxen hair, and rolling blue eyes, full of frolic and fun, are a good certificate for the alimentary value of the article. What does he care for the trouble his brutes give his rich neighbors? Don't he live in a free country, and don't the grass grow for the good of every body, and wouldn't the grass and weeds run to waste if his goats didn't eat them? The goat is a very useful animal to the Squatter Sovereign, and he will not give up his chattels until the strong arm of the law compels him to. There ought to be a tax of ten dollars levied upon every goat kept upon New York island. Perhaps that would right this great public wrong. While the Squatters can get their three quarts of milk a day from each new milch goat, they will not be likely to give up their privilege.

Among civilized people the goat is a useful pet for children—a sensible substitute for a dog, inasmuch as he draws a wagon better and don't bite so hard. He does not get rabid and impart his virus to your child. If he butts him over, the fall is not apt to be dangerous, and rarely comes unprovoked. He is also a good substitute for a grub hoe and bush scythe. If you want clean work made with a rocky bush pasture, put in a flock of goats. You can sell your scythe for old iron. But before you make your investment in goats, please remember that they are death on fruit and ornamental trees as well as bushes.

Italianizing Bees in Box Hives.

BY M. QUIMBY.

Many bee keepers would introduce the Italians in their apiaries, if it could be done with the box hive. I will give a method, by which, with only one movable comb hive, a small apiary may be Italianized in a season. First, introduce an Italian queen into a colony in the movable comb hive. No matter about the bees being all changed; if the queen is inaugurated, it is all right. Drive out all the bees of some good stock into an empty hive, and set this on the stand. Take the hive from which the bees were driven, with its contents, to the stand of the one with the movable combs. Lift out the combs and shake or brush the bees down by the box hive, into which they will enter immediately. Now take the movable comb hive with contents to the other stand, and shake that colony into it, and you have simply traded hives for each colony, and each will carry on the operations of the hive, the same as if it had always been there. The one in the movable combs can now be controlled. After a few hours, when the bees have become quiet, take out the combs, find and destroy the common queen. In a week cut out all the queen cells, and introduce an Italian queen, and when she has filled the comb with eggs, four or five days after, this colony may be transferred also. The process may be continued until all are changed. The cells cut out being Italian, may be put into the rearing boxes to hatch. I have given this method—perhaps unseasonably—that it may be understood, and one or more movable comb hives be prepared before the season to operate.

Make a man think he is more cunning than you, and you can very easily outwit him.

Some Notes on Potatoes.

Of late years new varieties of potatoes have multiplied with a rapidity only equalled by that of new grapes. Some of the varieties of comparatively recent introduction have been sufficiently tested to show that they possess decided merit, and deserve to be widely known. There is, perhaps, no crop more affected, in

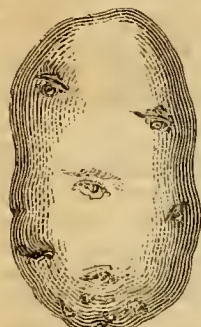


Fig. 1—COTTAGE.

both quality and quantity, by the character of the soil and climate than the potato, and no kind can be said to be equally good in all localities. The first requisite in a potato is, that it should cook dry and be of good flavor. If for marketing, it should be white-fleshed. There are some who discard all yellow-fleshed potatoes as unworthy of cultivation—a conclusion with which we cannot agree. Though potatoes of this character will not bring the highest price in the New York market, yet there are several having yellow flesh which are valuable for the table, and on account of their large yield, profitable varieties. The size and depth of the eyes are of importance, as in sorts with deeply set eyes there is great waste in peeling. The keeping qualities and freedom from disease, as well as the productiveness, are all important, and any variety deficient in these is unfit for a field crop, although a moderate bearer may possess other qualities which make it desirable as a garden sort. With potatoes, as with fruits, there is much confusion as to names,—a very widely disseminated variety often has several local names, and a well established name is frequently used to aid the sale of indifferent sorts. As it is difficult to describe varieties in a way that will allow them to be identified with any certainty, we have had engravings made which will give a much better idea than could be conveyed by any description, however carefully written. The figures, from average specimens, are one half the natural size.



Fig. 2—EARLY SHAW.

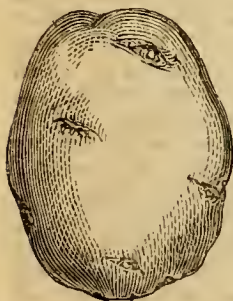


Fig. 3—SAMARITAN.

Early Cottage, Fig. 1: This is said to have originated in Albany County, about the year 1858. The vine is very strong and vigorous. The yield is large, early, and the tuber keeps well.

Early Shaw, Fig. 2: This was introduced to the cultivators around New York by one of our editors, who obtained it in Michigan. It is said to have originated there, in Lenawee county, and to be a seedling of the Mercer. Perhaps some of our Michigan friends can give the true

account of its origin. From the fact that there is an English potato known as Shaw's Early, which is a favorite early kind in the London market, we had supposed that the story of their Michigan origin was an error, and that the English variety had been introduced into that State by way of Canada. As two Englishmen, both of whom were familiar with the English sort, assure us that our Early Shaw is a very different potato from theirs, it seems probable that the variety did originate in Michigan, and that it unfortunately received a name which had already been bestowed upon another potato. The vines are not very vigorous, nor is the yield large, but the tubers are very uniform in size. For earliness and excellence, we have not seen its equal. Even when taken very young, the potatoes are of good quality. The skin is wholly or partially covered with a characteristic roughness. While its moderate yield will prevent its being a popular market sort, it is an excellent variety for the family garden. Fig. 2 gives the shape and also the comparative size.

Early Samaritan, Fig. 3: This originated in the western part of New York. Is early and of good quality: does not yield as abundantly as the Early Cottage. Jackson White, Fig. 4: Supposed to be a seedling from the Carter, and to have originated in Maine. It is one of the standard market varieties, and though not as early as either of the preceding, its good quality, fair yield, and good keeping, make it deservedly popular. The form is more irregular than in the varieties already enumerated, and its eyes are more deeply sunken. Though the flesh is slightly yellowish in the raw state, it is white when cooked.

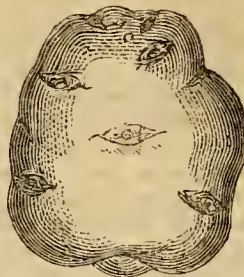


Fig. 4—JACKSON WHITE.

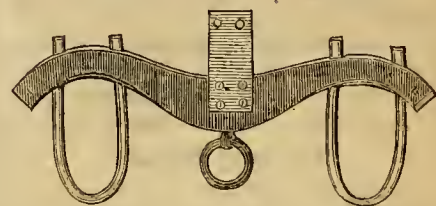
Fluke, Fig. 5: This is a remarkably neat-looking long potato, somewhat flattened; has a smooth skin, and eyes not deeply set. It is late, yields largely, and keeps well. A friend, who tries every variety of potato he can obtain, says that the Fluke "is the best potato in existence." It has not been grown as yet extensively enough at the East for us to recommend it for general cultivation, but at the West it is highly valued. It is difficult to see how any potato can be better than a properly baked Fluke, as we have eaten it at the West. All potatoes have their quality more



Fig. 6—DOVER.

or less injured by exposure to the light and air, but this variety is very delicate and more rapidly deteriorates from this cause than almost any other. It has been confounded with both the Prince Albert and the Mexican, both of which it resembles in form. Its eyes are less prominent than those of the Prince Albert, and the skin smoother than in the Mexican.

Dover, Fig 6: A very marked variety, its large and deep-set eyes serving to distinguish it from all others. Where several eyes come together at the "seed," or "blossom end," the depression and irregularity are even more striking than is shown in the figure. The other potatoes noticed above are white, while this has a light red or pinkish color. It is of excellent quality, but is late, though it may be eaten whenever the tubers are of sufficient size. As it is not a large cropper, and its form is not pleasing, it is not a good market sort, but by many it is preferred to all others for their own family use.



Driving Horses and Oxen Together.

S. Edwards Todd, writes to the *Agriculturist*: "In many parts of the country, horses are often hitched forward of oxen, when plowing, subsoiling, trenching, or performing many other kinds of farm or highway labor. Whether the driver be by the side of the oxen, or behind them, the horns and head of the ox on the near side, will often interfere with the reins; and if the driver is small in stature, the difficulty is increased still more. Moreover, a man can not drive horses as well, while he is traveling at one side, as he could if his reins were to go directly back from the horse for a few feet. My practice has been, when accustomed to drive a yoke of oxen and a span of horses together, to fasten a piece of board, to the front of the ox-yoke, with four wood screws—as shown in the accompanying engraving—through the holes near the top of which, the reins are allowed to play. The board is about one foot long, and six inches wide; and the holes for the lines not less than one and a fourth inches diameter, and reamed out so that the lines would play easily back and forth through them. When a man uses only one horse in front of a yoke of oxen—as many farmers are accustomed to do—this simple contrivance for holding the lines in place, will always be found very convenient; it can be easily removed, when it is not needed.

"An Important Discovery.

A New Era in the Manufacture of Sugar—A Promised Revolution in Commerce—A Golden Road to Wealth."

Such is the heading of an article, which originated in Buffalo, and is copied into papers in various parts of the country. The article goes on to tell how one Prof. F. W. Goessling has discovered a process for obtaining sugar and syrup from Indian corn, that at least three and a half gallons of syrup are obtained from a bushel of corn, with "an equivalent amount of granulated first quality sugar,"—if any one can tell how much this is. We learn that a company

has been formed and has purchased the patent for \$600,000. There being a "Company," there will be stock to sell and many people will be sold. Starch sugar is an old story,—making cane sugar from it is altogether another matter.

A Talk About Grass....1st Article.

Several requests have been made for a series of articles upon the various grasses in cultivation. Although grasses are among our most common as well as most useful plants, there is a great lack of definite knowledge concerning them, and the same grass is in different parts of the country known by different names, or the same name is applied to very different species. The ordinary grasses are readily recognized by farmers, but if asked to describe Red-top or Blue-grass in a way that would enable another to know them, they would find it a rather difficult matter. The leaves and stems of the different kinds of grass are so much alike, that it is very difficult to give such descriptions of them as would enable a person to recognize them by any peculiarities these present, and we are obliged to go to the flowers to find those distinguishing marks which will allow us to identify the different sorts with any certainty. Unfortunately, the flowers of grasses are very small, and so unlike the flowers of other plants in appearance, that they are at first sight rather difficult to understand. Still, with the aid of some enlarged drawings, we hope to show the structure of the grass flowers, and then it will not be difficult to trace it out in the grass itself. Let us begin the study with a head of Timothy, which can readily be pulled out of almost any hay-mow. The head consists of numerous little chaffy bodies, closely placed around the stalk; these are the flowers. Carefully remove a portion of them from the head and spread them out on a piece of white paper. Those which have not been broken up in the removal will appear like fig. 1, and consist of two chaffy scales, folded together and very much compressed or flattened, furnished upon the back with bristly hairs, and each terminated by a stiff bristle or awn. Fig. 1 is what is called a spikelet; the two scales are glumes. It will be noticed that one of these glumes is outside of, and folds over and covers the edges of the other, and that the inner one is attached to the minute stalk a little higher up than the other, as will be seen in examining the real flower, though it can not easily be shown in the drawing. In describing a grass, the glumes are spoken of as lower and upper. In order to see what is inside of the glumes they must be carefully separated. This is best done by means of



Fig. 1.

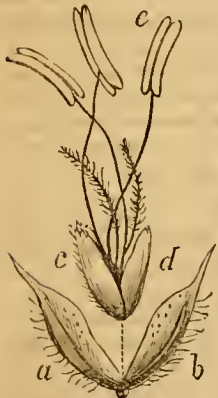


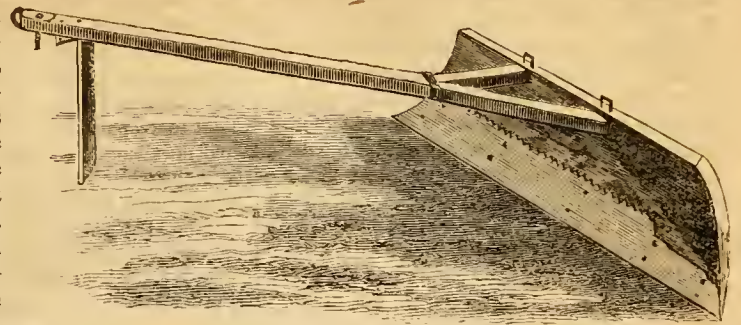
Fig. 2.

two needles, fixed in small wooden handles, to answer as pickers. In examining a fresh grass it is easy to spread the glumes apart, but the dried specimen must be soaked awhile in a little water; this will make the glumes flexible and allow them to spread as in a, b, fig. 2. Within the glumes are two other smaller scales, c, d, fig. 2, of a more delicate texture, which are called paleæ. In the figure they are shown detached, or lifted out of the glumes. The paleæ have the same position with relation to each other as the glumes; that is, one is outer and lower, and the other inner and upper. The upper one is almost always smaller than the other, and is usually marked with two lines (nerves) running through it, while the lower one has from one to several of these nerves. The shape and markings of the glumes and paleæ serve to distinguish species. In the case of the Timothy, the bristle-pointed and flattened glumes and the delicate small paleæ are characters by which it is readily recognized. Within the paleæ are the pistil and stamens, which will be described presently. Examine now a spikelet of Red-top, fig. 3. Here we have a similar arrangement of parts, though they differ in shape and relative size. The lower and upper glumes, a, and b, are without the bristle-points and hairs of the Timothy, while the paleæ are more unequal in size, the lower one, c, being much longer than the upper one, d.—Fig 4 gives the parts of a Red-top flower all separated from one another; a, b, lower and upper glumes; c, d, lower and upper paleæ, while the stamens and pistil are shown above. In the dry specimen it will be difficult to make out the stamens as they are delicate and readily broken. They are shown in figs. 2 and 3, at e, e, and consist of an oblong case or anther, supported by a very slender thread or filament. The anthers of the Timothy are light purple and make the head quite showy when in flower. The stamens are also shown in fig. 4. The pistil, as seen in fig. 4, is a little egg-shaped body, which is the ovary and will become the grain, with two feathery appendages, the styles, proceeding from its upper portion. These styles are also seen in figs. 2 and 3.—In fig. 4, a couple of small scales are shown just below the stamens and pistil, which in a popular account of grass structure may be left out of consideration. The examples here given are among the simplest forms of grass-flowers; if the description of them seems dry, the looking out of the parts in the real specimen will be found interesting.



Fig. 3.

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CONVENIENT ROAD SCRAPER.

new road scraper—or see whether a pair of sled-runners can be got out of a "crook," I cut yesterday—or rub over the hams and shoulders again—or pack the sausages in snow—or ride up to Greene, the sawyer, and stir him up about that stuff for a portable fence—or sharpen the wood saws—or drive the oxen to the village for shoes—or forty things beside. Action forever! General Grant (God bless him!) will find his pastime, after the war, in clearing up a stump or Canada thistle farm, I'll warrant. My mind will run back in spite of me to that road scraper. Let us work it out.

ROAD SCRAPER.

"There is no patent upon this tool, I believe, and it can be built by any one who can make an ox-yoke. A chestnut or oak log, of 2 feet or so in diameter and 6 feet long, is worked out in the manner indicated in the cut, with a twist, gaining about a foot in the six feet length—so that when the tongue, which is inserted diagonally, is in the yoke ring, the right-hand end will meet the ground like a plowshare, while the other falls away to the rear with a twist like a mould board. It is faced with an old saw plate, and is good for raising the road bed of a new road, or for smoothing the ruts of an old one. Large staples are inserted on the share or tongue to receive handles. It is a combination of scraper and plow.... Since writing the above I have applied a hot coat of gummy, cheap linseed oil and redding to the wood work, and mean to give it two more.

R. I. BENT IDENTICAL WITH KY. BLUE GRASS.

"The farms of Rhode Island have a grass which they call "R. I. Bent." It is highly prized as a pasture grass upon lighter soils, making a compact, permanent and productive sod, under very ordinary conditions of fertility, and is used for lawns. I have studied it among Naragansett farmers for four seasons past, using my eyes and asking lots of questions. Chas. L. Flint, in his 'Grasses and Forage Plants,' classes it with Red top—for which I can find no foundation. All the information I can collect from my neighbors, points to a very common grass, of habits and appearance identical with what Mr. Flint calls 'Green Meadow Grass, June Grass, Common Spear Grass, Kentucky Blue Grass, &c. (*Poa pratensis*),' and says it grows all over the Northern States. This grass is a great favorite with me. I find it in all handsome roadside or pasture sod in Rhode Island and Connecticut, and during a recent journey through New-York State I found my old acquaintance in all directions. Near Canandaigua, hearing a farmer boasting of a field he had in Blue Grass, I was at some pains to verify the familiar matted aftermath under this name. It is not easily eradicated from land, nor easily introduced; that is, if you plow an old pasture or meadow containing it, and take off a crop or two of grain or potatoes, manuring lightly, seed enough will be left in the land to bring in the

Road Scraper—R. I. Bent or Blue Grass.

An active farmer friend of ours in Rhode Island, often urged to furnish for the *Agriculturist* some of his practical notions, writes: "Rather than write, I would like to mix up a kettle of hot paint and apply to the wood work of my

old sod again in the course of two or three years. On the other hand, if sowed on very rich land, with spring grain and other grass seed, it would be choked out by the greater luxuriance of the other seed. I would sooner risk the seed bushed in upon an old meadow where Timothy and clover-were failing, or alone in September. Almost every farmer has this grass, and such as graze sandy and gravelly land can well afford to cultivate it. I propose sending you a sod of "R. I. Bent" next summer, in bloom. If we can drop some of the above names all the better."

For the American Agriculturist.

Expensive Shelter.

In a recent trip over the Harlem Railroad, I saw sights that made me feel quite at home, and ashamed of my birth place. Connecticut ideas must have emigrated long ago across Byram River, and established themselves in Westchester, Putnam, Dutchess and Columbia counties, and it had been fortunate for the country if they had stopped east of the Hudson. Snow covered the ground, and a bleak northwester swept over hill and valley. There stood the cattle by the stack yard, working oxen, steers, cows heavy with calf, and heifers; their feet drawn up close together; their backs arched; their hair erect—shaking pictures of discomfort and misery. They were not just let out of the barn for an airing; for there was the pitchfork sticking in the hay, showing that they had been foddered there, and the bare spots upon the ground, where they had lain down, melting the snow under them. These were unmistakable signs that these cattle took the air for twenty-four hours in the day, without respect to thermometer or weather gauge.

I wanted to get out of the cars, and take the owner by the throat, and say to him, "You miserable Connecticut sinner, what do you mean by tormenting these dumb brutes in this way? Do you ever go to church? Do you read your Bible, touching the 'merciful man showing mercy to his beast?' Do you ever read Shakespeare to learn that the 'quality of mercy is not strained?' Yours is strained so tight that it never gets out of you, and you torment these poor creatures with the slow tortures of frost and tempest."

Is it not astonishing that farmers will practice this barbarity, after all that has been said in the *Agriculturist* and other papers against it for the last dozen years and more? Is it not a marvel that close-fisted farmers, with a keen scent for the fraction of a copper in trade, will waste hundreds of dollars in this wretched slipshod custom? If any thing is demonstrated in the experience of our enterprising farmers, it is the economy of stabling cattle in the winter, from November to April. At least one-third of the fodder is saved by it, and the cattle come out in much better condition.

What would be thought of the wisdom of a farmer who should build a separate small barn for every animal upon his farm, instead of building one large one to accommodate the whole? It would be a terrible waste of lumber, and a monument of his folly. Yet he might better do this than to attempt to shelter and warm each by itself at the stack-yard, by superabundant hay. What would be thought of the man who, instead of building his little barns with lumber, should make them of the best hay, thatched from top to bottom? Yet this is just what the farmer is doing who follows this barbarous custom. The thatch is applied inside of the animal

in the shape of fodder, instead of outside in the shape of shelter. The hay is consumed by slow combustion to keep up the animal heat, and how much of it goes, you may judge, who have watched the consumption of fuel on a zero night to keep up the heat of a room. If the animal does not have hay enough, the flesh and fat gathered in summer, go to make up the deficiency, and the creature pines, the ribs stick out, the hide grows rough and bristling. The brute is tortured, and the owner's purse depleted.

Make an estimate of the loss of this barbarism. If it takes two tons of good hay to winter a cow in a barn, it takes three to carry her through at the stack. With hay at thirty dollars a ton, here is a dead loss of thirty dollars. With ten cows the loss is three hundred dollars, to say nothing of the diminished milk, butter and cheese next summer. Is not hay applied at the stack-yard a very expensive shelter? CONNECTICUT.

What a Patriotic Woman Can Do.

The beautiful picture, "*Farmer Folks in War Time*," published last month, was no mere fancy sketch. Numerous letters received at the *Agriculturist* office show that the women of America are worthy descendants of their heroic grandmothers, who gave their husbands, sons and brothers to their country, and themselves filled the vacant places in the more peaceful, but not less important, fields at home. Below we give extracts from a beautiful and touching letter by such a woman. The hand writing and general style evince high culture and refinement, but these have only brightened, not impaired the strength of character exhibited:—"My husband and self were both teachers until house duties called me out of the school room. Having a great taste for rural occupations, we rented a farm one mile from town, and while my husband pursued his school duties, I spent my time in farming on a very small scale. Thus happily the time wore on, until our country was reeling in the agonies of this dreadful rebellion. At the beginning of the war, we gave up our only two brothers, who, thank God, have lived through the fearful three years of service, and returned home this fall from Atlanta. As the thousands of men were called out, the deep love of my husband for his family held him back, but patriotism filled his manly breast to overflowing; neither night nor day could he rest until he too went forth in answer to his country's call. One year ago last August he was commissioned as Captain of Co. E, Fifth United States Colored Infantry. Through all the hardships of their vigorous campaign he led his men unshrinkingly, as his many fellow officers testify, without one murmur. After he entered the army we bought the farm which we had rented, and he left me as the manager, unbiassed and free to do as I thought best. I hired a hand, and to the best of my ability, and by the aid of the *Agriculturist*, I succeeded pretty well, considering the terrible agony of suspense that racked my soul through all those days of terrible assaults upon the works of Petersburg. He kept me up by his words of hope, love and cheer, and willingly I labored, until my labor became a pleasure, to lift the heavy payments at the appointed time, and make as many improvements as possible before his return. It was joy to gather around our new house that which I knew would please him. In the spring I paced the long rows of eight acres, dropping all the corn, in order that it might be in season. To be sure there were frequent showers, but I managed to scare away

the clouds with the 'family umbrella,' and I have a nice little crop of corn of near 200 bushels. My farm lies in the edge of a large white oak swamp, and needs drainage very much, which, as yet, I have not been able to give it to any great extent. Twelve acres of meadow were cut, and two acres of oats. Last winter I had my ground put in excellent order, and helped to plant out a choice orchard of apple, pear—dwarf and standard—and cherry trees, laid out in quincunx style. A new stable floor was laid; timber for a new wood-house, 20 by 23 feet, was cut, hauled and sawed, the house erected and nearly finished. I raised $\frac{1}{2}$ acre of sorghum, stripped and cut it myself, and have the pleasure of a nice barrel of molasses. Fences were reset, and when I thought the work was going on too slowly, I donned my bonnet, and tried my hand at helping to set stakes and build a new fence. I do not wish to boast of my feeble efforts, but these were my employments the last year, while my soldier Captain was risking his life in his country's warfare. While digging my fifty-two bushels of potatoes, and gathering my pumpkins, etc., etc., my thoughts were *far, far away!* On the 28th of July my husband was *mortally wounded*. He lived nine hours, and then gave up his noble spirit to God, for the sake of our *Country, Union and Liberty*. His body was embalmed and sent home. Oh! that coming home—my heart is broken, but I have three little children, for whom I know I must labor yet a little longer. My hopes are now all in Heaven; but although earth has grown dull and lonely, I love my country none the less, but all the more for the sacrifice of all that made life dear to me. Heavy debts are hanging over me, but patient creditors are favoring me. In doing for my little family, I hope I am serving my country as every patriotic woman should do, in trying to raise food for the 'thousands in the field,' and the thousands more to go."

Tim Bunker's Raid Among the Pickle Patches.

MR. EDITOR:—"What is in the wind now?" asked Seth Twiggs, as Mrs. Bunker and I started off down the Shadtown road.

"Smoke," said I, as Seth pulled out his stump of a pipe, and blew a puff into the air like a small locomotive just firing up. Old Black Hawk has n't been used much lately, and he went off considerable gay, as we struck the turnpike on Seth Twiggs' corner. Seth did not follow his big-bellied Dutch pipe a great while, but fell back upon his own tried and trusty clay stump. It is mighty hard for old dogs to learn new tricks, and Seth is one of 'em. My letter agin tobacco didn't have any more effect on him, than peas rattling on a tin pan.

"Well, I didn't mean that," said Seth, "Where are you gwine?"

"I am going down to Shadtown, to take the boat," said I.

"Then where?" asked Seth, perseveringly.

"And then to New York, and up into Westchester county, visiting. And if any of the neighbors get into a quarrel, jest tell 'em they'd better make up, for I shan't be back under a week, and there won't be any court."

You see the way it came about was this:—Sally got a letter a few weeks ago from her cousin, who married Noadiah Tubbs, thirty years ago, and moved off to Westchester. Cousin Esther and Sally used to be about as thick as blackbirds in the pie, before they were

married, but haven't met often of late. She hadn't more than read the letter, when she said:

"Timothy, it is a dozen years since I have seen Esther, and she used to be the best friend I had before I found you. And if you feel as if you could spare the time, I should like to go down and see her this winter?"

"Agreed," says I. And we got ready and started off the next week.

Noadiah Tubbs (they call him Diah, for short, and sometimes, Uncle Di,) lives on the banks of the Bronx, about a dozen miles from the city. He is what they call in Hookertown a case, or hard customer. How in this world Esther came to marry him I never could see, and I am a little more than ever in the dark about it since our visit. Perhaps he's grown worse since he got married, or else I've grown better. I ought to be a good deal better after living so many years with Sally Bunker. At any rate, Diah and I seemed to be farther apart than ever. Why! the creature don't go to meeting more'n once a year, and then it is when he is going to be put up for representative or sheriff, when he thinks, may be, he'll get a few votes from church people, if he goes to meeting. I am sorry to say there is rather a bad state of morals all round Diah's neighborhood. The Westchester sinners, from what I see of 'em, are not a bit better than Hookertown sinners. The folks don't seem to have much idea of Sunday, except as a day of visiting, hunting, and fishing. Rum-holes are plenty, and I guess this state of morals accounts partly for the fact that Diah Tubbs has so run down to the heel.

But you need not suppose that Uncle Di is a fool, because he uses rather coarse language, and goes to the tavern oftener than he ought to. He is a pretty fair farmer, or would have been called so a dozen years ago. He knows a heap about raising cucumbers, which they call pickles in all this region. Whether they have heard that the world uses any thing else besides cucumbers for pickles, I couldn't say. I used to think, before I took to writing for the paper, that I had learned about all I could on farming matters, but I find, as I go about, that every region has some new kink in farming, some special crop that I've never paid much attention to. All around Diah's they grow cucumbers by the thousand. Almost every farmer near a railroad depot puts in an acre or two, and gets about as much clean cash from the patch as he does from the rest of the farm.

I see very soon that Uncle Di knew some things that I did n't, and as I wanted to learn I got him started the first evening after I got to his house, on his favorite topic, raising pickles. There was a large dish of apples on the table when we began, but not many of 'em left when we got through. Says I, "What do your folks call this the pickle crop for?"

"Wal," said Diah, "I don't zackly know, but guess it's 'cause its shorter than cowcumber. May be it's 'cause they grow 'em more for the pickle factories than to eat up fresh."

"Do they have factories for this business?"

"Sartain, big five story house over the river, where they make 'em up by the million."

"And how many pickles do you suppose they raise in your town?"

"Wal, I could not tell, but it is an awful sight—enough to sour the crop of all creation, you'd think, if you should happen to be here in August, and see 'em going down to the depot. Most every farmer goes into it more or less, and would raise a great many more if he could get help just when he wanted it."

"How do you prepare the land for this crop?"

"Wal, there ain't much of a knack about that. I fix it pretty much as I would for corn, only I take more pains to make it mellow and light. If a green sward, it must be harrowed thoroughly, and the lighter you leave it the better."

"Is there any particular advantage in having the land fresh?"

"I never could see as it made much difference. Neighbor Bussing has 'em on the same land sometimes three years running. I 'spect more 'pends upon the dung than any thing else, and where you have pickles, you calculate to manure pretty high, and a good deal is left over for the second year."

"What kind of manure do you use?"

"Any I happen to have in the yard. It wants to be well rotted, and if ain't fine I fork it over until I make it so. Coarse stuff won't answer."

"How much, and how do you apply it?"

"If I have plenty of manure, and I believe in that article if I don't in any thing else, I spread on a good lot broadcast, and plow it in. I don't 'spose the crop gets the whole the first year. Then I put a good heapin' shovelfull in the bill."

"And how far apart are the hills?"

"I run the furrows pretty deep, just four and a half feet apart both ways, and make the hill at the crossing. One man drops the manure, and another follows with a hoe, mixing it a little with the soil, and covering it an inch or two."

"What time do you plant?"

"When I raise for nothing but pickles, I plant about the last week in June."

"Suppose it is a dry time. What then?"

"I give the manure a good soaking. It is pretty important to have the seed come right up. You see the cowcumber is of such a nature that if it gets sot, it is of no use to try to start 'em. You must push 'em right along."

"And what variety do you plant?"

"We ain't got any pertikelar name for 'em. They ain't Clusters, nor London Greens, nor Russians. I guess they are a sort of mixture, for every man raises his own seed."

"Is there any particular knack in doing that?"

"Yes there is. More 'n half the battle lies in raising the seed. I tried some seed I got in the city once, and didn't have any luck at all. It won't do to take the odds and ends for seed. If you want a lot of pot-bellies and nubbins, plant the seed of such, and you'll get 'em. I generally take the cucumbers that grow on the second and third joint, and let them ripen for seed, and don't allow any body else to see to 'em. I put 'em where I can find 'em in the summer."

"How many do you have in a hill?"

"I plant from five to ten, and thin out at hoeing time to five or six."

"How many times do you hoe?"

"I cultivate and hoe but once, and it is pretty important that that should be done at just the right time. A day too late makes a great deal of extra work. I run a plow about three times between the rows just before the vines fall over and begin to run, then dress out with a hoe."

But I see that I can't tell you all that Uncle Diah said in this letter, and if your readers' teeth are not all set on edge, next month I'll give 'em some more pickles.

Hookertown, Conn., } Yours to command,
Jan. 5th, 1865. } TIMOTHY BUNKER Esq.

AN IN-DOOR SMOKE HOUSE.—Whoever wants a cheap and convenient smoke-house, let him make it while building his kitchen chimney. After carrying the chimney up to the chamber floor, or the garret if preferred, build a tight closet of brick, well plastered, adjoining the chimney and connected with it by openings at

the bottom and top. If the light of the kitchen is high enough to cool off the smoke from the fire below before it reaches the closet (for you don't wish to fry the hams just yet,) the smoke may be diverted into the closet from the flue just above the ceiling, and then let off into the chimney again through an opening at the top. Otherwise a small fire must be made in the closet. Of the material for making the smoke, we prefer corn-cobs, or maple, or hickory sawdust. Such a smoke chamber will not only be handy in all weathers, and safe from thieves, but furnish an excellent place for keeping hams and dried beef in summer. An occasional smoke can be made, or a rubbing over with fine pepper may be given to keep away vermin.

One Acre Enough—Sometimes.

An "Ex-Market Gardener" gives to the *American Agriculturist* the following illustrations of what can be done on a small piece of land, by hard work and high manuring. The story looks large, but we do not doubt its truth:

"On a fertile acre, within sight of Trinity Church steeple, New York, but in the 'benighted land of Jersey,' lives a man whom, not to offend his modesty, I will call 'John Smith.' John's neat cottage and acre cost him, some eight years ago, \$3,000—now worth \$6,000.

"In the spring of 1864, he planted on his acre 12,000 Early Wakefield cabbage plants, which, by the first week in July, were sold in the New York markets, at \$8 per 100, for \$960. Between the rows of cabbage were planted, at the same time, 18,000 Silesia lettuce plants, which, at \$1.50 per 100, brought \$270. Both crops were cleared off by 12th July, the ground again thoroughly plowed and harrowed, and planted with 40,000 celery plants, which were sold before Christmas of same year, at \$3 per 100, for \$1,200, making the total receipts \$2,430.

His expenses were: "Manure \$150; keep of horse, \$300; interest on \$6,000, \$420; hired labor, \$400; incidental outlay, \$100; amounting in all to \$1,370, which deducted from the receipts gave him the net profit of \$1,060.

"John is only a common-place man. Some might call him a clod-hopper. He has no particular skill, no great share of "brains"—his only prominent quality is untiring industry; but it would be difficult for any one, no matter how endowed with skill or brains, to make more of an acre than he has done.

"Another more ambitious friend, who thinks ten acres no more than enough, has, with nearly the same crop, laid himself liable to pay Uncle Sam's 5 per cent. from his income on his 'truck patch,' his profits having been this season, on ten acres of land, \$5,700, over and above household expenses. Both of the above are exceptional cases, their grounds being in the very highest state of cultivation. But it is a fact beyond all question, that in what is known as the 'Communi-paw district' the net profits per acre, for the past three years, have averaged \$500.

"No greater mistake can be made, either by farmer or gardener, than spreading himself over a large surface. The market gardeners of New Jersey, in the vicinity of New York, cultivate from one to fifteen acres each. The most successful are those who have been content with six or eight acres. I believe their success will bear favorable comparison with that of the Long Islanders, whose farm-gardens contain from ten to one hundred acres each. As a class, they are hard-working and frugal, and all who have weathered the storm during the past dozen years are now independent."



A FAMILY SLEIGH RIDE. — Engraved for the American Agriculturist.

Thus far the winter has been remarkable for the long continuance of sleighing. No unusually heavy snow storms have occurred, but the falls have been so timed that the winter roads have mostly remained in admirable order. Family rides and pleasure parties have made the otherwise dreary hours bright with enjoyment; it has been spring time in the social world, if not in the almanac. No field repays cultivation better than the home circle. It can scarcely be too often urged that the children should expect and find greater enjoyment in the company of their parents and each other, than among strangers. The winter season is especially the time to strengthen home attachments, because so many attractions abroad are offered, and the comparative leisure gives better opportunity for recreation. Books, papers, and games within doors, rides in the family sleigh, and other out-door pleasures, may and should leave memories so bright that, in after years, the hearts of the children will ever turn with strong yearnings to the old homestead. The commandment, "Honor thy father and mother," will be rendered easy of performance, if parents do not neglect this essential part of duty.

COAL ASHES.—Let any one doubting the value of hard coal ashes for manure, try them for walks. Dig out the soil three or four inches deep, throw into the bottom any coal cinders, oyster shells, small stones, or other rubbish, for

a foundation; then put on the ashes. Roll them, and the walk will be smooth, hard, and dry. If this does not quite satisfy one's taste, let him just put an inch or two of fine gravel over the ashes; then roll smooth and solid. No wind will spoil such a walk, nor will it be muddy. It is the cheapest of good walks.

A Live Farmers' Club—Sorghum in Mass.

The Springfield Republican publishes some of the doings of the wide-awake Farmers' Club, of Wapping, in Deerfield, Mass. Weekly meetings are held at a school-house, which are regularly attended during winter and spring, by both sexes. At a recent meeting, "Sorghum Culture" was under consideration. Last year sorghum seed was received by the club from the Department at Washington, and Mr. Hiram Root offered to be at the expense of machinery for producing syrup, if some dozen others would each raise small plots, and give him half the product for manufacturing. The plan was agreed to, and the machinery, consisting of mill and evaporator, were procured from Mansfield, Ohio. Five or six acres of the cane were raised. The results of the different plots were various, but the whole was sufficiently remunerative to encourage future trials. Mr. Root produced 154 gallons of thick, heavy syrup, from three-fourths of an acre. This account indicates the value of farmers' clubs, and also shows the ad-

vance being made in Sorghum culture. Many similar successful experiments were made in new localities last summer, and the day seems not far distant when the whole land will be sweetened with this northern home-grown syrup.

How a Pioneer Established an Orchard.

Mr. I. W. Rollins removed from New England to Minnesota, in 1855. At that time the locality where he settled was entirely new, there being no land under cultivation in his neighborhood. He did not wait until he could afford to invest in fruit trees before he provided for an orchard, but sowed apple seeds the first spring. In three years he had trees ready to plant in the orchard, and in four years more gathered his first fruit. He has now a healthy, thrifty orchard of 300 trees just coming into bearing. Many persons after they establish a new farm wait more than nine years before they are ready to plant an orchard of young trees, and then several years more for it to yield returns. A little providence at the beginning in starting the seedlings, a little skill in budding or grafting, and care in setting and protecting the young trees, are all that is needed to soon give the poorest settler in new countries a valuable orchard.

THE too frequent use of authority impairs it. If thunder were continuous it would excite no more sensation than the noise of a grist-mill.



Fig. 1.—BUTTERFLY FLOWER.

Some Curious Vegetable Forms.

All plants are engaged in performing the same general work—that of converting the crude elements of the earth and air into organized products fit for the food of animals. This might have been done equally well had the plants been made all of the same form, instead of with that great variety which now surrounds us. The study of plants shows us the wonderfully varied means employed to attain the same end. Though all the parts of plants show great diversity in form, this is most strikingly seen in the flower, in which every conceivable modification of shape as well as of color, is wrought.

Among the most interesting flowers are those which resemble more or less closely some kinds of animals. The Calceolarias, looking very like large fat spiders, and the common Canary-bird flower (*Tropaeolum peregrinum*), which by the aid of a little imagination looks like a bird, are among the more common of these curious forms. To see the most striking ones we must go to the rare collections of the hot-houses, where among the members of the Orchis Family will be found flowers of strange shapes and brilliant colors.



Fig. 2.



Fig. 3.

The Dove-flower of Central America, which has what appears like a beautiful little white dove nestling within it, was figured in these columns

and the illusion is the greater from its being perched upon a very slender stem, so that when moved by the wind, it has the appearance of a butterfly hovering in the air. This plant thrives only in a warm and moist atmosphere, and can not be grown except in a hot-house. It is not flowers alone that simulate animal forms, but fruits sometimes put on grotesque shapes. The Snake cucumber (*Trichosanthes colubrina*), with fruit several feet in length, and shaped like a serpent, is frequently grown in green-houses. A nut from Demarara, called the Snake-nut, has a most curiously twisted kernel, which when removed from the shell, looks very much like a small serpent. Figures 2 and 3 give two views of this kernel, and show its snake-like form. The tree which produces it is related to the Horsechestnut, and bears the rather formidable but descriptive botanical name of *Ophiocaryon paradoxum*.

THE DIFFERENCE BETWEEN A FRUIT AND A VEGETABLE.—A Lady asks us how she shall reply to the question: "What is the difference between a fruit and a vegetable?" This is a rather difficult question to answer with precision. In one sense, all fruits are vegetables, and all the vegetables used as food by men and animals

a few years ago, and we now give a drawing of the equally remarkable Butterfly-flower, *Oncidium pallidum*. This plant is a native of Trinidad, and like many others of the same family it is an *Epiphyte*, i.e., it grows upon other plants, to which it attaches itself by closely clinging roots, and draws its nourishment from the air. The engraving shows a cluster of the bulbs of the plant upon a piece of a limb, one of them bearing leaves. On account of the great length of its stem, the flower can not be shown in its proper position, but is cut off and shown lower. The whole is drawn about half the natural size. There are some insects which very closely resemble leaves, and it would seem that to balance the account, Nature had made this flower as much like an insect as possible. It resembles a butterfly not only in shape, but in its brilliant colors,

are fruits. Horticulturally, those products intended for the table which first go through a preparatory operation in the kitchen, are called vegetables, although many of them, such as tomatoes, squashes, etc., may really be fruits, while melons, grapes, etc., eaten without preparation are fruits. Some, like the tomato, may be eaten either as a fruit or as a vegetable. Botanically the word fruit means the ripened ovary and its contents, together with whatever may be connected with it, as receptacle, calyx, etc.

The Trumpet Honeysuckle.

(*Lonicera sempervirens*.)

Among the woody climbers, the different species of *Lonicera* or Honeysuckle occupy a prominent place. The Woodbine, so woven into English poetry, is a well known species valued for its fragrance; and there are several others, the flowers of which are both beautiful and highly perfumed. As a covering for trellises, walls and flat screens, the honeysuckle does not answer as good a purpose as several other vines. Its nature is to wind or twine about some support like a pole, pillar, or trunk of a tree. As an ornament for pillars or poles, no vine is more suitable. The posts of a veranda or summer-house can be speedily covered by them. Supports of an ornamental sort are often made of cedar or pine, the shaft being about ten feet high, three inches in diameter at the base and tapering to two at the top. Short, transverse rods are run through them at about eighteen inches apart, and the honeysuckle allowed to twine about them. If one has a heap of bould-



TRUMPET HONEYSUCKLE.

ers, or a rocky ledge in his grounds, that he wishes to hide or embellish, let him set a scarlet

or yellow Trumpet Honeysuckle at the base, and they will trail over the rocks very soon. The honeysuckle may be trained and kept as a standard five or six feet high, by simply cutting off the leading shoot every year. It will then throw out laterals which will be covered with flowers all summer. Set a stout post of cedar or other imperishable wood in the center, to which the main stem is to be tied, and then the branches will hang down and trail upon the lawn in a beautiful manner. The species figured above, though not fragrant, is very showy, and has the merit of being a native. It has fine dark green leaves, the upper pairs being united at the base so as to surround the stem. The flowers are tubular, about two inches long, of a fine scarlet outside, yellow within and very brilliant. The engraving shows a portion of the plant of the natural size. Though the specific name, *sempervirens*, would indicate that it was an evergreen, it is not so at the North, but it retains its leaves during the mild winters of the Southern States. The neighborhood of New York City is believed to be the northern limit at which the plant is found growing wild, but it is abundant farther South. Several varieties differing in the size of the leaves and size and color of the flowers have been obtained from seed. It may be readily multiplied both by layers and cuttings.

Laying Out the Front Yard.

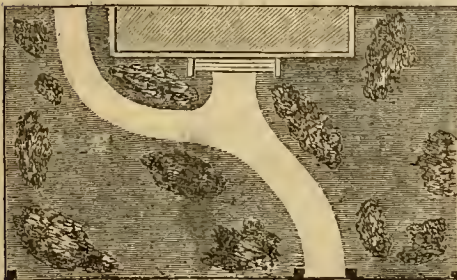


Fig. 1.

The space between the gate and the dwelling, which in large estates is termed the approach, is in those of moderate pretensions popularly termed "the front yard." There is to most homes, except in densely built cities, a greater or less extent of ground immediately in front of the house which is not devoted to crops, but which is usually more or less embellished by the occupant—though it is sometimes left in a deplorable state of neglect. Those who allow the grounds near the house to become a hospital for dilapidated vehicles and tools, and a ranging place for pigs and poultry, need first to practise a lesson in tidiness and order; but there are many persons desiring to arrange the approach to the dwelling in a neat and tasteful way, who apply to us to furnish plans which shall aid them. In several instances readers have sent us maps of their places as they now are, with a request that we furnish them with designs for their improvement. For obvious reasons we can not give these applications separate answers. Those who are laying out new places, or wish to make extended improvements in old ones, should either engage the services of a landscape gardener, or carefully study the works of Downing, Kemp, Smith, or other writers of acknowledged authority. Each situation presents its own peculiar features, and the plan, especially if the place is a large one, must be made with regard to the nature of the surface, the views to be secured or shut out, the trees, rocks and other natural objects to be preserved, and other conditions

which a person of taste will observe, and to which he will adapt his plans. There are some suggestions however, which apply equally well to large and to small places, and which should be

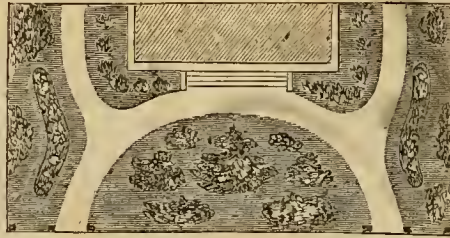


Fig. 2.

observed in plans involving the expenditure of large sums, as well as in the more economical ones. Simplicity, ease and convenience, are to be sought, while stiffness, formality and intricacy are to be avoided. The prime essentials in a front yard, approach, park, or whatever name we choose to give it, are, a fine turf and roads or paths. A lawn well made, and densely turfed is an object of beauty in itself, and serves as the setting for trees, clumps of shrubs, and flower-beds, all of which have their beauty enhanced by it. The roads or paths must be permanent in character, well made, well drained, and with their edges well defined. These two things being secured, the minor details are easily arranged. A few plans are given as suggestions to those persons who wish something to start from—it often being easier to modify a plan than to originate one. The most difficult cases to manage are where the

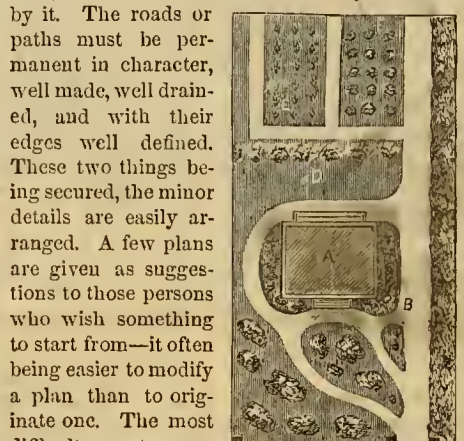


Fig. 3.

house is built so near the road that but very little space is given in which to work. In these the path runs directly from the gate to the front door, which gives a stiff and formal appearance to the place, as the path divides what little ground there is into two equal blocks.

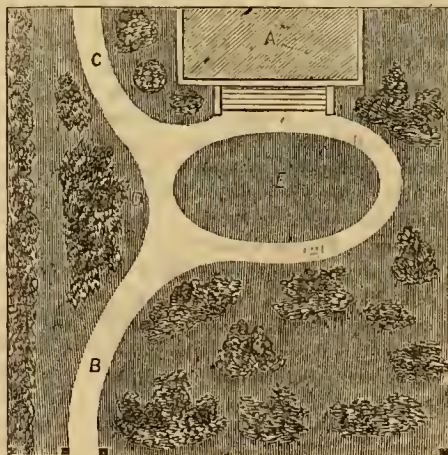


Fig. 4.

Fig. 1, shows how this formality may be broken up by placing the gate at one side, instead of directly opposite the entrance of the house, and allowing the path between the two to take an easy curve. This will give an appearance of greater extent, and it leaves the grass with a pleasing outline. A path at the left hand runs

to the rear of the house. Where the yard is very narrow, it is sometimes laid out as in fig. 2, which requires two entrance gates. The walk curves to the front door, and paths reaching the grounds at the rear may be made as in the drawing. This plan is rather formal, but it has the advantage that it saves a considerable unbroken extent of lawn in front of the house, and there are cases in which it will be found to be the best that can be adopted. The long and narrow lots, common in villages, are quite difficult to arrange in good taste on account of their awkward shape. In these the house is usually near the front of the lot, with kitchen and fruit gardens and stable, to which it is necessary to have a carriage road in the rear. One method of treating these badly shaped places is given in fig. 3, which shows the front portion of such a lot. A road, *B*, is run at one side the whole length of the lot, or as far to the rear as is necessary, leaving a border about 6 feet wide between it and the boundary. The front portion of this border may be occupied by ornamental shrubbery, while at the rear of the house it will answer for vines or dwarf fruit trees. From near the gate a pathway sweeps toward the house, if the place is small, or if the size will admit of it, this may be widened to a carriage drive. At *D*, is a grass plot at the rear of the house for drying clothes, which is shut off by a screen or hedge from the fruit and kitchen gardens, parts of which are shown at *E*, *E*. A place of considerably greater extent is given in fig. 4, where the carriage drive, *B*, turns around an oval, *E*, and reaches the stables in the direction of *C*. This plan is at once simple and convenient, and is capable of being adapted to large or small places. In this, as in the other plans, the trees upon the lawn are put in at the fancy of the engraver rather than as indications where we would plant them. We have not shown any flower-beds cut into the lawn, except in fig. 2. A few masses of flowers may be introduced with good effect, but where there is sufficient land the general flower garden should not be at the front of the house.

The Sheldon Pear—Historical.

In the description of the Sheldon pear, in the *Agriculturist* for November last, we gave the locality of its origin as cited by Downing. Since then we have had several letters from different parts of the country, each claiming to give a correct account of the history and origin of this pear. As these letters tell very different stories, they are quite amusing as illustrations of the difficulty in coming at the actual facts in so simple a matter as the history of a fruit which originated within the recollection of persons now living. Mr. P. B. Sheldon, Steuben Co., N. Y., writes a very full account of the pear, and as he is the son of one of the brothers whose name is borne by the fruit, we select his narration as most likely to be the correct one. According to Mr. S., the seeds which produced the Sheldon pear were brought from Connecticut about 50 years ago, and were planted on two separate but adjoining farms in Huron, Wayne Co., N. Y., by the brothers Wareham and Ral-seyman Sheldon. The singular part of the account is, that from this seed, four trees (one upon one farm, and three upon the other,) of the variety now called Sheldon, were produced. It seems very strange that four trees should be produced, the fruit of which was identical in character, and it would be interesting to know if the trees which have since been propagated are

from a single one of these trees, or from all four indiscriminately. We have heard only one unfavorable account of this variety, and this from an experienced cultivator in Conn. It may be that the progeny of the different original trees does not prove equally good, and that the above exception is the general verdict is due to the fact that cions have been disseminated from more than one of the four seedlings. As Mr. S., in his letter, speaks at one time of the "original tree," and at another of "original trees," we are left in doubt on this point. He states that he has had pears from the original tree that weighed 18 ounces; that the tree is not subject to blight, but that in some localities the fruit is, at intervals of several years, of an insipid quality, and that this happens with the original trees. It is singular that a fruit possessing the marked high character of the Sheldon should have been before the public for more than a quarter of a century and been so little disseminated, while during this period many foreign sorts have been generally distributed and cultivated, and many of them abandoned. This slow progress in popularity is attributed by Mr. Sheldon to the fact that it has had no person especially interested in its sale to puff it, but has depended entirely upon its own merits.

Some Weeding Implements.

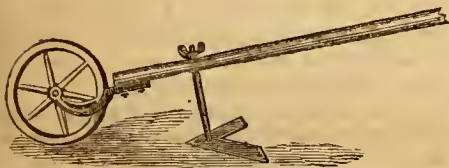


Fig. 1—WHEEL HOE.

A large share of all the labor in the garden is devoted to the destruction of weeds, and anything that facilitates this work, is of great importance to every one who has a garden. The ordinary hoe has been more or less superseded by weeding contrivances in great number, and we give a few of the simplest, such as can be made during the winter's leisure, with the aid of the blacksmith. Mr. Wm. R. Tatem, Phila. Co., Pa., sends a drawing of a Wheel-hoe which he finds very effective in working between rows of onions, and other crops sown in drills, as well as in cleaning paths. It consists of a V-shaped blade attached to a handle with a wheel at one end. The handle, the whole of which is not shown in the engraving, is of 1½ inch stuff, 4 feet 9 inches long, 2 inches wide at the lower, and 1½ inch at the upper end. A cross handle, 15 inches long, is attached at the upper end, to allow the hoe to be worked with both hands. The wheel is of cast iron, 10 inches diameter,



Fig. 2—MISSIONARY HOE.

with a rim 1½ inch in width. It is attached to the handle by means of a curved shank, having two arms between which the wheel revolves. The axle is fixed in the shank, and the wheel turns upon it. The upright of the blade is of 4 inch iron, 1½ inch wide, and 12 inches long; this is attached to the handle at 6 inches from its lower end. It is found convenient to have some contrivance to alter the height of the hoe

in order to adapt it to the use of a boy or man, as may be required. It is used by means of a backward and forward motion of the arms.

Fig. 2, the Missionary-hoe is an implement on a similar principle, though differing in construction. A straight and narrow blade, about 8 inches long, is attached to a frame just behind a wooden roller, which serves as a wheel to regulate the depth to which the blade shall enter the soil. We have used this implement with satisfaction, and found it the safest thing to put



Fig. 3—SCUFFLE HOE.

in the hands of an unskilled laborer. It is said to have been invented by a missionary to some of our western Indians, and in clean, mellow soil it does good and rapid work.—Fig. 3, the Scuffle-hoe, also called Dutch-hoe, and Push-hoe, is a very convenient implement for destroying weeds. A Boston correspondent, is so much pleased with it that he is desirous that all our readers should become acquainted with it. We give a cut of one form of the Scuffle-hoe, and let our correspondent speak its praises as follows:

"Since I commenced its use I have kept my garden free from weeds with so much less labor, that it seems to make all the difference between weeds and no weeds. It should not interfere with the use of the hoe in loosening the ground around hills of corn, melons, etc., but for cleaning off weeds and breaking the crust after a rain, for running between rows of strawberry plants, of beets, onions, and other root crops, etc., it saves much hoeing and hand-pulling of weeds. A hoe must be pressed into the ground with considerable exertion, which is quite fatiguing to most of the thousands to whom the possession and care of a kitchen garden should be a luxury and a recreation; but the Scuffler slides just under the surface, pushing out the young weeds, while it allows the body to be maintained erect and requires but little effort. It is particularly useful for scuffling close to a fence about the posts, under currant, and especially about blackberry, raspberry, or bushes of a briary nature. To get the best advantages from it, one needs to be careful about the pattern, as there are many forms in the tool stores. I think the blade should be just 5½ inches, that is the happy medium between too wide and too narrow; the handle should be long, say six feet, and the blade must be set upon it with such a slant as will enable a cut to be made either way, and the tool to be used without leaning over, that is, so that the blade may be flat on the ground when the end of the handle is at the height of the shoulder. If the ground has been allowed to get packed hard, or the weeds become large, the Scuffler won't answer, and one needs to brighten his hoe, or turn all the soil over with a spade."

In July last we figured and described the Bayonet-hoe, and since then several have written in praise of this simple and useful little implement. Mr. C. B. Meek, of Canandaigua, N. Y., states that he brought one with him from England, 28 years ago, and he has the identical hoe in use yet, it having been occasionally relaid with steel. He says: "I make all my drills for seed with it, and by working it deep between my growing crops, I can defy all drouths." Mr. M. states that this hoe was invented by the late Lord Vernon of Derbyshire, Eng., and that the proper name is the Vernon

Hoe. We were aware that it sometimes bore this name, and as it was earlier called the Spanish Hoe, we gave the name by which it is best known in this country. Whatever may be the oldest and therefore most proper name, it is certainly a most valuable garden implement.

Gardens for the Children.

A Michigan lady thus sensibly pleads the cause of the young people: "A great deal can be done to encourage horticultural tastes and industrious habits in children. Why don't farmers fence off little gardens for their larger boys and girls, and allow them to have all they can raise from them? Put agricultural papers in their hands, and encourage them to try experiments in wheat raising, cultivating seedling fruits, etc. Put a good magnifying glass into their hands, that they may become acquainted with their insect friends and enemies. To those old enough to appreciate and take care of them, give choice plants to cultivate, or what would perhaps sometimes be better, let them earn money in some way and purchase them for themselves. Don't turn them off with an Isabella grape when it will not ripen for you; let them have a Delaware or a Concord, that they may be more sure of a return for their labors. So of strawberries and other things. Excite in them a desire of excelling in raising fine fruits and vegetables. Let them get up children's agricultural fairs and horticultural societies for discussion, etc. Don't you think the Agricultural papers will be studied if you do this, and don't you think you will raise a family of intelligent and well-informed men and women?"

"So of domestic animals. If you have a boy a dozen years old, give him a yoke of calves to train; give the girls lambs, and let them have the fleeces as a reward for good care, or allow them to raise some fine cows for themselves. Children need objects to love, and incentives to faithful labor, and they will love home all the more if you attach them to it by pleasant memories and good kind instruction."—Well said.

A Diminutive Variety of Corn.

There are upon our Exhibition Tables some ears of corn about 15 inches in length, and we do not know how much larger ears may be produced; but in the opposite direction we think that the minimum has been reached in an ear sent us by Mr. A. Berry, Hamilton Co., O., with the name of "Brazilian Pop Corn." The engraving gives the exact size and shape; the color is a fine garnet red. An experiment with a few kernels shows it to be of excellent quality for popping; though it does not make as large grains as some other kinds. Mr. B. thinks he has acclimated the variety; at all events the ear sent us seems to be perfectly matured. It is recommended to grow it in drills, leaving the plants 18 inches apart. The suckers are not removed, as they bear as well as the main stalk, and each plant yields from 4 to 10 ears, or even more, according to circumstances. We are not informed if the variety is in the market,





"German Ivy."—*Senecio mikanoides*.

Under the name of "German Ivy" we have cultivated for several years a very quick growing, but rather tender climber. In shape its leaves somewhat resemble those of the true Ivy, hence its popular name—but it is really neither an Ivy, nor German. The plant is from the Cape of Good Hope, and belongs to the Composite family, one which gives us but few climbers. It has had a great variety of names—the correct one we believe, being *Senecio mikanoides*. *Senecio* is a very large genus, containing species from all parts of the world. The name *mikanoides* is given to the present one from its resemblance in its climbing habit to *Mikania*. Among other names for this plant we find *Senecio scandens*, *Delairea odorata*, *D. scandens*, *Breonia palmata*, etc. When the plant has liberty to run to an unlimited extent, it seldom flowers, but sometimes when confined, especially if grown in a pot where its roots become crowded, it blossoms freely. We are indebted to a friend in Lawrence, Mass., for the specimen from which the engraving is made. The flowers are of a lively yellow, and fragrant; they, as well as the leaves, are shown considerably less than the natural size. The chief use of the plant is to form a leafy screen, a purpose to which its large foliage and rapid growth well adapt it. It answers to cover unsightly objects in the grounds, and makes an excellent window plant within doors. It grows with the greatest ease from cuttings, every joint making a plant.

When is a Tree Grafted?

A correspondent in Whiteside Co., Ill., writes to the *Agriculturist*: "We have a few R. I. Greening trees which were bent down when small, and layers were made of them; therefore, the trees we now have are all grafted, roots and all. I wish to know whether the seed from the fruit of these trees will produce the same variety or not." The writer of the above does not seem to have a very distinct idea of what grafting is, and, in common with many others, supposes the term *grafted* applies to a quality of fruit, instead of to the process by which varieties are propagated.

The trees he refers to, instead of being any more completely grafted than trees usually are, in fact, are not grafted at all, but are merely R. I. Greenings "on their own roots," as the gardeners say. If cions from a very indifferent "natural" tree were to be inserted into these Greening trees, the fruit produced by them would be "grafted fruit," notwithstanding its inferior quality. As we are in the habit of perpetuating only choice varieties of fruit by grafting, many take it as a matter of course that fruit thus propagated must be of a superior quality, which is in some way derived from, or imparted to it, by the operation of grafting. This impression is aided by the fact that budding is also called inoculating, and as this latter term is also used for vaccinating it has probably given the idea that the character of a tree is modified by the introduction of some virus or principle into its system. The error of this impression will be manifest when we compare the operations of grafting and budding with other modes of propagation. In making a *layer*, a branch is partly buried in the earth, and it remains more or less in union with the parent plant until it makes roots of its own. In propagating by *cuttings*, the branch is completely severed from the parent, and planted in the ground to strike root and form a new individual. In *grafting*, a cutting is planted in another tree, with which it unites, and uses roots already provided, instead of making roots of its own. The cion or cutting used in grafting has several buds upon it, while in *budding* a single bud is employed. The future growth from the cion or bud partakes of the character, good or bad, of the tree from which it is taken; and, though the fruit may be somewhat modified by the character of the stock upon which it is grafted or budded, we believe the influence is always confined within rather narrow limits.

FRUITS FOR ILLINOIS.—At a recent meeting of the Illinois Horticultural Soc'y the following fruits were recommended for general cultivation, without dividing the State into Northern, Central and Southern

fruit districts, as has formerly been done:

Apples.—Early Harvest, Red June, Sweet June, Early Pennock, Maiden's Blush, Rambo, Snow Apple, Jonathan, Yellow Bellflower, Talman, Rawles' Janet, Willow Twig, Wine Sap... *Pears*.—White Doyenne, Flemish Beauty, Seckel, Duchess, Jersey, Easter Beurre, Bartlett, Osband's Summer... *Cherries*.—Early Richmond... *Grapes*.—Concord, Hartford Prolific, Delaware, Norton's Virginia, Clinton, Herbermont... *Quinces*.—The Orange Quince... *Blackberries*.—New Rochelle... *Raspberries*.—Doolittle's Purple Cane, Ohio Ever-bearing... *Strawberries*.—Wilson's Albany, Iowa... *Gooseberries*.—Houghton, Upright Cluster, or Pale Red... *Currants*.—Red Dutch, White Dutch, Grape, Victoria.

A new "Everlasting Flower."

(*Helipterum Sanfordii*.)

Those flowers having that peculiar papery texture which enables them to preserve their form and color upon being dried, are deservedly popular. Besides being useful in the garden, they are valuable for dry bouquets, which make very pretty winter decorations. The number of these has been much increased of late years, and we now have a quite full assortment of colors, from the pure white of the *Ammobium* and *Acroclinium*, to the purple of some of the *Helichrysums*. Last autumn we saw in the collection of Mr. James Vick, at Rochester, a fine golden yellow everlasting flower, the habit and color of which were very pleasing. It was the recently introduced *Helipterum Sanfordii*, which is a very pretty border plant and when dried, holds its color remarkably well. Like all the rest, when intended to be preserved in the dry state, this should be picked as soon as the flowers expand, or before they are fully opened. Mr. Vick has sent us a specimen and we give an engraving which shows a cluster of the nat-



HELIPTERUM SANFORDII.

ural size, and at the left a much reduced figure showing the manner of growth of the plant.

Garden Seeds—Look Out for Them Now.

Every good gardener should now be looking after the seed that he is to sow next spring. Of the imported varieties, the supply will probably be much less than the demand, and even of home-grown seeds the stock frequently gives out by planting time, as was the case with onion seed last year. It is scarcely necessary to insist upon the importance of good seeds—good not only as being of a good sort or strain, but good as to their germinating power. Old seeds are often a source of great loss and disappointment, and many are sold each year which are only fit to be thrown into the fire. It is especially difficult to procure at a distance from seedsmen of reputation, seeds on which one can rely with confidence. Seedsmen put up their boxes of seeds with a flaming printed label, "Warranted Fresh." All very true and fair for the first year; but when these boxes of seeds are brought out year after year for many years, it is neither true nor fair. Many kinds of seeds will not vegetate after the first or second year. The only honest way is for the dealer to label his boxes with the year in which they were put up, leaving it to the purchaser to decide for himself whether or no they are "fresh" enough for his use. Test by sprouting a few of each lot.

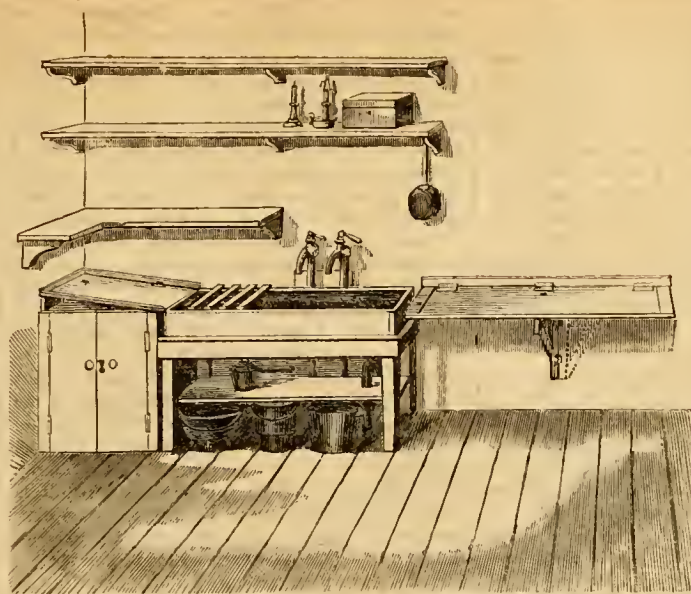
Propagating Hyacinths.

Hyacinth bulbs are imported from Holland, where large farms are devoted to their propagation. Our correspondent, F. Scholer, of Long Island, states that he can raise bulbs as good as the foreign ones, and nearly as cheaply as onions. Having some bulbs in which the heart, or central bud had decayed, he planted them in autumn, and found in spring, that numerous small bulbs were formed around each old one, in one case to the number of 34. These when taken up in July were found to be about the size of one's thumb; they were planted again in autumn, and the following summer when they were lifted, were found to be equal in size and quality to the imported ones. Acting on this hint, he afterward removed the central bud from bulbs by means of a knife, and succeeded in getting a crop of small bulbs. The experiment is easily tried, and we see no reason why, if sufficient pains be taken, good bulbs may not be as easily grown in our own gardens as abroad.

THE HOUSEHOLD.

How to Begin Housekeeping

"Molly Homespun" writes to the *American Agriculturist*: "Something more is required in house-keeping than recipes for cakes and cookies, though these are very good, but rather costly these times, with sugar at 30 cents a pound. I write for young housekeepers, and commence with the kitchen, the most necessary room in a house. Before going to housekeeping, the young wife should know just how much can be afforded to furnish the house with, and then commence at the kitchen, instead of the parlor; and every married woman, rich or poor, should know what is needed there for order and despatch. The kitchen should be as large as can be afforded. Next, have plenty of good soft water, if you can get it. Have a pipe come up over the top of the sink, with a faucet to draw the water from. Let the sink be large, and on one end have three or four slats nailed crosswise, to set dishes in to drain. This will save many hours labor in the course of a year, besides the wash and wear of a dish wiper,



A CONVENIENT KITCHEN SINK.

the washing of which is quite an item, if it is always kept clean; and allow anything else in the kitchen rather than a *dirty* dish-wiper. Have a board on one side of the sink to put the dishes on after draining. This will also be convenient for dishes while serving up a dinner, and will answer every purpose of a table to mix and iron on, and for many other little things which require a table." Our artist has sketched such a convenient arrangement, with one or two additions. Two faucets are represented above the sink. In many dwellings, arrangements are made for a flow of either hot or cold water, which is greatly desirable. A shelf under the sink is convenient for pots and kettles, and a small cupboard under the draining board will not come amiss. The waste pipe underneath has an "S" curve, or trap, to prevent a draught of foul air rising through the drain. The entrance to the waste pipe in the sink should be covered with wire netting, or perforated metal not easily rusted.

Economical Cooking.

How to live cheaply and at the same time healthfully, is a problem which many would be glad to solve. A few hints in this direction may be of service. Flour or some equivalent is an essential, but superfine wheat flour, for constant use, is not essential, and quite an item may be saved by purchasing wheat, instead of barreled flour, and having it ground without bolting. The use of this wheat meal a portion of the time, will conduce to health, and perhaps save another item in the doctor's bill. Rye flour is not near as expensive as fine wheat flour, and corn meal is considerably less also; it will pay therefore to use to some extent the good old fashioned rye and Indian bread. A very sweet bread may be made of corn meal alone, with no addition but pure water, if baked quickly in thin sheets. If you have milk to use with it, there are many excellent ways of preparing corn and corn meal, to accompany it, and this grain may properly be used largely in winter. Many have forgotten how people used to hull corn by the use of weak ley, and what an amount of good solid food may be prepared thus from two or three quarts of corn. New Dent corn makes excellent hulled corn, and eaten with cream and maple sugar, or with milk, or milk and butter, or cream alone, is good enough, and very nutritious. Butter and lard are very high; it may interest some to be reminded that butter-milk with a slight addition of butter or other shortening—that which comes from boiled beef should not be overlooked—makes a healthful and very good pie-crust. For pies, if apples are scarce, remember the pumpkins and squashes; good pumpkin pies can be prepared without eggs, by making the milk used, or a portion of it, into a flour por-

ridge before stirring the pumpkin into it. Custard pie may be made without eggs also, from milk flour porridge, by adding the necessary pastry and seasoning. Custards may be made in the same way, or with Irish moss, or rennet. Sump from Indian meal makes a very palatable pie in imitation of rice. Baked apples are a good and most wholesome substitute for pies, and they save sugar. Good cake may be made with thin sour cream and soda, without eggs, or butter. Mince pies, to be very good, need not have all the customary ingredients—dried berries may be substituted for raisins, and if you have blackberry pickles, try them—they are good. Green Hubbard squashes prepared as pumpkins are fixed for pies, are relished by some, and it is a very good way to use them up. Rutabagas cost much less than potatoes, per bushel, and are certainly good food. Beans are high, but they give more nutriment for the same money than many lower priced articles of food. Onions eaten with potatoes are a good substitute for meat. With plenty of vegetables, milk, and fruit, meats are not essential. Health and strength can be maintained without pork, notwithstanding the high opinion many have of its strength-producing quality.

How to Make Good Bread.

The subject of making good bread was pretty thoroughly discussed in the *American Agriculturist* last year, by various correspondents. But as we can scarcely have too much light on such a subject, and especially for the benefit of thousands of new subscribers, we publish the following plain and practical hints contributed by a lady who has always made her own bread, and made it good, for years:

"Of course we want good flour to begin with, and I always want some good potatoes, and hops also. Then I make what I call 'stock yeast' which I always take care to keep on hand, as it will keep good from four to six weeks—and I have kept it eight, but think it better not quite so old—it is easily done. It is made as follows: Boil two or three handfuls of loose hops in two quarts of water, one and one half hours, then strain the liquor on two tablespoonfuls of flour previously wet with cold water, to prevent its lumping; stir well and let it stand until milk warm. Add two thirds of a cup of yeast, let it ferment twelve or fifteen hours in a warm room, then bottle for use. Any sweet hop yeast will do to start the above, after which brew before you are out, and start from the same. Shake this yeast well when wanted to use.

I then make a ferment which I use to raise the bread, as follows: Wash clean, and boil soft, say two quarts of potatoes, mash fine with one half the quantity of flour while hot, reduce with cold water so as not to scald, add half a cup of stock yeast and let it ferment eight or ten hours or until it begins to fall at the top, when it is ready for use. It may be strained before or after fermentation. I usually strain it through a colander. It will be about as thick before fermentation as dough prepared for fritters. We may use any quantity of this we choose, as it has no bitter or unpleasant taste, of course the more we use, the quicker the bread will rise. This will keep in cold weather about two weeks, in summer not as long. Yeast and ferment should always be kept in a cool place ready for use; freezing or scalding will entirely destroy their virtue.

In the evening I lay my sponge, using one third

ferment, one third water, one third milk—if I have it, if not, two thirds water—and a little salt. Cover with a cloth and let it stand in a warm place until morning, then knead until it works free of the hands and board. Let it rise again in the pans and bake. The sponge should be made a little too soft to mould, but the more flour is used the longer it will take to rise; in summer it should be made quite stiff. It should always rise until it has a delicate, silky touch to the hand, or until it begins to fall at the top, which is always a sure test. If worked too soon, the bread will be tough and dark colored, if baked without kneading, it will be coarse grained, while that which is thoroughly kneaded has an opposite appearance. A good loaf will always be fine grained, still very light and showy. I always keep my bread when cold, in a stone jar, then it does not get dry.

I have been married six years, have always done my own work unless I was sick, and during that time I can safely say I have not failed one time out of twenty five to have my bread all right. I have not used the value of half a pound of saleratus, and have never lost my stock yeast.

Out of curiosity I tried the hot bricks as recommended by "Hatt," in the July number last year. The bread was sweet, but not so bulky by one fourth, coarse grained, and not as good nor handsome—if I may use the expression—as if kneaded the second time, and I am quite sure it did not go as far. I think it better to use a little more 'leaven' and not quite so much force, at any rate I felt nearer 'Paradise' when I had seen the last of it and replaced one of my loaves on the table."

A Bachelor's Opinion of "Recipes."

The editor who usually attends to the Household department was much occupied just as matter was wanted to complete these pages; so he handed a large file of recipes, which had been contributed by the kindness of our readers, to one of his associate editors with a request that he would select some of the best and prepare them for publication. This associate is a bachelor, and as a matter of course, he thinks that he knows more about house-keeping and bringing up children than those who have tried both. He returned the documents with the following notes:—"Here you have at least a hundred recipes, and probably not five things fit to eat can be made from them. Well, that is probably about the usual proportion, as one of the best housekeepers in New York told me that she bought every new cook book, and felt quite contented if she could find five good things in each. Some of your recipes have been read, and others, like the bills in Congress, have been 'read by title and passed.' People are puzzled to know what shall be done with the leading rebel when caught. If it wouldn't be too cruel, I would make him try the different recipes that come to this office. He'd never rebel any more, I guess.... Here is one for pork apple pie, and another for apple pork pie. No, I thank you. The sight of that big hog exhibited in the office of the *American Agriculturist* has been pork enough for the rest of my life. But, seriously, do people ever eat pork in apple pies?—do they put in any saleratus?—Here is a woman who sends a recipe for a pudding 'which can't be beaten.'—As there are no eggs in it, I don't see why it should be. Soda—soda—cream of tartar—saleratus—no, I won't publish any of these, and induce people to turn their kitchen into an apothecary's shop.—Here is a recipe to 'keep sausage meat.' The best way is to have no sausage meat, but if you do happen to have some about the house, lock it up in a chest and lose the key—or do any thing but eat it.—'Keeping eggs'—better keep hens and use the eggs.—I never saw an egg improve much by keeping.—Here is something about 'bread making.'—As we haven't said much on that subject, it would be well to publish this.—Pshaw! it has 'salt raising.'—Now how can people spoil flour in this way, and call it bread?—'Poor man's fruit cake.' Pray what business have poor folks with fruit cake?—but let us see what it is made of: flour, eggs, pork fat and

soda. That'll do.—If poor folks have pork fat and soda, let them make soap and take in washing, and then they won't be poor. My washerwoman gets a dollar a dozen, and dresses better than my wife—could if I had one. Poor folks' cake indeed!—'Rhubarb mince pie'—This must be a good idea.—I used to be foolish enough to eat mince pie, and then I had to take the rhubarb the next day; here the two are combined in one dose.—Oh! it means pie-plant, and that is out of season.—How can I publish any of these recipes; cake I never eat, puddings I abhor, sausages I detest, and mince pies I abominate, and you knew it when you put the job into my hands—about as sensible as to turn a bull into a china shop. I have looked over the whole batch of recipes, and though I don't doubt they are good of their kind, it is the kind that don't suit me. The only thing the title of which tempts me at all is Johnny cake. I open the recipe, and find that though the mixture may be good, it is baked in an oven! Shade of my grandmother! a Johnny cake in an oven! Don't you see that when it is baked in an oven, though it may be something good, it isn't Johnny cake. That must be baked on the middle piece of the head of a flour barrel (Beach's brand preferred), with a hole in the north-east corner. The cake is placed on this, and set up against a flat iron in front of a bed of hickory coals, to bake, and nothing short of this can be Johnny cake—but as I sometime intend to make a cook-book, I won't say anything more about it.—If I do make a cook book, I won't have any mince pies, any sausages, nor cakes, nor puddings, nor anything sweet, nor any saleratus; but just you wait and see what I do put in."

All of which goes to show how "Doctors disagree," especially bachelors. Well, perhaps food that common folks find agreeable ought not to agree with a bachelor. At any rate, our readers will agree that our bachelor is *spicy* enough, and that the best thing he can do before writing his cook book will be to take lessons in a few first principles from some competent lady. At present we hand him over to the tender mercies of our fair correspondents. When time permits, some of their much abused but good recipes will be published.—ED. HOUSEHOLD DEPARTMENT, (whoever he may be.)

Household Notes for February.

Look to the children's boots and shoes which may be wearing through by this time. Do not allow them to go with damp feet. Whole boots are not always water-proof.... Prepare spring and summer clothing, before the garden and dairy claim attention. Study what improvements can be made in the garden the coming spring, and by what means the products of the dairy can be increased in this time of high prices. Is the dairy room suitable? Is the water right? Do you understand the best methods of making butter and cheese? Give attention to the poultry. Can you not raise some very early chickens, for the table, for market, and for next winter's layers? Do not neglect the minds of your children. What advancement are they making at school? Give them home instruction. A blackboard is a very useful piece of household furniture, affording a means of teaching children many things, and furnishing them with pleasing employment. Teach them common things. Children are often very eager to learn about things around them, and if properly taught, will treasure up a great deal of scientific knowledge.... Take the fresh air daily; do not let the cold weather make a dormouse of you.... Try and get some time to brush up the chambers of your own mind. Try to keep the heart young, warm, and bright, and the children cheerful by your own sunshiny presence. Do not let the "cares of this world" or the "deceitfulness of riches" cheat you out of the blessings of a glorious and eternal future.

SMOKY PRUNES may be made palatable by covering with boiling water, stirring them quickly, and draining it off. Do this three times in succession.

Practical Odds and Ends.

Sent by Subscribers to the *American Agriculturist*. Please send plenty more of the same sort.

GREASING DISHES, griddles, etc., for cooking is done most easily with a swab made by winding a strip of clean cotton cloth on the end of a stick, and fastening it with twine.

TO SAVE SUGAR IN APPLE SAUCE.—Use half sweet and half sour apples. After washing, soak them separately over night, then stew them in the same water in which they were soaked. Put in the sweet apples first, and when they are tender add the sour ones. *Mem.* Next fall dry plenty of sweet apples.

TO CLEAN BOTTLES.—Partly fill the bottle with soap suds, drop in one or two dozen tacks, or some small nails, and shake them up briskly.

SHOE STRING TAGS are apt to come off speedily. A blow or two with a hammer to bring the sides together will keep them in place.

BUFFALO ROBES.—A subscriber asks how they may be made soft and pliable after being wet and hardened. Will some one please inform us.

ITCHING from poisoning or other cause may be relieved by rubbing with cloths dipped in water as hot as can be borne.

DRIED APPLES may be easily removed from strings by cutting the knots at the ends, and soaking the fruit in water a short time. Such fruit should always be washed clean before cooking.

Hints on Cooking, etc.

Breakfast Corn Cake.—Contributed by Mrs. F. E. H. Kingsbury, Suffolk Co., Mass. Put 2 cups of Indian meal (or 1 of Rye and 1 of Indian), $\frac{1}{2}$ cup of flour, and $\frac{1}{4}$ cup of sugar into a dish, and add a good sized teaspoonful of saleratus. Stir them together a little, then stir in 2 cups of sour milk, the sourer the better, and bake in a shallow tin, or one two inches deep. As no eggs or shortening are used, this is very economical, and when rightly made, it is also a very nice cake.

Good "Nutcakes."—Contributed by Mrs. S. J. Damon, Plymouth Co., Mass. Mix 2 eggs, 1 cup sugar, 1 cup sweet milk, butter the size of an egg, 2 teaspoonfuls cream of tartar, 1 of soda, a little nutmeg, and flour enough to roll out. Cut in rounds, making a small hole in each, then drop them into hot fat and fry to a light brown.

Farmers' Cake.—Contributed by L. J. Farrand, Lamoille Co., Vt. Mix 1 cup of cream, 1 of sour milk, 2 of sugar, 2 eggs, 1 teaspoonful saleratus, and 1 of salt, with flour sufficient to make a good batter. This will make two fair sized cakes.

Improved Hasty Pudding.—Contributed by "R. A." Sift the meal and make a batter of meal and cold water. Heat water boiling hot, salted to taste, and gradually stir in the batter until just thick enough for the mush to hop and sputter while boiling hard. Let it boil from one to two hours over a slow fire; it burns easily, and is spoiled if scorched. Do not add any meal after the batter is all in. Make it free from lumps.

Unbolted Wheat Bread.—Contributed to the *American Agriculturist* by Mrs. H. N. Low, Salem Co., N. J. Mix one quart of warm water, a teaspoonful of salt, with fine wheat flour enough to make a thin batter. Let this stand uncovered over night. The next morning stir in half a teacupful of molasses, a tablespoonful of salt, and mix with unbolted flour into a dough stiff enough to knead without sticking to the pan. Let it rise moderately, mold it over, place it in a greased pan, and when entirely light, bake it about three quarters of an hour in a moderately hot oven.

Pickling for Hams or Beef.—Contributed to the *American Agriculturist* by D. Nice, Bennington Co., Vt. For each 100 lbs. of meat, take 7 lbs. coarse salt, 5 lbs. brown sugar, 2 ounces

salt-peter, $\frac{1}{2}$ ounce soda or saleratus, and 4 gallons water. Boil and skim the mixture, let it cool, and when cold pour it upon the meat, which should be weighted to keep it down. Leave common sized hams in pickle 4 to 5 weeks. Beef can be kept until used up, if the brine be scalded occasionally.

Baked Carrots are much sweeter than when boiled. A Hubbard squash when baked preserves its peculiar aroma and sweetness much better than when boiled. In northern latitudes it does very well as a substitute for sweet potatoes.

Soda Crackers. Contributed by Mrs. C. F. Noble, McHenry Co., Ill. Flour, 2 quarts; butter, 1 cup; water, 1 pint; cream of tartar, 3 teaspoonfuls; soda, $\frac{1}{2}$ teaspoonful. Mix the cream tartar thoroughly with the flour; then rub in the butter, and add the water and soda together. Knead about the same as pastry for pie. Roll out a little more than an eighth of an inch thick, cut in squares, and prick them all over. Bake in a hot oven about twenty minutes or till dry. Wash the oven bottom clean, and put the crackers on it; for they will not bake well on tins.

Parsnip Croquettes.—Boil the parsnips until tender, and mash them. Flour a dish thickly, drop a spoonful of the parsnip on the flour, and roll it in the flour with a spoon until it is formed into a ball. Repeat this process until you have used up the parsnips. Have a frying pan of lard hot, drop the balls in, and boil a light brown. The lard must be boiling hot, and enough of it to float the balls. This is excellent, and has been eaten by those who thought they could not eat parsnips.

Codfish Balls.—"A Gratified Reader" warrants the following to be superior: Soak and boil the fish, and pick it into small shreds the same as for ordinary fish cakes. This is to be done over night. In the morning boil and mash potatoes, and while warm mix well with the fish, and mix into balls. In the meantime have lard heating in a frying pan, and when this is boiling hot, drop in the fish balls, and cook to a light brown. The balls should be as hot as possible, or they will cool and then absorb the fat, which will spoil them. There should be sufficient lard for the balls to swim in.

BOYS & GIRLS' COLUMNS.

Something About Dreams.

The writer believes in dreams, that is after his own fashion. He does not believe that one can tell from dreams what is about to happen. Strange stories are told of things occurring after certain dreams, but nobody knew what the vision meant until after the event came to pass, so that the dreamer was no wiser than the people. Any one who should try to do business by following his dreams, would soon have no money to dream about. Of course we do not refer to the visions which the prophets had in olden times, but to the ordinary dreams which every body has. Our belief in dreams is, that pleasant ones are very desirable, that they amuse and recreate the mind during the hours of sleep. The poorest man may enjoy unbounded wealth for eight hours out of the twenty-four, if he be a good dreamer, and all things which the heart can desire may come without an effort. Thus at least one third of life may bring pleasure, and this is as large a portion of enjoyment as most men have.

A hearty meal shortly before retiring, very great anxiety, too heavy press of business, or whatever disturbs body or mind during sleep, will often bring torment to the dreamer. He will be attacked by wild beasts, or fall from precipices, or be drowning, or in some other terrible situation. Pleasant dreams usually attend sound health, a proper mode of life and a quiet conscience; all of which will add to happiness by day as well as at night. The most important dreams come when people are wide awake. Columbus dreamed in this way, that there was a Western world, and then he went to work to find it. Jefferson Davis and others dreamed that they could have greater power in a Southern Confederacy, and they are endeavoring to make it come true. Thousands of boys and girls, men and women, are every day dreaming of becoming rich or famous, but they do not go to work to bring it about, and so their dreams only make them discontented. Here then are three things to be noticed: 1st, daydreams are useful if they are to good purpose. 2d, bad dreams can, and should be dismissed; and 3d, to accomplish anything, dreaming must be followed by doing.

"If You Love Me, Lean Hard."

The Boston Recorder relates the following: "Miss Fiske, while in the Nestorian Mission, was at one time in feeble health, and much depressed in spirits. One hot Sabbath afternoon, she sat on her mat on the chapel floor, longing for support and rest, feeling unable to maintain her trying position until the close of worship. Presently she felt a woman's form seated at her back, and heard the whisper 'Lean on me.' Scarcely yielding in the request, she heard it repeated, 'Lean on me.' Then she divided her weight with the gentle pleader, but that did not suffice. In earnest, almost reproachful tones the voice again urged 'If you love me, lean hard.'" This incident is worth a whole volume of commentary on the nature of true love, which is happiest when it can do most for the loved one.

Colored Men in the Army.

A friend recently returned from service with the Christian Commission in the Army of the Potomac, relates several amusing incidents of the colored men in and around the camp. One of them, a soldier, was on guard at the City Point wharf. Presently an officer approached, smoking a cigar. Politely giving the military salute the dusky sentinel said, "Smoking on dis dock is forbidden sah!" Is that the rule, asked the officer?—"Yes sah."—"A very good rule," replied General Grant, for it was he, and he immediately threw his cigar into the river. A happy darkey was enjoying himself perched on a high fence when a squad of rebel prisoners passed, and John's former master was among them, "Why John," exclaimed he in surprise, "are you up there?" "Yes, massah," said John, "and you's down dere."—"One of them was heard earnestly praying "Lord bless Massa Linkum, and douse his head wid wisdom."—Another thus gave the well known passage "Paul may plant and Apollon water, but God giveth the increase. "Paul may plant and polish wid water, but it won't do."

Sheridan Among his Soldiers.

A gentleman recently from Winchester, Va., relates the following incidents which he witnessed just after the famous battle of Cedar Creek, where Sheridan had turned disaster into an overwhelming victory.—The wounded were being brought in and attended to by the surgeons. A soldier was having an arm amputated; chloroform had been administered to render him insensible to pain, but he recovered consciousness just as the surgeon was sawing through the bone. Yet without seeming to pay any attention to this, he looked around and exclaimed, "Boys isn't Phil Sheridan a perfect brick? Didn't we give it to the Johnny's?" and his eye lighted up with the fire of victory. Not far from him our friend noticed two whose wounds had been dressed, (one had lost an arm, the other a leg) lying face to face on adjoining cots, earnestly discussing the events of the battle and praising "Phil" Sheridan, with whom and for whom they both wanted to fight again. The same enthusiasm pervaded the entire hospital, and the groans of the suffering were hushed by the exulting shouts for their leader and their success.

Petroleum—How a Farm was Sold.

A correspondent of the *American Agriculturist* gives an account of an instance of pretty "sharp practice" in the oil region of Pennsylvania. A widow, who owned a farm in a locality bordering upon, or rather within the bounds of Petrolia, procured a barrel of the genuine oil, and poured a few gallons upon the surface of several small ponds of water on her domain. The harrel was then secreted in some brush near a small rivulet, and a minute opening was made, so that a few drops constantly escaped, and floated down upon the surface of the water. The bait soon took with one of the roving seekers after hidden wealth, who contracted for the farm, hastened East, raised a company, and returned with ample funds to pay \$100,000 for the farm, and to begin operations. The widow, of course, found it convenient to immediately change her residence to an eastern city.—The unusual sequel of the story, which we can not vouch for, is, that by chance, this turned out to be a capital oil farm, and is yielding large returns to the company.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the January number, page 23. No. 111. *Illustrated Rebus.*—Do nought leaves on g two birds a l one nor bee ewe t of sol two flowers; or Do not leave song to birds alone, nor beauty of soul to flowers.... No. 112. *A Curious Word.*—Cores; add s, and it makes caress.... No. 113. *Novel Subtraction.*—Should have been take two letters from a word containing five, and leave but one. The word is stone; take away st and one remains.... No. 114.—Charles H. Thorp, sends the following solution. Ten acres is a plot measuring 660 feet on a side. As no vine is set nearer

than one foot to the fence, they are to occupy a plot 658 feet square. 658÷6 gives 109 spaces between the vines or 110 vines on a row, and 110 rows if they are set in square form. 110×110 gives 12,100 vines for the plot when planted in square order.—In the Quincunx order there will be 110 vines on each row one way. The distance between the rows will form the perpendicular of a right angled triangle having a base of 3 ft., and a hypothenuse of 6 ft., or 4 and 2 tenths feet, nearly. 658÷5.2 gives 126 spaces or 127 rows the other way. 110×127=13,970 vines in Quincunx order, or 1870 more than in the square.... No. 15. *Mathematical Problem.*—99 ft. 10 in. and 118 ft. 5 in.... No. 109.—*Mathematical Puzzle* (Dec. No. page 349).—The word is Palm-erson; the figures are 587019×3624=2127356856. The following have sent in correct answers up to Jan. 10, "Exepo," 108; David Dickey, 108; B. T. Fisher, 108; Flora McKay, 108; Austin Leonard, 108, 109; "C." Phila., 108; I. A. Mitchell, 108; Mary E. Graves, 108, 109; John S. Starbuck, 108; H. Hudgens, 108, 109; Gen. W. Read, 109; H. G. Kingsleys, 108, 110; J. G. Bunnell, 108; Wesley Harvey, 108; "R. N. M.," 108; Charles L. Gartman, 108; Ezra M. Smith, 108, 109; "H. P. S.," 109; R. M. Leete, 109; Elias Stevens, 109; Daniel S. Carver, 108; Clarkson Johnston 109; E. Bishop, 108, 109; Eliza Gillingham, 108; Augustine J. Pocock, 108; Philip Lounsbury, 108; J. Madison Santee, 108; O. B. Gibson, 109; Atherton Sweatt, 109; H. P. Smith, 108; A. S. D. Demarest, 108; Mary Lovejoy, 108; Edward A. Down, 108; David H. Trently, 108; J. C. Browning, 109; Mary N. Rice, 108, 109; Samuel C. Carter, 109; C. Arthur Totten, 108, 109; S. Faucher, 109; Olyvia Lybarger, 109; John N. McGiffert, 109; F. H. Brown, 108; "X. L. T.," 109; W. C. Sharpe, 109; "Grace," 108; Laura Williams, 108; Sturges Green, 109; E. W. Miller, 108, 109; Susie Maxwell, 108; R. F. Maxwell and Zachary Taylor, 108; Nettie Robinson, 108; James W. Logan, 108; Amelia W. Thompson, 108; H. F. Brayton, 109; Joseph Holsinger, 109; E. J. Davis, 108; Robert Schofield, 108; S. H. Grundy, 109; S. B. Barker, 109; Joseph Smith, 109; George Tomlinson, 109; Cordelia Baker, 108; Wm. E. Baldwin, 108; "L. S. F.," 108; Sarah and Orpha B., 108; Clarence U. Meigs, 109; Rufus G. Fuller, 108; J. B. Burt, 108; D. R. Hosteman, 108; H. Zavala, 108; J. S. Burgess, 112; Duane W. Wilber, 112; Edm'd P. Barker, 109; J. W. Winans, 109, 114, 115; J. B. Hatch, Jr., 112.

New Puzzles to be Answered.

No. 116. *Historical Questions.*—1. What General took the City of Dublin, A. D., 1116? 2. On what day did James take possession of the throne of England? 3. What was the first name given by Europeans to Maine and New Hampshire?

No. 117. What fruit is mentioned in the Bible as growing on a stick without root or branch?



No. 118. *Illustrated Rebus.*—Adapted to the times.

No. 119. *Mathematical Problem.*—Proposed by Chas. F. Erhard, Queens Co., N. Y. A race course forming a perfect circle is just one mile long along the centre line of the track, which is 20 feet wide. The enclosed circular piece of ground has a good crop of grass, and this has been bought by 3 men paying equal shares. They wish to divide the land in three equal parts by two straight parallel lines. How is this to be done and how many acres will each part contain?



No. 120. *Geographical Rebus.*—What four Capital Cities are represented in the above engraving?

No. 121. *Mathematical Problem.*—Suppose a heifer, at three years old, produces a calf, and one year after-wards, till she is twenty years old. Suppose her progeny to be females (through all the generations), and that each individual increases as the mother did, that is, a calf each year, commencing at the third, what will be the number of the herd when the old cow is twenty years old?

No. 122. *Mathematical Rebus.*—Contributed by the *American Agriculturist* by "William," Kirkland, N. Y. Please read it and find the answer to the problem.

I O 2 A A V & 000
O X 2 B & I X T U N 2 D
Now let 2+4=6 scholar ° & c
How T H E 7+2=9 I O un 2 the 3.

No. 123. *Conundrum.*—Why is Neptune like an Alchemist? This will require a good deal of guessing.



THE FISHERMAN'S RETURN. — Engraved for the American Agriculturist.

Our young friends at the West may not take in all the meaning of this beautiful picture, at first sight. The scene will be familiar to the boys and girls in 'Nantucket, Cape Cod, and all along shore' way up to Nova Scotia, Cape Breton Island, and Newfoundland, where thousands of the *Agriculturist* family live. Many of their parents are fishermen. Instead of wheat-fields, meadows, pastures and woodlands, rich in grain, cattle and game, they love to plow the blue fields of the sea, with schooner and sloop, where the cod, mackerel, herring and their sassy neighbors yield both sport and gain. But it is not all sport. No farm labor is harder or more unpleasant than that performed by the fisherman. It is no easy task to pull up a ten to twenty pound codfish from seventy feet below the surface. The excitement might make it pleasant for a few times, but to keep at it all day is harder than chopping wood or hoeing corn: neither is it very agreeable to pull the nets in which the smaller fish are caught. Add to this the frequent dangers from storms, fogs and icebergs, and most boys would prefer a life of less hardship.

Those who are brought up to the business, grow strong and hardy enough to bear the severe exposure and toil without flinching; their frames are tough as white oak, and the palms of their hands as hard as sole leather. But this does not make them hard-hearted. The picture shows this, and everybody, east, west, north or south, can understand and enjoy the affection which sparkles in the eyes of the children, and gives real beauty to the rugged face of the father.

The Stain on the Carpet.

Mary, an orphan, was hired by a lady to help do housework. "I pity you" said a girl whom she met coming from the door, as she was going to her new place. "Why?" asked Mary—"She's just the most particular body you ever saw. She turned me away only because I spilled a little oil; but I wouldn't stay if I could." Just then the door opened, and the girls separated, one to look for a new situation, the other with many forebodings to commence service. The parlor door was partly open as

Mary entered the hall, and she overheard the lady of the house exclaim "If it wasn't for servant girls I might have some comfort, I do believe they are all alike!" The poor girl's heart sunk within her, but she immediately resolved that she would try and prove that one at least could be faithful. During the morning she was sent up stairs to sweep a room. In moving the furniture she overset a small bottle which had been carelessly left near the edge of a table; it fell to the floor, broke, and spilled some ink on the carpet. She stood aghast. What could she do? She hastily gathered up the pieces, threw them out of the window, wiped up the ink, and then stopped to think. "She won't see it very soon, and when she does she may think it was the other girl," was the first thought. "But you did it, and you ought to tell her of it," whispered conscience. "I'm sure she'll turn me away, what shall I do?" "Go and tell her; you can't help the stain on the carpet, but you can keep the stain of a lie from your soul," said conscience. "Yes, and I will," said Mary aloud, and without stopping to think further, she went to seek the lady whom she met coming up stairs, and to whom she related the accident. "I believe I can trust you Mary," was the reply, so kindly made, that the girl could not keep back her tears. "You are the first girl I have had," continued the lady "who would confess a fault, and I hate deceit. Try and be careful, but above all, be truthful." Mary did not forget the lesson; she kept her place until her marriage several years afterward, and found that though her employer was strict, yet she had no better friend. When tempted to untruthfulness to hide a fault, let our young readers remember the "stain on the soul," and dread that more than any bodily punishment feared.

Fireside Games.—

A PHONETIC PLAY.—At a recent evening gathering we saw an amusing illustration of the effect of a combination of sounds. The company of

some twenty or more was divided into three sections. To the first section was given the syllable *Ish*; to the second *Ash*; and to the third *Osh*. At a signal, (the striking together of the hands of the leader, after counting three), each division pronounced its syllable in a loud voice, so that the three syllables were uttered at the same instant. The result was a sound like a tremendous sneeze by one person.

THE GOSSIP'S SURPRISE.—This game is best played by a large company, but it will afford amusement to eight or ten. The leader *whispers* a short story, in the ear of his next neighbor, containing as many different particulars as possible. The one who heard the story now repeats it (in a whisper as before), to his neighbor, aiming to tell it correctly, but in different words; and so it is passed around the entire company. The last one who heard it then repeats it aloud, after which the leader gives the story as he started it. The strange differences which sometimes appear, show how careful every person should be in reporting what he has heard, particularly if it is calculated to injure the character of another.

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Fresh Onion Seed.

Extra Conn. Seed Leaf Tobacco Seeds.
Choice Garden and Flower Seeds.

DOTY'S CR8 CLOTHES WASHERS.

Family Size \$12.

Hardy Fruit for the North West!

Would you learn the hardy, early bearing, most productive sorts of fruit, how to plant; also the hardy Ornamental Trees and Shrubs as tested in 23 years' nurserying at the West? Send 2 red stamps for the (1895) Catalogues of the Bloomington Nursery—15th year, 220 acres of Fruit, Ornamental and Nursery Stock—Root Grafts, Stocks, Cuttings, Scions, Fresh Apple (\$8.50 bush), and Pear Seeds (\$3.50 bu.), Green-house, Garden and Bedding Plants.

Apple and Pear Trees, Dwarf and Standard, an immense Stock, Plum, Cherry, Peach, Apricot, Nectarine, Small Fruits.

Grapes—15 acres, including Adirondac, Iona, Israella, Creveling, Allen's Hybrid, 7 of Rogers' Hybrids, Norton's Virginia, Union Village, Hartford Frolic, with superb bearing layers of Delaware and Concord, 1 year Catawba per 1,000, Early Richmond and Osage Orange in moderate supply.

Evergreens—20 acres mostly medium and small sizes, Ornamental Trees and Shrubs. **Roses**—Over 4 acres of over 400 sorts, many very new—few better stocks and collections, Dahlias, Phlox, Chrysanthemums, Gladiolus, Lilies, &c. Five large Green-houses with frames covering over 10,000 square feet of glass are used.

Packing by all routes carefully done in moss. Prices reasonable. Terms cash. BLOOMINGTON, ILL. F. K. PHOENIX.

30,000 CONCORD GRAPE VINES.

No. 1, One Year old, \$10 per 100; or \$99 per 1000.

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Delaware Grape Vine Layers, \$6 per doz.

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No.'s 4, 15 and 19, we have fruited the past 3 years, and they have done finely.

We have also No.'s 1, 3, 33, 30. Price \$9 per doz.

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We have an immense stock of NORWAY SPRUCE, BALSAM FIRS, SCOTCH AND AUSTRIAN PINES, AMERICAN ARBOR VITAE (White Cedar), SIBERIAN ARBOR VITAE, &c., &c., from small to large sizes. All have been transplanted ONCE, and the larger sizes two to THREE times in the nursery, so that success is ensured in planting. They are offered at LOW RATES per doz., per 100, or per 1,000, and prices will be given, packed in a superior manner, delivered at Depot in Rochester, or otherwise. FROST & CO., Rochester, N. Y.

Copartnership Notice.

The undersigned, have this day entered into a Copartnership, under the name and firm of BRILL & KUMERLE, for the purpose of carrying on a General Seed and Nursery Business, in the establishment formerly conducted by the late Geo. C. Thornburn. Seed Store and Warehouse, 153 Broad-st., Newark, New Jersey.

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Seedgrower and Nurseryman,

JOHN U. KUMERLE, Seedsman,

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20 BUSHELS OF PRIME APPLE SEED

the growth of 1864, for sale at \$6 per bushel. JAMES A. ROOT, Skaneateles, N. Y.

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A superior lot raised expressly for the subscriber, by one of the most successful cultivators in the Valley of the Connecticut.—Packets with full directions for culture, curing, packing, &c., will be mailed, post-paid, to all applicants at the following rates: 1 ounce, 50 cents; 5 ounces, \$1.50; 1 pound, \$5. Address B. K. BLISS, Springfield, Mass.

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"THE COOKS FAVORITE," very solid, smooth, good for early or late use, 25 cts. per paper, also EXTRA EARLY, FEJEE ISLAND; and Dwarf or Tree Tomato Seeds, each 10 cts. per paper. For a full list of VEGETABLE and FLOWER SEEDS. See DREER'S GARDEN CALENDAR FOR 1865, now published and forwarded on receipt of a postage stamp.

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Goodrich's New Seedling Potatoes.

I shall send out in early Spring for the late Rev. Chancey E. Goodrich's family the three new varieties, the Goodrich Calico, the Early Goodrich, and the Gleason. The first two will be sold at \$1.50 per peck each, or \$5 per bushel, while the Gleason will be \$2 per peck. Cash orders will be filed and filled strictly in the order received until the limited stock of tubers is exhausted, when the public will be informed. No charge for package nor cartage. D. S. HEFFRON, Agent, Utica, N. Y.

WANTED—Every reader of this paper who owns a farm or garden to try Goodrich's Seedling Potatoes this year. Reports from Maine to Wisconsin this season fully confirm all claimed for them in last vol., page 106. All who want good table potatoes, hardy and productive should try them. 4 lb. packages by mail. A cheap and PAYING investment; avoids exorbitant express and freight charges and delays. For circulars of terms, testimonials, &c., apply immediately to E. WILLIAMS, Mont Clair, N. J.

New Crop Onion Seed.

The following varieties will be mailed, post-paid, during the month of February, upon receipt of the price affixed:

	Per Oz.	4 Oz. Pound.
Yellow Danvers Onion.....	50 cts.	\$1.75 \$6.00
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Pear Seeds \$3.50 per lb. Norway Spruce, \$1.50 per lb., and many others. See Catalogue gratis. THOMAS MEEHAN, Germantown, Pa.

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What soil is best; how to prepare it; how to manure it; how to tell good seed from bad; how to plant it; how to grow onions from seed, potato onions, onion sets, shallots and top onions; when to pull onions; how to store them; how to prepare for market, and when and where most profitable to market them; what onions to select for seed, and how to grow it, and a hundred minute details so valuable to beginners, with many facts relative to peculiarities of onion raising in the Southern, Eastern and Western States of value to old growers. Illustrated with original engravings of the "Dave Warren" Onion, Early Crocker Onion (new), Red Wethersfield and Potato Onion, Sowing and Weeding Machines. In paper covers, forwarded by mail, prepaid by the subscriber at 50 cents each, Seedsmen and Booksellers supplied at wholesale rates, JAMES J. H. GREGORY, Seedsman, Marblehead, Mass.

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And matters connected with them of Importance to Purchasers of Vines.

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2d. The publication of these charges in the Ohio Farmer, under the signature of "Pecouic," and in the American Agriculturist, by the same party, over his own name.

3d. The Greeley Prizes, and the award of the One Hundred Dollar Prize to the Iona. The charges, or, rather, insinuations by Mr. Byram that this award was dishonestly and corruptly made, implicating the Committee, Mr. Greeley, and C. W. Grant, in the perpetration of a gross fraud.

4th. The same charge, more covertly made in the American Agriculturist, when introducing the accusation of Mr. Byram.

5th. The claim of the American Agriculturist that it should not be held as a principal Party in the Libel against C. W. Grant, implying its right to publish accusations the most destructive to reputation and business, under the plea that it does not know them to be false, and that it entertains no malice against the accused.

6th. The fallacy and wrong of this Plea, and the Opinion of one of the most able Legal gentlemen of New-York upon the subject.

7th. The accusations of "Piracy" and "Humbugging" against C. W. GRANT, for alleged copying and imitating plates, and also of uslog some of the identical plates of a book *Published* by A. S. Fuller, on the Vine, in his own (C. W. Grant's) Publications, named severally, Descriptive Catalogue, Illustrated Catalogue, and Manual of the Vine. The truth shown to be quite the reverse.

8th. Charges of Deception and unbusiness-like conduct in claiming to produce better vines, by additional care and expense for garden and vineyard, than those ordinarily produced by nurseriesmen.

9th. Concerning the advocacy of new and peculiar theories, and new and peculiar methods of cultivating and training Vines in garden and vineyard.

10th. Is the present desire to plant the best kinds for family supply and for market, and also for wine, unreasonable, and what will be the result of it?

11th. Where can be found, precise, accurate and intelligible Descriptions of all of our Native Grapes, that are worthy of notice, so stated that an ordinarily intelligent reader may learn their character, quality and relative value.

12th. Upon what peculiar conditions of merit are the claims to Public Attention of the Descriptive Catalogue, Illustrated Catalogue and Manual of the Vine founded, and which are said to constitute them a thorough and comprehensive treatise on the vine?

The foregoing twelve heads require each an extended

chapter for the full consideration, which the subjects embraced at present demand. This would require more room than the advertising columns of a periodical not specially devoted to the Vine, can furnish. There are other heads of equal, or even greater interest, not named. One of which is the History and Management of all of the Israella and Iona Vines, at Iona Island, showing fully and fairly their department under given circumstances, from the beginning, up to the present time. Another is, an account of the manner in which these Seedlings were produced, by which hints will be furnished to others of the course of proceeding to produce other improved kinds by "thorough breeding," which is undoubtedly the only method by which a hardy stock, perfectly adapted to this country can be obtained.

I have prepared a pamphlet of twenty-four pages in which all of these matters are briefly, but clearly treated, and in a manner calculated to give a true impression in regard to Grape Culture in all its aspects, whether for wine or for table—for market or for family supply.

In this pamphlet, the distinctive characteristics of the Iona and Israella, in which they greatly excel all other grapes for market and for table use, are clearly represented. The Israella being the earliest grape of excellent quality, and at the same time a good keeper, producing abundant crops unflinching, as grown in the open ground under the ordinary circumstances of cultivation, or rather under circumstances less favorable than those of ordinary garden or vineyard culture.

The Iona is also represented as very early in ripening, and as the only American Grape of large size that is equal to the best European kinds, in sweet, rich purity of flavor, and uniform tenderness and excellence of flesh quite to the center, and at the same time remarkable for the earliness and abundance of production, and its certainty of perfect ripening under the conditions of ordinary cultivation in full exposure in open air. Mr. Byram states that "to his personal knowledge" this earliness and excellence of quality was produced by "forcing arrangements of glass and walls, or screens combined, by which the quality of the fruit was greatly improved, and the time of ripening hastened at least three weeks."

These charges, if substantiated, fix upon my character an accumulation of guilt that is most painful to contemplate, combining falsehood in its most treacherous form, with cheating that is worse than robbery. The effect upon the Public will be to destroy general confidence in all engaged in the business, and upon myself, the ineffaceable brand of infamy will be stamped, involving in lasting shame all that own any connection with me.

These accusations were published in the Ohio Farmer, under the signature of "Pecouic," and in the American Agriculturist by the same party, under his own name, H. P. Byram.

One of the prizes offered by Mr. Greeley, under certain conditions for the leading fruits, Apples, Pears and Grapes, was awarded to the Iona Grape, by the Committee of the Fruit Department of the American Institute, in Sept. last.

The award of this important premium of One Hundred Dollars Mr. Byram represents as having been dishonorably and corruptly made, implicating the Committee, Mr. Greeley, and C. W. Grant, in the perpetration of a gross fraud. The charge is pointedly made, but the precise form of the crime is not given. The same charge, more covertly, but not less certainly, is made by the American Agriculturist. This is also a matter of much importance, and I would hereby call upon the whole Committee to state to the Public not only whether any dishonorable or corrupt action or influence was manifested by myself, or in my behalf, but whether any such influence came to their knowledge from any quarter, and if so, what was the form and purport of it.

I would here state, that no such transaction as is represented, ever took place between Mr. Greeley and myself, and that I never paid, or procured to be paid to Mr. Greeley, or to the Tribune Association, any money except what was applied for advertising, for which I have sent several sums of One Hundred Dollars each, and often much larger.

The claim of the American Agriculturist, that it should not be held as a principal party in the libel against C. W. Grant, is not to be entertained for one moment, and the plea that a character blighted, and a business destroyed, can be restored by a discussion on equal terms with the destroyer, with the Editor's whole weight thrown adversely at the beginning, and the calumniator placed with his falsehoods and wicked purposes, not only before, but also above his victim, by giving the presumption in favor of the accuser. The Editor is forgetful of the principle upon which the proverb of acknowledged wisdom is founded: "A malleable He will travel many leagues, while truth is getting ready his sandals, and will be hospitably entertained where truth will be shut out."

A case in point is ready at hand. A few weeks since a report was published in a leading paper representing me as a falsifier and swindler on a large scale. A full and complete refutation followed immediately, prepared and signed by men disinterested and of high and well known character. The malignant part of the report was copied in all parts of the country, with added venom, but the refutation not once. The fallacy and injustice upon which the plea of the Agriculturist is founded, are well disposed of in the following letter from one of the most eminent gentlemen of the New-York Bar, having this particular case in mind.

NEW-YORK, Jan. 12th, 1865, No. 11 Pine-st.

Dr. C. W. Grant.

Dear Sir.—Nothing can be better established in law than that the Editor of a paper is responsible for everything that he admits into its columns, whether he is the author or not. If he permits libellous matter to be published, he must respond in damages to the extent of the injury inflicted, whatever that may be.

He is not permitted to shield himself by the fact that the injurious publication was made without his knowledge or consent, for the conductor of a public paper is bound by the highest obligations, to see to it that so powerful an engine as the press is not used by others, for wicked purposes. He is bound to know before he suffers anything to be published that it is true, and must answer for it if it is not, though actual malice on his part, can not be imputed to him. If the publication is false, malice is always presumed from that fact, and the Editor who lends his columns to the defamer can overcome that presumption only by showing a degree of carelessness on his part which is equally obnoxious to the law.

Yours truly, WILLIAM FULLERTON.

In defending myself against the charge of unfairness and dishonesty, under the 7th head, I must necessarily become by implication the accuser of A. S. Fuller. My publications containing these plates were chiefly made years before his book appeared, and of course could not have been taken from it. On the contrary, so many of the plates on the management of the vine were my own (used without permission or one word of acknowledgment)—that if these were taken from his book, together with those copied or closely imitated, few of much value would be left. To my mind it is a flagrant case of violation of right, that should have been prosecuted. Concerning the numerous errors into which he has fallen through ignorance and inexperience, I shall speak elsewhere.

In answer to the 8th I would say that I was not only the first that practised the method of propagation that by thorough trial is proved and admitted to be the best, but was for several years alone in it, and that all of the numerous imitations now found in different parts of the country may be said to have grown out of mine. I may also safely say that no one has nearly equalled mine in extent and means of producing the best vines for garden and vineyard planting. The idea and purpose upon which I engaged in the undertaking, and to which I have persistently adhered, was the PRODUCTION OF THE BEST PLANTS TO BE AFFORDED AT THE CHEAPEST rates to the people generally, making the business a SPECIALTY, and giving abundant means, with my whole care and attention to that end.

When after long study, careful observation and extensive trial, I have learned what is best for those who wish to plant for any given purpose, and have produced a stock of surpassing quality, there is no way apparent to me by which the public may be reached to enable it to be benefited by them except by stating truly and precisely the character of what I have to offer. I have done this so long and so extensively, and by doing so have disseminated such a vast number of vines throughout every part of the country, that my jurors (the purchasers) must now be ready for rendering a verdict. I have recommended first class vines (that have been produced with great care and cost, and such as I felt assured were of unequalled quality), as the best and cheapest to purchasers for vineyards, as well as for gardens. I have produced large stocks of Delaware vines of this class for many years, increasing the number as the demand consequent upon their goodness and reputation increased.

Last fall MORE THAN MY ENTIRE STOCK OF DELAWARE AND DIANA VINES FOR VINEYARD PLANTING WERE ORDERED AT THE BEGINNING OF THE SEASON. This I accept as a verdict in my favor, and above all as a good omen for the success of vine culture. The demand for vines of the best class of these kinds for family supply has also vastly increased, and was to have been expected from the education of the public taste. This is not surprising to those who have learned the excellence and value of good grapes.

As to the 9th I can only say here the subject of vine culture has been of exceeding interest to me from my childhood, and that I had long been familiar with the principles and practice of the cultivation of both native and foreign kinds before saying one word to the public concerning either, and when I spoke it was according to my own carefully wrought out experience, the reproach of which is not severe to bear. My publications have been the outgrowth of my own personal practice, and made because I thought them suited to the public need at the time. I have never advocated any new theory, nor have I claimed the invention of any new system or methods of training. My labor has been to explain and teach to beginners those which have been well known and established for ages.

I have scarcely touched upon the subjects of the three last heads here, but the matter is fully treated in the pamphlet. All of these minor imputations have been in circulation a long time, being thought unworthy of notice; but when they culminated in charges of stupendous fraud I could no longer forbear.

C. W. GRANT,
IONA, Jan. 12, 1865.

50,000 CONCORD VINES.

5,000 ROGERS' HYBRIDS.

Send stamp for Wholesale or Retail Catalogue, containing cut of Rogers' No. 19. The **Special Premium Grape** of the Penn. Horticultural Society, which is the best new hardy Black Grape yet introduced. We have the whole stock from original vine. Address

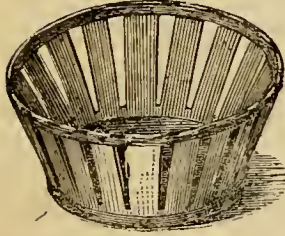
W.M. PERRY & SON, Bridgeport, Conn.

Our Descriptive Catalogue OF Flower and Vegetable Seeds, IS NOW READY,

and will be mailed to all applicants.
PETER HENDERSON, } HENDERSON & FLEMING,
JAMES FLEMING, } 67 Nassau-st., New York.

THE VENEER FRUIT BASKET.

Patented May 31st, 1864.



We offer to the trade for the year 1865, the celebrated **VENEER FRUIT BASKET**, which has been so extensively and satisfactorily used the past season. To those who have used it, it recommends itself; to others we claim for it superiority over the many kinds now in use for the following reasons: It is broad at the bottom and not easily upset. Shallow and therefore prevents the pressure on the lower tier of berries when being transported to market, nests closely together when empty, and is neat, stylish, durable and cheap.

For Circulars of price and description, address the Manufacturers, **C. BEECHER & SONS, Westville, Conn.**

DIETZ & CO.'S NEW PATENT



Petroleum Burner and Heater.

This Burner can be filled, trimmed, and lighted without removing the chimney or unscrewing the Burner.

It is not clogged by crust. It gives the best light, and produces no odor. The short chimney is seldom broken by heat, and can be easily cleansed. The Burner can be fitted to all ordinary lamps.

An attachment of small cost gives ready means of heating water, making it invaluable in the nursery or sick room.

Send for Circular, and Address orders to

**DIETZ & CO., 132 & 134 William-st.,
New-York City.**

Agricultural College of the State of Michigan.

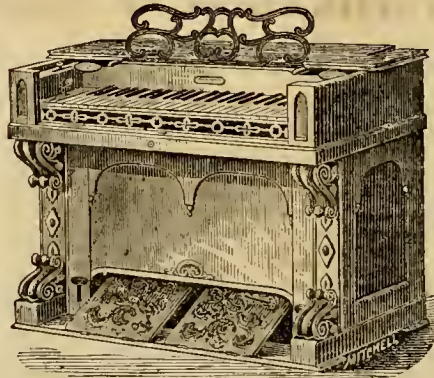
The classes for the term of 1865 will be organized on Wednesday, March 1st. This Institution is supported by the State, and has a full corps of Professors, a Farm, Gardens, Fine Stock, an excellent Chemical Laboratory, &c. Students are received to a full course of four years, or to a select course of any length. The course of study is intended to furnish a thorough English and Scientific Education.

Students are required to work three hours a day on the farm, and a moderate compensation is allowed for each hour's work.

Tuition is free to Students from the State—to others \$30 per Annum. Board is furnished at cost: during the last half of 1864, it was at the rate of \$2 50 per week, nearly one half of which was in most instances paid by the labor of the Student. For further information, or Catalogue, Address

T. C. ABBOTT, President,
Lansing, Michigan.

GEO. A. PRINCE & CO.'S PATENT AUTOMATIC ORGANS!



\$52 to \$525 Each.

39 Varieties, with Patent Basso Tenuto or Sub Bass.

**SCHOOL ORGANS AND MELODEONS,
FINISHED IN
Elegant Rosewood, Walnut or Oak
Cases.**

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35,000 NOW IN USE.

AN ILLUSTRATED CATALOGUE, CONTAIN- ing full description of style, and testimonials of the most eminent Musicians, as to the superior excellence of our instruments—will be sent free to any address.

THE AUTOMATIC ORGAN.

In presenting the Automatic Organ, we boldly announce the greatest triumph in musical instruments of the age. During the past half century, the French and Germans have manufactured reed instruments with double bellows, and two pedals for the feet to operate, but the want of the reserved or Exhansion Bellows, (which is the only bellows used in our instruments), made it impossible for them to produce the mellow, rich and musical tone for which our instruments are celebrated.

Another objection to this method of blowing was that, both feet being occupied, no opportunity was offered for the management of the swell. Within the past two years, instruments constructed on the European plan of "double blowers," have been manufactured in this country, and to counteract this difficulty (want of a swell) a lever has been projected from the centre of the instrument, to act upon the swell, and operated by the knee. The inconvenience and contortion necessary to effect this object are disagreeable enough to a gentleman, but to a lady the use of such an appendage is nearly impossible.

Our Automatic device obviates the difficulty entirely, the simple act of blowing with more or less force giving the desired increase or decrease in the volume of tone. We predict for this invention a brilliant future.

THE MELODEON AND SCHOOL ORGAN.

For seventeen years the superior excellence of our Melodeons has not been questioned, and for two years past the enormous demand has made it impossible for us to meet our orders promptly. With our increased facilities, we feel warranted in assuring our patrons that their orders will be promptly met, and solicit a continuance of their patronage.

GEO. A. PRINCE & CO.

CAUTION TO PURCHASERS.

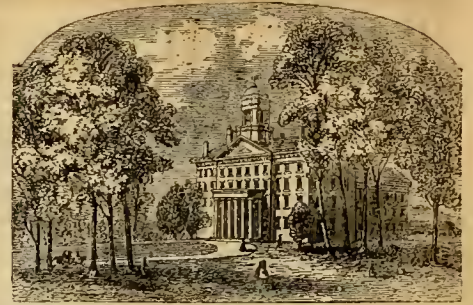
All our Instruments have upon the name board, in full, "GEO. A. PRINCE & CO." When a dealer represents any other instrument as "the same as ours," it is usually a mere attempt to sell an inferior instrument, on which he can make a large profit.

P. S.—A liberal discount to Churches, Clergymen, and Schools. Address

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Ripley Female College.

Spring Session commences February 8th, 1865. Thorough drill in English Branches. Preparatory, Academic, and Collegiate Departments. Superior facilities for French and Music; two Professors being exclusively devoted to the Piano. Splendid brick buildings, elegantly furnished (whole cost, \$75,000); numbers limited. Send for Catalogue.

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THE UNIVERSAL Cog-Wheel Clothes Wringer

was pronounced superior to all others at

The World's Fair, in London, 1862, received the **BRONZE MEDAL** (highest premium) at the Great Fair of the

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It has also received the

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at the following STATE FAIRS:

NEW YORK.....	1862	1863
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ILLINOIS.....	1863	1864
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Opinion of **Orange Judd, Esq., Editor American Agriculturist.**

It is, in reality, a *Clothes Saver! a Time Saver! and a Strength Saver!* We think the machine more than *pays for itself every year,* in the saving of garments! There are several kinds, nearly alike in general construction, but we consider it important that the WRINGER be fitted with COGS, otherwise a mass of garments may clog the rollers, and the rollers upon the crank-shaft slip, and tear the clothes. Our own is one of the first made, and it is as good as new, after nearly four years' constant use!

See also Premium list in this paper and advertisement in back numbers of the Agriculturist. Prices for the best family sizes—WITH COGS—No. 2, \$10. No. 1, \$12. On receipt of the price from places where no one is selling, we will send the U. C. W. free of expense. **EVERY WRINGER WITH COGS IS WARRANTED!** Good canvassers can find profitable employment selling the U. C. W. For terms and Circulars address **I. C. BROWNING, Genl. Ag't, 847 Broadway, N. Y.**

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Ladies try Them. They will make your hair beautifully without heating it. For sale at Variety Stores throughout the country. Retail merchants will be supplied by any first-class Jabber of Notions in New-York, Philadelphia, Pa., or Boston, Mass.

Stammering

Cured by Bates' Patent Appliances. For pamphlet, address **H. C. H. MEARS, 277 West 23d-st., New York.**

\$1. Preserve Your Eggs. \$1.

Perkins' Patent for Preserving Eggs, Meats, &c., April 19th, 1864.

Individual Rights to Farmers for \$1.00.

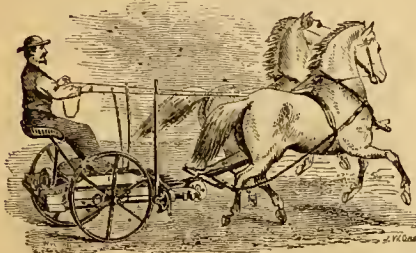
APPLY TO THE AGENT INCLOSING THE ABOVE SUM.

Every person having half a dozen hens should have the right to use this process, and thus always secure the luxury of fresh eggs. The advantages will at once command themselves to every one, as the preserving of eggs from plentiful to scarce seasons has been the subject of many, (and heretofore unsuccessful) experiments. Perkins' Patent is the only successful process yet known, eggs prepared by the Patentee and Agent have proved perfectly sound when 18 months old. This process has been well and thoroughly tried during the last 3 years, and while all other means have failed, this uniformly preserves the egg, and is at once, **Cheap, Simple and Sure.**—The Agent and Patentee have determined to offer this valuable process for preserving eggs directly to the **Farmers**, and at a price that all can afford to have it, trusting they will not be slow in availing themselves of the advantages offered. Apply to **HENRY E. RICHARDS**, Bloomfield, N. J., inclosing **One Dollar**. Give Post Office address distinctly, and in the order of application, the right will be mailed with full directions, and the method of preparing the egg shown by an engraving.

HENRY E. RICHARDS, Bloomfield, N. J., Agent for JAMES PERKINS, Patentee.

Eggs prepared under this Patent are on exhibition at the office of the American Agriculturist.

BUY THE BEST!



ON THE ROAD.



AND REAPER.

Manufactured by { C. AULTMAN & CO., Canton, Ohio.
ADRIANCE, PLATT & CO.,
165 Greenwich-st., New-York.

In reply to many inquiries, we have to announce that, UNTIL FURTHER NOTICE, orders will be received at the following **NET CASH PRICES:**

C. AULTMAN & CO.'S

Machines Delivered at Canton, Ohio.

JUNIOR MOWER,.....	4 ft, 1 inch cut.....	\$175
SENIOR MOWER,.....	4 " 8 " " ".....	200
MOWER AND REAPER,...	6 " " Rear Delivery.....	250
" " " " " ".....	6 " " Side ".....	250
" " " " " ".....	6 " " Dropper.....	250

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Machines Delivered at New York or Po'keepsie.

No. 2 MOWER.....	4 ft, 1 inch cut.....	\$175
No. 1 MOWER.....	4 ft, 8 inch cut.....	200
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A LESS AMOUNT OF FARM PRODUCE PAYS FOR A MACHINE AT THESE PRICES THAN WAS REQUIRED WHEN PRICES WERE NOMINALLY THE LOWEST.

By the beginning of Spring we were obliged to stop receiving orders, last year, and the demand is greater and earlier this season.

By ordering at once the Farmer not only makes sure of the **BEST MACHINE**, but avoids the risk of a further advance in prices.

Circulars can be obtained of any of our Agents, or will be forwarded by mail.

Seeds, Implements, Fertilizers. Plants

Of every variety for sale by

JOHN VANDERBILT,
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VALUABLE PATENTS FOR SALE.—Case's Corn Husking Machine, patented, Dec. 1854. Earhart's American Bee Hive, patented Nov. 1854. A good patent the best investment for capital and enterprise. ORWIG & CO., Patent Exchange, 229 Broadway, N. Y. City.

UNION MOWING MACHINE.



This Machine has been in use four successive harvests, and has met with the hearty approval and well merited praise of practical farmers. We call the attention of farmers to our Mower for 1865, of superior manufacture, and possessing new and valuable improvements.

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Two, Three, or Four The Forks.



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The **LIGHTEST, SIMPLEST** most **COMPACT** and **CONVENIENT FORK** in use. Is made entirely of **Iron and Steel**, in the most durable manner, having no wooden head to split and allow the teeth to get loose.

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BROWN'S Ice Cream Freezers.
Agricultural Implements of all kinds.—Seeds, Fertilizers, &c.

HAINES & PELL,
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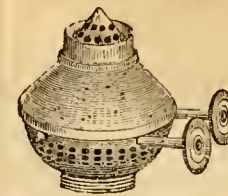
Is the only entirely reliable Washing Machine in existence. It has been in constant use in the family of Mr. Judd, the Proprietor of this Journal, and in that of Mr. Munn, proprietor of the Scientific American, since 1861. For description see advertisement in preceding numbers of the Agriculturist.

Send for free Circular to
OAKLEY & KEATING, 181 Water-street, New-York.

\$275. SEVEN OCTAVE. \$275. ROSEWOOD PIANO-FORTES.

GROVESTEN & CO., 499 Broadway, N. Y. New, enlarged Scale Piano Fortes, with latest improvements. Thirty years' experience, with greatly increased facilities for manufacturing, enable us to sell for **CASH** at the above unusually low price. Our instruments received the highest award at the World's Fair, and for five successive years at the American Institute. Warranted five years. **Terms net Cash.** Call or send for descriptive circular.

THE FAVORITE BURNER.



No glass chimneys needed. We are now manufacturing our unrivalled non-chimney Burner in such quantities as to be able to offer it to all who use lamps. It is the only reliable non-chimney Burner. It makes a clear, soft and steady light, without smoke or odor, consuming the carbon by jets of air entering the interior of the flame. It holds the flame and can be carried about like a candle. It saves the eyes, the fingers, half the oil, and all the expense of chimneys. It is the best night lamp, and is perfectly safe and reliable in every way. It is simple in operation, and never gets out of order. It will fit your lamps, as the screws are of uniform size, in the lamps now made. You can buy directly of us, through the mail, without regard to dealers, who make their profits mainly from the sale of chimneys. Mailed, postage paid, to any address on receipt of seventy-five cents, with wick ready for use.

N. B.—For twenty-five cents additional we will mail, post-paid, one year's supply of wicks. Write to
HUTCHINSON & CO., Cayuga, N. Y.

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What it will Do.

Read the following Letter from a Manufacturer.

SALEM, N. Y., Nov. 30, 1864.

John W. Quincy, Treasurer, &c.

I started a new Flax Mill this year, and feeling that the price of your Brakes was so high, thought I would economize by purchasing an improved old-fashioned Brake, which I did, and placed it in my new mill, and run it four days. After running two days, I was determined to test it thoroughly with the two Brakes I purchased of you, two years since, and have been running in my old mill at Lake, ever since. My tests are as follows:

On average rotted straw, your Brake would give every time full 100 lbs. more of dressed flax to the ton than I could with the greatest care get from the old Brake. On over-rotted straw I got over 200 lbs. more than I could get by the old Brake. I stopped dressing and went to figuring, and found that to dress the flax I now have, with the old Brake, would cost me over \$3,000 (loss). I therefore want you to ship me of your Improved No. 1 Brakes by Express, as my men will dress no more flax in this mill until the new Brake arrives. Enclosed please find check for \$455.

Yours respectfully,
P. T. BURDICK,

For further particulars of this case and many similar ones, and for full information concerning the **M & S. FLAX BRAKE**, send for Circular to

JOHN W. QUINCY, Treasurer,
98 William-st., New-York City.

GREEN'S PATENT ROOFING

Consists of a stout Canvas, impregnated with a perfectly water-proof and incorruptible compound, covered on both sides with a stout fabric made water-proof by a solution of INDIA RUBBER, and hardened by a coating of PATENT METALLIC PAINT.

It is thoroughly WATER-PROOF. It rolls up and unrolls like a piece of oil-cloth. It makes the best and most durable READY ROOFING ever introduced. It is designed for DWELLING HOUSES, BARNs, SHEDS, STEAMBOATS and RAILWAY CARS. It can be laid down by any sensible working man. It is CHEAPER than any known ROOFING OF EQUAL DURABILITY. HENRY SMITH, No. 129 Pearl st.

LEAKY SHINGLE, CANVAS or FELT ROOFS can be made water-tight by using the **GUTTA PERCHA CEMENT**. **LEAKY TIN ROOFS** will wear five times as long if coated with the **GUTTA PERCHA CEMENT PAINT**, the best Paint for Agricultural Implements, out-buildings, Fences, &c. Manufactured ready for use by the **JOHNS & CROSLY MANUFACTURING CO.**

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Contents for February, 1865.

Advertisements and Advertisers... 40
Bachelor's Opinion of Receipts... 34
Bees—Apiary in February... 34
Bees—Italianizing in Box LIVES... 43
Boys and Girls' Columns—Something About Dreams... 43
Bread—How to Make Good... 53
Coal Ashes for Walks... 48
Commercial Notes—Prices Current... 34
Cooking—Economic... 53
Corn—Diminutive Variety... 51
Curious Vegetable Forms... 3 Illustrations... 49
Dog Law—Form of Petition... 42
Farmers' Club—Wappling... 45
Flower Garden and Lawn in February... 34
Flower—The Butterfly... Illustrated... 49
Flowers—Everlasting (Helipterum Sanfordii)... Illus... 52
Flowers—Trumpet Honeysuckle... Illustrated... 49
Fruit and Vegetable—The Difference... 34
Fruit Garden in February... 52
Fruits for Illinois... 51
Gardens for the Children... 34
Garden—Kitchen in February... 52
German Ivy (Senecio Mikanoideus)... Illustrated... 52
Goats—What are they Good For?... 43
Grafting—When is a Tree Grafted?... 52
Grapes—Iona and Israela—Explanation... 39
Grasses—R. I. Bent and Kentucky Blue... 45
Grasses—How to Distinguish Species... 4 Illustrations... 45
Gravel Wall Houses, Barns, etc... 41
Green and Hot-Houses in February... 34
Hay—Embargo by Government... 42
Horses and Oxen—Driving Together... Illustrated... 44
Household Notes for February... 54
Housekeeping—How to Begin... 53
House Plans and Specifications... 5 Illustrations... 41
Hyacinths—Propagating... 53
Implements for Weeding... 3 Illustrations... 51
Live Stock Trade in New-York for 1864... 35
Maple Sugar Making... Illustrated... 40
Milk, Beef, Labor, No. 11... 42
Notes and Suggestions for February... 33
One Acre Enough—Sometimes... 47
Orchard and Nursery in February... 34
Orchard—How Established by a Pioneer... 48
Pears, Sheldon—Historical Notes... 50
Potatoes—Notes on Varieties... 6 Illustrations... 44
Practical Olds and Ends for Household... 54
Premiums for Subscribers in 1865... 34
Recipes—Breakfast Corn Cakes—Good "Nutcakes"
Farmer's Cake—Improved Hasty Pudding—Unbolted Bread—Pickling Hams or Beef—Baked Carrots—Soda Crackers—Parsnip Croquettes—Fish Balls... 54-55
Road Scraper—Convenient... Illustrated... 45
Seed—Care in Selection Necessary... 53
Sheep Mania—Timely Hints... 43
Sheep—Profits of... 42
Shelter for Animals—Expensive... 46
Sink for Kitchen—Convenient... Illustrated... 53
Sleigh Ride—Family... Illustrated... 48
Smoke House—In-door... 47
Snake Nut... 2 Illustrations... 49
Sorghum Culture in Massachusetts... 48
Sugar from Corn—Important Discovery... 44
Tim Bonker's Raid Among the Pickle Patches... 46
Woman—What Patriotic Can Do... 46
Yards, Front—Laying Out... 4 Illustrations... 50
INDEX TO "BASKET," OR SHORTER ARTICLES.
Agricultural Colleges... 36
Agricultural College, Mich... 36
Apples for Hogs... 36
Ashes for Potatoes... 36
Asparagus and Ashes... 38
Barley on Light Soil... 36
Bottles, Cleaning... 39
Broom Corn Brush... 38
Brooms, etc., Hanging up... 39
Bulbs, Late Planting... 38
Caked Bag, Treatment... 38
Catalogues Received... 37
Cemetery, Woodlawn... 37
Chick Pea, Uses... 38
Clons, Keeping... 38
Clover, Four-leaved... 39
Clover with Oats... 39
Coffee, Massachusetts... 38
Cows, Kicking... 38
Cranberries, Upland... 39
Currants, Black... 37
Eastwood on Cranberry... 36
Editorial Quarrels... 37
Falsehood Exposed... 36
Fibre, China Grass... 38
Files, Re-sharpening... 38
Flax and Hop Essays... 37
Frost in Pipes, etc... 37
Grapes, Best Locality... 37
Harness Buckles... 38
Hedges in New Jersey... 37
Hogs Poisoned... 36
Hoop Skirt Trellises... 39
Hot Bed, Double... 39
Humbus... 37
Husk-Tearing Machine... 37
Ice Water Cistern... 38
Implements, Price of... 36
Insects on Vines... 39
Kale, How to Cook... 37
Kvauzing... 38
Labels, Tin... 39
Machine, Clod-tearing... 38
Machine, "Manufact'g"... 38
Maggots in Beans... 37
Manures, Compost... 36
Manure, Flax Shives, etc... 38
Manure, Top-dressing... 39
Maple Tree Layers... 39
Marshall P. Wilder... 37
Orchards, Cultivating... 39
Pansies, Violets, etc... 38
Peach Orchard Crop... 37
Peach, Spring Budding... 37
Peach Tree Brush... 39
Peach Tree Layers... 39
Peach Trees, Injured... 38
Peach Trees, Exposure... 38
Peddler, Generous... 37
Potatoes, Boiling... 38
Potatoes, Bulkley's... 38
Potatoes, Cuzco... 38
Potatoes, Small Seed... 38
Poultry House, Cheap... 36
Productive Ground... 38
Querries, Sandy... 36
Quinces on Clay... 36
Rats and Harness... 37
Rhubarb... 37
Roses, Remontant... 35
Rust, Preventing... 39
Saws, Horse-Power... 38
Sorghum Candy... 39
Sorghum Convention, Wis... 36
Sorghum Culture... 37
Sorrel, Destroying... 39
S. School Lessons... 37
Steers, Breaking... 35
Strawberry Distribution... 37
Strawberry Propagation... 38
Strawberries for N. J... 38
Trees, Best to Plant... 37
Tritoma Uvaria... 36
Turnips for Hogs... 37
Vegetables, New... 36
Wages, Gas Tar for... 39
Water Pipes, Best... 39
Wet Days at Edgewood 37

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Contents for March, 1865.

Advertisers—Unreliable Excluded.....	67
Agricultural Society—New York State.....	69
Apples—Good Early Bearing.....	84
Bachelor in the Household.....	87
Bees—Apiary in March.....	67
Bog Land—Reclaiming.....	76
Book List for Farmers etc.....	68
Boys and Girls' Columns—What makes the Wind Blow—Book-keeping for Boys and Girls—Cure of the Drunkard—Bragging—What Kind of Puzzles to Send—About Publishing Names—Problems and Puzzles—About Organ Grinders—The Fate of the Elm—A Useful Dream—The Heroic Switch Tender—Tough Pies.....	3 Illustrations. 89-90
Chinese Magnolia.....	86
Cloves—Best Time to Cut.....	81
Climbing Furnitory—Argelany Vine.....	86
Country Parson on Gardening.....	84
Easy Chair—Home-made.....	85
Evergreen Hedges—Management.....	65
Farm Work in March.....	65
Fence Posts—Removing.....	77
Fire Wood—Preparing for Year.....	2 Illustrations. 82
Flax Culture—New Work on.....	68
Flower Garden and Lawn in March.....	67
Flowers—Chinese Wistaria.....	83
Flowers—Making Hollyhocks Useful.....	87
Fruit Garden in March.....	67
Garden Frame or Pit—How Made.....	83
Garden—Kitchen in March.....	66
Grafting Wax—Substitute for.....	81
Grape Planting this Spring.....	85
Grapery, Cold—Experience with.....	84
Grapery, Cold—Notes for March.....	67
Grapes—Rogers' Hybrids.....	85
Grass—Distinguishing Species. II.....	5 Illustrations. 79
Gravel-Wall or Concrete Buildings.....	78
Green and Hot Houses in March.....	67
Hop Culture—Prize Essay.....	2 Illustrations. 72-73-74
Houses—Cheap and Convenient.....	4 Illustrations. 78
Houses—Suggestions About.....	88
Implements, Seeds, etc.—Procure Early.....	75
Market Farm—Profitable English.....	51
Market Report and Commercial Notes.....	68
Meals—What to Get for Variety.....	88
Milk, Labor, and Beef, No. III.....	77
Notes and Suggestions for March.....	65
Oats—Bad Management in Cultivation.....	77
Orchard and Nursery in March.....	66
Pear Trees—Doctoring.....	85
Practical Odds and Ends for Household.....	88
Preparing for Field Labors.....	81
Recipes—Cream Pie—Spanish Cream—Good Bread Pudding—Chocolate Blanc Mange—Dishes for the Sick Room—Crust Porridge—Water Gruel—Corn Bread.....	83-89
Root Cutter—Effective.....	77
Roses—Best Varieties.....	81
Sheep—Improved American Merino.....	75
Sheep—March and April Lambs.....	75
Silk Worm—The Allantus a Failure.....	76
Soap, Hard—How to Make.....	88
Squash—Notes on Yokohama.....	82
Swill Barrel—Convenient Portable.....	80
Tim Bunker's Raid Among the Pickle Patches. II.....	80
Tomatoes—New Varieties.....	82
Trees for the Prairies.....	86
Washing Machines—A Good One.....	87
Wells—Horizontal or Side-Hill.....	76
Whitewash—Preparing for Spring.....	87
Willow, White—Success with.....	76

INDEX TO "BASKET," OR SHORTER ARTICLES.

Advertisements, Good.....	69
Advments, Petroleum.....	69
Agricultural Department.....	71
Amnobiom, Sowing.....	71
Animals, Food of.....	70
Beans, Concord.....	71
Bee-Keepers' Book.....	72
Broom Corn, Dwarf.....	70
Brush for Peas.....	71
Bulbs, Cultivation.....	71
Camellias, New.....	72
Camellias, Fine.....	71
Canada Thistles.....	70
Catalogues Received.....	69
Caterpillars, Tent.....	72
Cattle Breeders' Society.....	69
Cattle, Native Breed.....	70
Cauliflowers in Winter.....	71
Christian Commission.....	72
Clover with Oats.....	70
Cow Milking Herself.....	70
Cranberry, Upland.....	71
Currant, Black Naples.....	71
Death of an Ag'l Editor.....	69
Ducks, Best Breeds.....	70
Farmers, Laboring.....	70
Fence Posts, Setting.....	70
Flowers, Novelties.....	71
Fruit Growers' Guide.....	69
Fuller's Removal.....	71
Grape Grafting.....	72
Grapes, Del. Cuttings.....	71
Grapes for Michigan.....	71
Grass Named.....	71
Greely Fruit Prizes.....	71
Gum Spring Drill.....	72
Horse, \$37,500.....	70
Horses, Glandered.....	69

Indian Corn, Fine.....	70
Manure, Applying Coarse.....	70
Manure, Leather Scraps.....	70
Manuring with Clover.....	70
Maple Sugar Moulds.....	69
Meats, Keeping Smoked.....	72
Noles, Repelling.....	71
Newton's Newspaper.....	72
Number, Large.....	69
Oats in Succession.....	70
Onion Culture.....	71
Onions, Manure for.....	71
Peach on the Willow.....	71
Pears on Thorn.....	71
Peas, Soaking.....	71
Plant Named.....	71
Plaster and Bone Dust.....	70
Potatoes, Bulkeley's.....	70
Potatoes, Experiment.....	70
Potatoes, Fluke.....	70
Rats Gnawing Harness.....	70
Rose Culturist.....	69
Saw, Horse-Power.....	71
Sap Bucket Hook.....	72
Seed, How Much.....	71
Sheep, Prolific.....	70
Spring Greens.....	72
S. S. Paper, Good.....	72
Steers Turning Yoke.....	70
Strawberry Premiums.....	69
Strawberries, Tribune.....	71
Superphosphate, Applying.....	70
Teachers' Agencies.....	72
Wheat without Plowing.....	70

Notes and Suggestions for the Month.

Dreary winter is passing away, and joyous spring again comes to cheer and gladden. In many localities, where the March number of the *Agriculturist* will find its way, the music of the groves and the sound of flowing herds and bleating flocks may be heard, while in other regions the fields and meadows are covered with snow, and desolation reigns. With March, farmers in some of the States commence farming operations, while in others chilling winds and pelting storms confine the husbandman to the in-door labors of the farm. In one State the soil will be plowed and the seed put in for various crops, but in some others the fertile fields and the babbling streams will still be bound in icy fetters. Everything should be on the *march* towards improvement. Should the programme of farming operations for the season not have been already completed, let it be done without delay. If a good system of rotation has not been already adopted, plan it at once. Where no field labor can yet be performed, put every thing in order to do it as soon as weather and soil are favorable. There are hundreds of good farmers who do not know the great value of a crop of peas. They have never raised a crop, and they do not understand how to use them up advantageously. Procure good seed, in time to have it ready to sow when the soil is dry enough to plow, and put in a few acres of peas instead of barley, oats, or Indian corn. Peas will leave the ground in an excellent condition if the soil be well prepared for them, and if sowed at the proper time. They will be found excellent food for all kinds of stock, and there is no better meal for feeding milch cows, or sows that are raising young pigs, for the purpose of producing an abundant flow of milk, than an equal quantity of good peas and Indian corn ground into meal.

What Crops will you Raise?—What will your soil produce; or what kinds of grain, grass, or roots appear to be best adapted to the kind of soil, or what kinds of grain or other crops have grown for several years past on the soil? These are the questions that every farmer ought to consider before he decides what kind of crops he will raise during the coming season. A farmer should endeavor, as far as may be practicable, to adapt the right kind of *crops* to his soil rather than to adapt the *soil* to the

crops. If the soil is not adapted to either winter or spring wheat, do not attempt to raise it. If the soil is a good wheat soil and it has produced more wheat in years past than any other grain, it may be well to try some other crop that is also adapted to the soil, which will return perhaps as much, or more than a crop of wheat.

Drainage.—Before the soil is fit to plow, let it be examined for the purpose of ascertaining whether or not some portions of it may not be drained very advantageously, where it is excessively wet. Let wet portions of a field be staked out and drains cut for tile, stone or wood. During the month of March a long line of under-drain may be made before the soil is fit to plow, if the proprietor only has energy enough to lay out the work and commence it *at once*. If it be delayed until the soil is fit to be plowed, and other work begun, the draining will not be done.

Cattle.—Begin to increase the amount of meal fed daily to all fattening animals. Bullocks and dry cows that are designed for early beef should be well fed, watered and protected from storms during this month. Indian meal and oil meal fed now to fattening animals will start them right and return a good profit next June in early beef.

Horses.—Give horses daily exercise, either by turning them loose in a yard for a few hours, or by driving them in the harness. Mares with foal should be handled with great care, and if there is much snow and ice they should be sharp shod to prevent their slipping down, which would be very liable to cause stinking. Feed breeding mares a pint of unbolted wheat flour daily in connexion with their other food, as a small quantity of wheat flour is more highly esteemed than any other grain by experienced horse breeders for developing the growing fetus.

Houses.—Paint dwelling houses and any other buildings during this month as the pores of the wood and sun-shrinks are now closed and the paint will form a more durable coating on the surface than if applied in hot weather.

Implements and Tools.—Begin in good time to procure new tools and implements of husbandry, and to repair old ones. Todd's Young Farmer's Manual treats of the mechanical part of agriculture and edge tools and implements of husbandry, giving many useful hints. See book list.

Manures.—Spread horse manure over the heap and never allow it to heat and become fire-fanged. Haul manure to distant fields while there is sleighing, or before the ground has thawed, when the soil would be so wet that it would be injurious to drive over it and when a team would be unable to haul off a load. See that the rain from the eaves of buildings or from any other source does not wash away the soluble portions, the best part of barn yard manure.

Peas and Oats.—The oats keep the peas more erect than they would otherwise grow, and as they both ripen at about the same time, the yield per acre is usually much greater than if either were sowed alone. There is no better

feed for young swine, horses, neat cattle of all kinds, and sheep, than peas and oats. Seed may be obtained by the barrel or sack of seed dealers in most cities and large towns.

Potatoes.—Assort potatoes and feed out the small ones to stock; lay the best aside for seed. See some hints on how to raise early potatoes under the Kitchen Garden Calendar.

Roots.—Every animal should be fed a few roots daily. Save a few of the best to be planted out for seed. If you have never yet raised roots, procure seed and make arrangements for an experiment with a crop of them the coming season.

Stones.—Both large and small ones may be hauled off the field as soon as thawed loose, before the soil has become soft. If the ground is soft, pry up the large stones on meadows and place billets of wood or small stones beneath them so that they may be hauled off as soon as snow has fallen, or the ground will bear up a team. Remove brush, logs, and other rubbish from fields, if likely to be in the way of the plow.

Swine.—Separate sows that will farrow this month, from other swine. At least two weeks before their time prepare a warm and clean sleeping apartment, and make the bed of cut straw, in the middle of the floor, to prevent overlying of the young pigs. Do not feed too high before the young pigs are ten days old, but give a few feeds of raw roots of some kind before and after farrowing.

Stables.—As the warm weather comes on, see that stables are thoroughly cleaned out and well littered and ventilated, but horses should not be exposed to cold air currents, especially at night.

Sheep.—Take extra care of sheep during this month. Separate all feeble ones from the main flock, so that every one may receive a little grain and roots daily in connection with other food. See article on page 75. Remember that every early lamb is worth raising even at some extra care.

Trees.—As soon as the frost is out of the ground, ornamental trees may be transplanted, and if the soil is in order, fruit trees also. Drain the soil thoroughly, and pulverize deeply for all kinds of trees and shrubbery; manure will usually be needed.

Water.—Look carefully over the farm when there is a great amount of surface water, and see that it does not run across recently plowed fields, and wash away the soil. Turn small streams of muddy water from highways upon meadows and pastures; they carry with them much fertilizing matter, and will increase the crop of grass for years.

Wheat.—Procure in time good seed of spring wheat, of the best farmers. Get the last year's wheat floured in order to have bran for feeding.

Wood.—Improve every stormy and leisure day in preparing fire wood for next summer. See page 75.

Weeds.—Rally all the available force of the farm, and with sharp hoes cut all the bull thistles, teasels, mullein, and other biennial plants that will mature the seeds the coming season. Cut them about two inches below the surface of the soil; the surface water will stand in the little excavations and enter the roots and destroy them.

Work in the Orchard and Nursery.

—Trees at planting time excite our liveliest sympathies, for between the hard usage they get in being taken up in the nursery and the neglect they receive at the hands of many planters, they often have a hard struggle for existence. At the ordinary prices for trees, we can hardly expect of the nurseryman more than ordinary care, and under the best circumstances a tree comes out of the ground with much fewer roots than it had while it stood in the nursery row. This root pruning would not be of so much consequence if the majority of people did not set it out just as it is received and leave it to survive or perish. When it is considered that in the growing tree the absorbing surface of the roots is in exact relation to the evaporating surface of the leaves, it will be seen that, when in taking trees up we cut a part of the roots, this balance is destroyed. When such trees are planted out, the roots are unable to supply the demand of the leaves produced from the numerous buds upon the

branches. The consequence is, each bud puts out a few leaves, and though the tree may retain its vitality through the season, no vigorous growth is made, and it is often some years before the tree recovers from the shock of removal. While we do not mean to say that nurserymen never send out worthless stock, we believe that much of the poor growth of young orchards is due to want of care and knowledge on the part of the planter. Those who buy trees are apt to look more to that which is above ground than to that which goes below the surface, and are more taken with quantity of branches than quantity and quality of roots. It is difficult to convince such persons that the tree will be all the better at the end of the season if it is made to show less of branches at planting time. Get all the roots possible from the nurseryman, cut off all the bruised ones and smoothly cut the ends of those severed in taking up. Then after removing any useless branches, cut back all of last year's growth, leaving only one-half to one-third. It will come hard to do this, but it is necessary to get a good growth. In cutting, have reference to the future shape of the tree, and cut to a bud pointing in the direction where a branch will be most desirable. Don't buy cheap trees; it is poor economy to save a few dollars on an orchard by getting poorly grown trees to start with. Don't believe the large stories told of new varieties by glib-tongued tree peddlers who show a collection of highly colored plates and talk fruits wisely, though they may have never planted a tree in their lives.

Cherry Trees.—Plant early if the soil is open, and attend to any grafting the last of this month or early in next month. The cions should be freshly cut.

Cuttings from currants and shrubs, started thus, must be made before the buds start. Plant out those made last autumn as early as a place can be prepared.

Girdled Trees.—These may often be saved by the use of a plaster of cow dung and clay or loam bound on with a cloth. Put on a plenty to retain moisture.

Grafting.—Root grafting should be got out of the way as soon as possible, and preparations made for grafting trees in the ground. Cut cions, and see note on cions and grafting clay given on page 51.

Insects.—If any of the twigs appear as if they had a swollen place upon them, an examination will probably show that the apparent swelling is a cluster of the eggs of the tent caterpillar. This insect glues its eggs to the twigs, in a broad ring. If these are found, remove at any cost of time and trouble.

Manure.—Surface manuring is now practised by our best orchardists. The manure may be carted out and applied while the ground is frozen.

Orchards.—Wash the trees, if the weather is suitable, as recommended last month. If pruning must be done before summer, do it now. The weight of authority is in favor of summer pruning.

Planting.—The trees should have been ordered by this time, but if postponed until now, do it at once. In ordering apple trees it is well to recollect the value of sweet varieties as food for stock. Draining will always pay in the orchard, and the drains should be made before planting. The land may be staked out and the holes made at any time when the season is mild enough.

Seeds.—Order tree seeds for planting this spring. Those kept over winter in boxes of earth should not be sown until the soil is warm.

Stocks.—Those banded last year may be cut back to within three inches of the bud where the bud remains bright and appears to have united or "taken."

Transplanting of all hardy shrubs and trees may be done as soon as the soil is in working order.

Kitchen Garden.—As we write the calendar for March, there seems but little prospect that gardening operations will commence early, as the weather is that of mid-winter, and we have letters before us from places where snow is five feet on the level. Our directions are made to be in order whenever winter breaks up and the ground opens, and it is not to be supposed that the calendar will be followed blindly for out-of-door work. Usually there is little gained by too great a hurry.

Artichoke.—Remove winter protection and fork

in manure. If more plants are wanted, remove offsets and set in rich soil, 4 feet apart each way.

Asparagus.—Rake the coarser part of the covering from old beds and carefully fork in the finer portion. In making new ones it is best to plant in narrow beds 5 feet wide with two feet alleys between. This enables the crop to be taken and the beds to be cared for without trampling on them. Work the soil 18 or 20 inches deep and put in an abundance of manure. Set one or two-year-old roots one foot apart each way, making three rows to a bed. Set crowns 4 inches below the surface.

Beets.—Sow Early Turnip or Bassano in a warm rich spot, as soon as the season allows, in rows 1 foot apart. It is best to sprout the seed before sowing.

Cabbage.—Sow in hot-bed. The Early York is the common market sort, but the Cannon Ball is highly recommended. Wüningstadt is fine for a succession. Give young plants a dressing of ashes and plaster. Set out cabbage stumps for greens.

Carrots.—Sow Early Horn, as directed for beets. If some are wanted extra early, sow under glass.

Cauliflower.—Sow Early Paris and Early Erfurt in hot-bed to furnish plants for the first or early crop.

Celery.—Plants for the first crop should be started in a gentle heat or under a cold frame, in light rich soil. Early White Solid is the best early.

Cold Frames.—Give air on warm days and cover securely on cold nights. See article on page 83.

Compost.—The heap of refuse accumulated last season will need turning over and to be made uniform. Pick out sticks and other rubbish, and if not well decomposed, mix with manure to ferment.

Cress.—Sow and cover lightly.

Cucumbers.—Sow under glass. If intended for transplanting, sow on the under side of pieces of sod about 3 inches square, and set in hot bed or room.

Drains.—Most gardens will be all the sooner ready to work if drained. Drain the wettest places first.

Egg Plant.—This needs more heat than cabbages and lettuce, and should go in a hot-bed with peppers. The Long Purple is earliest. The N. Y. Purple largest and best for main crop.

Fences.—Put in condition to keep out all animals, and hang gates so that they cannot be left open.

Horse-radish.—Make beds in rich soil and plant pieces of root an inch long in holes made a foot deep with a dibble.

Hot-beds.—Brief directions for making these are given in last month's calendar, and an account of cheap turf frames will be found on page 83. In the management, avoid sudden alternations of temperature. Remove the mats or other covering sometime before giving air, in order not to cool the plants too suddenly. Where many sorts are sown in a bed, the seed must be in rows, but when a whole bed or a division is given to one kind it may be sown broadcast, and thinned out afterwards.

Leeks.—Sow in rich soil, in rows a foot apart.

Lettuce.—Sow under glass. The Silesian is best to sow thickly and pull when young. Butter lettuce, and other sorts are best to transplant for heading. It needs plenty of light if grown with bottom heat.

Manure.—Secure a good stock for the garden, and for later hot-beds. Spent hops from the brewers are very valuable, either when allowed to ferment alone or made into compost with stable manure. Cart out manure while the ground is frozen. Save hen and pigeon droppings as something precious.

Melons.—Treat like cucumbers.

Onions.—The potato variety is useful in the garden. The sets may be put out 4 inches apart, in 15 inch rows, as soon as the frost is out. Cover with litter.

Parsley.—Plant seed in a cold frame.

Parsnips.—Dig wherever the ground is open. Save the finest for seed.

Peas.—The early sorts may go in soon. A row or two which can be covered with a board or other cover at night may be coaxed for extra early.

Potatoes.—Get in some early sort as soon as the ground serves, but plant deep. Have some litter to cover over the rows if it comes on cold weather.

Radishes.—Sow in hot-bed, and in a warm light spot in open ground. Early Turnip is one of the best.

Rhubarb.—Fork in the manure on the beds. Set crowns with a piece of root in well manured soil.

Seeds.—See our advertisements and order an early supply of those needed.

Spinach.—Uncover that started last fall and stir the soil. Sow seed in rich ground.

Tomatoes.—Sow in hot-bed and transplant to a gentle hot-bed when two inches high. The plants will be all the better and stockier if transplanted two or three times before the final planting out.

Turnips.—Sow spring sorts early in a warm spot.

Winter Cherry.—Treat in the same way as tomatoes.

Fruit Garden.—The advantages of having the fruit garden separate from the kitchen garden have been often insisted upon. Wherever there is sufficient space, the trees and shrubs should have a place to themselves, and not be subject to have their roots disturbed by the frequent spading necessary to prepare the ground for vegetables. Under this head we notice shrubs and dwarf trees; standard trees are included in the directions for the orchard.

Planting may be commenced as soon as the frost is well out. The soil of the fruit garden should be drained, enriched and deeply plowed or spaded.

Blackberries.—Set the improved kinds 6 feet apart each way, cutting back the canes to 6 inches.

Currants.—Prune, and make cuttings of last year's wood. Transplant already rooted plants.

Dwarf Trees.—The remarks upon cutting back at the time of planting, apply with even more force to dwarfs. Now is a good time to commence to form dwarf pyramids as described in January, page 17.

Gooseberries.—Treat as currants. The Houghton and American seedling are the only reliable sorts.

Grapes.—If the vines were left unpruned last autumn, attend to them early. Those which at the fall pruning had extra buds left on the canes may be now cut back to the bud intended to grow. Plant new vines. There is scarcely a yard or garden that has not room for from one to a dozen vines which will fill up spaces now unoccupied. Recollect that a vine may be grown to a single stake, or may be made to spread over a large space.

Raspberries.—Do not uncover too soon. Plant new vines, especially the Black Caps, which are prolific and hardy, and good for home use or market.

Strawberries.—Prepare ground for new beds in time for planting. Use old manure; spade deeply.

Flower Garden and Lawn.—Spring work may commence this month, or the severity of the season may put it over to April. The Calendar suggests the earliest work, but the time of doing it will depend upon the character of the season. It is not well to be too much in a hurry. The ground must be dry and warm before growth will commence. Much clearing up will be required wherever this was neglected in autumn, and new borders and walks may be laid out and prepared.

Annuals.—While many consider that the trouble of raising annuals is all out of proportion to their value, yet there are some which no one would willingly do without. Asters, Balsams, Double Zinnias and Petunias as well as many others are needed in every garden. The list of annuals is very large, and the best way is to send to a seedsman for a catalogue and make a selection. Start those designed for early blooming in the green-house or hot-bed.

Cannas.—If space permits, have a mound-like bed of these in the lawn. They may be started from seed, but a quicker effect may be had from roots. Start the seeds in heat and do not put out plants until settled warm weather.

Climbers.—Introduce these wherever it can be done with good effect. The Honeysuckles, Climbing Roses, Wistaria and Trumpet Creeper, are good if flowers are wanted. If a dense green screen is needed to cover a trellis, nothing does better than a vine of Concord, Hartford Prolific, or some other vigorous growing grape. It must be grown without reference to fruit, but merely for wood.

Clematis.—This is a most valuable genus of plants; some of the newer ones, such as Helena, Sophia, and Sieboldi are beautiful low climbers. They are propagated by dividing the root.

Edgings.—Reset box as soon as the ground opens.

Gravel Walks.—Go over with a heavy rake and

add fresh gravel, if needed, and roll. Make new walks, putting down coarse stones before adding the gravel, in order to secure good drainage.

Hedges.—Set deciduous hedges, if they are preferred to evergreen, which must be deferred until in growth. Tamarisk, Barberry, Privet, and many other shrubs may be made into a garden hedge.

Herbaceous Perennials.—Every good garden should have a stock of these. The finer Phloxes, Dicentra, Columboes, Herbaceous Spiræas, and many others, give an abundance of flowers by simply dividing and resetting every two or three years.

Hot-beds.—Prepare for starting seeds of annuals, cuttings of bedding plants, dahlias, etc.

Lawns.—Top dress with wood ashes or nice compost which is free from weed seeds.

Manure.—For the main purposes of horticulture, this must be well decomposed. Save the hot-bed materials for the flower garden. Decomposed sods or leaf mould from the woods are always useful.

Roses.—Cut back the strong stems of Perpetuals, China and Tea roses severely, and they will bloom all the better. Thin out small and useless wood. Cut out old wood from climbers and leave only strong and vigorous shoots.

Shrubs.—These are so useful both in large and small grounds that we cannot too often recommend planting them. The volume for last year contains notes on many fine native and foreign species. Prune, if it has been left undone until now. It will not do to cut back all shrubs indiscriminately. The Lilacs, Weigelas, and many others, flower only from the buds formed last year, and if these are removed in pruning, no flowers will be had. Shrubs of this kind need only a judicious trimming. On the other hand the different species of Euonymus, Hibiscus, (Althea) etc., produce flowers on the growth of the present season and may be cut back closely.

Trees.—Make preparation for planting ornamental trees, not only upon the lawn but along the roads. Nursery trees are better than those from the forest, as they have better roots; still trees from the edge of the woods, or from open grounds, and the tops freely cut back, are much better than none.

Green and Hot-Houses.—The increasing heat of the sun will, on warm days, render fire heat unnecessary, but some fire must be kept at night. Sudden changes must be watched and guarded against by judicious firing. Air freely in fine weather. Prolong flowering by shading the glass.

Annuals.—Sow seeds in pots.

Azaleas are now coming into full bloom, and will need free watering and syringing before the buds open. Repot young plants.

Bedding Plants.—The stock of these must now be provided for, such as Verbenas, Salvias, Heliotropes and all the things so useful in filling the borders. Put in cuttings.

Begonias.—Repot in soil largely of leaf mould.

Camellias.—Place in a warmer situation those beginning to push a new growth; syringe frequently.

Chrysanthemums.—Propagate by cuttings to get a stock for next autumn's blooming.

Cinerarias.—These are very subject to the attacks of the green fly, and will probably need fumigating. Keep rather cool, with plenty of light.

Dahlias.—Those for early blooming may be started into growth, dividing the roots and potting them as soon as the sprouts show themselves.

Fuchsias.—These may be started into growth, giving a moist atmosphere and plenty of pot-room. Bring into good shape by pinching in young growth.

Japan Lilies.—These are often grown in pots, but may do better in the border. Pot them at once.

Pelargoniums.—Give water freely, and place as near as possible to the glass. Tie out the branches so as to give a fine shape for blooming.

Repotting.—Those plants about to make a new growth will need to be shifted. If it is not desired to increase the size of the pots, wash the soil from the old balls, and carefully repot with nearly dry earth, then water freely and keep shaded a few days.

Cold Grapery.—As a general thing it is not best to uncover the vines until April. Keep

the house cool by opening doors and ventilators, unless the weather be very severe. Those wishing to erect a cheap house are referred to page 84.

Apiary in March.—Prepared by M. Quinby. —There are several things to be ascertained as soon as the weather is sufficiently mild for the bees to fly freely. See if there are bees enough in each hive to secure it against robbers, and whether they have stores to carry them through till flowers yield enough; whether they have a queen; whether there is any moldy comb; whether any bees have been frozen, or starved, and left in the combs to decompose. When bees first fly out in spring, it is not unusual (especially with such as have been in the house, and are changed to some new stand, when taken out,) for part of the bees belonging to one hive to desert and join another. To ascertain the true condition of things, on a clear morning turn the hive over, and let the sun among the combs, and see how far the cluster extends. Do not mistake a cluster of dead bees for live ones. Enough to fill a pint measure would not defend the hive against robbers, or warrant any expectation of a swarm, unless such hive can be isolated, and free from all molestation by others. If it has a queen, it may serve to furnish some queenless colony with a mother; or a hive with more than its share of bees may be taken, and the bees equalized by changing the hives each to the other's stand. If the colony is nearly out of stores, and you cannot tell by lifting it, it is now a good time while the hive is inverted to look for sealed honey. If there is any it may be seen near the top and outside. As long as any can be seen, they will not be destitute in two weeks unless robbed. The time which it is thought the honey will last should be marked on a label, and attached to the hive. When necessary to feed, it is safest for those not familiar with the process, to take the hive to some dark room till all that is given them is stored. The least trouble is to invert the hive, and lay a piece of comb honey directly on the combs; if strained honey is to be fed, set a saucer on the combs, pressing it into the combs till it rests firmly, then pour in the honey, and cover with short pieces of cut straw. Honey thus fed should be scalded and skimmed, with the addition of a little water. Nearly all stocks should commence raising brood early in March. To ascertain the presence of a queen, look first for immature bees on the floor of the hive, then for the eggs. If none are found, then with smoke drive the bees from that part of the comb where they have clustered, and look for sealed brood. If no indications are discovered, and the colony is weak, provide a queen by uniting with this the bees of some other colony that has one. If the movable comb hive is queenless, it is ascertained at once by lifting out one or two combs. While inspecting the hive, it would be well to look for moldy comb. When very bad, cut it out, but a slight affection may remain. Also, if any of the bees have been frozen, or starved, they should be removed with a coarse wire bent into a hook at the end. It is unnecessary to look for frozen bees when they have been wintered in a warm room. Such are generally either all dead or all alive. Those that have been housed should be set out the first warm clear day, even if there is snow. If it has lain a few days it will do no harm. Put out only eight or ten at once, and two or three hours afterwards as many more. Look at the hives just at sundown, and the loss of the queen is often indicated by the uneasy movements of the bees. If the queenless colony be removed, save the hive and contents undisturbed for a swarm. Should worms hatch out in the empty hive when the weather becomes warm, smoke with brimstone to destroy them. In sections where the bees do not find plenty of pollen, the flour substitute should be provided. See directions in March, 1864.

Unreliable Advertisers in our Columns.—We spare no reasonable effort to sift our advertising columns from all unreliable parties, and generally succeed. There are, of course, difficulties in the way, but we prefer to come pretty near the standard rather than open our columns to all sorts of business which will pay for the space. Here is an example of one of the difficulties. A commission house offers an advertisement. We inquire about the parties, and the appearances and references are all so favorable, that we would our selves employ them. We admit the advertisement, and all goes on well for one, two, or three years. Bye-and-bye a complaint comes of apparent wrong dealing. We make inquiries, and all is explained satisfactorily, apparently at least. Afterwards, another complaint comes, then another, and another. We call on the parties, and they tell a different story, and claim all to be fair. Without devoting a week to the subject, calling witnesses, and holding "court," we cannot decide whether the parties complained of are really dishonest, or the contrary. The shortest way is, to do as we have lately done in two cases, with a commission house and a tree seller, viz., exclude them from our columns, until proved worthy

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the Agriculturist at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good to April 1st.]

Table listing various books for farmers and others, including titles like 'Allen's (L. F.) Rural Architecture', 'American Farmer's Encyclopedia', and 'The National Almanac and Annual'.

Important Work on Flax Culture.

The attention directed to these subjects by our offer of prizes has called out a great amount of information, in just that form most suited to the public wants, for while many are anxious to learn more respecting the growing of these important products, many others desire to know whether they can profitably commence the culture.

We have the plain, full directions, given by a large number of practical growers of long experience residing in different parts of the country. Any item omitted by one is sure to be brought out by others. We give one of the Hop-growing essays this month. Next month we shall give the best one of between thirty and forty good Flax essays. In order to place the mass of this information within the reach of all, as we cannot print a tenth part of it in the Agriculturist we shall get out as soon as possible a well-printed but low-priced pamphlet or book, containing the essays on Hop-culture—costing about forty cents. We hope to have this ready as early in March as the 15th or 20th. A similar work will be prepared from the great mass of information in all departments of Flax-culture, and dressing it for market. This will be in similar form. We shall try and keep the price as low as 50 cents. This will be ready in April if not before.

U. S. 7-30 LOAN.

By authority of the Secretary of the Treasury, the undersigned has assumed the General Subscription Agency for the Sale of United States Treasury Notes, bearing seven and three-tenths per cent. interest, per annum, known as the

SEVEN-THIRTY LOAN.

These notes are issued under date of August 15th, 1864, and are payable three years from that time, in currency, or are convertible at the option of the holder into

U. S. 5-20 Six per cent.

GOLD-BEARING BONDS.

These bonds are now worth a premium of nine per cent., including gold interest from Nov., which makes the actual profit on the 7-30 loan, at current rates, including interest, about ten per cent., per annum, besides its exemption from State and municipal taxation, which adds from one to three per cent. more, according to the rate levied on other property. The interest is payable semi-annually by coupons attached to each note, which may be cut off and sold to any bank or banker.

The interest amounts to

Table showing interest amounts for different denominations: One cent per day on a \$50 note, Two cents, Ten, 20, and \$1.

Notes of all the denominations named will be promptly furnished upon receipt of subscriptions. This is

THE ONLY LOAN IN MARKET

now offered by the Government, and it is confidently expected that its superior advantages will make it the

GREAT POPULAR LOAN OF THE PEOPLE.

Less than \$200,000,000 remain unsold, which will probably be disposed of within the next 60 or 90 days, when the notes will undoubtedly command a premium, as has uniformly been the case on closing the subscriptions to other Loans.

In order that citizens of every town and section of the country may be afforded facilities for taking the loan, the National Banks, State Banks, and Private Bankers throughout the country have generally agreed to receive subscriptions at par. Subscribers will select their own agents, in whom they have confidence, and who only are to be responsible for the delivery of the notes for which they receive orders.

JAY COOKE,

SUBSCRIPTION AGENT Philadelphia.

FISK & HATCH,

BANKERS,

AND DEALERS IN

GOVERNMENT SECURITIES.

38 WALL STREET, NEW YORK,

AND

U. S. GOVERNMENT AGENTS,

FOR THE SALE OF THE

Popular 7-30 Loan.

Under the recent arrangement of the Treasury Department with Mr. JAY COOKE, General Subscription Agent.

Checks and Drafts on New York, Legal Tender Notes and National Bank Notes may be remitted in payment. We also receive all Legal Tender Five Per Cent. Notes, and allow the accrued interest to date of subscription.

The 7-30 Notes will be forwarded by Express, free of charge, to all points reached by the Express Companies.

Orders may be forwarded to us direct, or through your nearest Bank or Banker.

Persons visiting the city will find a full assortment of the Notes on hand at our Office for immediate delivery.

Orders by mail should be accompanied with the address in full to which the Notes are to be forwarded.

We also keep on hand, and buy and sell at market rates, all kinds of

UNITED STATES SECURITIES.

Accounts of Banks, Bankers, and Individuals received on favorable terms.

FISK & HATCH,

BANKERS,

38 Wall Street, New York.

Commercial Notes—Prices Current.

New-York, Feb. 13.

We give below condensed and convenient tables referring to the transactions in the New York Produce markets during the month ending February 19, to which date they are made up. These tables have been carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the notes of our own reporter.

Table showing transactions at the New York markets, including receipts and sales for Flour, Wheat, Corn, Rye, Barley, and Oats for the months of 1865 and 1864.

The tables above show the amount of transactions, and the price table below gives present prices and changes from last month. The prices are mainly regulated by the value of gold; breadstuffs, meats, etc., are relatively higher than they would be but for the very limited supply in the city, the severe winter having greatly impeded the bringing forward of freight.

CURRENT WHOLESALE PRICES.

Table showing current wholesale prices for various commodities like Flour, Supr., Extra, Western, etc., as of Jan. 30 and Feb. 13.

FEATHERS, Live Geese, p. lb.	@ 26	75 @ 76
SEED—Clover, per lb.	25 @ 26	25 @ 26
Timothy, per bushel.	5 75 @ 7 00	6 00 @ 6 75
FLAX, per bushel.	3 60 @ 3 85	3 50 @ 3 65
SUGAR—Brown, per lb.	17 @ 23	16 @ 22
MOLASSES, New Orleans, p. lb.	1 30 @ 1 50	1 55 @ 1 50
COFFEE, Rio, per lb.	42 @ 46	39 @ 44
TORRICO—Kentucky, &c, p. lb.	12 1/2 @ 40	10 @ 45
Seed Leaf, per lb.	16 @ 65	9 @ 50
WOOL—Domestic fleece, p. lb.	90 @ 1 12 1/2	87 1/2 @ 1 10
Domestic, pulled, per lb.	72 @ 1 02 1/2	65 @ 1 04
California, unwashed.	25 @ 65	22 1/2 @ 65
TALLOW, per lb.	75 @ 80 00	70 @ 78 00
OIL CASE, per tin.	16 1/2 @ 17 1/2	15 1/2 @ 16 1/2
POIK—Mess, per bbl.	40 50 @ 41 50	34 00 @ 36 75
Prime, per bbl.	33 50 @ 34 00	29 00 @ 30 00
BEEF—Plain mess.	20 00 @ 22 00	18 00 @ 22 00
LARD, in blbs, per lb.	20 @ 24	19 1/2 @ 24
BITTER—Western, per lb.	35 @ 48	32 1/2 @ 47 1/2
State, per lb.	45 @ 60	42 1/2 @ 57 1/2
CHEESE.	15 @ 24	14 @ 24
BEANS—per bushel.	2 75 @ 2 90	2 00 @ 3 55
PEAS—Canada, per Bushel.	Nominal.	2 30 @ 2 35
EGGS—Fresh, per dozen.	37 @ 42	45 @ 47
POULTRY—Fowls, per lb.	18 @ 21	21 @ 25
Turkeys, per lb.	20 @ 23	24 @ 25
POTATOES—Mercers, p. bbl.	3 00 @ 3 75	3 75 @ 4 20
Peach Blow, per bbl.	2 75 @ 3 00	3 75 @ 4 00
APPLES—per bbl.		6 50 @ 7 00
Apples—Russels, per bbl.	3 75 @ 4 50	5 30 @ 6 00

The N. Y. Live Stock Markets have been very lightly supplied for a month past, owing to the blockade of the railroad by snow. BEEF CATTLE this week sold higher than ever before. Prices spasmodic ranging from 14c. @ 16c. per lb., estimated dressed weight for very poor cattle, to 25c. @ 27c. for extra animals. Other live stock have been almost as high proportionally. The regular supply is so disturbed by the weather that the present rates are no criterion for a week or two hence. LIVE HOGS are very scarce, the best bringing 14c. @ 14 1/2c. per lb., live weight. MILK Cows have ranged all the way from \$50 @ \$60 for ordinary to \$80 @ \$90 for very good and even \$100 and upward for extra.

New York State Agricultural Society.

The Annual meeting of this Society was held on the 8th and 9th ultimo, at Albany. A severe snow storm delayed the trains in almost all directions, so that the attendance was small, and the exhibition of dairy products, etc., meagre. The cordial greeting of the veteran Secretary, Col. Johnson, and the pleasure of meeting with so many of the tried friends and officers of the noble Society, aside from the interest attaching to the exercises, were pleasant. We ought to have more farmers' gatherings. Certainly there is no class of the community more benefited by a holiday, or who enjoy social intercourse more than intelligent farmers. But we heartily wish this Annual Meeting, calculated as it is to be very interesting and instructive, could be held at a season of the year when farmers might risk a journey of a hundred or two miles, with fair ability to calculate within forty-eight hours when they would get there, and when home again, and where they could get board for less than \$5 a day. We had the pleasure of meeting several gentlemen from without the State, distinguished for their writings or interest in Agriculture. Among them Dr. J. A. Warder, of Cincinnati; Col. Stone, of Vermont; Col. Harris, of the Ohio Farmer; and Mr. Greer of Ohio.

The officers elected for the present year, are: *Pres't.* Hon. T. C. Peters, of Darien, Genesee Co. *Vice Pres'ts.* Thos. H. Falle, Jr., West Farms, Westchester Co. Sam'l Thorne, Washington Hollow, Dutchess Co., Hon J. Staunton Gould, Hudson, Columbia Co., T. L. Harrison, Morley, St. Lawrence Co., John Butterfield, Utica, Oneida Co., Wm. Ely, Binghamton, Broome Co., D. D. T. Moore, Rochester, Monroe Co., Homer S. Huntley, Cataraugus Co. *Cor. Secretary,* Col. B. P. Johnson, Albany. *Rec. Secretary,* E. Corning, Jr. *Treasurer,* Luther H. Tucker; *Executive Committee,* Elon Comstock, N. Y., Geo. H. Brown, Dutchess Co., Clark J. Hayes, Otsego Co., H. J. E. Foster, Seneca Co., L. Blakesley, Oneida Co. Utica is proposed as the place of holding the next fair, but the decision is with the executive committee. Dr. Fitch continued his reports on noxious insects, treating of the hop-louse, currant worms, enemies of the potato, and the "bee-killer" fly. Dr. Warder and Mr. Gould explained the efforts making to prepare flax so that it can be worked on cotton machinery. After the evening meeting of the first day, the members of the Society attended the reception of Gov. Fenton by special invitation. On the second day a discussion was had in the hall of the Society, in regard to the best way to establish a good dairy herd, at which was elicited interesting information, and after which the following resolution was passed, viz:—"That it is both excellent and profitable for the dairymen of the State of New York to pursue the policy as far as practicable, of obtaining their cows by rearing their own stock for dairy purposes; and that heifers should be allowed to have calves at two years old." In the evening the retiring president gave the annual address.

Notice—Increasing Clubs.

Any number of subscribers can be added to a Club already sent in, at the same rates as the original Club, if the added subscriptions begin at the same time. Thus, to a Club of four names at \$5, other names can be added at \$1 25 each; and so of other rates. Can not each of our present Club subscribers add another name or two? We have stereotype plates to print all back Nos. desired.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

The Strawberry Plants will be sent out to subscribers early in April to the warmer sections of the country, and later to the colder regions. Particulars given next month. For all information about purchase of plants, see Mr. Knox's Advertisement. The Publisher has no plants of any kind to sell.

Cattle Breeders Association.—The Annual meeting takes place on Wednesday, March 1st, at the City Hall, Worcester, Mass. Numbers of representative breeders of each class of well bred cattle are expected to be present, the discussions will be valuable.

Death of a Veteran Agricultural Editor. Hon. EZEKIEL HOLMES, M. D., Editor of the Maine Farmer, died at his home in Winthrop, Me., on the 9th ult., in the 64th year of his age. His life has been a very useful one. He has been the Editor of the Maine Farmer since its commencement in 1833, and identified with Agricultural progress in his own State, and throughout the country. The loss of his counsels and co-operation will be very seriously felt, especially by the agriculturists of Maine and New-England, and his memory will be honored by all who have ever known him.

This Number of Extra Size.—In order to make room for the lengthy and valuable article on Hop Culture, without curtailing other matter, we add four extra pages this month at large expense. Probably this may be done in other numbers, especially next month, when we shall give a prize chapter on Flax Culture.

Glandered Horses from the Army. This terrible disease is fearfully prevalent in some of the Government Horse Hospitals. We have feared that it would spread from them, and now publish a communication from J. C. Meyer, V. S., Cincinnati, O., which asserts that it has spread most alarmingly. He writes us: "I would direct your attention to a great evil, which by your extended influence, you may be able to check somewhat. Since the Government has been selling its unserviceable army horses, the glanders have made their appearance in my practice, and are extending to such a degree, that I fear, if the sale of such sick horses is not stopped, not only an immense loss will be sustained by the State, but also, that in a short time we may be unable to obtain the necessary horses for war purposes. Some regulation prohibiting the sale of such horses, which would be respected by the Government agents, as well as by private individuals, is most desirable, as the lives of men as well as horses are jeopardized thereby."

Petroleum Advertisements—Why not Admitted.—The newspapers are getting rich on the broadside advertisements of Petroleum Companies; some of the Daily papers of this City receive \$1000 to \$2000 a day from this source. We have a full share of these offered at tempting prices, which we would gladly accept, not only for the profit, but because the discovery of Petroleum is a good thing—we may say a providential interference in behalf of the country, as the heavy exports of this article are materially aiding our National finances at this eventful period. But we are not able to distinguish the good Companies from the bad, without more personal investigation than we can possibly find time for at present. The best Companies are usually those which make the least show in the newspapers; the operators who know they have a good foundation generally try to keep the stock in the hands of themselves and friends. So, to avoid the danger of leading our readers into unprofitable or fraudulent enterprises, we feel compelled to decline all these advertisements.

An Interesting and Valuable department of this paper the present month, is the advertising columns, which are filled with the business announcements of reliable dealers. No advertiser is admitted whom we would not send an order to, if wanting what he advertises, and at the prices asked. Large numbers have been excluded, and we are sorry to say that many columns from good men were necessarily left out because they came after all the space we could possibly spare was filled up. See what a store of good things are offered to select from. Seeds and small plants go so cheaply by mail (only 16 cents per lb. to any place in the United States), that one taking the *Agriculturist* in hand and looking through the advertising pages will find himself almost as well accommodated as if most of the leading establishments in the country were brought

together at his door. It is well to look all through the business pages; they are made up at the convenience of the printer, so that one place is as valuable as another.—When sending orders, or for circulars, catalogues, etc., please remember the previous request to state where the advertisement was seen. Several business men have expressed great pleasure at hearing from the *Agriculturist* subscribers in every part of the country—from away down in Maine and Nova Scotia, to the most distant hamlet in the far West. Said one of these to us, "Until I heard from my advertisement in your journal, I had no adequate conception of the vast number of people interested in growing fruits, and planting seeds.... I never before so fully appreciated the greatness, the boundless extent of our country, and the unity of interests and purposes pervading the whole.... I have heard from thousands of individuals on a single subject, and they all unite and seem to think alike. How in the world the *Agriculturist* found its way into so many thousands of the most distant towns, is more than I can imagine...." Why, we advertised it everywhere, just as we should advise any man to do who had an unlimited supply of a good thing—let all the people know it. If your neighbor close at hand wants it, so does your neighbor in Iowa, and Nebraska, and way beyond.

Maple Sugar.—Mr. Joel Page, Westminster, Windham Co., Vt., sends us a few more hints on sugar-making. He constructs his molds for caking the sugar as follows: He takes a plate of sheet-iron or zinc 18 1/2 by 25 inches, nails cleats about 1 inch wide and 1/2 inch thick, thickest at the bottom, around the edges, and four lengthwise, equally distant, across the plate. The long divisions thus made he subdivides by zinc slips 1 inch wide and 3 1/2 inches long into small spaces of convenient size for cakes. Mr. P. has 11 molds one way, and 5 the other on one plate. In sugaring off he boils, stirring carefully till a drop on a bright ax-blade, when cold, will slide off without leaving a trace; then sets the vessel off the fire and stirs till the sugar begins to granulate finely, when it is poured into the mold, which is previously wetted, and set aside to cool. When the molds are inverted on a clean table the cakes drop out easily.

The American Rose Culturist.—This little handbook contains the necessary directions for planting, pruning and propagating the Rose, and will be found convenient for the amateur. The list of varieties is a few years behind the time, as is the case in all works enumerating the sorts of those flowers which are yearly changing and improving. The cultivators' annual catalogues give the newest varieties.—A new edition, in neat paper covers, just ready. Price 30 cents.

Elliott's Western Fruit Growers' Guide.—This has long been a favorite work of reference, especially among Western fruit growers. Its descriptions are brief, and it has a list of varieties which have been found unworthy of cultivation. A new edition has been prepared to meet the demand. Price \$1 50.

Catalogues, etc., Received.—The catalogues of nurserymen and seedsmen are, at present, often more than mere price lists. They frequently contain descriptions of plants, with useful directions for culture, and in many cases are illustrated with engravings. B. K. Bliss, of Springfield, has issued his Spring Catalogue and Amateur's Guide to the Flower and Kitchen Garden. It contains the newest seeds and is very full of description and illustration. One commendable feature is, that it tells the extent of ground a given amount of vegetable seeds will sow.... The catalogue of A. M. Purdy, South Bend, Ind., contains a good selection of small fruits.... The catalogues of Alfred Bridgeman's well-known establishment, at 876 Broadway, contain all the standard varieties of flower and vegetable seeds, as well as the novelties.... J. W. Cone, Vineland, N. J., sends price list of grapes.... The different catalogues of Ellwanger and Barry, Rochester, N. Y., would, if bound together, make a good sized volume. They seem to contain everything in the way of trees and plants.... John Vanderblit, 23 Fulton street, N. Y., has a full assortment of agricultural implements, and choice flower and vegetable and tree seeds, as set forth in his catalogue.... J. M. Jordan, St. Louis, Mo., offers a good selection of nursery seeds, and in his catalogue sensibly commends the various agricultural and horticultural papers to his customers.... The Reading, Mass., Nursery of J. W. Manning, has the usual variety, together with several Down-east specialties.... Henry A. Dreer, Philadelphia, publishes his Garden Calendar for 1865, being a catalogue of seeds and plants, with notes on their culture.... Reid's Nurseries, David D. Buchanan succeeds the late William Reid in the proprietorship of these celebrated nurseries. In his catalogue, he promises to maintain their reputation for accuracy and good stock.... J. M. Thorburn & Co., have issued their catalogue of flower seeds, and spring bulbs. It comprises a full assortment.

The "Native" Breed of Cattle.—

At the Annual meeting of the Cheese-makers' Association held recently at Rochester, this resolution was entertained. "Resolved, That Native cows are the best and most profitable for dairy purposes." The discussion which followed was upon Durhams, Devons, Ayrshires, Alderneys, and their grades, but the so called "natives" were not discussed at all. It seems strange that an association of sensible farmers should attempt to discuss a resolution advocating the merits of a breed, that not one among them could describe the characteristics of, and the very name of which conveys only an idea of a class of animals of the bovine species with no uniformity of character, except general inferiority, combined occasionally with special excellences, such as milking qualities.

\$37,500 Horse.—The famous thoroughbred race-horse "Blair Athole," was sold not long since in England for 7,500 guineas, which is equal to the above named price in Federal currency (gold).

Four Lambs at one Birth.—E. F. McCrea, Shelby Co., Ind., writes that a ewe, owned by a neighbor of his, recently dropped three white lambs and one that was jet black, and that they were all living at the time of writing. Four lambs at one birth is not a very great novelty however. We have seen five, and know of seven having been dropped at a yearling.

The Food of Animals.—The little book by Dr. Thomson, of Glasgow, on the food of animals and man, contains a great deal of true philosophy, which is applicable to the every day practice of American farmers. The views expressed are, to a great extent, based upon a series of experimental researches undertaken by order of the British Government a few years ago. Price \$1.00.

To Keep Rats from Harness.—In response to a query in the February number of the *Agriculturist* we can lay before our readers the following recipes and statements: One correspondent says, "Take about a tablespoonful of good cayenne pepper, and mix thoroughly with every quart of oil used. This will prevent the rats and mice from gnawing the harness, and also prevent horses and colts from chewing their halter." Another signaling himself "Sadler" writes: "Aloes incorporated in oil, will prevent rats and mice from injuring harness; 4 oz. to one gallon of oil will suffice". . . . John Griest, of Jay Co. Ind., says: "Thirty years ago a Dutch neighbor of mine told me, I could prevent rats eating my harness if I would put a small quantity of pine tar in the oil, but not much, as it would cause dirt to collect. I think I have not used as much as a tablespoonful to a quart of oil. When I did so, my harness was not troubled, and when I neglected it for a year or two they were badly eaten". . . . L. S. Lichtenwalner, of Lehigh Co., Pa., uses a gill of tar to the quart of oil; C. Schutt puts a teaspoonful to 2 quarts and "C." has a rat-terrier dog.

Cow Milking Herself.—"J. B. C.," of Dover, Del., says he tried the tongue-slitting operation described in the November *Agriculturist*, and it did not work. He could not have done the work well. A split tongue cannot suck. It probably closed in healing.

Steers Turning Their Yoke.—"Subscriber," of Howell, Mich., writes: "I take a stick of light wood, of sufficient size for strength, put two holes near each end, to correspond in distance with the bow-holes in the yoke, then strap it, not too tight, to the forehead of each steer. This will not only prevent turning the yoke, but effectually remedy the habit of one hooking the other while in the yoke. When tying tails is practised, should they, by any chance, be unyoked without untying, any one may imagine the consequences."

Ducks—AYLESBURY—ROUEN—CAYUGA BLACK.—"G. H. I. W.," asks which are the best, and who has them for sale at the West? We favor the Rouen, but are not so set in our way as not to admit good arguments against our pets and in favor of others. It is not "rule or Rouen" with us exactly. Sellers unknown.

Sowing Clover with Oats.—A call for testimony in regard to the practice of seeding clover with oats, made last month, has elicited many responses. It seems that in many parts of the country, where winter grain is constantly grown, the custom prevails of sowing clover upon the rye or wheat, and with barley, but not oats. Throughout the wheat regions of the middle States, where this grain is sowed upon a clover ley, turned under in the summer, the clover seeding is usually done with oats. When clover is sowed on winter grain, had freezing once in a while, after it has sprouted, kills it. Sowed with oats, the trouble is, that as the crop is very leafy, it is apt to choke the clover, and make it

grow spindling; then the oats are inclined to shell, and the stubble fields often grow a rank crop of young oats, which seriously hinder the grass and clover stocking.

Bulkeley's Seedling Potato.—Mr. J. W. B. Manning, of Reading, Mass., states that he cultivated this variety for one year, and that although the yield was good, the potatoes were of poor quality, and not fit for the table when many better ones are to be had. Mr. Wm. F. Barrett, Atlantic Co., N. J., writes that in 1862 he planted Bulkeley's seedling, obtained from Mr. Bulkeley, and Garnet Chili from Mr. Goodrich, side by side, and that no difference could be seen in the vines, or the resulting tubers of the two varieties. Mr. Barrett states that he wrote to Mr. Goodrich upon the matter, and the latter informed him that he had given Mr. Bulkeley, some years previously, specimens of his seedlings—the Garnet Chili among them. We have before had it stated that the Garnet Chili and Bulkeley's seedling were the same potato, and it is very possible that Mr. Bulkeley in cultivating a great many varieties mistook the Garnet Chili for one of his own seedlings.

Fluke Potato.—We have numerous inquiries for this variety. It is common about Rochester. Those who have any for sale should advertise them.

An Experiment With Potatoes.—Isaac Hicks, Long Island, writes as follows: "A neighbor last spring cut out all the eyes but the strongest one, and planted the potatoes in a row, giving them the same chance as others planted in the usual way. When dug, these potatoes, Peach Blows, yielded by weight double the quantity of the same variety growing adjoining them. They were also of larger size. His theory is that one good strong shoot, taking its support from a large potato when it begins to grow, will produce much more than when the substance, or food, is divided among several shoots, or even one shoot with but a small piece of potato to commence its growth with. As this was the fact, will it not be a good plan for others to try the experiment?"

Wheat without Plowing.—John Malony, Dubuque Co., Iowa, asks how it will do to put in wheat on corn stubble, without plowing the ground in the spring. If the soil were light, friable, in a good state of fertility, and free from weeds, he could raise a fair crop. But it would pay well to plow before sowing, whatever might be the quality and condition of the soil. If the soil were rather heavy, it would probably not produce half an ordinary crop without plowing. We have tried sowing barley, wheat and oats in the spring, on fall-plowed ground, without plowing again, and we were satisfied that if it had been plowed again in the spring the crop of grain would have been considerably larger.

Plaster and Bone Dust.—"W. B. M." of Plymouth (no State given), asks, "will it answer to sow plaster or any other manure with bone dust?" Yes. Sow plaster with anything you please, it will do no harm, and is an advantage with ammoniacal manures. Bone dust may be mixed with anything except ashes and lime. Plaster and bone are an excellent mixture. It is usually best to apply plaster with guano. Sprinkle it over manure heaps, and about the stable, under cattle and horses. It will repress an odor of ammonia at once.

Dwarf Broom Corn.—E. M. Graves, Erie Co., Ohio, gives his experience with Dwarf Broom Corn as follows: "One of your subscribers writes that he has raised Dwarf Broom Corn, and the tall variety for several years, that he likes the Dwarf much the best. His experience is different from mine. I have planted it and the tall variety every year for three years, and like the tall kind much better, and shall not raise any more of the Dwarf. The brush is generally one-third of it too limber to make a good broom—about like a mop. It is about two weeks later in getting ripe, and I cannot get nearly so many brooms off an acre as I can of the tall kind. For seed, the balance is in favor of the tall."

Fine Indian Corn.—Mr. J. L. Husted, Fairfield Co. Conn., has put on exhibition at this office some remarkably fine corn. The ears average about a foot in length, and are well filled with white flinty kernels having a slight dent. In 1839, Mr. H. purchased an ear of the "China Tree Corn," a variety which was highly praised at that time, but which has nearly passed out of cultivation, and by each year selecting the best for seed, he has established a variety which, with ordinary cultivation, gives him 75 bushels of shelled corn to the acre.

Manuring With Green Clover.—Friend Preston Eyre, of Beaver County, Pa., writes: "I have never failed to raise a heavy crop of India corn when I have plenty of old clover stalks to plow under. My plan is to let the clover get in bloom before turning

the cattle on it. They will eat the finest, and tread the rest down. Then if there is 40 bushels of lime applied per acre, the fertility of the soil will be kept up, and good crops will be produced. I think it a wrong practice for farmers to put on so much stock as to eat all grass off close to the ground."—On some soils it will not pay to apply lime. The true way to determine whether it will pay, is to experiment with it upon small plots of ground where different kinds of crops are grown.

Leather Scraps as a Manure.—Mrs. E. J. McLaughlin, Clark Co., Ohio. Leather scraps, composted with fermenting stable manure, will decompose and form a valuable manure for grapes, applied upon the surface, and worked in with the hoe or cultivator.

Sowing Oats After Oats.—Preston Eyre, Beaver County, Pa., inquires how it will do "to sow oats after oats?" and if it will pay better than to plant India corn after oats? Oats will do well after oats, on good soils, for several successive seasons. But it is bad management to grow the same crop twice in close succession, unless the land is well manured. In case a farmer has little or no manure, as Friend Eyre suggests, instead of sowing oats after oats, we would plant Indian corn, and manure it in the hill with good superphosphate, and it would be much better for the soil. In some localities in the State of New-York nothing but oats are grown for six or eight seasons in close succession, and with apparent profit to the proprietors. But it would be far better both for them and their farms to raise other crops in connection, establishing a systematic rotation.

Plowing in Superphosphate.—A subscriber inquires if "it will pay to sow about three hundred pounds of superphosphate per acre, broadcast on sod ground previous to plowing it for a crop of Indian corn?" We would not, as a general thing, apply superphosphate thus to corn, but would rather put it in the hill. Then it will be sure to benefit the young corn, and give it an early start, whereas otherwise it would not tell until later, when the roots have spread well. When it is applied in the hill, it is much better to sprinkle the handful over an area a foot in diameter, than to throw it in a heap as most farmers usually do.

Applying Coarse Manure.—A correspondent inquires "which is the best way to apply manure to gravelly soil—draw out the long coarse manure in the spring, and apply it directly to the soil, or pile and rot it, and apply it in the fall?"—If a crop of Indian corn or potatoes is to be raised, apply the coarse manure in the spring. For growing either winter or spring wheat the manure ought to be well rotted before it is applied, as coarse unfermented manure is not the right kind of fertilizer to apply to wheat, barley, oats and flax. In case a sandy soil is to be summer fallowed, it would be better to pile the coarse manure, or compost it and apply it in the fall to winter wheat, or the following spring to such crops as are to be raised, than to mingle it with the soil 8 or 12 months before the seed is sowed.

"Ought Farmers to Labor?"—This absurd question is being seriously discussed by the contributors to some of the agricultural journals. The law regulating the reward of labor, viz., supply and demand, seems to be overlooked, as well as the principle which underlies all just governments, that all men have a right to amass property, seek their own happiness, and conduct their own affairs in their own way, provided they do not interfere with other people doing honestly the same thing. If a farmer's labor in the field is worth \$2 a day, and if he can earn three times as much, in managing his business, buying stock, selling his products, and overseeing labor, of course he will hire an extra man, put him into the field and clear \$4 a day by the operation. It will almost always be necessary for every farmer to do some work—at any rate it is a great advantage for a farmer to be able to do any kind of farm work, and to do it as well or better than any man he can hire, and to this end he should "keep his hand in."

Canada Thistles.—D. L., of Wood Co., Ohio, writes: "I knew a man to kill ten (10) acres of Canada Thistles in one summer, and the field was so covered with them that a person could scarcely get through. He plowed them once each month during the growing season." Our correspondent adds: "This plowing was done when the sign was in the heart." An important (?) fact—but these thistles were "heartless intruders."

Fence Posts Top End Up.—C. Frovines, Indiana, writes: "Some strange ideas prevail here in regard to fence posts. Intelligent farmers tell me that posts will last as long again by being well seasoned before they are set, and the top ends being placed in the ground. And I see all the fences built in that way." He

asks, "Will some one explain why?"—There is no strong evidence that posts thus set will last longer than if they were set with the top end up. Until the evidence is produced, no reason need be sought why a post will decay sooner when it is placed top end up, than when it is set the other way. To test this, we once set fence posts alternately top up and top down, in the same fence, and there never was any perceptible difference in the time of their decaying.

Sawing Wood with Horse Power.

A Subscriber in Darlington, Pa., writes: "I saw my fire-wood with a circular saw, driven by a two-horse railway power, and I find it such an advantage that I never intend to saw any more wood by hand. It pleases the women very much to have plenty of seasoned wood, particularly when baking buckwheat cakes." We are acquainted with a young man in Cayuga Co., N. Y., who was accustomed to do all his threshing with a flail, and sawing wood by hand. At our suggestion, he purchased a two-horse threshing machine and wood saw. When he performed all this work by hand, he was obliged to labor very hard all winter. Now he does his own threshing and wood-sawing, and threshes for some of his neighbors. He sawed over 300 cords of wood for them during the past year, besides doing all his own work. He finds much more time to rest and read, and not half the amount of hard labor that was required when he threshed and sawed by hand. He saws, usually, three cords of hard wood, twice in two, per hour running time. This practice of making the horses do the hard work, is worthy of almost universal adoption.

Manure for Onions.—B. Gardner, Hampden Co., Mass. If you have plenty of night soil composted with loam and well rotted stable manure, you need not buy either guano or phosphate. An equivalent to 25 or 30 bushels of night soil, or 20 to 30 loads of stable manure, should be used to the acre. The Wethersfield Red is perhaps the best market sort. Yellow Danvers is very productive. The white varieties produce less, but bring a higher price. Our Pamphlet on Onion Culture is invaluable to a beginner.

How Much Seed?—The following table is from the new Seed Catalogue of Henderson & Fleming, N. Y. It will be found useful in determining how much seed to order, making allowance for defects, etc.

1 ounce of Asparagus and Cardoon,	about 500 plants.
do Broccoli, Cabbage, Cauliflower, Egg-plant, Kale, Tomato, Leek, and Pepper,	3000 "
do Celery, Endive, and Lettuce,	6000 "
do Okra, and Spinach, may be allotted for every	100 ft. row
do Beet,	do do 150 "
do Onion, Radish, and Salsify,	do do 175 "
do Carrot, Parsley, Parsnip and Turnip,	do 200 "
do Cucumber, is sufficient for	150 hills
do Muskmelon,	100-125 "
do Watermelon,	40-60 "
do Pumpkin and Squash,	40-80 "
1 quart Field Pumpkin,	400-500 "
do Dwarf or Bush Beans	" 200 ft. of row or 300 "
do Pole	200 " or 200-300 "
do Peas	150-200 ft. of row.

Brush for Peas.—J. Cotton Eastman. The tall growing peas do better with brush. The medium sorts will, perhaps, fruit as well, but are more difficult to pick, if allowed to fall over. For garden culture the dwarf sorts, such as Tom Thumb and Bishop's Dwarf are convenient. Drew's new Dwarf, is a new sort said to be very good. We are always glad to hear from young farmers, and to aid them when possible.

The Department of Agriculture.

—If the agricultural community have any interest in the appointments of the new administration, which will be inaugurated on the 4th of this month, it is in reference to the Department of Agriculture. They expect, and justly, that this Department shall have a fair chance to show its usefulness, and not be a subject of ridicule. They expect the appointment of a head who is sought for by the place, and who does not seek the place. They look for a man who stands in intimate relations to the agriculture of the country, and not one whose chief claim to the place is his personal services to one particular family. They expect a Commissioner of broad views and executive ability, who can devote his time to the interests of the country, and not to making favor with members of Congress. They expect to see an experimental farm, which shall contain the best kinds of stock, and where their comparative value shall be established by accurate experiments. They expect that the mails will be no longer weighted down with rubbish from old Philadelphia seed stores; that tropical seeds will not be sent to Wisconsin, and that useless seeds will not be sent at all. They expect that reports shall be made which shall not be diluted by writers by the page, but which shall give results, and be worth more than a yearly volume of any good agricultural paper. In short, they expect that some

one will be appointed to the head of the department who will get out of the old ruts, and start on a new track; and they don't wish the head of the Department to have a seat in the Cabinet.

Soaking Peas.—"Subscriber" asks if it is well to soak peas. They will come up sooner if soaked a few hours in warm water, and it is quite an advantage to treat them this way, if the ground is dry. If the peas have bugs in them, pour on scalding water enough to cover them, and let them cool. This will kill the beetles, and not hurt the peas.

The Concord Pole Bean.—Two Massachusetts subscribers who have cultivated this new variety have written in praise of it. One says: "It is very elegant in appearance, the earliest pole bean I have yet found. It is good as a string or shell bean, very prolific, averaging a pint of the dried beans to the pole. Mr. Burr (author of Garden Vegetables of America), in a recent article in Hovey's Magazine, gives a very high rank to this bean, and I think justly." We have received a sample of this bean, and it appears like what it is claimed to be, a cross between the London Horticultural and White Pole Cranberry, two excellent varieties.

Cauliflowers in Winter.—P. Whittersay, New Haven Co., Conn., writes that he is now enjoying fine, large cauliflowers, which came from small and poorly formed ones planted in the cellar last autumn. We have often advised this plan.

Onion Culture.—Numerous inquiries are made about the culture of onions. For all general information we refer to our book on Onion Culture, which gives the experience of numerous growers. See book list. A. C. Hayes, Washington Co., Iowa, asks if we would advise him to try an onion crop. No one should undertake to raise onions who cannot command plenty of help, as there is a great amount of hoeing and weeding to be done in order to succeed. Better try a moderate extent of ground at first to learn the routine of culture. New land is not suited to onions, but they should follow roots, corn or other hoed crops. Great quantities of manure must be used, but the same land may be cropped year after year. In the warmer section of the Middle States the season is too hot and dry for onions from seed, and there, sets must be grown in autumn, and kept through the winter for early spring planting. Where onions have not been before, it is advised to sow alternate rows of carrots, as the onions are not injured, and if they chance to fail, a good crop of carrots pays for the labor expended.

Upland Cranberry.—R. Hanford, Monmouth Co., N. J., has confounded two things under the name of "Upland Cranberry." The name is applied by cultivators to a variety of the common cranberry which they consider best adapted to dry localities. It is also one of the popular names of *Uva Ursi*, a Bear-berry. It is a great misfortune that many of our native plants have several popular names.

Castor Oil Bean for Moles.—C. F. Raymond, of Fairfield Co., Conn., states that a dozen castor oil beans planted in his garden drove out the moles, and that they staid out for some years. The plants were allowed to grow during the season. Others say the same.

Grass for a Name.—J. Straur, Tabotville, C. W., sends *Phalaris Canariensis*, or Canary grass, the seed of which is used as food for Canary birds. It is often found growing wild in waste places where rubbish from bird cages has been thrown.

Plant for a Name.—R. L., Boston, Mass. The specimen of "Fox plum," is *Mitchella repens*, usually called Partridge berry, sometimes Twinberry, and Tallow-berry. Probably is of too slow growth for a hanging basket, and we doubt if it will endure the dry heat of a room.

The Greeley Fruit Prizes.—It will be recollected that the Hon. Horace Greeley last autumn offered a prize of \$100 each for the best variety of grape, apple and pear for general cultivation. These prizes were to be awarded by the Horticultural Committee of the American Institute. The notice given having been too brief for general competition, the premiums are kept open for another year. At a recent meeting of the Committee the following judges were appointed for the award of these premiums: Doctor J. A. Warder, Cincinnati, Ohio, Chairman; Charles Downing, Newburg, N. Y.; Dr. I. M. Ward, Newark, N. J.; L. Ferris, Throg's Neck, N. Y.; Dr. E. W. Sylvester, Lyons, N. Y.; P. J. Quinn, Newark, N. J.; P. B. Mead, and W. S. Carpenter, New-York City. Three exhibitions will be held in September, October and November next, the conditions of which will have timely publication. This arrangement is made with the consent of Mr. Greeley, and will,

doubtless, be satisfactory to fruit-growers generally. —In this connection we add, that in a recent communication which we have not room for, Mr. Byram distinctly disclaims any intention in anything he has previously said or written, of attributing to Mr. Greeley, any but the most noble and philanthropic motives in offering those prizes. He says: "Mr. Greeley is too noble and high-minded to lend his aid to any dishonorable or corrupt measures to advance his own interest or that of his best friend."

Fine Camellias.—Mr. Wm. Chorlton, of Staten Island, has a way which we commend to the consideration of other florists. Every winter he makes a show upon our tables of the most beautiful Camellias. Those exhibited this year are of the finest varieties, and beautiful specimens. As Mr. C. is not a commercial florist, he does not do this as an advertisement, but just for the love of it, and in so doing he gratifies hundreds with a sight of excellent specimens of this costly flower.

Grapes for Michigan.—J. G. M., Oakland Co., Delaware, is the hardiest of the good grapes. Concord and Hartford Prolific would doubtless do well with you, and are good market varieties. It makes but little practical difference whether stakes or trellises are used, provided the training is properly carried out. Before investing much in a vineyard it will pay to visit Kelley's Island or some other locality where there are established vineyards, and study operations there.

Delaware Grape From Cuttings.—J. M. Cook, Ottawa Co., Mich. Cuttings of the Delaware so seldom succeed in the open air, that it is about useless to try them. If buried in the fall below the reach of frost and then put in a warm and moist place, a few may grow, but more likely all will fail. The nurserymen use single eyes, and start them in sand by means of bottom heat. The details, which would occupy too much space, are fully given in Fuller's Grape Culturist.

The Peach on the Willow.—The contributor who sends us a description of the manner in which peach trees are grown in California, by grafting them in a split willow, is informed that he has been hugely humbugged by some traveller's yarn.

The Tribune Strawberries.—T. L. Stringer and others. These were sent out numbered 1, 2 and 3, by notches upon the tallies, which were attached. The names are: first, Col. Ellsworth; second, Monitor; third, Brooklyn Scarlet.

Black Naples Currant.—Several subscribers think that we did not deal justly by the Black Currant in last month's basket. We there expressed our opinion that it was a disagreeable and worthless thing, and now we let others say that it "makes a good jelly, fine jam and excellent wine; that it is better for taris, pies and preserves than the white currant." Medicinal qualities are also ascribed to it. Now both sides are given, and let those who like them grow them.

Pears on the Thorn.—J. G. D., McLean Co., Ill., has tried grafting the pear on the wild thorn with fair success. The trees produced moderately, and the fruit was good. He thinks that it may be made to answer a good purpose where other stocks cannot be had. The grafting should be done on the root.

"Ammobium" wishes to know how to make the seeds of *Ammobium alatum* germinate. We never had any difficulty with it when sown in the ordinary way. Probably the seeds were covered too deep—a common cause of failure with most flower and other seeds.

Cultivation of Bulbs.—C. C. Smith, Marshall Co., Iowa; Bliss of Springfield, Mass.; Vick of Rochester, Thoburn, and Bridgeman, both of New York City, and others, publish special bulb catalogues, which contain directions for the culture of each sort and which will be sent on application to them.

Fuller is Going.—A. S. Fuller, the well-known nurseryman, finding his place in Brooklyn too small, has taken extensive grounds in New Jersey. His address until May 1st, will be Brooklyn, and after that date, Godwinville, N. J.

Novelties Among Flowers.—B. K. Bliss advertises a pure white *Dicentra spectabilis*, which by the way, florists will persist in calling "*Dielytra*." Under either name it will prove valuable if it is as good as the original. Peter Henderson comes out with a new Pansy, which rejoices in the name of "Good Gracious." Despite the odd name it is very double and very pretty. We shall next have flowers labelled "How you talk;" "I want to know," and "You don't say so."

Spring Greens.—Those who prefer dandelions to other greens can take a hint from Daniel Emerson, Summit Co., Ohio. He says, "I let a few dozen dandelion roots grow in the richest part of my garden, and cultivate them from year to year. Very early in the spring, our neighbors see with amazement that we have greens long before they have begun to think of them."

A New Camellia.—Mr. Isaac Buchanan, of Astoria, has raised a new red seedling, which is quite remarkable for its size, and very rich color. The flower measures over five inches across, and the petals are over two inches broad. Mr. B. names it *Camellia Thurberi*; it is a very striking variety.

Successful Grape Grafting.—Mr. H. Tronsen, Northampton Co., Pa., states that he followed the instructions for grafting the grape given in the *Agriculturist* for Sept. 1863. In March 1864, he set a graft of Concord and Maxatawny into two common grape roots. The Concord made 35 feet and the Maxatawny 62 feet of ripened wood, and large and vigorous in proportion. The process is recommended to be done in early winter, before the ground freezes, but it may be done very early in the spring. Remove the earth for a few inches around the worthless vine, cut it off, and put in a graft of some valuable sort. Let the cion be of one good eye and put in like an ordinary cleft graft. Tie the stock with bass matting or yarn and cover with earth. Grafting is only to be recommended where there is a valueless vine. We would not set out a vine for the purpose of grafting it.

Tent Caterpillars.—An experienced fruit grower on Long Island, sends the following seasonable item: "Last year we had a hard job to destroy all their nests in our orchard, but we succeeded with the exception of perhaps half a dozen. But the moths came from the wild cherry trees and others' orchards near by, and laid their eggs on the outside rows. One pleasant day of last month, after a rain, we went around, and in about three hours collected 300 nests, containing about 100,000 eggs. I took them to the Farmers' Club, gave a history of their habits, and presented them to the members to examine, in order that they might destroy the eggs on their trees, as it takes much less time than when hatched."

Keeping Smoked Meats.—Philip Fischer, Clark Co., Ind., asks: "Can you not give us a good method for keeping smoked meats in summer?" (1) Pack in dry salt, (2) Let them hang in a tight smoke house, and make a smoke once in a while, especially in fly time. (3) Pack in tight barrels, and fill up with strong brine. The first way named is probably the best.

Acknowledgment.—We have received and handed to the U. S. CHRISTIAN COMMISSION, \$78 80, from B. O. Stephenson, the proceeds of a festival in behalf of Sick and Wounded Soldiers, held in Nevinsville, Adams Co., Iowa; also \$1 from J. H. Fowler, Westchester Co., N. Y.; 50 cents from Francis Turkel, Guernsey Co., O.—For the U. S. SANITARY COMMISSION: from "G," Green Co., Wis., \$3; from H. Greenwald, Stephenson Co., Ill., 50 cents; from W. G. Talbul, Huron Co., Mich., \$1; Watson Robinson, \$1; Mrs. G. Marshall, 50 cents; Easterbrook, \$1; Thos. Philip, \$1; John Peacock, 50 cents, Mr. Whitelam, 50 cents.

Book for Bee-keepers.—No book that we have ever read gave us so much information in regard to the habits and nature of the honey-bee as the work of Mr. Langstroth. This book with the monthly hint under the head "Apiary" in each number of the *Agriculturist* will furnish as good a guide as the bee-keeper need to have. See book-list.

Newton's Newspaper, or Uncle Sam's Journal.—The concern which under the name of the Department of Agriculture, uses up a goodly share of the taxes paid by hard-working farmers, has resumed the issue of an Agricultural paper under the name of Monthly Report. We should not so much mind this if it went to those who paid for it; but as it cannot go to every farmer, we object to publishing a paper for the favored few. This monthly report is so cumbersome, that according to the Commissioner, "it requires from fifteen to twenty days to have the reports printed, folded, stitched and trimmed." Stop them altogether, and save fifteen to twenty days of valuable time, and also of paper which in its white state has a decided market value, but in the shape of a "report" is of precious little use. It may interest the people in Clinton, Ill., to know that there was "bright zig-zag lightning in the Southeast at 7 P. M." on December 2d, and for the people in Ottawa, in the same State, to have it recorded that on December 4th, there were "wild geese flying eastward this morning." But farmers most prefer to wait until war expenses abate before these geese or any other are brought be-

fore the public at their expense. The report contains an article on hops, an excellent specimen of job work made up mainly from European authorities, and containing much that is incorrect. New-York hop growers will be glad to hear from this paper that they can learn the soil and manure best adapted to the growth of the hop from its analysis, which is all very scientific, but not very practical. If the Commissioner must come before the public every month, all that is useful in his report may be put in a single sheet, which might be issued from any New-York office in a single day.

Hook for Sap Buckets and other purposes.—A subscriber in Otsego Co., N. Y., sends one of the hooks he uses to support his wooden sap buckets. The hook made twice the size here shown, is driven inverted firmly into the tree; the edge of the bucket is then placed between the hook and the tree, and pulled out slightly so that the teeth on the hook shall take hold a little. Thus it will be held perfectly secure. This is probably the most convenient way to suspend buckets when they must be hung high above the reach of cattle, etc. Sap flows equally well at a height, as near the ground. This contrivance is applicable to hang buckets in other places.



"Teachers' Agencies."—We have oft-repeated inquiries from different parts of the country respecting the value, the reliability, etc., of this, that, and the other "agency" for securing teachers, which it is usually impracticable to answer. We can conceive of such an agency, conducted honestly and economically, as being of material advantage to both teachers and employers—a sort of Intelligence office, where is kept a record of vacancies and unemployed talent. We would not advise a teacher to send \$5 or \$10 to unknown parties, merely to have a name recorded among a great number of others. Let the agency assume some risk; a nominal charge of 50 cents or \$1, for postage, trouble, etc., is all that should be made, until something is actually accomplished for the teacher. When a place is secured, a small percentage upon the salary obtained would be proper. There are a multitude of teachers returned from the South, who are seeking occupation, and it is hard upon such to send perhaps their last \$5 to some agency, with no certainty of having any return. It is proper that we should say, in this connection, that our remarks do not apply to the advertisement, last month, of the Educational Agency of Prof. Nash, formerly of Amherst College. From what we know of him, we believe he is aiming to promote the best interests of both teachers and employers, and at a very moderate remuneration.

The Gum Spring Drill, advertised in last month's *Agriculturist*, is sold at \$100; a spreading of the types made the price look like one dollar.

A Word to Correspondents.—Very many letters would have been answered had the basket room been larger. Be patient. Please always give full address, which will be omitted if desired. No letters of a merely personal nature are answered, unless postage for reply is inclosed, and not then if the information desired requires time for investigation. We repeat that we cannot reply in "the next *Agriculturist*" where to get a hundred different things. The seedmen, nurserymen and implement-makers, who advertise in our columns, all of them have all the usual articles in their line. Those who have specialties advertise them. Inquiries about the potatoes figured in February are informed that we know of no seed for sale.

Any one having Fifty Dollars or upward, that he can possibly spare, should put it into one of the 7.30 U. S. Bonds, now offered. Not only will it help to furnish the means of speedily finishing up the war, but it will be a good investment. We urged our readers to buy the old 5.20s, and all who did so have not only drawn six per cent in gold, but they can sell the bonds to-day for ten or twelve per cent advance. The new bonds now offered bring 7-3-10 per cent interest for 2½ years, and then every holder can have his money back, or demand a 5-20, 6-per cent gold bond, which are likely to be quite as valuable as the old ones, because having longer to run. Some prefer railroad and other securities, lest reverses should happen to the Government and depress its bonds. But should the Government paper depreciate, all other values would go down with it. We do not fear failure. Our cause is just, and Providence will make it wholly successful, and this year, too, we believe. Let every one who can, contribute towards it by investing all the money he can spare, in the government bonds. Most banks throughout the country will furnish the Bonds. These remote from banks can pro-

cure them through the Government agents, as noted in the advertisements of Messrs. Fisk & Hatch, and Jay Cooke, which from patriotic considerations, we give a prominent position here in the reading columns.

An Excellent S. S. Paper.—"The *Sunday School Times*", edited by John S. Hart and I. N. Baker, and published weekly by J. C. Garrigue & Co., Philadelphia, at \$1.50 per year, is a very valuable journal for Superintendents and Teachers. It contains a large amount of information, hints, and suggestions highly useful not only to Sunday-School people, but also to teachers in secular schools, and to parents. We often find in its single articles, worth more than the annual subscription. Send to the publishers for a specimen number.

CULTIVATION OF HOPS.

Hop Essays—Award of Prizes.

A large number of responses have been received to the offer of prizes for the best Essays on the Culture of Hops, and their preparation for market. It was very difficult to find practical hop-growers to whom the decision in regard to relative value of these essays could be referred, and by whom the prizes could be awarded, and have this Committee act in time to enable us to publish the first prize essay the present month. The subject was, therefore, referred to the Associate Editors of the *Agriculturist*, who were happy in receiving the assistance of Hon. George H. Andrews, of the N. Y. State Senate, in the decisions, especially upon one very important point, viz.: Whether an article advising the use of certain patent rights and methods depending on their use ought to be entertained? Mr. Andrews has long been a cultivator of the hop, and for many years the editor and publisher of "The Hop Growers' Journal" (now no longer issued), and is probably better qualified to judge than any one else in this country. With his approval, therefore, we feel warranted in awarding the first prize (\$40) to the writer of the essay below given. It is to be regretted that it is not more fully illustrated. The author, however, is preparing other drawings, which will appear in the book or pamphlet soon to be issued, embodying all that is valuable in these essays, with much additional information. The Second prize (\$20) is awarded to "E. O. L." Vernon, Vermont; an excellent article, well illustrated. The Third prize (\$15) is awarded to S. B. Ryder, Coventry, Vermont.

Culture, Drying, and Baling of Hops.

FIRST PRIZE ESSAY.

BY HERMAN C. COLLINS, MORRIS, OTSEGO CO., N. Y.

VARIETIES.—There are many varieties of hops cultivated in this country, but English Cluster and Grape Hops succeed best. The Pompey Hop is very large, with long arms, but it is more injured by rust and insects than the first mentioned, on which the hops hang in large clusters, and both are early varieties.

SOIL AND SITUATION.—The situation for a hop yard should be such that there is a free circulation of air—never by thick woods in a valley, for there rust, blight, mould, and lice most abound. They should have plenty of sunshine, which is the surest preventive for all these. The soil should be dry in winter, and have no water on the surface at any time. If not naturally rich enough, it can be made so by manuring. Any soil where good crops of corn or potatoes can be grown is suitable, but it should be easily worked and kept mellow, as there is much cultivation to be done. Where wheat will not grow, the soil must have lime, if hops are planted. In central New-York, they are raised on very high land, where none but the smaller varieties of corn will grow.

PLANTING.—The best time to plant a hop yard is in the spring, as early as the ground can be worked. The ground should be plowed and made as fine and mellow as possible; then stake it off, and either mark it out with a plow or line it, and plant with a "dibble," which is the surest way to have the plants all live. Corn, potatoes, or any other hoed crop can be raised the first year with the hops. The rows should never be less than 8 feet apart, and on the rich bottom lands of the West 9 or 10 feet is better. Make the hills the same distance apart both ways, and the rows perfectly straight. It is a great mistake to have the hills crowded, as they often are in some yards, to 7 feet each way, or even less.

The sets for planting, are runners from old vines, which can be had from any old yard. Care must be taken to keep the sets from male plants separate from the others. The hop is a diocious plant, that is, having the staminate or male, and pistillate or female flowers, on separate plants. There should be about one male hill to every eight hills, each way, or one in sixty-four, making from eight to twelve to the acre. These hills should be

marked by a stake at planting, to enable one to distinguish them at a glance. The sets should be cut to two pairs of eyes each, (if very short jointed, three pairs of eyes may be left,) and three to five of these should be put in a hill, according to the condition they are in. They are usually planted in a furrow made by a plow, which must be from 2 to 4 inches deep, according as the soil is light or heavy. If planted too deep, they will not come up well. Sets are usually sold by the bushel; 2 to 3 bushels for an acre. When yards are planted with good, fresh sets, and it is done early, there is very little risk of failure. Often large yards are planted without losing a single hill. When the ground is very mellow, with but few stones, dibble the holes just deep enough to let the sets be under the ground, and 3 or 4 inches apart; press the soil around them, and mark the place with a stick.

CULTIVATION THE FIRST YEAR.—The cultivation consists in keeping the weeds down, and the ground mellow. One day's work in season, is better than two later. If good sets are used, and they are planted very early, it will pay to raise a crop the first year, and the plants will be the better for it. Set one stake to each hill, and let all the vines run upon it. The stake should be but 8 feet long, and set 1 foot in the ground; if longer than that, the vines will not get to the top in season to "hop" well. It is best to stake the plants, because then they are out of the way in cultivating the yard, and do not get torn off. We raise from 200 to 400 pounds to the acre the first year, at no cost, except picking and drying, besides the cultivation, which must be done if even none are raised. The stakes may be pieces of old hop poles, or better, 1½ inch square sawed stuff, 8 feet long (there is one foot board measure in each stake). It pays well to get gas tar, which costs but \$1 or \$2 per barrel. Heat it in a pan made for the purpose, and dip the whole stake into it while it is hot. This makes a firm coat of paint on the stake, protects it from the weather, and at the same time is very offensive to insects, and plant lice will not lay their eggs on it in the fall. In the autumn of the first year, a covering of two forkfuls of coarse manure should be given the hills, and if there is any chance of water standing on the surface, furrows must be plowed for surface drains, for it will kill the hills it covers. Cattle should never be pastured in hop yards in the fall, especially not in young yards. There should be no grass for them to eat, though there too often is.

TRAINING.—Throughout the hop region of New-York, young trees have been cut, for many years, for use as hop poles. This has gone on until the price has risen from 2 or 3 cents to 20 or 30 cents each, and large quantities are brought from Canada and the wilderness of Northern New-York, by canal and rail, and then drawn with teams to the yards, frequently from 10 to 25 miles. Hardwood poles last from 2 to 5 years, the best cedar poles but 10, and many poles break down with their load, or are broken down by the wind every year, which causes a total loss of the hops on them, and frequently on one or two adjoining poles. The common method allows two poles, 18 to 30 feet long, to each hill. Being so long, the wind whips them, breaking off many of the arms, so that often a considerable part of the crop is destroyed in this way. When the crop grown upon the poles is picked, many hills are killed, and all are injured by bleeding of the vines, which must be cut off.

HORIZONTAL HOP YARD.—There is a new method in vogue in this State, which has been used in Otsego Co. to some extent for three years past, and the last year it was used all through this, and in some other States, viz., "Collins' Horizontal Hop Yard." It was described in the *American Agriculturist* for May, 1864, and is illustrated in the opposite column. I shall confine my directions for raising hops mostly to this plan, as I consider it as far superior to the common plan, with long poles, as the Mower and Horse-Rake are to the haying implements used by the last generation. There is but one stake to the hill, and this is 8 or 9 feet long, and set 1 foot in the ground. The best and cheapest stakes are 1½-inch square sticks, sawed at any saw-mill, left rough, and entirely coated with coal tar. Where this plan is introduced into old yards, old poles, cut in two are used; yet it is far better to use the square stuff above described, than to cut down a tree for each stake.

The outer row of stakes should be 8 or 10 feet outside of the outer row of vines, and where next a fence, put them on the line of it. These should be 2½ inches square, or if round, about as large as a common hop-pole, and set a little deeper than the others. For the inside hills, round stakes, an inch through, are as good as larger ones. The tops of all the stakes are connected by a twine running across the yard both ways—it is tied to the outer stakes only, and wound once around the inner ones. Use good twine—wool or broom twine, made out of hemp or linen. At the present price of twine it is best to raise the flax and spin it; two or three threads making a small twine that will measure about 700 feet to the pound; this is strong enough, and lighter is often used, and if tarred with good pine tar it will last several years.

Tarred hemp twine at present costs 25 to 27 cents per pound at wholesale in New York, and from 35 to 40 cents through the country. A kind should be used that will not weigh more than 25 pounds per acre; but I like best a good home-made twine at about 15 pounds per acre. The cost for twine is at present from 6 to 10 dollars for an acre, but four years ago it cost only 3 or 4 dollars.

At the male hills, put one tall pole about 18 feet long, so that the male vines will run up it, and the wind can blow the pollen over the yard. The string should pass these poles free, so that the wind will not break the twine.

The cost of preparing a yard in this manner is as follows: 750 feet lumber for stakes, at \$15@20; gas tarring stakes \$2; 25 pounds twine, at 30 cents, \$7 50; setting stakes \$1; putting on twine 50 cents; right per acre \$10. Total cost after setting vines \$26. Cost of yard with long poles, 1,400 poles, 20 cts. each, \$280; sharpening \$10; setting \$7. Total cost, not counting hauling—after setting vines, \$297.

SECOND YEAR.—In spring the yard, as soon as dry enough to work, must be grubbed. Hoe the dirt from the hill without injuring the crown of the root. With a knife, cut off all the old vines smooth, and any runners that are seen. Never tear them off nor cut them with the hoe. At the same time examine whether there are any grubs in the hill, and kill all found. There are two kinds of grub, one which makes a beetle, with a dark hard head, and white body, with legs all on the forepart of the body. It is always found doubled up like a horse shoe. The other is a caterpillar which makes a butterfly. Both must be killed wherever found. Leave the hill nearly bare. If the stakes are in the yard they must now be set, but if not, it is best to plow first. In setting, use a common light crowbar, and set about a foot deep, rather deeper for outside hills, and nearly twice as deep for the long pole at the male hill. Then plow out the yard, and after plowing take out the runners or sets. These are only



Fig. 1.—HORIZONTAL HOP YARD.

found in a yard after the second year, and if well saved, are worth from 50 cts. to the second dollar and a half per bushel. Break them as little as possible, and do not let them lie long in the sunshine, nor be frozen while out of the ground. In setting the stakes, all the holes should be on the same side of the hill, so that in plowing you can tell how to guide the horse that he may not step on the crown. After taking out the sets, hoe the dirt back upon the hills so that the ground will be nearly level, and put on the twine. When the stakes are but seven feet high, a man can easily put it on from the ground, but a boy or girl can do it with a light stool. The twine is carried in a basket slung over the shoulder out of the way. Never tie the twine except at the end stakes, and only wind once around the others, passing at the tall polls at the male hills. Have all stakes the same length. When the vines get up two or three feet high, they must be tied. Tie four to each stake except in the outer row of hills where five or six may be tied, so as to fill the strings to the outer row of stakes. Put the vines around the stake the way the sun goes, or they will not run, and tie with soft bass matting or old woolen yarn.

Cultivate often, for it will save a great deal of hoeing. The five-toothed cultivator is best, but when the yard gets grassy, the plow is the only thing that will do the work; never let the weeds get the upper hand. The vines will need tying up as often as any leave the pole, but it must never be done on a cold day, nor early in the morning, as then they will break, and whenever one has its bead broken off, it must, if not up to the strings, be taken down, and another vine from the ground be put in its place. When the smallest vines have got a good start, three feet or more, bury the refuse vines at the foot of the stake with two inches of dirt, and never pull or cut them off, as is usually done. In a few days the leaves will rot, making manure, and the vines will make cheaper food for the grubs than those running up the stake. These vines throw out small roots, and help to make the crop for the year; besides they are the best kind of sets for a new yard the next year. Mix air-slacked lime and unleached ashes, and put on about a pint to each hill; this will help to keep away grubs, and serve as manure.

When the tallest vines are up two feet above the tops of the stakes, go through the yard and lay them on the strings, winding them loosely once or twice around. Put the vines on the strings, while they are growing very fast, about twice a week, or when they are two or three feet long, letting them hang down six inches. When the vine has passed the first space, let it run past the stake, on to the string having fewest vines on it, and when it gets to the middle of the second string, let it hang down like an arm. Sometimes I have seen vines stopped when at the second stake, but I do not like the way so well as to let them run further.

Never put the arms upon the strings, but let them hang down or wind into each other; they will not break by hanging, and will be more exposed to sunshine and air. When they are so long as to brush the ground, lay them up on others, winding once around, and they will stay. If the vines have been so planted that the male vines cannot be told, let them run up on the strings, but mark them in the fall, so as to put in a tall pole, for, if grown in this way, the pollen will be better distributed.

PICKING.—The hop is ripe, when on opening it the seed is hard, and of a purple color. After that, they turn brown, and the seeds drop out, and there is a great loss both in quality and weight. Of course, in a large yard, all the hops cannot be picked at exactly the right time. If the yard is a large one, the hops will be ripe sooner in some parts of it than in others, and should be picked first, and indeed some must be picked rather too early, in order that none may be left much too long. Commence when the seed begins to get hard, and but few are yet purple. In horizontal yards this is about a week earlier than where long poles are used, and as there is no cutting off vines, they do not bleed as in the old way.

At first do not hurry up the picking too fast, as while the hops are rather green the kilns must not be filled more than ten or twelve inches deep, and it takes longer to dry them than those that are riper. After a few days, when the hops are fully ripe, it is best to get one-half more pickers than at first, as on a good kiln the hops can be dried from sixteen to twenty-four inches deep, and two kilns-full can be dried in a day.

Those conditions of the air which produce rust in wheat, seem to have the same effect on hops. It sometimes comes on very soon after a warm shower. High land is most free from rust; the worst place is a deep narrow valley near a stream, and sheltered by woods.

Hops can be picked from the strings, either in the common way with boxes and box-tenders, or by girls with baskets without help. I like the latter way best, as it saves three-fourths of the time usually spent in tending box, and the hops are picked cleaner and faster. I will describe both ways: First, with light willow baskets which will hold three or four bushels, commence at the ripest part of the yard, loosen the strings from the stakes, and let them drop until held by the vines; they will then be about five feet high, and can be pulled lower as wanted. A large girl, or a man, can take the strings off the stakes.

Pick clean; put the fingers through between the hops in the bunch, instead of around it and stripping, as is often done. Put in all the hops, but none of the large leaves, and as few of the small ones as possible. Often there is no care taken to keep out small leaves, but for a prime article very few should go in, and no bunches of more than three hops should ever be allowed in the basket.

The owner, or some very careful man, should empty the baskets into sacks as they are filled, and see that all are picked well. Where any are found with bunches of hops, or any large leaves, the picker should sort them, and pick them all out. For this the most careful man is required, and every careless girl in the yard will abuse him as much as she can. Good pickers will gather 25 to 30 bushels per day well, but wages should be based on about 15 bushels for a day's work, as many girls will not pick more than that.

Sacks for carrying the hops to the kiln should hold about ten or twelve bushels without packing, as the hops, if pressed in, will soon heat and turn black. The bags must never be left full of hops over night. Burlaps make good cheap sacks, and once made they last for many years. The vines are left on the strings so as to mature the root for another crop, until they are killed by the frost; then it is best to take them down, strip them off the strings, and burn them. In this way the eggs of the plant-llice are mostly destroyed. Where the picking is done with boxes, these are made of various sizes—16, 372 cubic inches is the size required by a bill proposed in the last Legislature of New York, but the bill did not pass. The boxes, usually holding from seven to ten bushels, are

made about three feet long, with a partition through the middle, and two of these double boxes, with a platform three feet square between them, make a "set" for four pickers. They are of half-inch basswood, with handles at each end. A man (or a girl) called a "box-tender," who has a large basket, knife, and light stool, pulls off the arms from the vines, (they break out easily by a pull towards the root of the vine,) and with the knife cuts off the end of the main vine, which hangs down.

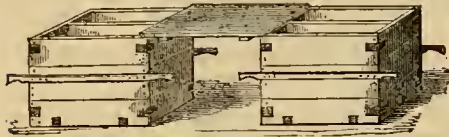


Fig. 2.—"SET" FOR FOUR PICKERS.

As fast as he fills his basket, he empties it on the platform, thus leaving the main vine with most of its foliage entire, and preventing any bleeding.

When the hops are good, and the strings not more than seven feet high, one man can tend two sets of pickers, eight boxes, as easy as he can one where they are nine feet high. The man who tends box should never be required to sack the hops. Broken arms are to be thrown away when the hops on them have turned brown; for if put in, they will injure the sale of all. A man who has the reputation of picking his hops clean, and putting them up nicely, will get a little extra price for them, and find quicker sale when hops are low. The difference between "Fancy" hops and "Common sorts" is always enough to pay the whole cost of raising the crop. Only the best hops have the advantage of a foreign market. The price for picking varies from 20 to 50 cents per box. Owners usually board the pickers, and if they are treated well, he will find it all the easier to engage them another year.

DRYING THE HOPS.—The kiln should be proportioned to the amount of hops to be dried. It is usually divided into four rooms. The stove room, where fire is made, should be not less than 14 feet high, and 16 or 18 feet is better, with stone or brick walls and no floor; if the walls are of wood, they must be plastered to the top of the room. At the bottom of the walls there should be six air holes, one by three feet, with doors to close them tight when necessary, and if the kiln is very large there must be more than six. The stoves, usually two, are large enough to take in three-foot wood, with grate bars at the bottom, and very large doors; the pipes are carried once or twice across the room, as near the level of the top of the stove as possible, and then go into a chimney on the outside of the building. Great care must be taken not to have the pipes touch the wood-work, as it is kept so hot for a long time, as to set fire to any wood work near it. The pipe is often run several feet from the building and turned up like the smoke-stack of a steam boiler, to make a good draft. There is a door from the stove room into the baling room, with a light of glass, so that the man who attends the drying may see the state of the fires without going in, and on the inside of the glass is a Thermometer to show the degree of heat at a glance.

The drying room is over the stove room; usually there are joists laid across the top of the stove room, and wooden slats, one inch by two, are laid on them on edge, two and a half inches apart. On this there is laid a carpet—usually made of flax or hemp with small threads, twisted hard and woven loosely, so that the spaces between them are about 1-16 of an inch or more, allowing air to pass through it freely. It should never be of cotton.

The best kiln I have ever seen, is one which has a movable carpet, invented by Edward France. Wires, like telegraph wires, put three or four inches apart, are used instead of slats, and no joists are used, but the wires are stretched tight by a nut on the end. The hops are put on it from a movable walk; a plank 2½ feet above the carpet, supported from the rafters by wire suspension rods, and when the hops are on, the plank is turned on edge. When the hops are dry, the carpet is rolled off by a shaft in the stove room, so that all the hops are taken off in less than five minutes, and the carpet put back ready for a new charge, without losing the heat or letting the fires go down. No sweeping is needed with this kiln, nor does any one step on the carpet.

The roof should be carried up very high, so as to have the ventilator as high as possible, and make a better draft to the kiln. This is made with a cowl which turns by the wind, or a slat ventilator is used, arranged so as to keep out the rain, while the air can pass up freely.

The stove room is next the drying room, but the floor is from three to eight feet lower than the carpet, so as to make plenty of room to store hops in bulk until they are ready to press. It should have but one window, which should have a shutter to keep the room dark, while the hops are in it. They will turn brown if exposed to light. Have boards to set up, and make the end of the stove room farthest from the drying room into one or two large bins, so that any damaged hops can be kept separate,

Under the stove room is the baling room; it has a tight floor, and is used to bale the hops, store the hop press, together with any tools not in use in the yard.

At first picking, put on the hops not more than twelve inches deep, and start the fires. Use only dry wood, as more heat can be had from dry than green wood, and where the stoves are large, the fires last better if large wood is used. Open all the air holes, so there will be a good draft through the hops. When the fire is first made, the steam passes off from the hops very fast. Keep the temperature as regular as possible. About 180° or as near that as may be, with as good a current of air as you can get, will dry them rapidly. After making the second fire, take a pan of coals from the stove, and put on a quantity of sulphur. If the hops are nice and free from rust or mould, one pound is enough for bleaching a kiln, but when very rusty, from two to five pounds are sometimes used. Put the pan in the centre of the room, and shut the door—the fire must be well made, for it cannot be mended for half an hour. When half the stems will break on bending them, the hops are dry enough. This will be in from eight to ten hours.

In using the common kiln, the doors are thrown open, the fire goes down, and the kiln is cooled for two hours, so that a man can go in to shovel off the hops, which he cannot do while it is hot. With a rake, shovel and broom he throws the hops off upon the cooling floor of the stove room, and sweeps the carpet off clean. He must wear shoes without nails, or he will tear the carpet.

Much of the flour, or Lupulin, always falls through into the stove-room—sometimes two or three pounds from each kiln full. What falls on the stoves and pipe must be brushed off or it will smoke the next charge. With the France kiln there is no sweeping; the hops are taken off when first dry, no flour falls through and the hops are left whole; the next charge of hops is put on, and the heat is mostly saved, the fires not being allowed to go down at all. Two men have charge of the drying, where the kiln is run all the time, each working half the time. The hops should be left on the cooling floor, where they are thrown, until the next charge is nearly done; they are then shoved back a little, to make room for more, and so on until they get into the bins at the end of the room, two or three charges being in this way kept spread as much as possible all the time.

When the hops have been neglected by the dryer going to sleep, or any other cause, they become too dry, which is known by their feeling harsh, and most of the stems snapping. Shut the air holes, put a quart or a little more of salt upon a pan of coals in the stove room, and let the charge stand a short time—this will toughen them.

It is best to have pickers enough to keep the kiln running all the time. Be careful to get hops dry enough.

BALING AND PRESSING.—The baling should be done in from four to six weeks; we usually take a rainy time when nothing else can be done, as then hops handle best.

The Harris Press is the best I have ever seen for baling hops—it is made by Seneca Gifford, Waterville, Oneida Co., New York. It is cheap and good—costing now but fifty dollars. Baling cloth is made on purpose for hops. A good quality should weigh about one and one half pounds per yard. Never use Gunny-cloth nor Burlaps. Twine for sewing should be small, strong and free from bunches, so as to sew easily; the needles used are common bent sail needles. A dozen pointed iron skewers are wanted to hold the cloth while sewing—use tallow instead of wax upon the thread, so that it will slip easily.

Cut the sacking for the bottom piece one yard longer than the bottom of the press, and the upper one six inches shorter; save one piece of each kind until the last bale, for a measure, so as to have them all uniform. When a nice hop is grown, it should be kept as whole as possible. Have side boards to fit in from the top of the press to a trap door in the floor of the stove room, and a wooden box there of the same size to shovel them into. The side boards to come out when the hops are below them. Take care to fill the corners of the bale full, so as to make a square handsome package. Bales are all the same size, weighing from 150 to 240 pounds, according to the degree they are pressed and how well seeded they are. The baled hops, if kept stored long, must be in a dry room set on end, and a few inches apart, so that the air can circulate between them.

SELLING.—When hops are high, almost any will sell, but when they are low only the best sell readily. At two years old they are worth but half price, and are worthless at four or five years. Always sell the first year. By keeping the run of the market, both in this country and Europe, the grower can form an intelligent opinion of what the price should be. It varies from eight cents, at the lowest, up to fifty or sixty cents, as at present, for very fine qualities, but the average for the last 40 years has been 17 to 18 cents. The cost of raising in the manner described is from 4 to 6 cents per pound. The average crop all through the country is near 1000 pounds per acre (when the work is well done), but I have seen 2500 pounds per acre raised on a large yard. On two

large yards in Morris, Otsego Co., N. Y., the average for four years past has been 1700 on one, and 1800 on the other, both being trained on strings.

INSECTS.—For two years past, the hop crop has been very much injured, even ruined in some places, in New York, by the Hop Louse. This comes early in July, and unless prevented, it increases until it ruins the crop. I insert from Harris' "Insects Injurious to Vegetation" a part of the description:—"The winged plant lice provide for a succession of their race by stocking the plant with eggs in the autumn; these are hatched in due time in the spring, and the young lice immediately begin to pump up sap from the tender leaves and shoots, increase in size and in short time come to maturity; in this state it is found that the brood without a single exception are females, which are wingless, but are in a condition to continue their kind immediately. Their young however are not hatched from eggs, but are produced alive; and each female may be the mother of 15 or 20 young lice in a single day. The plant lice of this second generation are also wingless females, which grow up and have their young in due season—and thus brood after brood is produced even to the seventh generation or more without the appearance or intervention of a single male through the whole season. This extraordinary kind of propagation ends in the autumn with the birth of a brood of males and females, which in due time acquire wings and pair. Eggs are then laid by the females and with the death of these winged individuals, which soon follows, the species becomes extinct for the season."

The bark of poles, and any old rubbish, vines etc., in the hop yard, will be covered with the eggs of these plant lice. When sawed stakes are used and coated with gas tar, not an egg will be laid on them. The old vines should always be burned up in the fall.

The enemies of the louse are the Lady bug (Coccinella) while in the larva state. It is a small flattened grub, of a bluish color, usually spotted with red or yellow, and has six legs near the fore part of the body; "they are hatched from yellow eggs laid among the lice in clusters". Another is the grub of a "golden-eyed lace winged fly"; "it is a long slender grub with a pair of large, curved, sharp teeth". Harris says it will kill one louse a minute—"its eggs are on short hairs among the lice". "Small two winged flies, black, with yellow bands, lay their eggs among the lice—they make maggots which destroy large numbers."

By taking care to save what are found of these, I think the lice will be kept down so as not to ruin yards as is done in some cases now. Every hop grower should have Harris' book. The insects which prey on his crops are described there, with some hints towards their extermination. Ants should be kept out of the yard as much as possible; they are said to take care of the lice, while they are few, and transport them to vines where there are none. Drive away by coal oil or gas tar put on their hills. After the first year, Lady-bugs and other enemies of the lice increase so much as to save the yard from much damage. There are several Caterpillars which live on the hop vines, but I have never seen them plenty enough to do much damage, except the one which lives in the ground and eats the roots and the vine near the surface.

If the grower examines the hop yard closely, he will soon learn to tell his enemies from his friends. Crows and other birds are of great use in eating beetles and grubs, and snakes also devour large numbers of them. Last spring, I found more than half the hills in our yard dug into by skunks, searching for the grubs, and where they had been I could find no grubs. The little harm they do in sucking eggs, is far more than made up by their work. A family of skunks will do as much towards taking out grubs, if you will protect them from the dogs, as a man can do. They work in the night.

Barn swallows were on our yard last summer all the time and appeared to live there, going only from the barn to the yard, where they got their whole living.

MANURING.—Every fall the yard should have two forkfuls of coarse manure on top of the hills, partly as a protection to the vine, and from the first to the middle of July it should have as much, or, if the ground is poor, more well rotted fine manure, which has been fermented enough to kill any seeds which were in it. This should be put on, and covered immediately with an inch or two of dirt—ashes are often mixed with the manure, but I prefer using them with lime on the surface of the ground. I have seen plaster used with good effect. Old bones are good to bury in the yard, where any amount of them can be had. So also are the sweepings of blacksmiths' shops. In this country hops are now mostly raised in Central New York, some in New England, and a few in the Western States. I have seen them growing wild in Iowa, Missouri, and Kansas fully as fine as the cultivated ones; they grow wild on all creek bottoms, where the soil is not overflowed in the winter, and where they are not killed by fire, producing best in those bottoms formed by the wash of limestone hills. The few yards in Iowa and Wisconsin produce large crops of the best quality of hops.



American Merino Sheep.

The engraving herewith presented is a portrait of a pair of ewes, bred and owned by Mr. George Campbell, of Westminster, Vt.,—the breeder who gained for American Merinos so much credit at the Hamburg World's Fair, in 1863. Twelve of his sheep, competing with the best flocks of Europe, took two first prizes, for length of staple and weight of fleece, notwithstanding the number of entries in the Merino class was 913. This breed of sheep, then for the first time brought prominently before the public, have very rapidly risen in favor, and the American Merinos, especially as bred in Vermont, are greatly sought for to improve flocks of fine wool sheep all over the world. Among the older and most noted breeders are Mr. Hammond, Mr. Sanford, the Messrs. Cutting, Mr. Wright, Mr. Saxton, and others, in the Western portion of the State, and in the Eastern part, Messrs. Campbell, Cushing, Bridge, Perkins, Fuller, and others—the great pioneers in the improvement of the original Spanish Merino. These flocks principally originated from the early importations of Col. David Humphreys, of Connecticut. Mr. Hammond and others, in Addison Co., made their purchases of the Humphreys' stock of Mr. Stephen Atwood, of Connecticut, principally in the years 1844 to 1846.

These sheep have been so much improved, by Vermont breeders chiefly, that at a late meeting, held at White River Junction, for the purpose of forming a New-England Wool-Growers' Association, it was thought proper to give them the name Improved American Merinos, in place of Spanish Merinos. This Convention passed the following resolution:

"Resolved—, That in consideration of the great advance which has been made in the breeding of Merino sheep, in the United States, since their first introduction here, we hereby agree to adopt the name of Improved American Merinos, as most appropriate to the thoroughbred Spanish Merino sheep of these States, and we recommend that this name be adopted by agricultural societies in offering premiums."

The improvements are in their form, constitution, and fleece. Formerly the wool on their bellies was short and thin, and there was scarcely any on their legs. At the present day, they are much stronger made, of better form and proportions, and are thickly covered with wool down to their feet. There is one disadvantage in having the sheep so thoroughly clothed on every part with wool, viz., that before dropping their lambs it is necessary for the shepherd to cut away the wool from the udder, so that the lamb may be able to find the teats. If the wool is left on, and the lamb left to take care of itself, in many instances it would perish. These circumstances would not be as liable to occur in summer as in winter, for the reason that nature has provided a remedy. After the sheep go to grass, the greater flow of milk, with the warm weather, causes a little feverishness in the bag, and the wool starts off, leaving the teats free.

March and April Lambs.

In order to raise lambs as early as March and April, the ewes should be in good condition. To have the lambs dropped strong and healthy, the ewes should have had plenty of gentle exercise. To make them grow, good early cut hay should be provided,—clover is best for milk. For grain, feed oats, shorts, and oil-meal, and, if possible, provide plenty of roots, of which beets are best. A warm barn or shed is of importance, for no prudent man will attempt to have early lambs without a comfortable place for them.

A few small pens, sufficiently large for one sheep and lamb, say 3½ by 3 feet, ought to be provided, and as soon as the lamb is dropped it should be put, with its dam, into one of these pens. If the wool has not already been cut away from the teats, this must be done at once, if necessary, and the shepherd should see that the lamb sucks. After remaining separate from the flock for a day or two, if the lambs become strong and suck well, they can be taken out and put with the flock of ewes with young lambs, leaving the pens for younger ones. It is not well to allow ewes with lambs to run with

those that have not lambed.—To make the small pens, take sound boards and match them together, so as to make the pen 2 feet 8 inches high, 7 feet long, and 3½ wide. Make a little feed rack, 1 foot wide and 3½ long, and set in the center, and you have two good pens 3 feet by 3½ each. If the weather is unusually cold, make a cover to these pens and cover them over when you have fresh lambs,—they need no bottom.

After the lambs are three weeks old, they should be separated from their dams a part of the time. This prevents the lambs from learning to eat wool from the sides and legs of the sheep, as they frequently do when left to themselves. Another advantage in separating them is, that they can be fed with a little grain and roots and a few choice locks of hay, all of which they will soon learn to eat. The ewes will also do better when the lambs are kept away from them a portion of the time each day.

To separate them, let the shepherd stand in the doorway, with the door open just enough to let one sheep pass out at a time; a boy going behind the sheep drives them out while the shepherd keeps the lambs back. If the sheep are well trained, they will readily pass out, and the lambs will learn to stay back. If they have not been handled much, and are inclined to be timid, be gentle with them, and in a short time they will learn their duty. Good lambs can be raised at any time in winter, by the above plan.

Look Out Early.

Several indications point to a pretty large demand for implements, seeds, trees, etc., the coming spring and summer. Money is more abundant than labor; labor is high, and implements have not advanced in price so much as farm products. Any thing that will help out work, and increase the products of the soil, will be eagerly secured by sensible farmers. There is a possibility, rather a probability, that considerable portions of some Southern States may be sending for implements which they formerly procured mainly from the north. So there is danger of a short supply. The suggestion we

would offer is, that enterprising men (and our readers are all of this kind, of course), should be on the lookout early. This month they can cast about, discuss with their neighbors the utility and value of different implements and kinds of seeds, correspond with dealers and manufacturers, and examine their advertisements, catalogues, and circulars, which are usually furnished free, for a stamp or two, and in this way get ready to order early. The last pages of this paper probably offer the most complete Directory to a class of good dealers that can be anywhere found.

Reclaiming Bog Land.

A correspondent of the *Agriculturist*, writes over the signature of "Hermon," communicating the following practical hints, and promising more on the subsequent treatment of the reclaimed bog land.

"Reclaiming swamp lands is of importance at all times, but especially so, when the price of hay is such, as to render the undertaking doubly remunerative, especially as the immigration of foreign laborers is greater now than usual, and they can be employed by the month, to perform the work, and also be at hand, when harvest or other business requires a full force of hands.

I propose to give my experience during a few years past, that others may try what has been a benefit to me, and to caution them to avoid errors that I have fallen into. During the winter is the time to make arrangements, engage help, survey the swamp to find the full descent, determine the number and location of the principal ditches, and have tools and every thing in readiness, so that no time need be lost after the weather becomes fit to commence operations. The prime requisite is a main ditch of sufficient depth with a slight and uniform fall, to secure which, it is often necessary to begin the outlet ditch many rods from the lower part of the land to be drained. Hence the propriety of having a competent man to determine the actual descent in the land to be dug across, in order to find at what distance it will be requisite to commence, to obtain the desirable depth and fall.

Cutting the main ditch is the first business to be done, that the swamp may become dry enough to admit of cutting and burning the bogs before the season is far advanced. Do not be afraid to dig the outlet deep enough and wide enough; better begin a little farther off than appears right, thereby securing an extra depth to compensate for the settling of the land, as it parts with its water and becomes more firm and solid. The ditch should not be less than four feet deep, and if the swamp is large, five would be better; for the water should have greater fall in ditches, especially in blind ones, than the general surface of a swamp presents, so that when the drains are dug to their termini, they will be a little more than three feet deep, shallower than which, no blind ditch ought to be, if a greater depth can be obtained. None of the earth thrown out of the main ditch should be left to press upon the banks, making them more liable to fall in, but should as soon as practicable be moved back with a team and scraper, spreading evenly as possible, for the earth and marl from the bottom frequently form a valuable amendment to the surface soil. In scraping, try to improve the shape of the banks by rounding off the edges; this removes a part soon acted upon by the frost and thrown into the ditch, adapts the surface better to the scythe, and gives it a finished appearance.

All ditches to remain open should be dug with very slanting banks; but those to be filled should be dug square down, which involves less labor. In some places tiles are used to form a passage for the water [and are generally to be recommended. ED.], but when small stones are abundant, it is customary to use them, thereby clearing them from the surface of neighboring fields. When stones are used, they should be put in so carefully, as not to break or jar down fragments of the banks. Always begin to fill in stones at the highest point, that is the upper end of the ditch, and never allow one larger than one's fist to be within a foot and a half of the bottom; some use a sledge to break any that are too large, throwing in the pieces. Two feet is a suitable depth to fill with stone, and the best possible covering for them is the small bogs and wild sods of the swamp. These, stamped down, will keep the dirt in place and not be touched by the plow when breaking up ground.

If help enough has been employed, the bogs should be all cut and burned, except those needed for ditches, and much of the ground plowed by the time the blind drains are completed, which should be in time to sow buckwheat, and before you need the hands in the hayfield."

The White Willow.

The season of the year approaches when willow cuttings are best set. The White Willow should not be indiscriminately recommended for all soils, nor at all for *hedges*, properly so called. Its chief value, no doubt, is upon the moist, rich, naked prairies, where for *shade*, *wind-breaks*, and *wood*, its rapid, clean growth will commend it; sometimes, also, it will be found useful for these purposes where timber abounds. On low, moist grounds, common hedge plants usually fail, and ordinary fences are often liable to be washed away, while the willow will thrive and may be so set as to form, in a few years, a permanent, living tree fence, which will turn cattle, stop ice and drift wood, and make itself generally useful. The Yellow, or "Golden" Willow, will grow equally well, but it is less hardy, not so erect in its habit of growth, nor so useful for timber—that is, for fencing stuff, etc. The White is more highly esteemed also for basket making, though inferior to the Osier Willow in this respect. It is for the open prairie country of the West that its good qualities are most apparent, and our views, in regard to the value of the White Willow, for live fence, soft timber, wind-breaks, etc., as expressed more than a year ago, have only been confirmed as testimony has accumulated. There has been much disappointment, it is true, among those who have bought the cuttings and set them out for hedges or live fences. Too many small cuttings have been planted, and not unfrequently frauds have been practised, and cuttings of other sorts furnished for the White Willow; but the great cause of disappointment has been poor preparation of the ground before planting, with poor care afterwards. This, in connection with the dry springs and summers we have had, was enough to ruin the prospects of many plantations which might have done tolerably well if they had had to contend with either neglect or drouth singly. So far as we have been able to ascertain, no fence well planted and attended has failed to answer reasonable expectations, if on soil adapted to the White Willow.

Good strong cuttings, of a foot long, ought to be secured, and the ground should be plowed at least four feet wide, turning the furrows together.

We would use a double plow, and put it down 10 inches,—and it would be all the better to run a sub-soil plow 10 inches deeper through the center furrow. The cuttings being set as early as the ground can be worked, and cared for as well as a row of beans, the weeds being kept down, and the ground open and loose, we should expect very few to miss, and few not to make a good growth. Our recommendation for the willow is only for locations and uses to which it is especially adapted. For our views in regard to other trees, and the great importance of growing some kind of timber on the prairies, we refer to an article on page 86.

Side Hill or Horizontal Wells.

The title is strange, and the idea doubtless a novel one to most of the readers of the *Agriculturist*. It is well worthy their consideration. Mr. W. H. Gardner, of Muskegon Co., Mich., thus writes: "One would think from the invariable rule of digging *down* for water, that it could be found in no other direction. In many localities it may as readily be found by *digging up*, as down, and the labor of drawing water ever afterwards saved, as well as much of the labor of digging the well. We have seen many wells in the States of New York, Wisconsin, Michigan etc., which could have been started horizontally into the hill-side, and reached water within but little greater distance horizontally, than was dug down into the earth perpendicularly to find it. A horizontal well has the following advantages: It can be dug at any time or season; the earth can all be taken out in a barrow, however far horizontally the "level" is driven; a great saving of labor and time; by keeping a gentle ascent from the opening, the water will *draw itself*, running out as from a natural spring; they are more easily stoned, less dangerous, and can be deepened at any time. The question which first suggests itself is: where can such a well be dug?—We answer: anywhere, at the foot of a bill of forty or more feet in height, or on the side of a hill. In sinking shafts in mining, or digging railroad tunnels, water is very readily and almost uniformly found, digging horizontally, and often in great abundance—the horizontal shaft cutting off more of the veins of water percolating through the earth, than a perpendicular one would." It is a matter of common experience where extensive draining operations are carried out, that living springs are cut so that water flows perpetually from the drain. When no such permanent sources of water are encountered, the flow from drains may be made to supply all the needs of a family and stock yard, except for a few months in the heat of summer.

What of the Ailanthus Silk-Worm?

A few years since much interest was excited in France, by the introduction of a new silkworm (*Saturnia Cynthis*), obtained from China, which fed upon the Ailanthus, and produced a coarse but strong silk. The insect was figured and described in the *American Agriculturist*, Vol. XX., page 81. A few parties in this country experimented with the insect, and it was hoped that their efforts would be successful. Such, however, appears not to have been the case, as will be seen by the following communication from Rev. Jno. G. Morris, D.D., Librarian of Peabody Institute, Baltimore:

Dear Sir: In answer to yours of the 19th, I would state that I *now* believe the cultivation of

the Ailanthus Silk-worm can not be successfully pursued in this country. I have tried the experiment for three or four consecutive years, and, to my chagrin, discovered that the worm degenerates; that multitudes perish without any assignable cause,—that they do not copulate freely, and thus thousands of unimpregnated eggs are laid. I do not know why it is, considering that our climate and that of China are so similar, but I have abandoned the work in despair, and, indeed, I believe that the whole race is extinct in this country. Guerin de Menéville's experience in France is precisely the same. I have a letter from him stating that, whilst for the first few years, the worm thrived in Paris, and a great deal of Frenchy fuss was made about it, companies established, and whole plantations of Ailanthus laid out, yet that the whole affair is "a failure," and he could not supply even a few eggs and cocoons. And yet, I should like to see some one else undertake it, and probably, by proper application at the Jardin des Plantes, in Paris, a few cocoons might be procured. As for myself, I have entirely given it up, and think that a good, substantial, though not as glossy and fine a silk, can, without any trouble, be raised from two of our native moths, viz., *Attacus Cecropia* and *A. Polyphemus*.

Milk.—Labor.—Beef....III.

The profits of raising neat cattle depend upon their many different products, which alike influence the modes of farming, and are reciprocally influenced by them, as well as by soil, climate, market, etc. The title of these articles does not, by any means, express all the sources of profit, but only imperfectly classifies them. Under milk are included all dairy products, even whey-fed pork and chickens; and under beef, of course, veal and hides, tallow, etc., etc., which all beef cattle, sooner or later, come to. In connection with all stall-fed or stabled animals, another product not included in our enumeration, ought to be considered, viz., *manure*—that product without which, in many parts of this country, and still more in Europe, it is impossible to realize any profit from keeping cattle. This most important problem is therefore presented to the farmer, in connection with whatever object he feeds cattle for:—to secure the largest quantity of manure, and of the best quality, consistent with the amount of labor he can afford to lay out for this purpose.

In Some parts of South America, and perhaps still in California, cattle are herded and cared for, for the sake of their hides alone, or for their hides and tallow. In Texas, their beef has value also, and so throughout the prairie States, at present, cattle are raised for beef—in some districts, the chief business of most of the farmers being to raise young cattle, which are sold to others, who fatten them for market.

Here it is that some of the steers must bear the yoke, and cattle are worked two or three years, or until their sale is likely to be too much affected, when they are put off to the feeder. As we approach the longer settled States, or come into the neighborhood of large cities, the demand for milk, and the improved modes of farming, which render it possible to make butter and cheese with profit, lead farmers to value the dairy qualities of cows in proportion, while the feeding and fattening qualities of the different breeds are not less prized than elsewhere, nor is the fitness of the males for the yoke overlooked even in such districts.

There are two classes of working oxen, namely, those required and adapted to draw heavy loads, at a slow pace, and those of an active, sanguine nature, quick walkers, and fitted to draw moderate loads, at a brisk pace, and to throw themselves with great vigor into their work. Between the two extremes there is every variety of course. As a type of the slow, powerful ox-team, we have the short-horns, or rather grade short-horns,—cattle of magnificent proportions, getting their full growth and perfection at about 5 to 6 years old, weighing from 3,000 to 4,000 pounds per pair in good working order, and being serviceable 5 years longer, but if worked much more than this, liable to be laid up a good part of the time from some ailment coming to one or other of a pair. The longer they are worked, the poorer beef they make; for though they fatten readily enough, yet the beef is tallowy, and will not bring so good a price as that of younger animals. There is, indeed, a great difference in oxen, yet it is especially true of the short-horns, and their grades, that the period of making flesh and fat together passes away at a comparatively early age, leaving a capacity to fatten, but not to make marbled beef.

Among the mongrels which go by the name of "Natives," we not unfrequently find light pairs of cattle, which for spring, quickness, and nerve, can hardly be excelled, but nevertheless, the Devons, as a breed, are decidedly superior to all others in this respect, and very handsome. They are usually put to light work at 3 years old, but do not get their full growth and strength before they are 7 or 8. They remain serviceable for many years—if well treated, may be worked till 16 to 20 years old, though this is seldom done, because with age come infirmities and inaptness to fatten readily and uniformly. For ordinary farm work, especially if they are to be used much on the road, a pair of red cattle three-fourths or seven-eighths Devon, and weighing together 2,200 to 2,600 pounds, is about as pleasant a team as a man can have or desire.

The white-faced Herefords, and their grades, make powerful oxen, not so lazy nor so tender as the short-horns, nor possessed of anything like the snap and vivacity of the Devons, but excellent for common farm work. For cattle to sell, large pairs of short-horns, 4 or 5 years old, well matched, with as much red as possible, and weighing above 1,500 pounds apiece, are perhaps most profitable, at any rate, they bring the highest prices; but the smallest Devon cattle, of bright but dark mahogany red color, with long white horns, well matched in looks and weight, and turning the scale with something over a ton to the pair, are the farmers' favorites, especially in the hilly sections of the country.

Bad Management in Cultivating Oats.

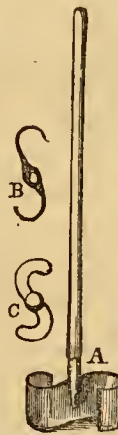
The system of management which is adopted very extensively in many parts of the United States, is decidedly bad, not only for the immediate pecuniary interest of farmers, but for the productiveness of their farms, and for the country. It is bad for *farmers*, because they receive only a light crop, when their soil is capable of yielding, in many instances, twice as much as it has formerly produced, with the same amount of cultivation. It is bad for the *soil*, because it is kept in a very foul condition, which, of course, renders it less productive. And it is bad for the *country*, because field agriculture is the great motive power of the nation, and anything that tends to diminish the quantity of grain will

tend to cripple the resources of government.

We refer, particularly, to the practice of growing oats for many years in succession on the same soil, by plowing it only once, and seldom returning anything, in the form of fertilizers, to compensate for the crops that have been removed. Thousands of acres of excellent land for agricultural purposes are cultivated in this way, until Canada thistles, wild mustard, horse dock, and many other noxious weeds have taken almost entire possession of the soil; and one of the worst features in this system of management with the oat crop is, all the weeds mature their seed before the oats are ripe enough to cut, and enough is shelled out, when the oats are harvested, to seed the soil for seven years to come, and the Canada thistle seed is blown all over the country. In all such localities, if farmers will discontinue oats, and raise a crop of Indian corn one year, and a crop of buckwheat the next season, and apply all the manure they are able to make, they will soon find that it will be far better, and more profitable, to adopt some short rotation system, even where oats *have been* considered the most profitable crop to raise, for several years in succession. It is quite impracticable for a farmer to avail himself of the great benefits arising from clean cultivation of the soil, when it is plowed only once each year, and then in the spring.

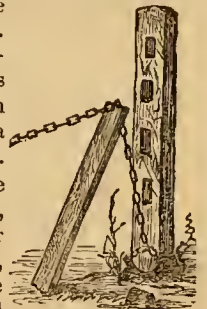
ROOT CUTTER.—We advised the use of a

spade to cut roots in our last issue, not because it is the *best* thing, but because it is one of the handiest. Here is a very simple contrivance for cutting roots which can be made by any good blacksmith. It consists of a knife in the shape of a letter S, (A, and B, in the figure), a handle being inserted as shown in the accompanying cut. At C, is shown a form of double knife preferred by some, and no doubt capable of doing more rapid work. These knives are much in use in Germany, and the engraving is from a sketch made there some years ago. Where many roots are fed, it will pay to procure some one of the machines, made specially for this purpose, which cut beets, turnips, or carrots in thin pieces, and very rapidly. They cost all the way from \$15 to \$50, or more.



Removing Fence Posts.

When posts have been a long time in the ground, it is a difficult matter to remove them in the usual way, by working with the crowbar and spade, especially if they are largest at the lower end. Mr. R. S. Hubbard, of Middlesex Co., Conn., suggests a plan for removing them very easily with the aid of a yoke of oxen and chain. The chain is hitched to the post close to the ground, and passed over a post or stout plank three feet long, which leans toward the post to be drawn. A pull of the cattle upon the other end of the chain will easily lift the post. The drawing will show the manner of arranging the chain.



Most men will have a living if they die for it.

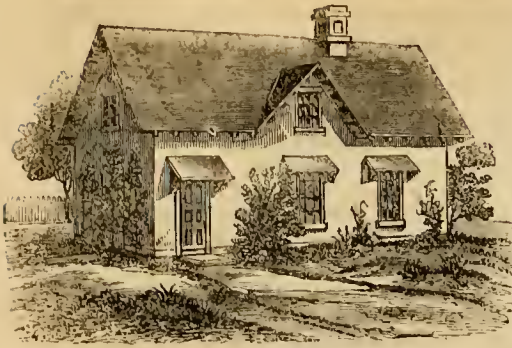


Fig. 1.—COTTAGE.

Small, Convenient, Cheap Houses.

BY NARRAONSET.

Snug, convenient, and cheap cottages, for people of small means, are a great desideratum. They who have wealth in abundance, can build large houses and provide for every luxury. But is it impossible that the poor man should have a comfortable, convenient home? From the many ill-contrived, small dwellings that have been carelessly thrown together for the discomfort of those who inhabit them, it might be inferred that, in the poor man's vocabulary, were no such words as "comfort" and "convenience."

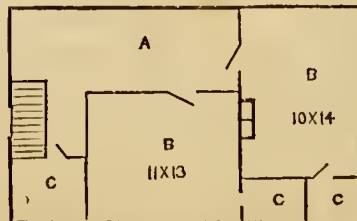
Because a house is small, it need not be inconvenient. But to combine desirable conveniences within a limited and economical space, requires more thoughtful study than where an abundance of room is at one's command. And this thoughtful study the poor man often has not time to bestow; those he may employ to construct his dwelling may be too incompetent or indifferent to supply it, and the result is, that when the building is completed, it is lacking in many of those little contrivances which so much contribute to the comfort of a family, and which, if seasonably provided for, might have been enjoyed without any additional cost.

There have been, from time to time, many little bits of fanciful architecture placed before the public, under the style of "Cottages for the Poor;" but, while charming to look upon exteriorly, they have, for the most part, *within* been destitute of those essential features that contribute to the real wants of those who would live respectably, but who *must* live economically. With no disposition to disparage the attempts to make a house externally attractive, we deem it of still higher importance to provide for its interior convenience; but we believe that neither point need be sacrificed to the other.

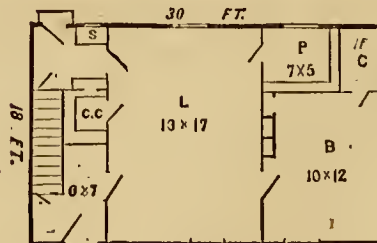
In illustration, we present a plan for a cottage, adapted to the wants of any laboring man, with a family of four or five children. In this plan, covering 18x30 feet, we have the following accommodations:—A large living room (L), serving as parlor and kitchen; a good sized bedroom (B) opening from it, with a clothes-closet (C) of good dimensions,—a convenience often wanting in small houses,—and a snug little closet, with shelves, by the chimney. There is a spacious pantry (P), where stores may be deposited, such as flour and meal barrels, etc. On the opposite side of the sitting room is a convenient china closet (CC), with a slide connecting it with the back entry, in which a sink (S) is placed. The window here may be of less dimensions than the others, only furnishing sufficient light for the sink; the space beneath the sink should be closed up as a kettle closet. From the back entry is a descent to the cellar. From the front entry is the stairway to the attic (A), closed from the

entry by a door at the foot of the stairs. Above are two large bedrooms (B, B), each of which is supplied with a good closet, and each, when necessary, can have the comfort of a fire. Over the front entry is a large linen closet (C), which may be supplied with shelves, and used for the packing away of bedding, etc. In the outer attic is a space, such as every house requires, for putting trunks, chests, stoves, etc., when out of use.

Any one who has lived in a house, where, in case of sickness, it was impossible to kindle a fire in a bedroom, for the want of a chimney, will appreciate the conveniences which this plan affords. They, also, who have been obliged to garnish the walls of their sleeping rooms with the various articles of their wardrobe, will understand the comfort and great convenience which the closets afford. And every good housekeeper, though she be peculiarly poor, will know how to value the spacious pantry and convenient china closet. We have made no provision for a parlor, separate from the living-room, for in families whose wants this plan was designed to meet, little use is made of such a room. They ordinarily keep but one fire, and live in one room; and, with the conveniences furnished by closets and pantry, the living-room may always be kept in a present-



ATTIC PLAN.



GROUND PLAN.

Fig. 2.—A, Attic; B, B, B, Bedrooms; C, C, C, Closets; F D, Front Door; L, Living room; P, Pantry; S, Sink.

able condition. With the convenience of a back entrance, the front entry may always be kept clean and neat. It affords space for cloak-hooks and umbrella-stand; and, with a bit of oilcloth upon the floor, may be as genteel as many of much larger dimensions and more ambitious pretension. Against the blind end of the house, (having only an attic window,) if exposed to the south, a trellis might be raised, and a grape vine trained, which would be at once fruitful and ornamental also.

While we have aimed mainly at internal convenience, we think, also, that the exterior of our cottage is not without attraction. What every building requires, to give interest to its outline, is *expression*,—something that shall break up the monotony of a plain, dead surface. This we have secured by the little front gable, the projecting roof, and the simple hoods above the doors and windows,—which are plain pieces of 2-inch plank, supported by the simplest form of a bracket underneath, as shown in fig. 3. These do for the house in regard to expression, what the projecting lines of mouth, chin, nose, and eyebrows do for a man's face. They cast shadows, and thus, though inexpensive, give

character and expression to the building, and impart an interest it would not otherwise possess.

A man's face might be as flat as a board, and his eyes, nostrils, and mouth but so many perforations through it, and they might still answer every absolutely necessary purpose of his physical being. It is the projecting lines of his features, across which play the light and shade, that afford that variety of expression, of the study of which we never tire. By the application of this same principle, a house may be made more interesting than a mere sugar-box. In the above design, the posts should be at least twelve feet, the lower rooms nine feet between joists, and the roof be pitched at a right angle,—as they say, at a quarter pitch.



3. WINDOW CAP.

Gravel-wall, or Concrete Buildings.

No one will seriously consider the erection of gravel-wall buildings for his own use, who is not situated where sand, gravel, and larger stones may be readily obtained. Where these are at hand, the subject is well worth the consideration of every one who is going to build. First, decide who will do the work. If you must trust it all, or chiefly, to a professional stone-mason, brick-layer, or builder of any kind, take his advice and use stone, brick, or wood. If you can attend to it yourself, and, at least, *superintend* the whole, you will do well.

The materials requisite are sharp sand (free from dirt), gravel (free from dirt), and well-burned lime. The presence of stones, even of the size of one's fist, among the gravel, is no disadvantage, and, if not present, they may be added. If, however, no stones of an intermediate size between small gravel and large flat stones exist, as is very often the case, the stones may be broken up, or laid in the wall with the mortar. Such a wall, however, is a departure from the proper concrete wall, though perhaps equally good, if well laid. It may be laid in "flasks," or "curbing," like concrete. The lime need not be of such quality as is necessary for fine smooth mortar; no matter how coarse it is, if it be only freshly burnt, and capable of making a strong mortar. If it sets quickly, so much more rapidly the work may be pushed forward. Oyster-shell lime answers perfectly well. It ought to be thoroughly burned, and unslaked. Do not buy and transport the slaked shell lime with one-fourth of its weight of water.

When the ground is dry, and well-drained naturally, the foundation may be of concrete, made by using one-third good hydraulic cement with the lime. A wide course of flat stones is perhaps the best arrangement to base a foundation wall upon. In case springs are encountered, or the ground is of a wet nature, it is well to lay a tile drain outside the foundation. With proper care, even in such a soil, hydraulic concrete may well be used, but it is usually better to lay a good stone foundation where the soil is very wet.

There are several methods of carrying up the walls, which are worthy of attention. The simplest consists in placing a "curbing" of boards on each side and putting in the concrete thus formed, where it sets. With a little contrivance, corners may be turned very accurately and well. The difficulty with this method is the care requisite to carry up a smooth, even wall, with square corners. Another method,

highly recommended by some who have had experience in this matter, is to construct regular "flasks," or moulds, made, say 3 feet long, 14 inches high, as wide as the wall is thick, and made to take apart easily. In these the concrete is placed, and when it has set, the flasks are removed, and after a few days, these artificial stones become sufficiently firm to be handled, when they are laid in the wall, in mortar, exactly like hewn stones. One advantage claimed for this method is, that the work may go on during storms or rainy weather, as well as at any other time, for it is done under sheds. Other advantages are, that the walls are even, and that they may have more the appearance of stone work—which is perhaps no recommendation. The blocks may be formed round a "core," or cores, and thus the benefits of a hollow wall secured, possessing the advantage of flues for ventilation, and chimney flues, in any part of the house. These, however, are easily provided in the common way of making the concrete wall, at the time it is laid.

Yet another method is to lay up stone or brick "piers," at the corners at least, and perhaps at other points in the wall if it have a great length. Between the piers the wall is laid of concrete, the boards, or "curbing," being kept in place by the piers, so that the irregularities incident to careless work, when no piers are built, are avoided. The use of the blocks of concrete above described, instead of stone or brick, to lay piers, has been recommended, and would, doubtless, be an excellent and very convenient way to secure perpendicular corners and regular walls, without the use of stone or brick. We are inclined to commend this idea, for, if properly carried out, it will enable one to finish the wall very roughly, while the corners and piers are smooth, the effect of which is very agreeable, and the false look of stucco, blocked off to represent hewn stone, is avoided. No matter how simple or elaborate the structure, any false representation is a fault. Wood should be wood, and nothing else, and stone, stone. When we represent stone work by wood, the appearance may be good at a distance, but the near view reveals the fraud. It is only the constant employment of these architectural frauds that leads us to tolerate them. In another article, we purpose to consider the best way to make the "curbing," how to keep it in place, and how to make an even, regular, substantial wall.

Talks About Grass... II.

(Continued from page 45.)

In an article in last month's *Agriculturist*, we gave a description of the general structure of the flowers of grass, and took those of Timothy and Red-top for illustration, they being of the most simple character.

As it is designed to make these articles practical, as well as partly botanical in their character, no particular order will be followed, but we shall notice first those about which most inquiry is made, and endeavor to give such descriptions, divested of such technicalities, as far as the nature of the subject will admit, as will enable one to recognize the species, and also some notes on their uses and culture.



Fig. 3.—RED TOP.



ORCHARD GRASS.—*Dactylis glomerata*. Fig. 5. This is a very vigorous grass, has a perennial root and stout stems, which grow about three feet high, and even five in rich soil. The stems, where the grass does not grow very thickly, are often bent at the base towards the ground, and then rise perpendicularly. The leaves are from 6 to 18 inches long, broad, and rough on both sides. The panicle or flower cluster is of a bluish green, often tinged with purple, and somewhat one-sided. The general appearance of the plant is given in the engraving, where, to economize space, the stem is cut off and doubled up. In order to describe the structure of the flowers, we must employ the terms defined in the first article, and, to aid the description, the spikelet of Red-top used there is reproduced here.

It will be recollected that the parts, *a, b*, Fig. 3, are glumes. What is within these constitute the *floret*, which is made up of the two palea, *c, d*, and the stamens and pistil which they enclose. By comparing this figure of the Red-top with that of the Orchard grass, fig. 6, the difference will, at first, appear greater than it will really be found to be after a careful examination. We have, in the flower of the Orchard grass, the pair of glumes at the base of the spikelet, corresponding to *a, b*, of fig. 3, and inside of them, instead of a single floret, there are three, placed upon opposite sides of a short stem within the glumes. Each of these florets, as in case of Red-top, consists of the palea which are shown here as nearly closed together. The lower palea has rough hairs upon the back, and terminates at the apex in a short, bristle-like point. With a magnifier, five lines, or *nerves*, may be seen upon the lower palea. Sometimes the spikelets, instead of being three-flowered, as shown in the engraving, have four flowers or florets. We have been thus minute in the description of the structure of the flowers of these two grasses, as they serve as types of two divisions of grasses. The Red-top being an example of the general structure of the one-

flowered grass, or those with one floret within the glumes, while the Orchard grass serves to illustrate the *many-flowered* species, or those of which the glumes enclose two or more flowers. The generic name *Dactylis*, is from the Greek, meaning a finger's breadth, and is supposed to refer to the size of the clusters of spikelets, and *glomerata*, its specific name, describes the manner in which the spikelets are glomerated, or crowded together in little bunches. This grass is a native of Europe, and was early introduced into cultivation in this country. There is perhaps no grass concerning the value of which such widely varying opinions have been entertained, a diversity which is owing in good part to the fact that the grass takes on a quite different character according as it grows thickly or thinly. The experi-

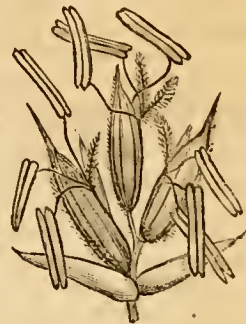


Fig. 6.—ORCHARD GRASS.

ence of one of our editors has been quite in its favor, but the remarks concerning its culture must be deferred until another month.

KENTUCKY BLUE GRASS.—**GREEN MEADOW GRASS.**—**JUNE GRASS.**—*Poa pratensis*.—That this grass should have received several popular names, shows that it is widely known, and also serves to indicate the fact, which botanists have long recognized, that it is a species so changed in general appearance, by soil and situation, that the grass growing in one locality is regarded as a distinct species from the same thing growing in another. Indeed, botanists, who are supposed to be more accurate than ordinary

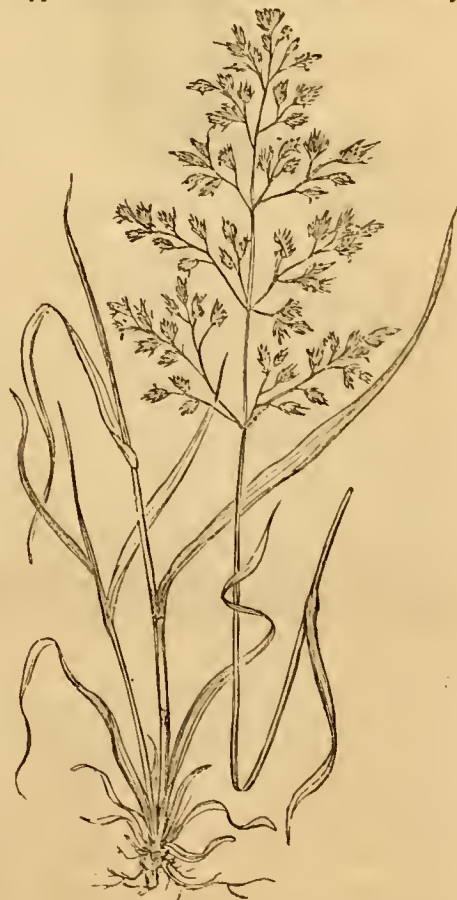


Fig. 7.—KENTUCKY BLUE GRASS.

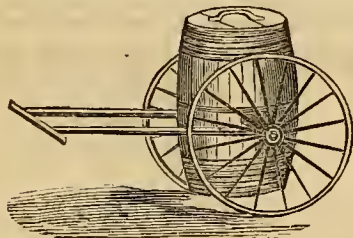
observers, and to be able to give a reason for their views, have called the same thing by half

a dozen different names. The general appearance of the plant is shown in fig. 7. The root is perennial, and throws off numerous and long creeping root stocks, which enable it to form a dense matted turf, and also serve to distinguish it from the nearly related Rough Meadow grass (*Poa trivialis*). The leaves are quite narrow, but their luxuriance varies greatly with the soil in which they grow. The stems are from 1 to 3 feet high, slender, smooth, and round. This cylindrical form of the stem serves to distinguish this from another species often called Blue grass, *Poa compressa*, which has a stem so strongly flattened as to be at once recognized. The form of the panicle, or flower cluster, is shown in fig. 7. Its branches, however, are often five or seven from the same point. The spikelets are one-twelfth to one-sixth of an inch long, three to five-flowered, and of the shape of the magnified one shown in fig. 8. The palea, Fig. 8—BLUE GRASS.

In common with many related grasses, has a tuft of cobweb-like hairs at the base. In addition to the names for this grass above quoted, an intelligent Rhode Island correspondent states, in last month's paper, that he has satisfied himself that this is the grass known as Rhode Island Bent, a name which has usually been considered as a synonym of Red-top. This is a valuable grass, and, on account of the dense turf it makes, is especially adapted for lawns. But our remarks on the agricultural value of this, as well as of Orchard Grass, must be reserved for another article.



Fig. 8—BLUE GRASS.



A Convenient Portable Swill-Barrel.

The accompanying illustration represents a Portable Swill-Barrel, evenly balanced on a pair of light wheels, which ought to be about 3 feet in diameter. The spokes and felloes of the wheels should be made of the best timber, in order to secure great strength and lightness. Dress out a stick of tough wood for an axletree, about 2 inches square, and make an axle-arm on each end of it, to fit the wheels. The length of the main part of the axletree, between the wheels, should be about 30 inches. Make a square mortise through two opposite sides of the barrel, just large enough to receive the axletree. Let the work be done neatly, so as to secure a good fit, and calk the cracks with tow, or with the strands of a rope picked to pieces. Two straight sticks for thills, with a cross-piece connecting the forward ends, are bolted to the axletree with small carriage bolts. The axletree should pass through the barrel, a little below the bilge, provided the wheels are high enough to swing it clear from the ground.

The advantages of such a portable swill-barrel will be readily appreciated by every one who desires to keep the offensive odor, which always arises from the piggery, at a distance from the dwelling house. The barrel, wheeled to the door of the kitchen, may receive the swill, and can then be trundled back to the piggery.

Thus we dispense with all the disagreeable handling and spilling of swill, unavoidable when a swill-barrel is stationary and the swill is carried in pails from the kitchen to the sty. Another very important consideration is, that if an inclined plane be made for the wheels to run upon, the contents of the barrel may be poured directly into another barrel, or into the feeding trough, by simply elevating the shafts so as to turn the barrel over backwards. A barrel may be supported on wheels in this manner, for the purpose of carrying water to stock of any kind, or for any other purpose where it is usual to carry water, liquid manure, etc., in pails. A lid should fit the top of the barrel closely, to keep the liquid from slopping over.

Tim Bunker's Raid Among the Pickle Patches.—(Concluded from page 46.)

MR. EDITOR.—I began to give you some account last month about the way Noadiah Tubbs raised pickles up in Westchester County. I wanted your readers to hear him out, for when you get an old farmer to talking on a subject that he feels at home in, he always has something to say worth hearing. Daniel Webster learned something about growing turnips from the farmers of Old England, and a very plain boatman taught him in codfishing. Diah's morals don't exactly square with my notions, but I am willing to own that he knows more than I do about raising pickles. So you may just imagine that he sits there cocked up in his flag-bottomed chair in the corner, squirting tobacco juice into the sanded spit box and "pickle edication" into Tim Bunker.

"I wonder you don't cultivate your crop more, what is the reason?"

"Wal," said Diah, "There's two or three reasons. You see, you don't plow the ground till the weediest part of the season is over, about July 1st. Then the cultivating comes along the last of the month, and before it is time to cultivate agin, the vines are in the way. And besides I allers sow turnips at the time of cultivating, to take the ground when the vines have done bearing. And in this way I often get a half crop of turnips and kill two birds with one stone, if not more; for the turnips take the place of weeds, don't tax the ground any more and are a great deal better for the cattle."

"I hadn't thought of that, I declare. When do you begin to pick pickles?"

"It won't vary much from six weeks from the time of plautin."

"And how long does the season last?"

"It will hold on for six weeks or more, until frost comes sometimes."

"What do you do to keep the bugs off? I am always pestered to death with bugs on my vines."

"That is pretty easily managed where you have so many vines. Bugs might easily eat up a dozen hills in a garden where they would more'n have their mouths full in a two acre lot. I generally sprinkle on a little plaster as soon as they get up in sight, and if this don't stop the bugs I go over them once or twice more. The plaster is good manure for 'em any way, and I s'pose a pinch of guaner in it would be better still. If I had hen manure plenty I should just as lives have that. I calculate to keep the vines growing so fast that the bugs can't catch 'em."

"That's a good idea. I s'pose that accounts for the fact that we don't see so many vines destroyed in wet seasons as in dry. I never thought of that before. Now I should like to know a

little about marketing the pickles, and as them apples are gittin rather low I'll let you rest."

"I generally make a market for 'em with some pickle maker in the city or over on North river. He agrees to take 'em delivered at the depot at so much a thousand—assorted in barrels. We make three sizes. The big ones are for eating fresh, and I s'pose are sold in market by the pickle men for that purpose. The other two sizes are just the thing for pickles and go the factory. These are the fellers you see in jars in all the corner grocery stores. We pick all sizes together, and carry them to some convenient place under a shed, at the edge of the pickle patch, and there they are sorted and put in barrels and sent off to market."

"How often do you have to pick 'em?"

"Every other day is the rule. But sometimes a rainy day comes and stops the picking, which makes trouble. The pickles git a great deal bigger and it takes about a third more barrels to hold 'em, and you don't git any thing extra for your trouble. Some folks stop for Sunday, but that don't make any difference with me. I never could see but what pickles pick'd Sunday brought jest as good money as any other."

"Wal now I don't believe that suits Esther."

"No it don't. She and the parson and all the children have a runnin fight with me on that subject."

"I guess when you come to foot the bills in the final account, you'll find that all the money you've made by Sunday work has burnt a hole in your pocket and dropped out. But how many men does it take to attend to a pickle patch?"

"You ought to have at least four to the acre, and they'll have to be pretty smart to keep up with the work. It is hard on the back until you get used to it. You can work in boys pretty well, as they don't have so far to bend. You want to pick one half of the patch one day, and the other half the next, and so on."

"What do you make your shed out of?"

"Most any thing will do for that. Four crotched sticks and two poles with rails laid across, and buckwheat straw or any refuse hay put on to make a cover, and shed rain will answer very well."

"How many pickles can you raise on an acre?"

"Well there is about as much difference in pickles as there is in any thing else. Your success depends some on good seed, some on manure, and some on care, and a good deal on luck."

"Just what do you mean by luck?"

"It's what man hasn't any thing to do with. Some would call it the season, and some Providence. I call it luck."

"I guess there is a Providence in the pickle crop as in every thing else, and if the Almighty don't send rain you'll come out at the little end of the horn."

"Well, it may be so. If every thing works right you may calculate on getting about three hundred thousand pickles to the acre. Sometimes I have known 'em to get four, but they must manure high and have uncommon good luck to do that. A good many fall short because they don't understand the business."

"About what do you get for your crop taking them by the season?"

"I sold them last year for fourteen shillings a thousand, but some got as high as two dollars. I calculate I got a thousand dollars for my two acres, and the expenses were less than four hundred, and I had to hire every bit of labor. With good management and luck I should say a man might clear about three hundred dollars to the acre, to say nothing of the turnips which come mighty handy."

"And what is the effect of the crop on the land? For I find that is a matter to be taken into the account. Some crops run the land terrible hard, and if you don't manure high, they'll make a desert of it."

"That's so. Tobacco for instance. I've tried it time and agin, and it like to have spoiled my farm. It took about all the manure I could rake and scrape for two acres of tobacco, and the rest of the land went dry. It ain't so with pickles. They are pretty much all water, and a good deal of the strength of the manure goes over to the next crop. Then if they are well attended to, they leave the ground pretty clean. You see the weeds are all turned under the last of June, and agin, when you cultivate the last of July. Then the turnips sown between the rows get the start of the weeds, and when these are pulled in November, you have a pretty clean field; I have allers noticed that grass and almost any other crop did well after pickles."

Esther's apple dish got low about this time and Diah's pond of pickle knowledge was in the same condition. I pumped him dry.

Hookertown, Conn., } Yours to command,
Feb. 10th, 1865. } TIMOTHY BUNKER ESQ.

Preparing for Field Labors.

During the month of March, farmers should make all necessary preparations for performing the labors of the field, as soon as the soil has become sufficiently dry to be plowed, and the season is right. Even on small farms, as well as on large ones, there is much preparation to be made. Old plows should be put in order, and new ones should be purchased; and it is important that a little effort be made to secure, as far as practicable, those plows that are best adapted to the kind of plowing to be done. Harrow teeth should be sharpened; rollers, cultivators, seed-drills, spades, hand-hoes, and all tools and implements should be put in working order, before the time arrives for using them.

Some farmers are always behind-hand, not only during seed time, but with their haying and harvest; and one prominent reason for it is, their tools and implements are not put in order in good time. Our own practice always was, to have every tool and farm implement in working order several weeks previous to the time when it was to be used.

An English Market Farm.

The London Agricultural Gazette gives an account of one of the large farms which supply that city with food, from which we condense some interesting particulars. The farm is that of Mr. W. Adams, at East Ham, and comprises about 800 acres, upon which he pays rents, taxes, and tithes to the amount of some \$25,000 annually. Seventy horses are employed, and the annual bill for labor exceeds \$30,000. These expenses, together with the amount paid for manures and commissions on sales, make up the total annual payments to about \$100,000 a year. The above amounts are taken by reckoning the English pound at \$5; in our present currency, they would, of course, be more than double. The chief crops are cabbages, carrots, potatoes, and onions, of which, in the mode of culture followed, from six to eight crops are taken in four years. During this four years, the land gets about 120 tons of manure per acre, and at least eight thorough plowings. The land is kept continually at work, the only "rest" it has is being occasionally allowed to produce a

crop of grain or peas. Cabbages are the main product, and of these sometimes three crops are taken from the land during the year. This heavy cropping demands heavy manuring, and 80 tons per acre are not unfrequently used during the year. Notwithstanding the enormous amounts of produce yielded annually per acre, a proportionate amount of fertilizing material being added, the land actually improves under the treatment. The instance given here, and the market gardens near our own large cities, should serve as a lesson to those farmers who scatter a few small loads of manure each year, over a great surface, and then expect large crops.

A Word about Roses.

A pleasant writer on rural affairs, says: "There are recipes in the cookery books for green-pea soup without peas, and turtle soup without turtle, but we know of no recipe for a garden without roses." The Rose needs no advocate, for there is scarcely a person, who, if limited to only one plant, would not select the Rose. The old June Roses are being neglected for the Hybrid Perpetuals, Bourbons, and Teas. Yet we confess to a liking for the old favorites. In their season, they bloom in the greatest profusion, and one has roses enough, and to spare. Then they are so sweet, and smell as roses ought to smell. Still the others have their advantages, and we suppose that our old favorites must stand aside for the new sorts. Whatever kind of roses are planted, they should have a deep, good, and rich soil, moist, but not wet. In old gardens, it is much better to remove the soil to the depth of a foot, and replace it with earth from an old pasture, working in some well-rotted manure. Cut the plants to two or three buds, at planting. The Hybrid Perpetuals comprise some of the finest roses. They are not perpetual, however, but bloom profusely in June, and give a smaller crop of flowers in autumn. The second blooming may be rendered more abundant by picking off half of the buds formed in June, and removing the flowers as soon as they fade, in order that the plant may not exhaust itself in ripening useless seed. Among the standard sorts of this class are, Giant des Batailles, General Jacqueminot, Baron Prevost, Pius IX, Madame Plantier, etc. This class are hardy, but bloom all the better with a slight protection. The Bourbons are tender, and must be protected during winter, but their constant bloom repays the extra trouble, Souvenir de Malmaison, Hermosa, Souvenir de l'Exposition, and George Peabody, are good representatives of these. The China, or Bengal Roses, are also free bloomers; they are adapted to pot culture, as well as to the garden, where they will bloom all summer, and, after being potted and cut back, they will flower in the house. Agrippina, Louis Phillippe, and Mrs. Bousanquet, are well known Chinese sorts. The Tea Roses are of great beauty, and of most delicate perfume, but they are more tender than the others, and must be housed in winter. Among the choice kinds, are Adam, Safrano, La Pactole, Isabella, Caroline, Madam Bravay, etc. The Moss Roses are a distinct class, and are general favorites. The Climbers should not be forgotten; of these is a great variety of Prairie Roses, Ayrshire, Boursalt, etc., all good and desirable. If but one climbing rose can be had, the Baltimore Belle may be selected. In the names above given, we have only indicated some old and readily obtained sorts. There are many others as good, and new ones of great merit are

yearly added to the list. Whatever roses are planted, let them be on their own roots. While it may be that many sorts bloom more freely when grafted on the Mannetti stock, they are only suited to professional gardeners, and people, in general, will find them productive of disappointment. Enough desirable sorts may be had on their own roots, without bothering with the grafted ones.

The Time to Cut Cions.

The question whether cions for grafting should be cut early or late has been discussed to some extent in the agricultural papers, and was the subject of a communication read at a recent Fruit-Growers' meeting. The fact is, that success depends much more upon their proper keeping than upon any particular month of cutting. The cutting should not be delayed until the tree awakes from its dormant condition, as then the bark loses more or less its adhesion to the wood, and is apt to slip in working. The present is a favorable month for securing grafts, and they may be preserved in sand, soil, or any other medium that will prevent them from drying. The writer of the letter above referred to keeps his in saw-dust from green wood. He finds that it contains just the proper amount of moisture to preserve the cions in good condition.

What shall we do for Grafting Wax?

The Crimean war had its influence upon horticulture; the Russian ports being closed, we were cut off from the supply of bass matting, and were obliged to look elsewhere for tying materials. In a similar manner the war of the rebellion has shut up the sources, from which we derived our rosin, and this essential ingredient of grafting wax has become so enormously expensive, that those who have to do much grafting, are looking for a substitute. In operating on small stocks, a wax of some kind is almost indispensable, but on large ones the old fashioned grafting clay may be employed. This was in use centuries before grafting wax was invented, and many old gardeners claim that it is superior to any of the modern compositions. While it is less pleasant to work with, it has the advantage, that it retains moisture, and the cions are not so readily injured by drying, and the wood, to which it is applied, is said to heal over more readily than when wax is used. To make grafting clay or mortar, two parts of clay or stiff clayey loam and one part of cow dung, free from litter, are thoroughly mixed and beaten together, adding some very fine hay, cut short, to give toughness to the mixture. The mass is to be worked over and tempered in the same manner as mortar, adding water if necessary to bring it to a proper consistence. The clay should be prepared some weeks before it is used, and it will be all the better if it is worked over several times. The mass may be made into a compact heap and covered over to prevent drying. If it is disposed to become too dry, a cavity may be made in the top of the heap and filled with water. When applied in grafting, the mass should form a coating at least an inch in thickness and be smoothed off with the hand.

When a man chooses the rewards of virtue, he should remember that to resign the pleasures of vice is part of his bargain.

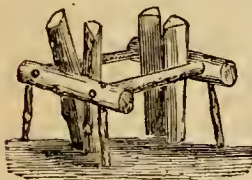
It is much better to sleep in peace on the bare ground, than to lie unquiet on a soft bed.



Preparing Fire-Wood.

In most parts of the Empire State, as well as in some of the Eastern States, many farmers are busy a portion of the time, from January to April, in cutting and hauling their fire-wood for next year. For the most part, it is sawed, split, and piled, during the wet and stormy weather of March and April, when workmen cannot engage in field labors. This is a good practice, and worthy of adoption by scores of slip-shod farmers, who commence a year beforehand to prepare their fire-wood for a year to come, but who are never able to get it split and piled in time to allow it to become well seasoned before it is to be burned. There is much bad management with fire-wood. Allowing it to remain for several months exposed to the weather, after it has been cut and split fine enough for the stove, is a very bad practice; because its quality will be injured, more or less, and it will never make as much heat as though it had been piled under an open shed, as soon as split, and before it was seasoned.

The labor of splitting fire wood for stoves may be greatly facilitated by using a splitting bench, which is represented by the accompanying figure. It is made in the following manner:



procure two small logs, or round sticks of wood, about three, or four feet long, and six or eight inches in diameter. Connect the two logs with a two-inch

wooden round, near each end, as shown by the engraving, so as to form an opening, about ten or twelve inches square. Place this frame on four strong legs, driven firmly into the logs, in the under side. Place billets of wood in the bench, standing on one end, and apply the axe. The object of the bench is to keep the wood erect, while it is being split. When a splitting bench is not used, the workman is obliged to set up the billet every time a stick is split off. Consequently, he will spend as much, or perhaps more time, in simply setting up his sticks, in a proper position for splitting, than he will in splitting them. After a billet of wood has been placed in the splitting bench, a man may split

three, or four of them fine enough for the stove, about as soon as he will be able to split one stick, without using such a bench. The height of the bench should be about two thirds the length of the wood that is to be split. A splitting bench of a different style may be constructed, by using the crotch of a tree, with a stick fastened across the two branches. In using any kind of a wood splitting bench, care must be exercised not to allow the axe to pass through a stick so far, as to permit the *helve* to strike on one of the sides of the bench, as one careless blow would break it. Let the blows be applied in such a manner, that the edge of the axe will pass through the upper end of a billet of wood, and strike the side log.

There are many pleasing incidents and associations connected with hauling wood, in the manner represented by the accompanying illustration. Our thoughts revert to the days of boyhood, when we were accustomed to haul fire-wood with the oxen and "ox-sled." The sled was made entirely of wood, with not a single nail, bolt, band, or strap of iron about it; even the shoes were made of some kind of very hard wood, which had been seasoned not less than one year, expressly for that purpose. These hard-wood shoes were fitted neatly to the runners, and fastened to them with wooden pins. In many of our Northern States, we meet occasionally with one of these sliding vehicles, in all its primeval rudeness, and it will compare with the strong and neat double sleighs, that are now in use, about as the neat and effective steel plows do with the rude bull plows that were in use on many farms about forty years ago. These rude sleds are made by our back-woodsmen in the following manner:—A tree, which has a suitable crook for the runners, is cut down and split into two parts, which are scored and hewed, like sticks of framing timber. Then the beams are fastened to the runners, with wooden pins. All the tools required are a chopping axe, a carpenter's adze, drawing-knife, two augers, and a hand-saw. But improved sliding vehicles have nearly supplanted the "Yankee ox-sled," even in the newly settled portions of the Northern and Eastern States.

Tricks and treachery are the practice of fools that have not wit enough to be honest.

New Varieties of Tomato.

A friend in Massachusetts, who tries all the new vegetables, has at our request given his experience with some of the new Tomatoes. He says of the **VALENCIA CLUSTER TOMATO**: "A flat, smooth sort, of good market size, growing in closely jammed clusters much like the extra early York. It is a handsome tomato, but against it lies the fatal objection of being terribly late—the latest by far of a dozen varieties cultivated last season. Some of the vines exhibited the peculiarity of very light colored leaves at the extremities of the shoots, having a half bleached look, like the head of a Blumenthaler Savoy Cabbage.—**THE COOK'S FAVORITE**. This variety is a very vigorous grower, ripens very early, and is prolific. The foliage is of a handsome light green.

It is an improved sort of the apple tomato, giving a larger proportion of large handsome apple-shaped fruit, than any of the common sorts; the fruit ripening to the stem, and being full meated. The tomatoes are of fine size, and of good flavor. On the whole it is decidedly the best variety of the apple tomato in the market.

EXTRA EARLY YORK TOMATO. This is mostly a flat-round, slightly scalloped form. It is quite early, yields its fruits in clusters. It does not run to vine so much as most varieties, the plants growing to about two-thirds the usual size. It ripens its fruit to the very extremity of the branch. The quality is excellent, and it very seldom decays on the vine. I have found no tomato, in my testing of over a dozen varieties, that will yield so much ripe fruit to a given area as this. This and the Cook's Favorite with some large later sorts would leave nothing further to be desired for standard market tomatoes."

The Yokohama Squash.

Mr. J. J. H. Gregory, of Marblehead, Mass., to whom we are indebted for the Hubbard, and who is acknowledged authority on squashes, sends us the following notes of his experience with the new variety of Japau Squash. "It requires a larger season to mature than any of our standard sorts; it should therefore—in the latitude of Boston—be started under glass. It is prolific, grows to an average size of about 7 pounds, is very dark green, while growing, and begins to assume a dull copper color near the stem and calyx end as it ripens, and gradually turns wholly this color. It is very flat in shape, and remarkably thick meated laterally. The outside of most of them is covered with small blisters, reminding one of a toad's back; there appears to be another variety in which these blisters are wanting. This squash is deeply sutured. The shape of the leaf, the habit of growth, the seed and the quality of the squash ally it very evidently with the Crook-neck family, with which I have no doubt it will cross. The quality of this squash, when fully ripe, is excellent, being very fine grained, having a very smooth taste, sweet and rich, it being like the best specimens of Canada Crook-neck, combined with a nice marrow. It will doubtless prove a great favorite with a large class of persons.

How to Make a Cheap Garden Pit or Frame.

Where anything but the rudest gardening is carried on, some appliances are in use to protect tender plants during winter, as well as to start them into growth earlier in spring than they can safely be exposed without protection. Last month, p. 34, we described the ordinary hot-bed, with its plank frame to support the sash. This may be used, with a bed of fermenting manure, to accelerate growth, by the artificial heat it affords; or the frame and glass may be used, without the heating material, when it forms what is called a cold pit. By use of a cold pit, seedlings may be advanced very materially, as the heat of the sun, received upon the soil within it during the day, is prevented from passing off during the night, and thus the average temperature greatly increased. Those to whom the expense is no object, will have regular hot-bed sash, with a strong plank frame; but there are many who, not being able to afford these, would be glad of a cheap substitute. Any one who can pick up a few old window-sashes can have a tolerable cold frame, or hot-bed, with but little cost. In the *Agriculturist* for December last, we gave an illustration, showing how channels, to carry off water, could be cut in the frames and crossbars of a window sash, when used for garden purposes. The sash being procured, a frame for it may be built up of turf, which, if the sod is good, will not only be durable, but will keep out frost better than a wooden frame. The size of such a frame will depend upon the number of sash at command, and the uses to which it is to be put. For a simple cold frame, to get cabbage and tomato plants earlier than they could be had in the open ground, a frame of sods large enough to accommodate the sash may be built, the pieces six inches wide, neatly laid up, forming an enclosure, the walls of which shall be nine inches high in front and eighteen inches at rear, the front being towards the south. The turf and sash being at hand, the whole can be made in a short time. The frame should be placed on a well drained place, and on rich soil. The earth being well spaded and raked, the sashes are to be put on, and covered in the afternoon, by means of board shutters, straw or other mats, and uncovered in the morning. The soil will, in a few days, become warm enough to receive the seeds; and young plants, ready for transplanting, may be had some weeks in advance of those raised in the open ground. It will, however, generally be better to make a more permanent structure than the one just described, one which will answer for protecting half hardy plants during the winter, as well as for starting seeds in spring. As before, the size will depend upon that of the sash, and it will be all the more satisfactory if long sash, such as is made for hot-beds, can be had. To make a pit; after having determined upon its size, drive stakes at the corners, excavate the earth to the depth of a foot, use sods nine inches in width, and lay them up with care, observing to "break joints" at the corners. The walls may be high enough to give an inside depth of two feet at front and three feet at the rear. The walls should be neatly trimmed, and if a coping of boards is placed upon the top, the structure will be all the more durable. Roses, cabbages, and cauliflowers may be wintered in a pit of this kind, and in spring it may be converted into a hot-bed, by nearly filling it with fermenting manure, upon which is placed a layer of six inches of soil to receive the seeds.



The Chinese Wistaria.—(*Wistaria Sinensis*.)

Those who live in cities, or in those communities where horticulture has made some progress, may think we are occupying space uselessly in figuring and describing so old and well known plant as the Chinese Wistaria. Although it has been so long in cultivation, for some reason or other it has become less widely disseminated than one would suppose, and it has so much of beauty to recommend it, and is so easy to cultivate, that we wish it to be more generally introduced. In older books it is called *Glycine*, but Nuttall found it to be different from that genus, and he gave it a new name, and

dedicated it to the late Dr. Wistar, of Philadelphia. The vine is a rapid grower, and with a little aid will climb almost anywhere. We know of a vine in New-York which reaches to the chimneys of a three-story house. The flowers are borne in the greatest profusion in May, before the leaves are fully developed. They hang in large clusters, and are very much in appearance like those of the Locust, except that they are of a fine light purple. There are a number of old vines in New-York City worth going far to see, when in bloom. The engraving shows the shape of the flowers and young leaves. It will be recognized as belonging to the *Leguminosæ*, or Pea family, which includes the Locusts, Laburnum, and many other ornamental trees and shrubs. Though beautiful under any circumstances, it shows at its best when trained horizontally, as along the edge of a balcony or upon a horizontal trellis. It is well adapted for training to pillars. If allowed to run up a support of red cedar, upon which a foot or two of the limbs remain, the effect is very fine. Though disposed to ramble, it bears severe checking; we have seen it grown to a stake 6 or 8 feet high, and kept closely pinched, showing a mass of flowers from top to bottom. The plant was carried from China to England about fifty years ago, and was for some time treated as a greenhouse plant. It proves perfectly hardy in the climate of New-York and Southern New-England. In those localities where the winters are very severe, it will be necessary to protect it; in this case it should be trained in such a manner that it can be taken from its support and laid down and covered with a few inches of earth. It grows readily from layers and from cuttings. Plants are sold at the nurseries at about fifty cents each. A white variety has been recently introduced, but is rather rare as yet. It has long clusters of pure white flowers, and will, in time, become very popular. Some other varieties are mentioned in the catalogues. A native species, *Wistaria frutescens*, is found in Illinois, Virginia, and southward. This is also

kept by the nurserymen, and, though not so showy as the Chinese, is worthy of more notice than it has received. It has shorter and compact clusters, and often flowers twice in the season.

Early Bearing Apples.

To persons just planting orchards, especially in a new country, those kinds which yield fruit soonest after planting, are very desirable. We note the following:—*Keswick Codling*: This is not a first-rate apple for dessert, but is excellent for pies, and is one of the earliest bearers known. Tender, juicy, sour, of medium size, ripe in August and September.—*Sops of Wine*: A good apple, of middle size, dark crimson, an abundant bearer, ripe in September.—*Spice Sweet*: Large, pale yellow, sweet, tender, good for eating or baking, profuse bearer. September.—*Drop d'Or*, or *Cloth of Gold*: Large, yellow, sweet, with a sub-acid flavor. Early and abundant yield. September and October. To these we may add the *Early Harvest*, excellent for cooking, and, when fully ripe, for eating. All these are not only early bearers, but good, substantial fruit, worthy of a place in the orchard.

Experience with a Cold Grapery.

The following description of the erection and working of a cold grapery, by Mr. Aaron Low, of Essex, Mass., will be interesting to those who wish to erect structures of this kind. The cost of the house, based upon the price of materials and labor, in 1862, was \$160, but this was at a time when prices were much lower than at present. Though a house like the one here described would doubtless give paying returns, the border is too small for the best results. Our correspondent gives a sketch of the routine of the care of the house for three years, but as the whole article is rather long, we give, at this time, his manner of building his house, and the operations of the first year, reserving the remainder of the account for another month:

"After selecting the spot, and deciding that my house should be 50 feet long, by 13 feet wide, I took out the soil to the depth of two feet, with a gradual slope from the back to the front of the pit. I then filled one foot in depth with small stones, and on them a covering of leather chips and clam shells, to keep the soil of the borders from working down and obstructing the drainage. A two-inch tile drain in each corner, and one in the middle of the front side of the pit, running to an outlet 30 or 40 feet from the house, render the drainage complete.

THE HOUSE.—For the back of the house, 9 feet high, stout cedar posts 14 feet long, are set about 8 feet apart, and 5 feet in the ground, so as to be sure to be out of the influence of frost. The 4 by 6-inch plate is spiked on to the head of each post. Girts, 2 by 3 inches, are placed 3 feet apart, on the back side, and let in with a shoulder, and spiked on to each post. The covering consists of hemlock boards, covered with spruce clapboards; the boards running down to the bottom of the pit, the clapboards extending to the ground level.

The front is 3 feet high from the ground level, and has 6 glass windows, 7½ feet long, and 2 feet wide. They are made of 2-inch plank, for the outside frame, with an inch stile running lengthwise, taking two lights in width, of 8 by 10 glass. In other respects, the front is built the same as the back side.

The ends are built the same, except instead of

the cedar posts, spruce joists, 3 inches by 4, are framed into a sill at the bottom of the pit and the end rafters of the roof. There is a door in each end. The one next the street is part glass, the other is a common board door.

The rafters are of white pine, 15 feet long, 2 by 6 inches, placed 3½ feet apart, and matched to front and back plates with a shoulder, and bolted on. Purlins, 2 inches by 2, are mortised into each rafter, 3½ feet apart. They extend through 1½ inches, and are fastened by a strong oak pin, on the opposite side. Four stiles, 1 inch thick, by 2 deep, are placed between each pair of rafters, each resting upon the purlins, being let in with a ½ inch gain, and fastened in place by a nail. There are 5 rows of 8 by 10 glass to each bay. All the rafters and stiles are ploughed ¼ of an inch deep, and the glass, instead of lapping, is slid up and butted, one pane against the other. This is much more convenient than the old method, and, where the glass is true, it will not leak enough to do any hurt. To support the vines, white oak treenails, 10 inches long, are driven into inch holes, bored in each rafter, 3 feet apart; holes ¾ of an inch are bored in the lower end of the treenails, through which common sized telegraph wire is run lengthwise of the house. No. 19 wire runs parallel with the rafters, to fasten the bearing spurs to. The wires are 14 inches from the glass.

The top ventilators are seven in number; one to every other bay, and are made 2 feet wide, and 46 inches long, resting on the rafters on the outside, being hung to the casing of the plate by butt hinges. They are raised by a narrow strip of board fastened by a hinge to the lower inside edge of the ventilator, that being fastened by another hinge, making a loose joint, to a strip of board sliding through two grooves on the back of the house, and reaching down low enough to be convenient in opening them. The front windows are opened when bottom ventilation is wanted. There are two tanks, holding about 600 gallons, one being inside, and connected with the outside one by a lead pipe. The water from the roof fills the outside tank, and is drawn into the other as wanted.

THE BORDERS.—The borders are wholly on the inside, and were made of the top soil taken out of the pit, mixed with pasture turf and muck that had lain in heap six months, with the addition of about a sixth part of fine old manure, and a small portion of air-slackened lime and ashes. The heap was dug over and made very fine, before putting it in the borders, which were but 3 feet wide, and 2 deep. The vines, 34 in number, there being 17 on the front border, and the same on the back, were one year old, and were set out on the 4th day of May, 3 feet apart, and 1 foot from the front of the house. They soon started growing, and as soon as they had made 2 or 3 inches, all but the best shoot were rubbed off. The house was kept quite moist, by syringing every night with water kept in a shallow tank, 1 foot wide, and 3 inches deep, running the length of the house. One great advantage in the shallow tank is, you always have water of the same temperature as the air in the house, to syringe the vines with.

The top ventilators were opened every fair day, as soon as the temperature of the house commenced rising, and were kept open till the latter part of the afternoon, thereby letting the temperature rise and fall gradually. The vines grew rapidly, and were trained carefully to the wires, until they had grown the length of the rafters, when, about the 1st of September, they were stopped, to hasten the ripening of the cane, for next year's fruiting. The borders were

watered once a week, till September, when it was gradually withheld, and the front ventilators opened daily, to give a free circulation of air."

"After the leaves had fallen in November, the vines were taken down, and the strongest cut back to 5 feet, the weaker to 2 feet. They were then laid down on the borders, and covered with forest leaves sufficiently to keep out the frost, and remained undisturbed till spring. The house was kept cool in the winter by leaving the doors open in fair weather.

A Country Parson on the Chinese Winter Radish, and on the Value of a Garden.

The following, from a "New-York Domine," who lives in a village near this city, is given as a specimen of many letters we receive upon the success of small gardens and the pleasure derived from them. The Radish, which he does not too highly praise, was figured and described in September last. The seed is sown in August and September:—"I am a kind of 'Country Parson,' and take great pleasure in cultivating a small garden. I find it a source of recreation and of health, amid other and weightier labors. On the recommendation of the *American Agriculturist*, I procured, last summer, a package of the new Rose-colored Chinese Radish, for fall and winter use. They have proved so good, and I have had such complete success in keeping them, that I want to tell you about them. This radish is so much more sweet and tender than the old Black and White Spanish sorts, that I am sure no one will cultivate either of the latter after he has tried the former. My family have enjoyed them as a real luxury. They are beautiful to look upon, and still better to the taste. As a new one is cut open, revealing its beautiful and juicy surface, the frequent exclamation is, 'What an excellent radish!' I had a couple of quite old persons, over seventy years of age, staying with me. One of them without a tooth in her head, scraped and ate them with a relish that would have done you good to see.

"Let me tell you of the plan that I hit upon to keep them for winter use. I have learned so many good things from the *Agriculturist*, that I want to tell you this in return. I first dug a hole about two feet deep, and wide enough to hold upright a common flour barrel. I then took an old barrel, with both the head and bottom out, and stood it in the hole. I put my radishes into the barrel, on the ground, and banked up the barrel, on the outside, about to the top. I pushed a small bundle of straw into the barrel, and down upon the radishes, and then laid an old door over the top of the barrel, to keep out the rain and snow. When wishing to get the radishes, we have only to push the hand down between the straw and the side of the barrel. We are now in the second week of January, and have had some severe freezing weather. I have not found one frozen, and they are as fresh, and crisp, and sweet, as when first pulled.

"My whole lot, with about one quarter of it occupied by the house, is 75 feet by 125 feet. I have a beautiful bed of Asparagus and another of Strawberries, of my own planting; about twenty Grape vines, of seven different sorts; Raspberries, Blackberries, Currants, Pears, Cherries, Peaches, almost all of my own planting in less than six years past. And besides these, I manage to get a good many vegetables out of my garden in the spring and summer. I have learned many very important things from my garden. I have had pleasure and enjoyment from it, and have, I trust, neglected no duty to

others from attending to it. Perhaps I ought to say that I live in a parsonage, and so do not know how long it may be mine. But may not we dominies practice what we preach to our people,—to plant and sow good seed for those who are to come after us?"

Grape Planting this Spring.

If the "grape mania" did not culminate last autumn, it will certainly do so this spring; and the only limits to the amount of planting will be the ability of propagators of approved sorts to supply plants. Many vines are already set and many more will be, and it is all well. We wish every farmer, and every one who has even a good sized yard, to have grapes enough for his family, and some to give to his less fortunate neighbors. Grapes in many localities are grown not only at a profit, but the land devoted to them gives better returns than any other crop that could be raised upon it. Knowing of these successes in grape culture, several have asked our advice about entering into it largely as an investment. Did we look only at the paying vineyards, there would be no hesitation in encouraging these enterprises, but recollecting more than one melancholy failure, and having last summer seen the mowers among the posts of an abandoned vineyard, we are obliged to use a word of caution. Grape growing or any other culture, is a business to be learned, and we would no more advise one without experience to go into this, than we would counsel him to open a store for the sale of books, hats or any other commodity, without first learning the ways of the trade. One of our Ohio friends has a vineyard, which, according to all figuring, should have given this year a profitable crop, but it did not yield a bunch. It is easy to say what a vine ought to do the third year after planting, but sometimes it won't do it. Capital is not all that is required for success in a vineyard. One great obstacle is the difficulty of procuring skilled labor; while unfavorable seasons, insect enemies, rot and mildew often render the most carefully tended vineyard unproductive. "But shall we not plant vines?" Yes, by all means. He who has ten, and finds them profitable, will not need to be persuaded to plant fifty, and he who already has his acres will know whether it will pay to double their number. To those who have no vines we say plant five, ten or twenty, or even one, if you can do no better. These will show the adaptability of location and will serve far better to gain experience upon, than five or ten acres at the start. We hope to see grapes the cheapest of fruits, but it will not promote this end to advise those who have never grown vines, to plant extensive vineyards at once.

With regard to soil, while it seems to be settled that the grape will grow on any good soil, there is still much discussion as to whether certain varieties do best on light or heavy lands. While this subject still remains unsettled, there is one point upon which all are agreed, viz., that whatever the nature of the soil, it must be, naturally or artificially, well drained. The soil should, of course, be in good condition as to fertility, and it must be worked by the spade or plow to the depth of 18 or 20 inches. Our views, as to selection of varieties, have already been given. While we regard the Delaware as the best grape which has been largely tested, and the hardiness of which has been thoroughly proved, its slow growth, and the care it requires, have not given it that popularity it will in time attain. The Concord has been so often styled

"the grape for the million," that the phrase has become hackneyed. It seems to be better adapted to general culture, and such treatment as nine out of ten will give their vines, than any other sort; consequently we have advised the Concord, if dependence is to be placed upon a single sort. It is hoped, however, that none will be contented with one single kind, but that the taste of the readers of the *Agriculturist* will lead them to plant several of the established varieties. Where the Catawba will perfect itself, this favorite variety will not be easily supplanted by any other. At the winter meeting of the Fruit-Growers' Society of Western New-York, held in January last, a vote was taken upon the best grapes for a succession, which we publish as showing the estimation in which the different kinds are held by the horticulturists of that part of the country. Thirty-one members voted, and the result was as follows:

Delaware,.....	30	Rebecca,.....	21
Diana,.....	26	Concord,.....	14
Isabella,.....	25	Creveling,.....	12
Hartford Prolific,....	23	Catawba,.....	9
Iona, Perkins, Allen's Hybrid, To Kalon, and Northern Muscadine, each	2	votes; and Lydia, Adriondac, and Israella, each	1
vote.			

Rogers' Hybrid Grapes.

In the grape notes of last year, after testing these varieties pretty thoroughly, we stated that we had not seen a first class grape among them. By this it was meant that none of them, in our estimation, were equal to a Delaware, Iona, Allen's Hybrid, Diana, or even a perfect Catawba. Some have thought that the opinion above quoted did not do justice to these new candidates for public favor. So far from wishing to do injustice to these or any other new grapes, we should be happy to be able to say that the whole fifty were each and every one an improvement on any other grape now in cultivation, but so far our experience with them does not warrant it. What has already been said was not the record of the opinion of one individual upon a single specimen, but a deliberate judgement made up after testing them in company with a number of experienced horticulturists, at different times, both in the vineyard and in the office. Another season we hope to make an equally careful examination of them, and shall be glad if we are able to change our opinion. Those who think our judgement unfair in this matter are referred to the following extract from the proceedings of the Fruit Growers' Society of Western New York, held in January last. We quote from the Country Gentleman: "Rogers' Hybrids had been fruited by several, but they were not highly commended. President Barry doubted if any would be superior to the Concord. In reply to an inquiry, he said it was his opinion that the Rogers' grapes were only seedlings of the Fox, and not hybrids. C. L. Hoag, of Lockport, had fruited them for two years, and he thought very highly of some of them—while all are strong growers."—The following testimony in the case, is from the Report of the Fruit Committee of the Massachusetts Horticultural Society, for 1864:

"Several of Rogers' Hybrids have been seen on our tables, such as Nos. 1, 4, 15, 19, 43, and others, but your Committee do not feel disposed to give a decided opinion on the merits of any of these. It has already been said, that some of these varieties did not ripen early enough to be valuable; and it may be added, that, as tested by us, they were found to have a hard pulp, and to be of inferior quality, except No. 4, a black

grape, of fair quality, which ripened well; but as the specimens we have tried have been mostly produced on young vines, it is unfair to fully decide upon their merits. It would be strange, indeed, if, among so many, there were not some good ones. We would, however, advise the public to plant rather sparingly of all the numbers until they have been more fully proved."

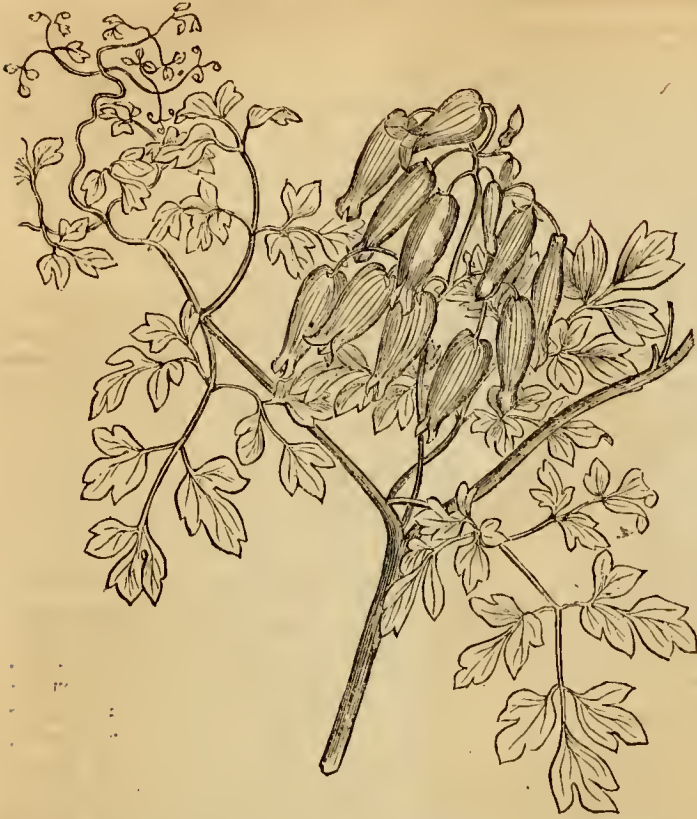
To Manage Evergreen Hedges.

The ground being well prepared by digging, or plowing and working it into fine tilth, the plants, if of arbor vitæ, or hemlock, not more than eighteen inches or two feet high, should be set two, or two and a half feet, apart. Norway Spruce may be three feet high, and set three feet apart. Cut out the leading shoots, so as to make them bushy at the base. Mulch the ground with old straw or leaves, or spent tan bark, and the trees will take care of themselves for the first year.—In spring of second year, prune off the strongest leading shoots on every side, but have the lower branches longer than the upper. This pruning should not be done until after severe frosts are past, say the middle of April. If grass or weeds have encroached upon the line of the hedge, clean them out, and keep the ground well worked through the summer, though without disturbing the roots. In the autumn, cover the soil around the plants with a light dressing of old manure. Every spring, after this, prune the hedge into shape, keeping the base about four feet wide, and thence sloping up to the top, which should not be thicker than one foot, if of Spruce, or six inches, if of arbor-vitæ or hemlock.

After the hedge has nearly reached its desired height, its growth should be checked by summer pruning. In July or August, cut back all the strong growth to the desired point. This summer pruning must now be kept up from year to year. As a further check to strong growth, let the grass grow around to the stems of the plants, and withhold all manure.

Let it always be borne in mind, that the great secret in making a good hedge is, to start it well with a strong, bushy base, and then to keep it in shape by pruning the upper branches shorter than the lower. If the lower branches are allowed to be overhung at all by the upper, they are then deprived of the sunlight, rain and dew. The reason why evergreens in the forest lose their lower branches, is because they are overshadowed. In the open meadow, or pasture, the branches grow as low as the "browsing line;" and in the lawn, where cattle do not come, and where the axe is kept away, the branches spread themselves luxuriantly upon the grass. Lank, lean, bottomless hedges, always proclaim the neglect of their owners. Let the rules we have given be observed, and good, useful, handsome hedges of hemlock and other evergreens will become more common.

DOCTORING PEAR TREES.—At the recent meeting of the Ohio Pomological Society, Dr. Kirkland expressed strong confidence that the use of a solution of coppers upon the leaves and bark, and the application of blacksmiths' sweepings to the roots of pear trees would be found a complete remedy for the fire-blight. On the other hand an intelligent friend of ours says that he has faithfully doctored his trees with iron but has failed to see any benefit. Let us have the experience of others, whether a success or failure. The subject is one of considerable importance to all fruit growers.



The Climbing Fumitory or Alleghany Vine.—(*Adlumia cirrhosa*.)

In most sections of the country, but especially at the West, there is found growing in shady places a vine which, by its delicacy and grace, attracts the attention of the lovers of wild flowers. Its merits have long since given it a place in our gardens, and we illustrate it here to bring it to the notice of cultivators, as well as to answer several who have enclosed us specimens, asking its name. The plant is biennial, and, like others of its class, is neglected by those who are impatient to have flowers the first year. It is a very slender vine, climbing by means of its tendril-like leaves. What appear in the drawing like several small leaves, are really parts of one much divided leaf. The flowers, of the size and shape shown in the engraving, are white, more or less tinged with rose-color, and are produced in great profusion. The tender green, thin texture, and fine division of the leaves, together with the pendent clusters of delicate flowers, give the plant an airiness and delicacy possessed by few climbers. It belongs to the Fumitory family, and the resemblance its flowers bear, in shape, to those of the showy *Dicentra*, will at once indicate the two to be near relatives. The name *Adlumia* was given in honor of Major Adlum, a botanist of a past generation. In addition to the common names given at the head of the article, the plant is sometimes called Mountain Fringe. On account of the delicacy of its foliage, the vine does best in a somewhat shaded place. It climbs to the height of 10 to 15 feet, and should be provided with a trellis, or support of some kind. The seed is sown in the spring, where the plants are to stand; the roots need no protection through the following winter. Sometimes the plants bloom the first year. In looking over the catalogues for the price of seeds, we find that B. K. Bliss, of Springfield, Mass., is the only one who announces it, at 10 ets. per paper.

KINGS ought to be Kings in all things.

Trees upon Prairies.

A correspondent in Illinois writes: "You can not do your western prairie readers so great a kindness as to induce them *this coming spring* to take hold of tree-planting in earnest, with whatever of seeds, cuttings or trees most convenient." This suggestion is a timely one, and although the matter has been advocated by us in former years, the subject is one that can not be too frequently nor too strongly presented. Those who live in the tree-less parts of the country need not be told how necessary are trees for shelter, timber and fuel. Even those who dwell in regions formerly well wooded, find that the forests are so rapidly disappearing that it is time some steps were taken to replace

them. With those who wish to plant trees, the questions of first importance are: what kinds shall I plant, and how shall I get them? Leaving the White Willow, which is discussed in another column, out of the question, the two trees which seem best adapted by the rapidity of their growth and value of their timber, are the Black Walnut (*Juglans nigra*), and Silver Maple (*Acer dasycarpum*). The seeds of the former are to be planted where they are to remain, but the Maple may be raised in nursery rows and transplanted. The Peach, is highly recommended to grow for fuel even where it will not produce fruit, and would doubtless be found valuable; it has the advantage of rapid growth and the seeds are easily obtainable. Black Cherry, Birches, and Larches are all hardy and desirable. The Cucumber-tree (*Magnolia acuminata*), White-wood, Osage Orange, Honey Locust, Chestnut and deciduous Cypress, are all suited to mild climates. All the above may be raised from seed. The White and other Willows grow readily from cuttings, as do the Cottonwood and other Poplars. The Evergreens are of rather slow growth, but they should not be neglected on that account. The Norway Spruce is among the most rapid growers and valuable for its hardiness. The Red Cedar, Arbor Vitæ, and White Pine are all desirable evergreens.

While our Western friends advocate the Cottonwood, which is as nearly worthless as a tree can be, they quite ignore the *Ailanthus*, which has merits enough to outweigh its faults. It will grow readily from seeds, and live where another tree would starve. Give the seed only a little dust to cover it, and it will grow. It is especially adapted to poor soils, and will grow with great vigor in rich ones. So abundantly does it spring up between the bricks and pavements in New-York City, whenever anything shelters it from injury, that it is estimated that, should the city become suddenly depopulated by a pestilence, its site would, in a few years, become an impenetrable thicket of *Ailanthus* trees. The wood makes fair fuel, when well seasoned, and its timber would doubtless be

servicable in many ways, though statistics are wanting concerning its durability. The chief objections to it are the unpleasant odor given off in flowering time, its tendency to sucker, its lateness in pushing its leaves, and its naked look in winter. Although all these, especially the first, have weight when the tree is used merely for ornament, they amount to but little where utility is the main consideration.

Many others might be added to the list, but those already named include the more available ones, and the question now is: how to begin. The easiest way will be to procure a stock of young trees from the nursery, and perhaps this is generally the safest way with evergreens, but most persons will find it inconvenient and expensive to buy their stock and must raise it. Mr. F. K. Phoenix, a well known Illinois nurseryman, takes so much interest in tree planting, that he devotes the cover of his Catalogue to an essay on the subject. Although in the trade, he says: "You need not call upon the nurserymen—send to some reliable friend in a timbered region to get you out such seeds, cuttings or forest seedlings as you may require."

We repeat, get trees or seeds somehow; if seeds cannot be had this spring, make it a point to find out where fruiting trees are, so that they can be collected as they ripen. Upon consulting the catalogues of seedsmen, we find they have the seeds of *Ailanthus*, several species of Ash, Honey-Locust, Cucumber Magnolia, several Pines and Peach Pits. Besides these the seeds of many of the slower-growing and more ornamental trees may be had at once. We hope to recur to this subject at the proper season.



The Chinese Magnolias.

The city gardens of New-York—there are gardens here—are very gay in spring, and they owe much of their beauty to two plants from the Celestial Empire. The *Wistaria* is the most conspicuous of climbers,—noticed in another article—and the Chinese Magnolias are among the most showy of shrubs or small trees. The *Magnolia conspicua*, called the Chinese White Magnolia, or Yulan, grows in its native country to the height of forty or fifty feet, and forms a fine pyramidal tree. As it flowers freely, when quite small, it is more generally seen as a shrub with us, but there is a specimen upon the grounds of Charles Downing, Esq., at Newburgh, which is some thirty feet in height. The flowers appear in April, before the leaves unfold, and, from their great size and pure whiteness, give the plant such a showy appearance that it well merits the specific name—*conspicua*. Each

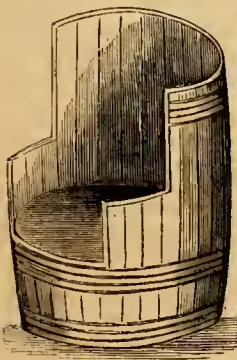
flower is four or five inches long, and looks so like a white lily that it is not strange that the Chinese call it Yulan—or lily-tree. Not only are the flowers beautiful from their brilliant whiteness, but they have a most delightful fragrance. The tree is also a pleasing object after the flowers are succeeded by the leaves, as its foliage has a healthy and vigorous look. The shape of the flowers and leaves is shown in the engraving. The fruit, for the reason that only a portion of the seeds perfect themselves, is curiously contorted and variable in shape. The tree will grow in any good soil, and is perfectly hardy at Newburgh, and probably further North. In the nurseries it is propagated by grafting on *Magnolia acuminata*, one of our natives that grows readily from layers. It may also be grown from seeds, but grafted plants are more readily transplanted. Another *Magnolia*, much resembling the foregoing, also frequently cultivated, is called *Magnolia Soulangeana*. It is a variety of *M. conspicua*, and believed to be a cross between it and a purple Japanese species, *M. purpurea*. It gets its name from having originated on the grounds of M. Soulange Bodin, near Paris. The tree has almost precisely the same appearance as the other, but the flowers are tinged with purple and bloom a little later. Several other varieties of *M. conspicua* are to be found in the catalogues, the tree having a tendency to sport when raised from the seed. The trees are to be had in all first-class nurseries at about \$1.50 or \$2, we believe.

MAKING FLOWERS USEFUL.—According to La Belgique Horticole, a new culture has sprung up near Nuremberg. The flowers of the very dark variety of hollyhock, which appear nearly black, are found to contain coloring matter in such quantity as to render them valuable as a dye. The flowers are sent to England where they are used in dyeing cotton, and the culture is said to be quite a profitable one in Belgium.

THE HOUSEHOLD.

A Home-made Easy-Chair.

A subscriber to the *Agriculturist* describes an easy chair which almost any one can make with materials very easily procured. Take a good flour



barrel, cut away a few staves at the height of a common rocking chair, then make a deeper cut about a foot higher to form the arms, as shown in the engraving. Nail in a circular board for the bottom; then make a suitable cover of any kind of cloth, stuff it well with hair, moss, tow, or other proper material, and it is complete. A small opening or door can be made under the seat, which will furnish a convenient work box. Before commencing to make a chair of this kind from a barrel, it is necessary to nail all the hoops securely, especially those which are to be cut, to each of the staves.

Lime for Whitewash in the spring should be slaked now. Take quick-lime in lumps; start the slaking with hot water, and add more as needed to bring it to a creamy consistence. Do this in a half barrel or similar vessel; stir it well, cover and leave it in a still place, undisturbed until

wanted for use. A crust of carbonate of lime will form on the surface; this will have to be skimmed off. Lime prepared in this way becomes smoother and softer, the gritty portions and particles imperfectly burned settle to the bottom, and the slaking is more complete than if slaked at the time it is used, and for nice work it is much preferable to lime slaked at the time it is wanted for application.



Washing Machines.—A Good One.

The meshes of cloth catch and hold many substances which do not belong there. These are usually made up of various matters floating in the air, or gathered by contact with dusty surfaces, and in wearing apparel, exhalations from the body help to soil the cloth. Water, properly applied, carries out some of the foreign particles mechanically, others are dissolved, and thus separate chemically. Hot water acts more readily than cold, but even when it is heated, some substances do not yield to it, and soap, or other chemical additions, are necessary to prepare them for separation from the cloth. To wash clothing effectually, it is necessary to bring the water and soap, or other detergent, into repeated contact with every fibre, and the hotter the better; and the process, or machine, which does this best, and with the least labor, is first in excellence and most desirable, provided it is not too costly.

Above we have illustrated a Washing Machine invented by Mr. Wm. M. Doty, which, in our judgment, combines the desired points in an excellent manner. It consists of tub, *A*, nearly square, but with the front and rear ends sloping toward the bottom. A movable wash-board, *B*, is suspended within the tub, by means of pins, on the two upright side-pieces into which the board is mortised. The clothing is placed between the wash-board, *B*, and the sloping side, *A*, and the wash-board is swung against it by means of a frame, or handle, with its lower ends entered into slots in the upper end of the side pieces. A brass spring at *C*, between the side piece and the side of the tub, and fastened to each, brings the board back after it has been forced against the clothing by the downward motion of the arms. The wash-board is placed to strike the clothes, so that they are kept rolling over and over, and a new surface is presented for each blow, thus operating on the principle of a fulling mill. A cover for the tub is provided, to keep the water hot, which is an important addition. The tub is readily emptied by a faucet in front, not shown in the engraving. The family size of this

machine will take the bulk of six shirts at a time, and wash them in three to five minutes, with much less wear to the clothing than by rubbing over the board. Our estimate of the value of this household implement may be judged by the fact that, after several months' trial in the family of the Proprietor of the *Agriculturist*, by the side of several others, this was finally selected to offer as a premium to our friends sending subscribers. The machine is also being introduced for washing wool, and is much liked for this use by those who have tried it. Subscribers west of the Ohio river can be supplied with these machines by Messrs. Doty Brothers, Janesville, Wis., others by H. B. Lane, Agent, 151 Nassau-st., New-York City. The arms and legs are easily removed, and the whole readily packed in small compass for shipping. With the handles slipped out, and a cover laid on it answers as a small table in the kitchen. The price here is \$13, at Janesville, \$10.50. This low price is a prominent consideration, and recommends this machine to the public.

Our Bachelor in the Household.

The publication of the Bachelor's crusade against the recipes we placed in his hands has, as we anticipated it would, brought down upon him the just indignation of several of our lady friends. This has evidently had an effect, as he is moved to reply as follows:—"Now, Mr. Householder, you have done it! and my 'private opinion, publicly expressed,' has gone forth in your soap and saleratus column. Judging from the letters which you have handed me, there must have been a flutter in more than one kitchen, when the last *Agriculturist* came to hand. You seem to have taken a malicious pleasure in setting forth and emphasizing the fact of my singleness, and then have

done all you can to prevent my bettering my condition (or otherwise), by making public my views on some domestic matters.

Well, I accept the situation, and take the letters of indignation as the reward which those who try to reform popular abuses always receive. But I am happy to know that all the housekeepers are not irate, and some have written sensible letters, which are good to read, and one lady has sent me her cook-book, with a request to exchange. Let her wait till mine is out, and she shall have two copies. As to your fling at a bachelor's knowledge of cookery, it is merely a specimen of the airs of superiority which married people are apt to indulge in. A man no more need be of the matrimonial persuasion, before he can judge what is good and wholesome food, than he need be a gardener to know a good rose, a fiddler to judge of music, or a painter to be able to appreciate a good picture. But I believe that I do know something about culinary art. Once in my life, I was some years where cooks were not to be had, and was obliged to investigate the subject myself, or eat my food raw. I found that the great essentials were: something to cook, something to cook it in, a fire, and common sense. The first three are easily obtained everywhere, but the last and greatest of these is as rare in the kitchen as elsewhere. Now if I could only teach people that fat pork, seven days in the week, was neither necessary nor healthful; that a good breakfast may be made without meat; that when water boils it is as hot as it ever will be; that a rich mince pie or pudding, after one has eaten meat to the limit of his capacity, is one thing too much; that alkalies—soda and saleratus—when they meet with fat—shortening—will form soap, which, though good in its place, is not good in bread and cakes; that peas, asparagus, and other delicate vegetables, are ruined if boiled with pork, or other meats, and a hundred other such obvious and commonsensical things, they would be prepared for my cook-book, to which I jocularly referred. Seriously, I am glad that your good lady friends send in their recipes, for it shows that they think that what we eat is of some conse-

quence, and though I may let off a little harmless fun at some of them, I trust none will think it ill-natured. One great cause of our indifferent cookery, as a people, is, that we have regarded eating as a necessity of our nature, but something unworthy of any serious thought. Now, as we are obliged to have three meals a day, I consider that they should not merely serve the wants of the system and appease hunger, but that they should be made actually enjoyable. The whole family are gathered at the table; indeed in many cases the hours spent there are the only ones of family reunion. Here is the family council, the place where lessons of wisdom are taught, and all home ties strengthened, and it is too much to expect of poor human nature to be good, wise, or happy over poor and indigestible food. If some Girard or Cooper would found a school for ladies, in which cookery should be raised, if not to the dignity of an exact science, at least to that of a useful art, it would be a national blessing. You ask me to contribute occasionally to the columns of your department. I make no promises, but if I do write for you sometimes, I must have leave to say my say in my own way, and no lady must be offended."

What Shall I get for Variety?

"Are you awake?" said I to my wife, as the clock struck five. "Yes," she replied quickly; and, "I have been thinking for nearly two hours what I can get up for a variety on the table. It is nothing but beef, pork, mutton, fish, and chicken; and then, chicken, fish, mutton, pork and beef."—"Do you need a better variety than that?"—"If our boarders (two bachelors) were not so observing and very particular about every dish that would do."

"Let me give you a programme for a week. Now, if you have beefsteak and mutton for breakfast, make a meat pie, just as a chicken pie is made, for dinner; and, slice up some cold ham, or mutton, for those who think meat pie is not enough. For a dessert, make apple dumplings instead of so much pie, *pie*, *PIE*, at every meal. That's good enough for one day. To-morrow, for breakfast, cook fresh fish, and make fresh-pork dumpling, by dipping the thin slices in a batter made of eggs and flour. This dish may be varied by using salt pork, sometimes, instead of fresh. For dinner, have roast beef, or mutton, with baked beans, and salt pork.

"What shall we have for supper?"—"In addition to good white bread, and Graham bread, have white biscuit one evening; Graham biscuit the next evening; the next evening make buckwheat cakes; the next, make Canaille cakes. (Canaille is the coarse part of wheat flour.) At another time, make cakes of equal quantities of Indian meal and Graham flour, and bake on a griddle, and serve with butter, or cream and syrup. For variety in the line of sweetening, dissolve a few pounds of maple sugar, in hot water. These dishes will always be excellent. One day have apple pie; the next, mince pie; the next, pumpkin pie; the next, custard pie; and, for Sunday, nothing will eat better than a pie made of a Hubbard squash. The next morning fried chicken, and baked potatoes, and pork, and, if potatoes will not be enough, add turnip, or squash. At noon, make a meat pie. It appears to me, that so many good dishes can be varied so that none of us need get tired of either of them. T.

Suggestions about Houses.

Molly Greenfield writes to the *American Agriculturist*: "Published plans of houses are all well enough, as being suggestive, but a person should not follow them heedlessly. A house well adapted to one situation, may be very illy suited for another. A house just right on a North-and-South road, might be just wrong on an East-and-West one, or even on the opposite side of the same road. One thing, I think, receives less attention than it deserves, that is, the lighting of various parts of a dwelling. Now I want a kitchen with light from the East. I would like it to be bright and sunshiny in the morning, when I have to work there. I want

no room that is to be much used for sitting or sleeping, to have only North windows. A pantry, if to be used for milk in summer, should be lighted from the North, and the next preference is from the East. From the South and West the sun is very hot on summer afternoons. If only for a winter milk room, it may be lighted from those directions. I would have opportunity to enjoy the glories of sunset from a Western window in my sitting room or parlor, and would have the soft dawn of morning enter my sleeping room. A little right calculation will make a great difference in the pleasantness of a house.—The family sleeping room should be large enough for two beds, or have a second bedroom adjoining, and be arranged for warming. I would prefer a fire-place. It ought also to have, as adjuncts, at least a small dressing room, with clothes-press, and a bath closet. Adjoining the sitting room, I would have a small study, and somewhere, if I could, a convenient place for house plants, and, when building, would get in all the closets possible, at least one for every large room.

About the wood-house. My plan is to have this located at a little distance from the dwelling, say a rod or two, connected, perhaps, with a dairy, or other workhouse, and with the dwelling by a covered passage. The wood yard is to be on the opposite side, away from the dwelling, and filled from that side, but with a door toward the house, through which to carry the prepared wood. This might take some more steps than the usual method, but would they not be fully repaid by the tidiness around the dwelling, and, perhaps, its increased healthfulness? Who knows what disease may not have found its way to the household from the decaying chip manure, at the very back door? With this plan, you can have flowers and shrubbery, and vines, all around your house."

How to Make Hard Soap.

The request in the February *Agriculturist* for directions to make hard soap, has been answered by a generous pile of letters, for which our thanks and those of our readers are due. More than a dozen send No. 1, following; one sends a sample of the article, which is superior to much that is sold at the stores, and is quite cheaply made.

No. 1. Pour 4 gallons of boiling water over 6 pounds of washing soda (sal soda) and 3 pounds of unslacked lime. Stir the mixture well, and let it settle until it is perfectly clear. It is better to let it stand all night, as it takes some time for the sediment to settle. When clear, strain the water, put 6 pounds of fat with it and boil for 2 hours, stirring it most of the time. If it does not seem thin enough, put another gallon of water on the grounds, stir and drain off, and add as is wanted to the boiling mixture. Its thickness can be tried by occasionally putting a little on a plate to cool. Stir in a handful of salt just before taking off the fire. Have a tub ready soaked, to prevent the soap from sticking, pour it in, and let it settle until solid, when you will have from the above quantity of ingredients about forty pounds of nice white soap.

No. 2. Dissolve 1 pound concentrated potash, in 2 quarts of boiling water, in a small kettle by itself. In another kettle, boil about 5 pounds of clean fat, or tallow, or its equivalent of soap grease, with 2 gallons of soft water. As soon as the grease is melted, gradually add the dissolved lye from the small kettle, about a gill at a time, until all the lye is used, constantly boiling and stirring over a slow fire until the whole becomes thick and as transparent as honey. During this process, sufficient water should be added occasionally to replace what has boiled out. If using fresh grease, add 4 ounces of salt. Let it stand till it gets cold, then cut into bars, and put away to dry. The concentrated potash, or lye, can be obtained at any drug store, and usually in country stores where medicines are kept.

No. 3. Another correspondent writes: "Hard soap is made the same as good soft soap, by the union of grease and strong lye; the clearer the grease, the better the soap. They are boiled up together; when they boil up thick, then add salt in the proportion of 2 quarts to 8 gallons of soap. Let

it boil up thoroughly, set it away to cool, when it can be cut out and dried ready for use."

No. 4. Take about 12 quarts good soft soap, add 1 teacupful of fine salt, bring it to a boil while stirring, and set away until cold; then take off the top, bring it up to a simmer, then strain, put it on a board to dry. Cut it up and turu while drying.

Practical Odds and Ends.

Contributed by Subscribers to the *American Agriculturist*. Please send plenty more of the same sort.

A BLACK BOARD should be in every kitchen, not to mark with chalk, but to place pots and kettles on when removing them from the fire. Make it about a foot square, and 1 inch thick. It need not be washed often merely for looks, as the corners will be unsoiled. Its use will save the tables, floor, sink, etc., from many unsightly marks.

TO PEEL ONIONS CHEERFULLY.—Sit before the draft of a fire on the hearth, or with the pan on the stove hearth, with the front doors open, and you may peel any quantity, without shedding a tear.

TO KEEP SAUSAGE MEAT.—Prepare it in small, round cakes, fry them as for the table, pack them closely in an earthen jar, pour the fat from frying over them, and put a weight on them to keep them down until cold, then remove the weight, and cover the top over with lard. Keep in a cool, dry place.

GEESE EGGS carried to the cellar as soon as laid, and kept there, will hatch well. They should be turned over once a day. Above stairs, the temperature is uneven. Number the eggs as laid, that the first goose setting may have the eggs first laid.

VARNISHED FURNITURE is sometimes disfigured by heat, which causes white spots; to remove these, touch them with flannel slightly dipped in alcohol, and rub till the whole surface is dry and warm.

APPLES, quartered and cored, sprinkled with sugar, and cooked in a close dish, in the oven, require less sweetening, and are preferable to those stewed in the ordinary way.

Hints on Cooking, etc.

Cream Pie.—Contributed by A. M. Turner, Litchfield Conn. Mix 1 egg beaten, 2 tablespoonfuls corn starch (flour will answer.) 2 tablespoonfuls sugar, a little salt, a teaspoonful extract of lemon, and 1 pint of milk. Bake the two crusts separately; boil the custard, and when cold lay it on one crust and cover with the other.

Another Cream Pie.—Contributed by Mrs. H. Drinker, Susquehanna Co., Pa. Take 6 eggs, two small cups of sugar, 2 cups of flour, 1 teaspoonful of cream of tartar, ½ teaspoonful of soda. Dissolve the soda in a little hot water; mix the flour, sugar, and cream of tartar; whip the eggs separately; mix all the ingredients well together, and pour into two plates of moderate size.

Cream for the Pie.—Take 1 pint new milk, 1 small cup of sugar, 2½ tablespoonfuls of flour, and 2 eggs. Beat the eggs, sugar, and flour together; stir them into the milk when it boils; let it remain over the fire until it thickens, but do not let it boil. Flavor with vanilla. A few minutes before dinner, split the cake, by cutting around the edge, and pulling off the upper half; pour the custard on the lower half, and cover with the other.

Spanish Cream.—Make a soft custard of 1 quart of new milk, and the yolks of 6 eggs, with 6 tablespoonfuls of sugar. Dissolve ¼ ounce of gelatine in ½ pint of water, add it to the custard when hot, flavor to the taste, pour into moulds, and put in a cold place.

Good Bread Pudding, without eggs, may be made by stirring into it good, tart apples (pared and quartered, or sliced), when ready for the oven.

Chocolate Blanc Mange.—Take 1 quart of milk, and ½ pound of unsweetened chocolate made fine; boil together for a few minutes, and sweeten to your taste while boiling. Put in

while hot, $\frac{1}{2}$ of a box of prepared gelatine, and stir until dissolved. When cool, add a small tablespoonful of vanilla extract, and pour into moulds to cool. It is better made the day before needed.

Dishes for the Sick Room—Crust-Porridge.—Contributed by Lina May. Take a thick slice of bread, or what is better, a light-baked crust, and boil it in a quart of water 20 minutes, adding a little salt. Season according to the condition of the patient; butter will improve the taste.

Water Gruel.—Mix 2 tablespoonfuls of wheat flour, 2 tablespoonfuls of Indian meal and 1 teaspoonful of salt with a little cold water, carefully mashing all lumps. Pour this into 3 quarts water, and cook 40 minutes, skimming it occasionally. A few raisins thrown in while boiling improve the flavor, and are usually harmless.

Milk Gruel.—Prepare the same as water gruel, except using only $\frac{3}{4}$ quarts of boiling water. Simmer for 20 minutes, stirring it often; then add 1 quart of milk and let the whole scald five minutes. Great care must be taken to prevent burning.

Corn Bread.—Stir well together 1 pint each of water, Indian meal, and wheat flour, 1 tablespoonful of sugar or molasses, $\frac{1}{2}$ teaspoonful each of soda and salt, and 1 teaspoonful of yeast bread sponge. Place it in a 2-quart basin that has been well greased, and let it stand in a warm place until light. Then set the basin in a steamer over a kettle of boiling water, and let it steam two hours, after which put it in the oven for 20 or 30 minutes, to brown over, and dry out some of the moisture.

BOYS & GIRLS' COLUMNS.

What Makes the Wind Blow ?

If the question were, "Who makes the wind blow," all our young friends would have a ready answer; they know that God controls all the forces of nature. But he uses means. The sun is His great wind-maker. To understand its action, think of the air as a great ocean like water, but much lighter, entirely surrounding the globe. The sun shines upon this ocean of air, and through it on the earth, heating them both, and imparting most heat at the earth's surface. But the sun's rays shine more directly down on some parts than on others, and therefore heat them more. Thus, it is always hotter in the region of the equator, than at the poles. Now heat expands a fluid, making it lighter, and when part of the air is expanded by heat, it rises, and the cooler, heavier surrounding air rushes in to fill its place, and thus wind is produced. The following simple experiment will show just how this works. Fill a large tin pail with water in which scatter some fine bread crumbs. Place a burning lamp under the middle of the pail, and the crumbs will soon begin to rise, carried up by the heated column of water, and then making a curve toward the sides, will sink downward, and pass in a horizontal direction along the bottom, just as wind drives along the earth's surface. In a room containing a hot stove, drop into the air in different places bits of light cotton, or dry thistle blossoms, and you will see how the air is moving at each point.

If the earth were all a plain, and each part received a regular unchanging amount of heat through the year, the currents of air or winds would always move in one direction. But many things prevent this. The land is more heated than the water by the sun's rays; some soils also absorb heat more readily than others; then at night and during cloudy weather when the source of heat is cut off, the heat is radiated or passed out unequally from different localities, and this produces variations in the currents. Mountains, and valleys also, change the courses of the winds, and other causes, such as the varying moisture in the air, and probably its electrical condition, still further operate to cause them to shift and change, so that no one can predict with certainty which way the wind will blow to-morrow, and "fickle as the wind," has come to be a proverb. On the ocean where no mountains intervene, and where the heat is quite uniform, currents of air called trade winds blow steadily in one direction. Their course in the northern hemisphere is from north-east to south-west, in the southern hemisphere from south-east to north-west. These steady winds are of great service in navigation or trade, as ships are some times enabled to glide before them for weeks without changing a sail. New discoveries are being made almost every year, and perhaps at some time in the future men may be able to foretell the direction of the wind; at present, we can only try and make the best of it from whichever quarter

it comes; though that is a little difficult on some March days, when it seems to blow from all quarters at once.

Book-keeping for Boys and Girls.

The boys and girls' Cash Account Book described in the January *Agriculturist*, has set many readers to thinking. It is easy to tell what subjects interest our readers from the letters received. We like to have them express their opinions fully in criticisms and suggestions, as well as in praise. One gentleman writes about the Cash Account, "I wish every boy and girl in the land were required to keep a neat and exact account of receipts and expenditures. It would induce habits of carefulness, industry and economy, that in a few years would tell on the welfare of the nation, for its moral as well as its financial prosperity." He suggests the following method of keeping the account, which has some advantages, being concise and economical.

1864.		Cash Account.		1864.	
Dr.	December.			Cr.	
79	1	To balance from last month.....			05.
32	2	By money for ball.....			
	3	Money from Papa for leaves gathered, 16 bushels, @ 2c.....			
	5	Paid Sunday School Miss. Society...			10
01.		Beating Papa in dressing.....			
08.	7	Gathering 4 bushels of leaves.....			
07.	10	Contributed to soldiers Hospitals....			10
		Weekly allowance.....			
		Admission to Museum.....			15
	12	Candy bought.....			01.
					41
	31	Balance carried to January 1865....			86
\$1	27				\$1 27

"The left hand columns are for the Dr. account, or money received, with a column for the date of the entries. The right hand for the Cr. account, or money paid out. Supposing the account for the month to be completed. I have struck the balance, which is ready to be carried to the account for the next month. In this way each page of the account book can be filled up, and no broad spaces left blank." The young beginner will be more likely to make mistakes by this method than in using the form given in January. This, however, will teach carefulness, and so perhaps in the end be an advantage. Let no one be discouraged by mistakes; the fact that they are made is the strongest reason for persevering, so that they may finally be avoided.

The Cure of the Drunkard.

A man long noted for Intemperate habits was induced by Rev. John Abbott, to sign the pledge "in his own way," which he did in these words, "I pledge myself to drink no more intoxicating drinks for one year." Few believed he could keep it, but near the end of the year he again appeared at a temperance meeting, without having once touched a drop. "Are you not going to sign again?" asked Mr. Abbott. "Yes," replied he, if I can do it in my own way, and accordingly he wrote "I sign this pledge for nine hundred and ninety nine years, and if I live to that time, I intend to take out a life lease!" A few days after he called upon the tavern keeper, who welcomed him back to his old haunt. "Oh! landlord," said he, as if in pain, "I have had such a lump on my side!" "That's because you've stopped drinking," said the landlord. "you won't live long if you keep on." "Will drink take the lump away?" "Yes, and if you don't drink you'll soon have a lump on the other side. Come let's drink together," and he poured out two glasses of whiskey. "I guess I won't drink," said the former inebriate, "especially if keeping the pledge will bring another lump, for it isn't very hard to bear, after all," and with this he drew the lump, a roll of greenbacks, from his side pocket, and walked off leaving the landlord to his sad reflections.

Bragging.—A foreigner who had heard of the Yankee propensity for bragging, thought he would beat the natives at their own game. Seeing some large watermelons on a market-woman's stand he exclaimed, "What! don't you raise larger apples than these in America?" The quick-witted woman immediately replied, "Apples! any body might know you were a foreigner: them's gooseberries!"

What Kind of Puzzles to Send.

Our young friends, and many not young in years, kindly send frequent contributions to the puzzle department, for which they will please accept our thanks. Of course all can not be published, there would not be room for half of them, even if all were suitable, and so the best are selected in addition to original ones furnished by the editor of this department. We invite our friends to send plenty more, to give a full assortment from which to choose. In every case send the correct solution with the problem, or puzzle. Let them be original; if a spice of fun can be worked in, all the better. Rebus and charades are not desired: enough are on hand to last a long

time. Mathematical, Grammatical, Geographical puzzles, and others which instruct while they amuse, are most welcome. They should not be made too difficult, but enough so to require thought, patience and perseverance. Puzzles of various kinds, with strings, blocks of wood, etc., etc., are acceptable, if new, and will be properly illustrated, where it is desirable.

About Publishing Names.

Up to the present time the names of those correctly answering the problems, etc., have been published in these columns. This gave pleasure to those who were successful, and we were happy thus to acknowledge their efforts. But recently the number has increased so much, that at the present rate we shall sometimes have to give up a large part of the boys and girls' columns to names alone, or not publish any. As the greatest good to the greatest number is our rule, we find we can not always give the names. The pleasure and benefit of studying out the puzzles will be just as great, however, and there will also be room for more problems, stories, etc., to please all who love to read this part of the paper, and that we believe includes most readers.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the February number, page 55. No. 116. *Historical Questions.*—1, Roderick; 2, May 7th; 3, Franconia... No. 117. Aaron's Rod bore almonds... No. 118. *Illustrated Rebus.*—Warm a ruin thousands and yet (in the end of ten) a b less eye in g; or War may ruin thousands, and yet in the end often be a blessing... No. 119. *Mathematical Problem.*—None have answered this correctly, and it is left open for another month... No. 120. 1, Dublin: 2, Concord; 3, Augusta; 4, Hartford... No. 121. *Mathematical Rebus.*—I owe to A a V (5) and ciphers three; Owe ten to B and ninety unto D; Now let some scholar cipher up and see, how great the sum I owe unto the three... No. 122. *Conundrum.*—Because he is a sea king (seeking) what never existed.

New Puzzles to be Answered.



No. 124. *Illustrated Rebus.*—A very common proverb.

No. 125. *Mathematical Problem.*—A circus company hired a triangular field each of whose sides measured 300 feet. 1st. How large in diameter can they make their ring in the field?—2nd. How many feet of ground in it?

No. 126. *Curious Word.*—What is the only word in the English language that can be written without pen, ink, pencil, or any other instrument?



No. 127. *Illustrated Rebus.*—What every body hopes for

No. 128. *Abbreviation.*—How can you inquire after a person's health with only three letters?

No. 129. *Anagrams.*—1, Nice red hams. 2, Go nurse. 3, To sin far more. 4, Cover not a sin. 5, Move it cool. 6, Miss no trains.

No. 130. *Conundrum.*—What part of a fish is like the end of the war?

No. 131. *Mathematical Problem.*—A garden lies in the form of an equilateral triangle measuring 100 feet on each side. A tower 25 feet high stands three feet from the center on a line toward one corner. How far is it from the top of the tower to each corner?

No. 132. *Ethical Mathematics.*—Suppose A, tells the truth 4 times out of 5; B, 5 times out of 6; C, 6 times out of 7. Then if A, and B, make a statement which C denies, in whose favor is the preponderance of truth? Please give solution and reasons with the answer.

No. 133. *Charade.*—My first is insane; my second is a vowel; my third gives light; my fourth is a carriage, my whole is an island.

No. 134.—*Puzzle.*—10015150 is what all young people should be, to gain the good opinion of others.



THE ORGAN GRINDER AND HER PET.—Engraved for the American Agriculturist.

Organ grinders were formerly seen almost wholly in large cities, but of late years we have met them far out in the country, where they seemed pleased to receive a bowl of milk or a plate of food, instead of the customary penny. They are a wandering race, somewhat like the gipsies, and are as strongly bound together by ties of etaship. It is said that they never cheat each other, and as a class they bear a good reputation for general honesty. Most organ grinders are natives of Italy, many of them from Savoy. Savoy you may remember formerly belonged to Northern Italy, but in 1860 was annexed to France. A few Germans have taken up the trade of making cheap music on hand organs, but the Italian members of the craft look upon them as interlopers, and will not associate with them. It is estimated that at least three to four thousand Italian organ grinders have emigrated to this country. Most of them are poor, for the business does not pay very well. Occasionally one of them shows considerable enterprise and talent in bringing out new features, and is rewarded by quite a harvest of pennies. Some of this class accumulate enough to buy several instruments which they let out to their less fortunate brethren. Frequently girls travel about with organs, often in pairs, one playing an accompaniment with a tambourine. If they are neatly dressed and attractive in personal appearance like the one in the picture, they may earn large wages. A well trained monkey is a great addition to the music-maker's stock in trade, as its comical tricks are quite sure to attract a crowd. Some of these animals educated for this purpose sell as high as fifty to a hundred dollars each.

The Italian organ grinders of New York City live together in a block of poor rickety buildings in one of the filthiest and most poverty stricken streets. They are huddled together six to twelve in a single room, with lit-

tle or no furniture. Yet they are not without their enjoyments. Every year they have a grand ball to which only members of the profession are admitted, and where it is said there is as much pride of rank as among the most aristocratic circles. Some of them claim relationship with noble families in their own country, and they are looked up to accordingly by their companions.

The few organ grinders who acquire competence usually return to their native land to which they are passionately attached. All through long years of toil and privation they are cheered by the bright vision of home in the distance. Although they are vagrants, let us not judge them too harshly. They bring much pleasure to the children of the poor at least, and the melodies they play are often the finest compositions, which in some degree aids in giving correct musical taste to the hearers. Surely they are better thus employed than in simply peeging.

The Fate of the Elm.

A thrifty young elm sprang up near the edge of a forest. The surrounding trees cared for it tenderly. They shaded it from the rays of the burning sun, caught the heavy pouring rains which might have drowned it in infancy, and gently bathed it with careful drops; no harsh winds could penetrate the kind shelter they gave, and when winter came they dropped down their leaves to protect its roots from the frost king. It grew rapidly. Soon it looked down upon the ferns and azaleas, then it overtopped the hazels, and ere long it stood strong and graceful, its head so high that it could look far out of the forest into the wide fields. Then it began to complain. "Oh, that I could see more of the world; the flowers of the plain are more beautiful than those which grow here in the shade; I am tired of this dreary darkness; I long to

play with the free winds." And thus it had no pleasure in the good things around it. One day a strange sound was heard in the forest. Blows of the ax fell thick and fast, and tree after tree came down with a crash before the industrious workmen. "We will leave this hand some elm," said the owner, "it will ornament the field. In a few months it stood alone; its companions had all been removed, and grass and flowers were springing at its feet. Its wish was accomplished; but a wise man that lay beneath its shade one hot day heard it sigh, as the wind tossed its branches. "I am fitted for better society; men seldom visit me; coarse animals rub against my trunk; nothing but daisies and clover live here; by the side of yonder mansion are noble lords of the forest, rare flowers surround them, and beautiful ladies sit in their shade." Thus the unhappy tree found no pleasure in the beautiful field.—In autumn workmen removed the graceful elm to the coveted place near the owner's dwelling. It was planted where the light streamed upon it through the windows of the kitchen, from the blaze in a large open fireplace. For a little season it seemed content. But soon came the murmur, "Why am I condemned to stand here like an outcast? The angry blast chills my bare limbs; all around me is desolate; I can put forth no leaves, while those insignificant roses, helio trepes and geraniums are tenderly cared for, and kept blooming in their summer home within doors. Thus the tree moaned unhappily through the winter. Spring came, the trees awoke and put on their new robes to hail the season, all but the poor elm, which showed only here and there a feeble leaf. Presently the owner, while walking through his grounds, said, "See, this tree is worthless, its heart is cankered; it is no longer an ornament, take it away." Then it was cut down, prepared for fuel, and when cold weather came, it was burned in the room which had excited its last discontent. And an old man who one night sat dreamily by the fire was heard to say, "See my fate in these expiring embers; all my life I have despised the good of the present, and pined for the future, until now the past years are all a waste, and consumed by discontent, I can only give to others the possessions which might have brought joy to myself."

A Useful Dream.

Some months since a gentleman forwarded a clob of subscribers to the *American Agriculturist* directing them to be sent to Springfield, giving neither County nor State. The clerk entered the names and money on the books, but as there are twenty-four Springfields in the United States, he thought possibly he might not guess the right one, and therefore waited for further instructions—perhaps a scolding—before sending the papers. Recently a letter came from the same place, complaining that the papers had not been received, this time giving the State.

Thousands of subscribers had been received and entered since the first letter, and the clerk was puzzled to know where to look for this "needle in a haystack." After some hunting, and a good deal of vexatious thinking, he left it for the time. The same night he dreamed the whole thing over, remembered where the first entry was made, and early in the morning turned at once to the place he had dreamed of, where sure enough every thing was plainly recorded. Subscribers should not be encouraged in carelessness by this incident, as it is hardly fair to expect our clerks to work all day and dream all night, to keep their books straight.

The Heroic Switch Tender.

The following incident is related in a European paper as having lately occurred in Prussia. A switch tender had just taken his place to change the track, in order to turn a train which was in sight, so as to prevent a collision with another train from an opposite direction. At this critical moment, on turning his head, he discovered his little boy playing on the track of the advancing engine. He might spring to his rescue and remove him safely, but then he would not have time to turn the switch, and hundreds of lives might be lost by his neglect. In an instant his resolution was taken. "Lie down!" he shouted to his boy, and the child happily accustomed to obedience, promptly threw himself on the ground, and the whole train thundered over him, the passengers little dreaming how much their safety had cost that father. The trembling man rushed forward, fearing to find only a mangled corpse, but no words can express his joy at seeing his child alive and unharmed. The next day, the king having heard of the circumstance, sent for the man and presented him the Medal of Honor for his heroism.

Tough Pies.—Army pies are so terribly tough that soldiers call them leather-pies. A poor fellow of Grant's Army, probably a shoemaker formerly, whose arm had just been amputated, was being carried past a "stand" the other day where an old woman was selling pies, when he raised himself in the ambulance and called out, "I say old lady, are those pies sewed or pegged?"

(Business notices \$1 25 per line of space.)

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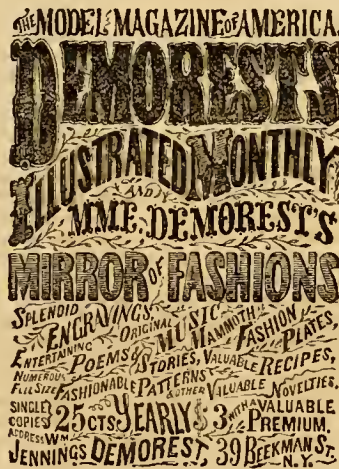
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How to Get a Farm, and Where to Find One.

The following interesting article on "Illinois, its Climate, Soil, and Productions", which we take from a work just published by J. MILLEA, and for sale by D. APPLETON & Co., entitled, "How to Get a Farm, and Where to Get One," by the Author of "Ten Acres is Enough," is worthy of the careful perusal of those who are desirous of securing for themselves and families a home which they can call their own.

The West—Illinois Central Railroad Lands—Climate, Soil, and Productions.—The vast region popularly known as "The West," has been so often travelled by thousands from the older States, and so repeatedly described in print, that all must have a general knowledge of its character and capabilities. Little, therefore, remains for me on these subjects, than a compilation of details appropriate to the matter in hand—where to find a farm.

In the very heart of the great valley, midway between the Arctic and the Tropic, the Atlantic and the Rocky Mountains, lies the State of Illinois, the young Hercules of the West, touching Lake Michigan on the north, and the lower Ohio on the south, with the majestic Mississippi washing her entire western border, and the Wabash skirting her for more than half its length on the east. Her growth, during the last decade, has been really more rapid and considerable than that of any other State, though some of the newest have increased in population by a larger percentage than hers. Her population has all but doubled during the last decade, having risen from some 900,000 to about 1,700,000.

In 1850 Congress granted to the Illinois Central Railroad Company 2,595,000 acres of land to aid in building a railroad, which would soon open up for sale and settlement a much greater adjoining area belonging to Government; the quality of the land being undoubted, it being prairie and rolling land of well ascertained fertility.

Three years after the Central Railroad Company began their operations, their sales of land amounted to 1,312,373 acres, realizing a total sum of \$16,663,823. The terms of sale are probably more liberal than are elsewhere to be found. Had they been otherwise, it would have been impossible to attract to a new and wholly unsettled country the largest body of settlers ever voluntarily collected on one spot within so short a period. The buyer has his choice among a million of acres, still unsold, and may take land at from \$7 to \$12 and upward per acre, according to location. He may pay for it in cash, if able to do so, and thus obtain a discount of twenty per cent.; or he may take land and be allowed four, five, six, and seven years in which to pay for it, but paying the interest yearly in advance. He may buy as small a tract as forty acres, or one as much larger as his means will justify.

The land grant to this Company was the first public gratuity in aid of railroads. When first made, the central portion of Illinois was an unoccupied prairie, as fertile as any soil in the world, but wholly unavailable. It now swarms with population, that along the railroad having trebled within ten years. Great towns have sprung up along its track, and the annual growth of population and wealth is enormous. Here the enterprising man will be sure to find a farm, and the Railroad Company will show him how to get it. Their road is 704 miles in length, and extends from Cairo, in the extreme southern part of the State, to Dunleith, in the northwest, with a branch from Centralia, in the centre, to Chicago, on the shore of Lake Michigan. For all the purposes of agriculture, these lands are equal to any in the world, producing wheat, barley and oats in the north; corn and wheat in the centre; and wheat, tobacco, and cotton in the south. In all parts of the State vast numbers of live stock are produced. A healthy climate, a rich soil, and railroads to convey to market the fulness of the earth—all combine to place in the hands of the working man the means of independence. Nowhere can the farmer, the mechanic, the manufacturer, and the laboring man, find surer rewards of industry. With 12,000 common schools, 21 colleges, 48 academies, and a liberal fund for the support of learning, Illinois offers the means of education such as few States can boast. All the conditions favorable to prosperity are to be found here.

The climate of Illinois is healthy, and the mortality is less than in almost any other part of the country. The immigrant seeking a location regards the healthfulness of the district as a matter of primary consideration, and Illinois, so far as its sanitary condition is concerned, ranks with the most favored States of the Union. The vital statistics collected in 1860 show that in this State the deaths per cent. to the population were in that year only 1.14, while the average of the whole country was 1.27. Extending 350 miles from north to south, Illinois has all the varieties of climate to be found between Boston, in Massachusetts, and Norfolk, in Virginia; in the southern part, the genial climate of Virginia, Kentucky, and Tennessee, and in the northern section more

nearly resembling that of Pennsylvania, Southern New York, New Jersey and Connecticut.

The soil in the different parts of the State presents very marked characteristics. From the latitude of Chicago as far south as the Terre Haute and Alton Railroad, the country for the most part is open prairies, with here and there groves of timber, and timbered on the banks of the various streams. The soil in this region consists of a rich, black loam, and is remarkably adapted to the production of corn, sorghum and tame grasses. For stock-raising no better land can be found. South of this line the soil is lighter, and of a grayish tinge—the country is also more broken, and the timber more plentiful. The small prairies in this region produce the best of winter wheat, tobacco, flax, and hemp. From Centralia to Cairo, in the south, the country is heavily timbered. In this district fruit, tobacco, cotton, and the different productions of the Border States, are largely cultivated and highly remunerative. A large number of sawmills are erected near the line of the railroad, the lumber from which commands at all times a ready sale.

Indian corn is, perhaps, the most important crop in the country. It is applied to so great a variety of purposes, and is so indispensable an article for foreign consumption, that however abundantly it may be produced, the constantly increasing demand will press heavily upon the supply. In 1859 the United States yielded 827,694,528 bushels, of which Illinois contributed 115,296,779, about fifty millions of bushels more than any other State. Illinois stands pre-eminently first in the list of corn-producing States.

For the culture of wheat, the lands of the Illinois Central Railroad are in all respects equal to any in the State. One great advantage which these lands have, is their nearness to the railroad, by which the purchaser has the means of putting his crop in the market at the earliest or most favorable time, and at a cheap rate of transportation. During the year 1862, the stations on this road sent forward to market 4,688,755 bushels of wheat, besides 567,627 barrels of flour. In Southern Illinois, winter wheat is almost certain to yield a good return to the grower. The reaping, threshing, and cleaning machines, now so generally in use, have made wheat-growing a source of great profit to the farmer.

It seems well established that cotton is to become a remunerative crop in the southern part of Illinois. It was cultivated in 1862 in almost every town south of Centralia, and, if we regard the planting as an experiment, the result is completely satisfactory. It would be a low estimate to assume that in that year 5,000 bales of ginned cotton were grown. There was a large demand made upon the neighboring States (particularly Tennessee) for cotton seed, and more than one hundred tons had been sent forward from Cairo and distributed.

The rapidly-increasing cultivation of sorghum in this country deserves particular notice. In another year Illinois will send to the eastern market thousands of barrels of sorghum molasses, besides retaining sufficient for home consumption. In 1859 this State produced 797,096 gallons, and at that time attention had only just been directed to sorghum. Since then its cultivation has been increased tenfold. A prominent sugar refiner estimates the annual consumption of molasses in the United States at 80,000,000 gallons, and of this vast quantity of sweets, it is safe to say the free States consume 60,000,000 gallons. He goes on to say: "This enormous and increasing consumption of molasses and syrups in our Northern States should encourage the western cane growers in their efforts to produce crops of western cane syrups, with the certainty that they will find a ready sale for all that will be produced of merchantable quality and in good packages."

Hemp and flax can be produced in Illinois of as good a quality as any grown in Europe. Water rotted hemp from as far north as Sangamon County, when submitted to Government tests, compared favorably with Russian hemp, and exceeded in strength the standard fixed by the Government, in some instances as high as twenty per cent. Good corn lands are good hemp and flax lands, and, therefore, we may safely conclude that Illinois can produce these important articles much cheaper than they can be imported. If the fabrication of linen goods has made but little progress in this country, it is because the raw material has been grown in but limited quantities. In many parts of the West, farmers have raised flax simply for the seed, and thrown away the fibre as valueless, under the mistaken idea that flax which produced seed could not be worked into fine linen. In the Chicago market, hemp and flaxseed are now sold from three to five dollars per bushel. The Lockport (N. Y.) Flax Cotton Company have contracted with as many farmers of Niagara County as desired to do so, for their crops of flax straw at \$10 per ton. In Illinois, with heavy seeding, twenty bushels of seed and three tons of flax straw have been gathered from an acre. This was an extraordinary yield. The average crop in Niagara County, New-York, in 1862, was one ton of straw and fourteen bushels of seed to the acre.

Much attention is directed to Southern Illinois, on account of its peculiar adaptation to fruit raising. It has the advantage of early season, as well as a soil especially suited to the growing of fruits and vegetables, together with unequalled railroad facilities, by means of which the product is brought to the very door of all the great markets of the Northwest. Fruit placed upon the cars in the evening will reach Chicago the next morning. St. Louis is still nearer than Chicago; and strawberries, tomatoes, &c., are supplied to Cincinnati nearly a fortnight in advance of the ripening of these luxuries in the immediate neighborhood of that city. It is the early market that gives the greatest profit to the fruit grower. Strawberries from Cobden and Makanda are placed in Chicago as early as the 14th of May. The Railroad Company supply every convenience for transporting fruit to market. Cars are run with especial reference to this branch of traffic, and the time of running the trains is so adjusted as best to suit the requirements of shippers. Southern Illinois has become the best fruit-growing region of America. While every part of Illinois is to some extent adapted to fruit culture, it is only in the southern part of the State that all conditions are found in the highest perfection. Pears, apples, peaches, grapes and strawberries, are produced in all abundance. During the last year, upwards of 200,000 fruit trees were planted in orchards south of Centralia, within six miles of the railroad track; but no matter in what extent they may be multiplied, the demand for fruit will always be in advance of the capacity to furnish what is wanted.

Pork packing has become an immense business in this State, the number of hogs packed in 1862 amounting to 1,484,534 head, half a million in excess of Ohio, which until the last year or two has stood first among the pork-producing States. The following table, giving the number of hogs packed in seven States in 1862, shows a wonderful result:

Illinois.....	1,484,534	Kentucky.....	130,920
Ohio.....	981,683	Wisconsin.....	196,745
Indiana.....	587,528	Missouri.....	284,011
Iowa.....	403,899	Total.....	4,069,680

Illinois is the great stock-raising State of the country—sending two thousand head of beef cattle a week to the New-York market. In the census return of 1850 the live stock in Illinois had a valuation of \$94,209,258, and in 1860 it had increased to \$73,434,621—only two States (New-York and Pennsylvania) exceeding that amount of value. The raising of stock for market has been the source of many fortunes in Illinois. The Company have large tracts of land well adapted by nature to the raising of cattle, sheep, horses and mules—better adapted, indeed, than are the lands of almost any other State of the Union. During the year 1862, the Illinois Central Railroad brought to Chicago, from various stations along the line, upwards of 30,000 head of beef cattle, and about 10,000 sheep. Wool-growing is a branch of industry that cannot be overdone and will inevitably be largely increased.

The immense coal deposits of Illinois are worked at different points near the railroad, and thus the settlers are enabled to obtain fuel at the very cheapest rate. Du Quoin and St. John, in Southern Illinois, and La Salle, are the principal places from which coal is distributed. The statistics of coal produced in the United States for the year ending June 30, 1860, place Illinois third in the list of coal States—Pennsylvania being first, and Ohio second. In the period named, the coal mined in this State amounted to 14,906,643 bushels, valued at more than a million of dollars. The production at the present time is largely in excess of this amount.

To whatever extent the resources of this State are developed, there can never be any very great accumulation of breadstuffs in this country. It is impossible for Europe to yield enough wheat for its three hundred millions of people, and the soundest writers upon the subject assert that even with the most favorable harvests three-fourths of the population are inadequately fed. With cheap means of transportation to the shores of the Old World, it is believed that five hundred million bushels of breadstuffs would be annually purchased from the United States. But it is not alone to wheat and corn that the export trade is confined. In Illinois almost everything that contributes to food for man is produced in excess of the wants of the population, and finds a profitable market in the Eastern States and in Europe.

The Central Railroad Company have given no encouragement to speculators, few of whom are either permanent or improving owners. Their effort has been to secure the actual settler by offering him extraordinary inducements, for it is he whose labors enhance the value of the neighboring lands, and contribute to the traffic of the road. The good effects of this policy have long been apparent. More than a hundred cities and villages now line the railroad, with populations varying from 200 to 10,000 or more, having factories, mills, stores, post-offices, schools, churches, and newspapers. They rapidly increase in numbers and wealth, distributing the comforts and luxuries of civilized life to the settlers, while they open up unlimited opportunities for profitable employment to the business man, the trader, and mechanic.—Appleton's Railway Guide.

Cauliflower certain to Head.

J. M. THORBURN & CO.,

beg to call the attention of Amateurs and Market Gardeners to their Celebrated

NONPAREIL CAULIFLOWER SEED.

25 cts. per paper; \$1.50 per oz.; or \$30 per lb.

We can confidently recommend the above as the very best variety in cultivation.

ALSO

Extra Early Peas.
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For Varieties, Descriptions and price of all Seeds,

Send for the Catalogue of Vegetable and Agricultural Seeds.

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NEW FLOWER SEEDS.

J. M. THORBURN & CO.'S

Annual Descriptive Catalogue

OF

FLOWER SEEDS AND

SPRING BULBS,

Containing all the desirable novelties of the season

for 1865,

has just been published and will be mailed free on application to

J. M. THORBURN & CO.,

Growers and Importers of Seed,

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The New Zinnia Mexicana, 25 cts. per paper, by mail.

Choice and Rare Seeds.

McELWAIN BRO'S

Illustrated Annual Catalogue and Vegetable and Flower Garden Manual for 1865, will be published early in February. It contains a description of the most valuable and popular varieties of Flowers and Vegetables in the world with explicit directions for their treatment and culture, comprising about 75 pages of closely printed matter, **BEAUTIFULLY ILLUSTRATED.** It will be forwarded to all applicants enclosing 15 cts.

Address **McELWAIN BRO'S,**
Springfield, Mass.

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FLOWER AND VEGETABLE SEEDS,

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Guide to the Flower Garden,

FOR 1865; IS NOW PUBLISHED.

It Contains Accurate Descriptions of the LEADING FLORAL TREASURES OF THE WORLD,

WITH FULL DIRECTIONS FOR

Sowing Seed, Transplanting, & After-culture.

This beautiful and useful FLORAL GUIDE consists of about 70 pages, beautifully illustrated with over Thirty Engravings and Two COLORED PLATES.

It is published for the information and benefit of my customers, and to those it is sent FREE. To all others, price 10 cents, including postage, which is less than the actual cost. Address

JAMES VICK,

Rochester, N. Y.

Dreer's Garden Calendar for 1865,

Contains practical directions for the cultivation and management of the Esculent and Flower Garden. Also select lists of Vegetable and Flower Seeds; with recent introductions. New Roses, Dahlias, Gladiolus, etc., mailed to all who enclose a postage stamp. Address

HENRY A. DREER, Philadelphia, Pa.

SEED! SEED! SEED!

FOR THE

FARM & GARDEN.

1865.

For the present planting season, we offer a choice assortment of seeds, the quality of which is very fine, and in general, the supply good, but owing to the very severe drouth of the last summer, some sorts are scarce.

We have

Early and Dwarf Peas.

Medium and Late Peas.

Dwarf Beans, Pole Beans.

Extra Early Dwarf Sugar Corn.

Mammoth Sugar Corn.

All valuable sorts of Beet, Cauliflower, Carrot, Cucumber, Melon, Lettuce, Parsnip, Radish, Squash, Pumpkin, Tomato and Turnip.

ONION SEED.

Early, Globe and Flat Red, Globe Danvers, and Yellow Flat Dutch, Early White, and White Portugal.

ONION SETTS.

Yellow and White.

HERB SEEDS.

Thyme, Marjoram, Sage, Savory, and all other sorts.

FRUIT SEEDS.

Apple, Pear, Quince, Cherry, Apricot, Currant, Gooseberry, Raspberry, Strawberry.

GRAIN.

Spring Wheat, Spring Rye, Barley, Poland Oats, Buckwheat, White Flint Corn, Yellow Flint Corn, Dent Corn, King Phillip Corn, Flour Corn.

CLOVER, GRASS SEEDS, &c.

Red Clover, White Clover, Lucern, Timothy, Red Top, Bent, Kentucky Blue, Fowl Meadow (this is the true kind), Sweet Vernal, Perennial, Rye, Italian Rye, Italian Millet, Hungarian Millet, Sainfoin, Spurry, Vetches, Flax, Chinese Sugar Cane, Broom Corn, Tobacco, Long and Short Staple Cotton, Grafting Wax, Oil Soap, etc.

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Dealers supplied with assortments of packets for retailing, their own selection, or in quantities in bulk, at lowest Wholesale rates.

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189 & 191 Water-st., New-York.

Choice Seed.

With the return of another season I would invite the attention of the public to my Annual Catalogue of reliable Garden Seed, including over 200 varieties, many of which are of my own raising. I would call particular attention to the following list of new, rare or very desirable vegetables; Cannon Ball Cabbage (new, early, the heads are as round and about as hard as a cannon ball); Marblehead Mammoth Drumhead Cabbage (the largest in the world)—Stone Mason Cabbage (the best of all winter cabbages, put up in half oz. packages, and sold by the pound if desired)—Learman's Mammoth Cauliflower (the largest of the kind)—Mammoth French Squash (weighs from 100 to 250 lbs.)—Mammoth Sweet Corn (the largest sort known, selected from ears weighing from two to three pounds, very sweet, excellent for the table)—Yokoboma Squash (new from Japan)—American Turban Squash (new, the driest, sweetest and best of all fall squashes, first rate)—Striped Gaudaloupe Egg Plant (quite ornamental)—New York extra large purple Egg Plant (the largest of all varieties)—Ornamental Kale (several varieties in one package; fine for either the flower or kitchen garden)—Pierce's American Cauliflower (the standard late sort in Boston Market)—Early Paris Cauliflower (imported seed, the best early sort)—Ward's New Alma Cauliflower (a popular new English variety)—Early White Japan Melon (new, very sweet, fine)—Ward's Nectar Melon (the sweetest, spiciest, best of all the green fleshed varieties)—Caterpillar Plant (a curious vegetable; several varieties in one package)—Vegetable Snails (another natural curiosity). Each of the above at 25 cents per package. Forty Days' Corn (extra early, about 10 days earlier than Darling's Early)—Mexican Sweet Corn (the sweetest of all varieties of table corn)—Golden Sweet Corn (an early, prolific, sweet table corn, of a bright golden color, fine)—Hubbard Squash Seed (true; I introduced this)—Cow or Tree Cabbage (for stock)—Yard Long Bean—Extra Early York Tomato (very early, very prolific, of good size and excellent quality)—Cook's Favorite Tomato (a very early apple tomato, prolific, of excellent quality)—Yellow Lupins (the plant so highly recommended for subsowing in a recent Patent Office Report—also highly ornamental)—Tom Thumb Pea (very early, grows 10 inches high, very productive)—Drew's New Dwarf Pea (new, very dwarf, very prolific, peas egg shaped, each plant forms a bush, but one pea being required to about one foot of row)—Brown's New Dwarf Early Marrowfat Pea (a new variety which may be relied upon, as both the earliest and most dwarf Marrowfat grown; very prolific)—Improved Long Green Cucumber—Six finest varieties of Cabbage Lettuce in one package. True Boston Curled Lettuce (the most clearcut of all, quality good)—Ornamental Gourds (many varieties in one package)—Spotted Sieva Bean, Concord Bean (a new pole bean, remarkably early, quality first-rate)—Extra Flat Beet (new, very early, about as flat as a turnip, quality excellent)—Chick Peas (two sort mixed; extensively used in Europe as a substitute for coffee)—Chinese Sugar Cely (the most clearcut of all, quality good)—Chinese Sugar Cely (one of the largest and best varieties cultivated)—Lester's Perfected Tomato (very large and thick meated)—Sutton's Student Parsnip (new, recently originated in England, desirable)—Chinese Rose Winter Radish (decidedly the best of all the winter sort, an acquisition)—Hood's Dwarf Imperial Purple Celery (new, superior)—Indiana Chief Bean (a pole bean; can be used as a string bean much better than any other variety; very productive).—Each of the above at 15 cents per package. Catalogues sent gratis to all. Those who received it last season will receive it this without writing for it.

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Marblehead, Massachusetts.

Green Houses for sale in a good location with no competition. Address G. E. ADAMS, Logansport, Ind., Box 239 P. O.

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And all others who wish pure and reliable Seeds, should purchase



which are grown by the Subscriber from Selected Stock, and are always Warranted as Represented. Price List, with Buist's Garden Manual for '65, mailed to all who enclose stamp for postage.

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FARM AND GARDEN IMPLEMENTS

of every variety.

Bone Dust, Guano, Poadrette, Bruce's Concentrated and other manures.

Plants, Trees, &c. For sale at wholesale and retail, at low prices.

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The subscriber has been engaged over thirty years in raising all kinds of Garden, Vegetable and Flower Seeds, and having over one hundred acres devoted to that purpose, is enabled to offer as good a stock of seeds as can be found in the country. Dealers can be supplied in any quantity, either by the pound, bushel, or neatly put up in small papers suitable for retailing. A list of prices will be sent to all applicants. G. R. GARRETSON, Flushing, N. Y.

Seeds. Seeds. Seeds.

Fresh and reliable—
AT GRIFFIN BROTHER & CO.,
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20 Choice varieties for \$1.00; 45 Choice Varieties for \$2.00. Notwithstanding the great advance in the prices of most kinds of seeds since last season, we shall continue to furnish the above collections at our former liberal rates. They contain only those varieties that are most valuable, and enough in quantity to seed an ordinary sized garden. Any person sending for these collections can not but be well pleased, even though they use less than half the varieties. Those who desire larger quantities will find our Collections for \$5, \$8, \$15, \$20, \$25, equally desirable and economical. For list of the contents of these, and a great variety of Vegetable and Flower Seeds, see our

Illustrated Catalogue

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We have a fine stock of Onion Seed which we warrant to be true to name and sure to germinate. As the American crop is quite short it will be necessary for those in want of the best seed to secure it early. We will furnish at the following rates until March 20th.

Early Red.....	oz.	lb.
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Onions and How to Raise Them.

What soil is best; how to prepare it; how to manure it; how to tell good seed from bad; how to plant it; how to grow onions from seed, potato onions, onion sets, shallots and top onions; when to pull onions; how to store them; how to prepare for market, and when and where most profitable to market them; what onions to select for seed, and how to grow it, and a hundred minute details too valuable to beginners, with many facts relative to peculiarities of onion raising in the Southern, Eastern and Western States of value to old growers. Illustrated with original engravings of the "Dave Warren" Onion, Early Crocker Onion (new), Red Wethersfield and Potato Onion, Sowing and Weeding Machines. In paper covers, forwarded by mail, prepared by the subscriber at 30 cents each. Seedsmen and Booksellers supplied at wholesale rates. **JAMES J. H. GREGORY, Seedsmen, Marblehead, Mass.**

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We have on hand a large supply of Sorghum and Imphee Seed of the best varieties, to which we respectfully call the attention of those interested in the Cane culture. We have taken great pains to procure good choice seed; and believe we have the purest lot in the country. Those wishing seed will do well to order early and thus guard against disappointment such as was experienced by many last season. Cook's Evaporator, Cane Mills, Corn Crushers, Sawing Machines, &c., &c., for sale. Seed Circular and Sorgo Hand-Book sent free. **BLTYMYER, BATES & DAY, Mansfield, Ohio.**

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Regular Sorgo.—By Mail (prepaid), 30 cts. per lb. By Express, 10 lbs. or less, 25 cts.; 10 to 40 lbs., 20 cts.; and over 40 lbs., 15 cts. per lb.
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I am receiving letters daily from all parts of the United States, from Farmers, Gardeners, and others, who pronounce my Turban to be the drest, sweetest, finest grained, and most delicious fall squash they ever ate. The Hubbard is universally acknowledged to be the best of all winter squashes, while the new Japan Squash, the Yokohama, is pronounced the very best of its class. I was the original introducer of the Hubbard and Turban squashes. Packages of seed, (all of my own growing,) sent by mail, with full directions for cultivating, for 25 cents each for Turban and Yokohama, and 15 cents for Hubbard. Five packages of Turban or Yokohama, \$1.00.—Hubbard by mail, post-paid by me, \$2 62 per pound. **JAMES J. H. GREGORY, Marblehead, Mass.**

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300 Bushels Imported Extra Early Daniel O'Rourke Peas, just received. Market Gardeners who wish a pure Extra Early Pea should purchase from this lot. Prices on application to **ROBERT BUIST, JR., PHILADELPHIA.**

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We have a good supply of genuine Seed Leaf Tobacco Seed grown expressly for us from selected plants, by one of the best cultivators in the Valley. Packets containing 1 oz. with full directions for cultivation will be forwarded to any address for 50 cts. Prices for larger quantities will be given on application. Address **McELWAIN BROS., Springfield, Mass.**

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NANSEMOND SWEET POTATOES for SEED. Price \$6 per single bushel, \$15 per barrel of 3 bushels. Reasonable discount on large orders. Plants, also in proper season. This variety is successfully grown at the north. Send for circular of directions, etc. Address **MURRAY & CO., Fosters Crossings, Warren Co., Ohio.**

SWEET POTATO SEED.—Improved Nansemond Seed potatoes for sale in lots to suit at \$5 per bushel; a bushel will produce from 3000 to 5000 plants. **J. C. THOMPSON, Tompkinsville, (Staten Island) N. Y.**

GOODRICH SEEDLING POTATOES for Seed. Orders for the Pinkeye Rusty Coat, Czeco, and Garnet Chili varieties, carefully selected, will be filled by the subscriber, when the weather admits, at five dollars per barrel. Enclose the money with order. **E. C. ALLEN, West Meriden, Ct.**

6 lbs. GOODRICH'S SEEDLING POTATOES FOR \$1, by mail pre-paid, Garnet Chili, Czeco, and Pinkeye Rusty-coat, 2 lbs. of each variety. 800 bushels Seed potatoes for sale. Price \$3 50 per bin. Circulars free. **P. SUTTON, Ransom, Snagsheana Co., Pa.**

SEED POTATOES BY MAIL, the most popular thing out. A liberal postal law enables farmers, however distant, to try the new varieties at trifling expense. For testimonials, terms, &c., address **E. WILLIAMS, Mount Clair, N.J.**

Dwarf Broom Corn Seed.

A genuine article sent by mail at the following rates: for 1/2 lb., 25 cts.; 1/4 lb., 45 cts.; 1 lb., 80 cts.; 1 1/2 lbs., \$1, by **D. REDFIELD, Scotchtown, Orange Co., N. Y.**

DWARF BROOM CORN SEED.—I will send the genuine Dwarf Broom corn seed, post-paid, at the following rates, 1/2 lb. 50c., 1 1/4 lbs. \$1, 5 lbs. \$3, 10 lbs. \$5 **ELIAS REED, Waterville, Lucas Co., Ohio.**



All sizes of Cloth, Paper Parchment, and Manilla Tags made and printed to order, at lowest prices. Send for Price List.

Corn Planting! Time Saved.

Every farmer should have one or more of Thos. B. McConaghey's Patent Corn Droppers. They will positively save one half the time, over the old way of dropping corn. For Three Dollars I will send one Dropper to any address free of Express charges. A liberal discount made to them that buy to sell again. Address **THOS. B. MCCONAUGHEY, Newark, Delaware.**

Hot Water Furnaces

for Warming Green-houses, Conservatories, Graperies, &c. **WEATHERED & CHEREVOY, 317 Prince-st., New-York**

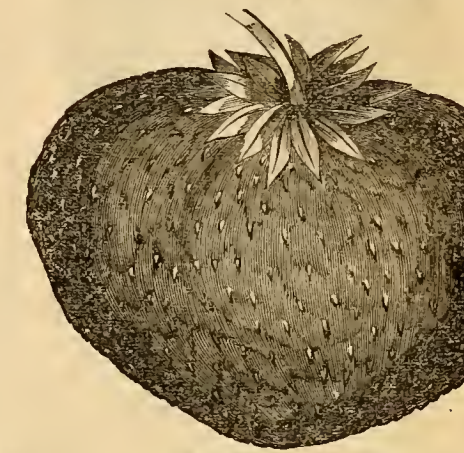
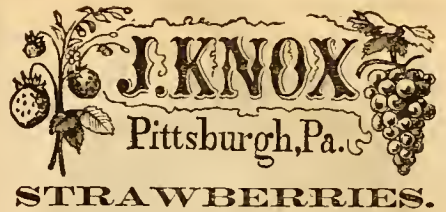
FERTILIZERS !!

Lester's Pure Ground Bone. Pure Peruvian Guano.

E. F. COE'S SUPERPHOSPHATE OF LIME.

Bruce's Concentrated Fertilizers. Plaster, Poudrette, etc.

For sale in quantities to suit purchasers. SEND IN YOUR ORDERS EARLY **R. H. ALLEN & CO., 189 & 191 Water-st., New-York.**



Great Agriculturist.

It is claimed for this New Seedling that it is of unequalled size and productiveness, single plants producing as high as 234 berries, many of them weighing one ounce each, of bright glossy crimson color, very firm, high flavored, and a first class market berry. For an account of its origin; introduction; purchase by us; character and productiveness of the plant; size and character of the fruit, and other information, see our circular. We have bought of Mr. Judd his entire stock of plants for sale, and are now able to furnish them at the following prices:

1 plant.....	\$ 75	50 plants.....	\$ 15
2 plants.....	1 20	100 ".....	25
6 ".....	3 00	500 ".....	125
12 ".....	5 00	1000 ".....	200

Our stock of Strawberry plants this season, including **Golden Seeded**, the best early; **Russell and Fillmore**, of wonderful size and productiveness; **French's Seedling, Triomphe de Gand, Wilson's Albany**, and all other desirable kinds, is the largest and best we have ever offered.

Strawberry Plants by Mail.

We will send safely packed and post-paid by mail
For \$1, 1 Agriculturist, 8 Golden Seeded.
For \$2, 2 Agriculturist, 10 Golden Seeded, 12 Russell.
For \$3, 3 Agriculturist, 10 Golden Seeded, 12 Russell, 12 Fillmore.
For \$5, 6 Agriculturist, 12 Golden Seeded, 12 Russell, 12 Fillmore, 12 French's Seedling, 6 Kitley's Gollah.
For \$10, 12 Agriculturist, 24 Golden Seeded, 24 Russell, 24 Fillmore, 24 French's Seedling, 12 Kitley's Gollah, 12 Lening's White.

For description of above, and many other kinds; our select lists; mode of culture; prices, &c. See our illustrated catalogue.

Graps.

Our vines are grown in the open air, from the best of bearing wood, taken from our own vineyards, and are greatly superior to those raised under glass with their roots cramped in pots. They are healthy and vigorous, have remarkably good roots, and give entire satisfaction in their growth, when planted, which is the true test of a good vine. We offer in large quantity the following:

- Concord.** **Montgomery.**
- Delaware.** **Taylor.**
- Hartford.** **Elsingburg.**
- Creveling.** **Herbmont.**
- Diana.** **Allen's Hybrid.**
- Union Village.** **Rebecca.**
- Iona.** **Israella.**

Adirondac, and other desirable kinds.

Raspberries.

Our collection is unsurpassed, if equalled anywhere, and includes:
Hornet.—The largest of all, and of great excellence.
Pilate.—Very early, and valuable.
Imperial.—Very productive and fine.
Suchett.—Very beautiful and good.
Jonet.
Brinckle's Orange.—Finest flavor.
Franconia.—One of the very best.
Improved Black Cap.—Hardy and very profitable.
Philadelphia, Allen's Hardy, &c. Blackberries.

New Rochelle, Dorchester, and Newman, in any quantity.

Currants.

We have taken special pains to collect the best varieties of currants, and have a very large supply of:
Cherry, Largest and best for Jelly.
White Grape, Best White, very fine.
Victoria, Productive and latest.
Short Bunch Red, Productive and very good.
Marsailine, Very large, and best quality.
Goseberries, Asparagus, Linnens Rhubarb, &c., &c. Send for Catalogue enclosing stamp. **J. KNOX, Box 155, Pittsburgh, Pa.**



Great Agriculturist.

Another year's trial has proved this Strawberry to be one of the most productive as well as the largest in the world. My stock for the coming spring is large, and the plants are very fine. Delivered in rotation as ordered. Two plants, \$1 20; Six, \$3 00; Twelve, \$5 00; 100, \$25; 1000, \$200. The following are the great prize berries in Europe for 1863. Lucida perfecta, Bijou, Haquin, and Souvenir de Kief, at \$2 per dozen, or the four for \$6 00.

The following 8 varieties are the prize berries of Belgium and France, for 1862. Orb, Lucas, La Negress, Frogmore late Pine, Exposition de Chalons, Madam Cologne, La Delicieuse, Quinquifolia, at \$1 per doz., or the 8 for \$6 00.

Russell's 50 cents per doz.; or \$2 per hundred. French Seedling, the best early berry, and Buffalo Seedling, \$1 per doz. Lennig's White, Deptford White, White Piacapple, 75 cents per doz.; or \$4 per hundred.

All orders addressed to **WM. S. CARPENTER,** 339 Greenwich-st., New-York.

STRAWBERRIES.

All persons desiring to purchase Strawberry Plants are requested to send for my Price List of all the new and leading varieties. Plants taken up and packed with much more than usual care, as letters from my customers in all sections amply testify. **EDWIN MARSHALL,** Po'keepsie, N. Y.

Great AGRICULTURIST STRAWBERRY.

I have a stock of unusually Strong Plants of this celebrated variety, which I will send post-paid to any P. O. address, packed with unusual care, as follows: 2 plants, \$1; 6 plants, \$2 50; 12 plants, \$5. Order early.

EDWIN MARSHALL, Po'keepsie, N. Y.

STRAWBERRY PLANTS, Fruit and Ornamental Trees, Shrubs, Vines, and a general assortment of Nursery Stock. Catalogues mailed to all applicants.

FRANCIS BRILL, Nurseryman and Seedgrower, Newark, New Jersey.

N. B.—My Seed business will hereafter be conducted under the name and style of **BHILL & RUMBLE,** 153 Broad-st., Newark, N. J.

FRANCIS BRILL,

STRAWBERRY PLANTS for sale. Five of the best varieties of plants for cultivation, viz.: Russell's Prolific and Buffalo Seedling at \$2 per 100; French's Seedling at \$5 per 1,000; Cutler's Seedling and Downer's Prolific at \$3 per 1,000. Also other varieties at reduced prices.

For sale by, **THOS. C. ANDREWS,** Moorestown, Burlington Co., N. J.

Russell's Seedling Strawberry.

One Dollar per 100 plants.
Nine Dollars per 1,000 "

EDWARD MERRITT, Poughkeepsie, N. Y.
March 1st, 1865.

STRAWBERRY PLANTS for general Cultivation. Ten of the best varieties for sale at the lowest rates. Price list sent free to all applicants. Varieties warranted true to name.

JOHN S. COLLINS, Moorestown, Burlington Co., N. J.

FOR THE BEST SELECTED STRAWBERRIES, Raspberries and Blackberries, which yielded for me last summer over 1,500 bushels of fruit, send for Catalogues gratis.

WM. FARRIS, Cinnaminson, N. J.

STRAWBERRY PLANTS FOR SPRING SETTING; most of the promising and new varieties, including French's Seedling, T. de Gand, and others. Send for a catalogue free to all. **SAML L. ALLEN,** Cinnaminson, N. J.

STRAWBERRY PLANTS of best quality and varieties. For prices, etc., Address **E. WILLIAMS,** Mont Clair, N. J.

GRAPE VINES.—The undersigned begs leave to call the attention of dealers and planters to his large and well selected stock of Grape Vines, and feels fully convinced that he will give satisfaction to all who favor him with their orders. Send for Price List.

CLINTON GRAPE VINES.—A few thousand Grape Vines of this variety for sale at \$5 per 100; \$45 per 1000. Address **G. E. MEISSENER,** Richmond P. O., Staten Island, N. Y.

Vines at Wholesale Rates to Clubs.

Propositions for the formation of clubs, by which all can obtain vines at wholesale prices, with other advantages, will be sent for a stamp. The propositions may accompany the price list and twenty-four page pamphlet, or any of the catalogues, without cost of stamp; and I would invite the attention of every purchaser to them for their great advantages.

The excellence and importance of the new kinds, Iona and Israella, are now so well understood and appreciated that there is but one voice in regard to them, and that of earnest, enthusiastic praise from all quarters where they are known.

These can be very cheaply obtained by clubs who buy not less than fifty of the vines. Early orders are necessary to secure the best plants.

ENGRAVINGS OF THE IONA.

A limited number of fine lithographic colored engravings of the Iona Grape have been prepared at great cost, by an eminent artist, which exceed in truth and beauty anything of the kind that has been produced within our knowledge, in any country; greatly surpassing those of the celebrated French artists, Grobon and Poiteau, in the brilliance and delicacy of their coloring, by which the transparency and iridescent play of light is represented. As a work of art, it is worthy of a place in any portfolio, or of an elegant frame for the walls of the library or parlor.

These engravings are furnished only as premiums with Iona vines. For particulars see propositions to clubs. As our artist was able to complete but a limited number, we can not agree to furnish them throughout the entire season. All who are desirous of securing them to aid in canvassing will do well to send an early remittance, according to one of the "special propositions."

HAS THE EARLY RIPENING OF THE IONA AND ISRAELLA GRAPES BEEN OBTAINED BY ANY FORCING APPLIANCES OR BY ANY OTHER MEANS THAN THAT OF ORDINARY CULTIVATION IN GARDEN OR VINEYARD?

In answer, I would say both of these kinds have always been grown under very moderate circumstances of cultivation, in full exposure in the open ground, and without any forcing appliances whatever. Their surpassing productiveness, as well as unequalled quality, are from the excellence of the kinds as may be clearly seen by any one who will call and examine.

They have always been open to the inspection of the public at all seasons, and will continue to be so.

A Pamphlet of Twenty-four pages gives the full statement of the manner in which these vines were produced; in which will also be found hints for the production of Seedlings of all kinds, with a view to improvement. It contains a full account of the management of all of those vines from their production from seed to the present time. It is sent for a two cent stamp, and I commend it to the attention of all who have any interest in planting vines in garden or vineyard. It contains also, full Tables of Contents of the Descriptive and Illustrated Catalogues, with Price List of vines of all kinds.

The Descriptive Catalogue is sent for ten cents, and the Illustrated for twenty-five cents.

These two bound together in flexible paper-covers, and called "Maanald of the Vine," are sent for fifty cents.

The Descriptive exhibits the principles and general considerations which form the basis upon which Grape-culture is to be successfully conducted, and is illustrated with many very fine and life-like Engravings. It also contains full and accurate descriptions of all our native kinds that are worthy of notice, with a clear representation of their relative value with a chapter on "Wine Making." Also a lecture by Mr. Mead.

The Illustrated (eighth edition) treats thoroughly of practice and of practical results, illustrated with about eighty engravings. The two together constitute the most thorough, practical and comprehensive treatise on the Vine in the language. The conditions of the full measure of success are clearly stated, and the precise manner of performing every operation is so clearly shown as to be easily intelligible to every reader.

P. S.—The supply of colored engravings of the Iona is at present exhausted, but another limited supply is in preparation, and will be ready in a few days.

I would call the attention of all interested in good grapes whether for family supply or for market, to the distinctive excellence of the Iona and Israella.

The Iona as a grape for late keeping, as well as for its earliness, and for its quality, in which it has no competition, will soon render all of the inferior kinds (which are now recommended only for market, and not for use), of very little value. The vines are offered at extremely low prices, as will be seen by consulting Price List and Club Propositions. I would also call attention to the advantage of obtaining vines grown from strong mature wood that has been prepared for that special purpose.

C. W. GRANT, Iona (near Peekskill), Westchester Co., N. Y.

A CARD.

We take this method to inform our friends and customers that our large stock of grape vines is entirely sold, and we were obliged to shorten the orders of many of our best customers. We sell only vines grown by ourselves, none have been sold at auction or by agents, and we have advertised but little. Our plants are good, strong and healthy enough to sell without puffing.

J. F. DELIOT & RYDER, Vine Growers, Sing Sing, N. Y.
N. B.—I built two green-houses 100 feet long last fall, and expect to put up two more this spring, especially for raising vines, to which I devote myself wholly, and I hope to have a full supply of fine vines next fall.
J. F. DELIOT, Vine Grower, Sing Sing, N. Y.

30,000 CONCORD GRAPE VINES.

No. 1, One Year old, \$10 per 100; or \$90 per 1000.
" 2, \$8 per 100; or \$70 per 1000.
2 Year old, \$20 per 100; or \$180 per 1000.

Delaware Grape Vine Layers, \$6 per doz.
Union Village, \$6 per doz.

ROGERS' HYBRIDS.

No.'s 4, 15 and 19, we have fruited the past 3 years, and they have done finely.

We have also No.'s 1, 3, 33, 30. Price \$9 per doz.

GEO. SEYMOUR & CO., South Norwalk, Conn.

20,000 Concord Grape Vines.

Our vines are grown in open field, all over one year are transplanted and will bear at once.—Concord 1 to 3 years, 25 to 50 cts. each; \$10 to \$20 per 100; \$85 to \$175 per 1000. Roger's Hybrid (mostly No. 19), 75 cts. each; \$8 per doz. A few bearing vines, \$1 50 each; \$12 per doz.; origin, Salem, Mass., 12 miles from us. Creveling, extra strong vines, Diana, Delaware, Hartford Prolific, Dracont Amber, this is much the earliest grape of my 50 bearing varieties.—Also Allen's Hybrid, Iona, Israella, Adirondac.—20,000 Russell's Prolific Strawberry plants, \$2 per 100; \$18 per 1000. 20 other Strawberries.—20,000 Currant bushes, new varieties. A new Gooseberry.—Large and Small Fruits generally. Shrubs, Shade Trees, Evergreens, &c. Send stamp for Illustrated Catalogue **J. W. MANNING,** Reading, Mass.

50,000 CONCORD VINES.

5,000 ROGERS' HYBRID'S.

Send stamp for Wholesale or Retail Catalogue, containing cut of Rogers' No. 19, The Special Premium Grape of the Penn. Horticultural Society, which is the best new hardy Black Grape yet introduced. We have the whole stock from original vine. Address **WM. PERRY & SON,** Bridgeport, Conn.

GRAPE VINES, &c.

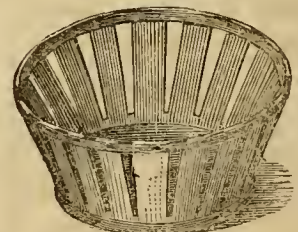
Three good 1 year old Delaware Grape Vines, or 2 Creveling, or 2 Maxataway, or 6 Concord, or 2 New Japan Variegated Honeysuckles, will be sent post-paid to the address of any one sending a \$1 Greenback to **MAHLON MOON,** Morrisville, Bucks Co., Pa.

GRAPE VINES FOR SPRING 1865.—Adirondac, Iona, Israella, Allen's Hybrid, Delaware, Concord, Rogers' Hybrids, No. 15 and 19, Hartford Prolific and Clinton. For sale at low prices by **J. W. CONE,** Vinland, N. J. Formerly Norfolk, Conn.

The above vines are of best quality and warranted true to name. Samples sent on receipt of price per dozen. Vines sent by mail post-paid, when so ordered.

THE VENEER FRUIT BASKET.

Patented May 31st, 1864.



We offer to the trade for the year 1865, the celebrated **VENEER FRUIT BASKET,** which has been so extensively and satisfactorily used the past season. To those who have used it, it recommends itself; to others we claim for it superiority over the many kinds now in use for the following reasons: It is broad at the bottom and not easily upset. Shallow and low, it holds fruit when being transported to market, nests closely together when empty, and is neat, stylish, durable and cheap.

For Circulars of price and description, address the Manufacturers, **A. BEECHER & SONS,** Westville, Conn.

By Mail. The New Strawberries, Grapes, Currants, &c.

Priced descriptive list will be sent to any address. **B. M. WATSON,** Old Colony Nurseries, Plymouth, Mass.

Five Hundred Thousand

(500,000.)

CRANBERRY PLANTS,

for sale by **GEO. A. BATES,** Bellingham, Norfolk Co., Mass. Send for Circular on the Cranberry Culture.

THE TRUE CAPE COD CRANBERRY for Spring planting, for Upland and garden culture, and for swamps. Under my method of cultivation the yield last season on Upland was over 400 bushels per acre. Explicit directions for cultivation with prices of plants, with nursery catalogue complete, will be sent to any address. **B. M. WATSON,** Old Colony Nurseries, Plymouth, Mass.

CRANBERRY PLANTS.—The best bearing vines and so others, can be had, not by the Thousand but by the barrel. Enquire of **Doct. B. H. STEVENS,** Essex, Conn.

CHOICE CAPE COD CHERRY CRANBERRY VINES—famous bearers—plump, rich colored fruit, for sale by **J. F. WOOD,** Middleboro, Mass. Send for Circular.

AGENTS WANTED for sale of Trees, Plants and Seeds, in all the loyal States **B. M. WATSON,** Old Colony Nurseries, Plymouth, Mass.



**THE UNIVERSAL
Cog-Wheel Clothes Wringer**

was pronounced superior to all others at
The World's Fair, in London, 1862,
received the BRONZE MEDAL (highest premium) at
the Great Fair of the
American Institute, in New York City, in 1863.
It has also received the

FIRST PREMIUMS

at the following STATE FAIRS:

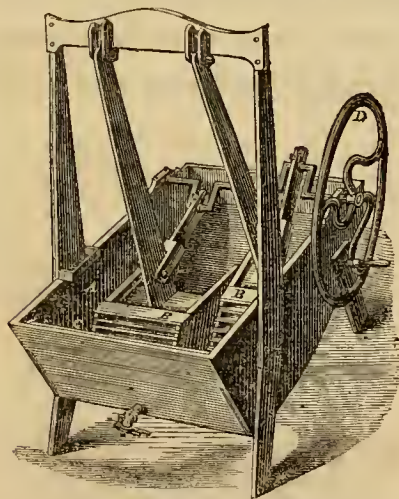
NEW YORK.....	1862.....	1863
VERMONT.....	1863
PENNSYLVANIA.....	1863.....	1864
MICHIGAN.....	1864
INDIANA.....	1863.....	1864
ILLINOIS.....	1864
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and at the principal COUNTY and INSTITUTE FAIRS
throughout the land.

Opinion of Orange Judd, Esq., Editor American
Agriculturist.

It is, in reality, a *Clothes Saver!* and a
Strength Saver! We think the machine more than *pays for
itself every year*, in the saving of garments! There are sev-
eral kinds, nearly alike in general construction, but we con-
sider it important that the WRINGER be fitted with COGS,
otherwise a mass of garments may clog the rollers, and the
rollers upon the crank-shaft slip, and tear the clothes. Our
own is one of the first made, and it is as good as new, after
nearly four years' constant use!

See also Premium list in this paper and advertisement
in back numbers of the Agriculturist.
Prices for the best family sizes—WITH COGS—No. 2, \$10.
No. 1, \$12. On receipt of the price from places where no
one is selling, we will send the U. C. W. free of expense.
EVERY WRINGER WITH COGS IS WARRANTED!
Good canvassers can find profitable employment selling
the U. C. W. For terms and Circulars address
R. C. BROWNING, Genl. Ag't, 347 Broadway, N. Y.



The Nonpareil Washing Machine,

Is the only entirely reliable Washing Machine in existence.
Geared to run three turns of the crank to one turn of the
hand.

It has been in constant use in the family of Mr. Judd, the
Proprietor of this Journal, and in that of Mr. Munn, proprie-
tor of the Scientific American, since 1861. For description,
see advertisement in preceding numbers of the Agriculturist.

Send for free Circular to
OAKLEY & KEATING, 184 Water-street, New-York.

\$1.00.—Preserve Your Eggs.—\$1.00.

One Dollar will procure the right to use Perkin's Patent
for preserving Eggs, Meats, &c. For full particulars, see ad-
vertisement in Feb. number of American Agriculturist.

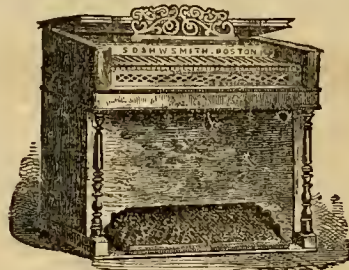
Apply to HENRY E. RICHARDS, Bloomfield, N. J.

Thirty Gold or Silver
Medals, or other first pre-
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within a few years. Their
Cabinet Organs are de-
clared the best instru-
ments of their class in the
world by over 200 of the
most eminent musicians
in the country.

Circulars with full par-
ticulars free. Salesrooms,
274 Washington Street,
Boston; 7 Mercer Street,
New York.

**S. D. & H. W. SMITH'S
AMERICAN ORGANS.**

Pronounced by more than One Hundred of the best Orga-
nists of the country to be Superior to any other Reed In-
strument yet produced, and have received the First Pre-
mium whenever exhibited.
SIBERIA OTT, Wholesale Agent, No. 748 Broadway, N. Y.



The First Premium was Awarded to the
AMERICAN ORGANS

At the New York State Agricultural Fair held at Rochester,
September 1864, over the whole catalogue exhibited, includ-
ing instruments from the most celebrated makers.
Exclusive Territory secured to Dealers and large discounts.
Send for Illustrated Price Circulars and address all orders
SIBERIA OTT, 748 Broadway, New-York.

**BOARDMAN, GRAY & CO.,
PIANO FORTES.**

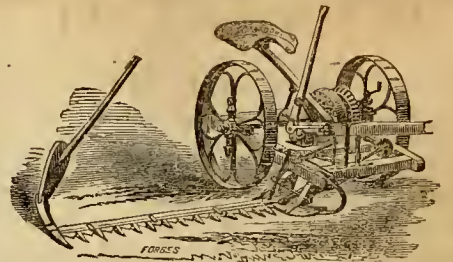
Orders for these celebrated and Superior Instruments
should be addressed to the Wholesale Agent,
SIBERIA OTT, 748 Broadway, New York.

**\$275. SEVEN OCTAVE. \$275.
ROSEWOOD PIANO-FORTES.**

GROVESTEEN & CO., 499 Broadway, N. Y.
New enlarged Scale Piano Fortes, with latest improvements.
Thirty years' experience, with greatly increased facilities
for manufacturing, enable us to sell for CASH at the above
unusually low price. Our instruments received the highest
award at the World's Fair, and for five successive years at
the American Institute. Warranted five years. Terms
net Cash. Call or send for descriptive circular.

The Most Popular Piano Songs.

- "'Twas Evening at the Window." Hoffman. 30
"Twas evening, at the window
We were, my Love and I
- Do they Pray for me at Home. Fiske. 30
"O oft in foreign lands
As I see the bended knee,
Comes the thought, at twilight hour,
Do they ever pray for me."
- I'm lonely since my Mother died. Thompson. 30
"I'm lonely since my mother died,
Tho' friends and kindred gather near."
- I live for those who love me. Clark. 30
"For the wrong that needs restance,
For the cause that lacks assistance,
For the dawning in the distance,
And the good that I can do."
- Tenting on the Old Camp Ground. Kittredge. 30
One of the very best soldier's songs published.
- I'd Choose to be a Baby. The best Comic Song of
the Season. 30
Copies sent by mail, post-paid, on receipt of price.
OLIVER DITSON & CO., Publishers, Boston.



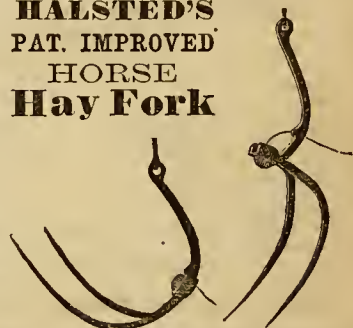
**Nishwitz's Monitor Mower
and Reaper.**

The success of the Monitor is without parallel. It em-
braces every point necessary to make a Perfect Mow-
er and Reaper. It recommends itself to every farmer
for the simplicity of its construction. It is proved to be the
Lightest Draft. It takes the preference for dura-
bility, ease of management and good work.

Four different sizes. Fully warranted. For cir-
culars giving full description, references, &c., Address

F. NISHWITZ, Manufacturer,
Williamsburgh, L. I., N. Y.
J. N. CLOYES,
(General Agent, Central and Western N. Y.) Utica.
P. S. MESEROLE,
(General Agent, Ill., and the West,) 204 Lake-st., Chicago.

**HALSTED'S
PAT. IMPROVED
HORSE
Hay Fork**



Lightness, Simplicity, and

Durability Combined.

After its extensive introduction and use last year, is now
offered to the public in its improved form. Agents wanted.
Town, County, and State Rights for sale. Send for a circular.
Address A. M. HALSTED, 67 Pearl-st., New-York.

**Hussey's Celebrated Plows!
Manufactory at North Berwick, Me.**

These Plows are celebrated for their superior turning ca-
pacity, easy draft, ease in holding, steadiness in the ground,
strength and durability.
"Having thoroughly tested these Plows we take pleasure
in recommending them to the public."—WILLIAM F. ESTES,
Pres. N. H. State Ag. Society, Dover, N. H.
MERRILL BAILEY, Trustee of Shaker Society, Alfred, Me.
Circulars, Price Cards, &c., sent gratis on application.
Address TIMOTHY B. HUSSEY,
North Berwick, Me.

**ATTENTION, DEALERS IN WHEEL
STOCK.**

THE JACOB'S WHEEL COMPANY
are prepared to buy seasoned WHEEL STOCK OF PRIME
QUALITY FOR CASH, in any quantity, such as hubs,
spokes, felloes, bent rims, hickory plank, &c. Address the
JACOB'S WHEEL COMPANY, No. 99 Wall-st., or No. 145
and 147 Bank-st., New-York.

**HURD'S PATENT
American Hog Tamer**
To Prevent
HOGS FROM ROOTING.
Every Farmer Should Have It.
IT SAVES MANY TIMES ITS COST.
Price, with 3 Knives delivered free at
nearest Express Office, \$3.00.
Address EMERY & CO., Chicago, Ill.

Sawing Machines:
In addition to the manufacture of Steam and Horse Powe,
Thrashing Machines, we are building extensively Cross-
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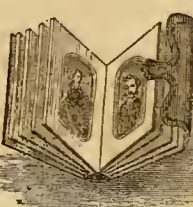
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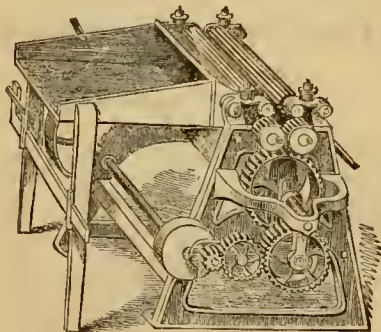
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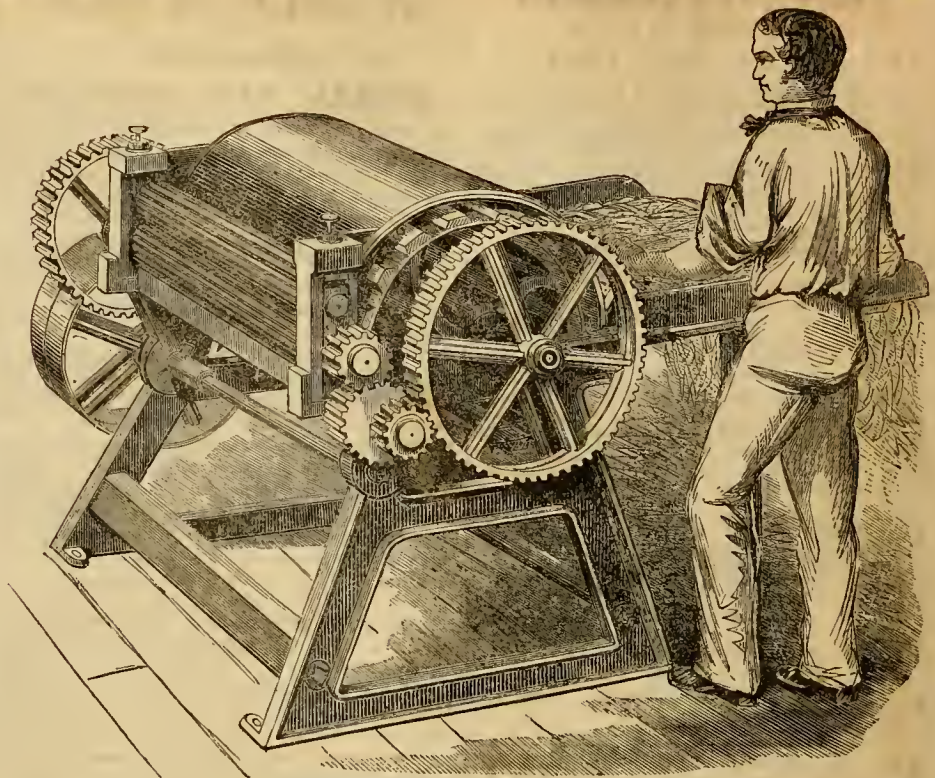
THE STRAW STRAIGHTENER.

While cotton held undisputed sway at the head of textile materials, it was difficult to attract public attention to the less apparent but rapidly increasing necessity for the more extended culture of flax. For a long period the home-grown supply had each year been less adequate to meet the growing demand. Cheap cotton goods had supplanted homespun linen, and other crops had consequently taken the place of the small plots of flax which formerly yielded the home supply, and gave a small surplus for the factories. Although flax manufacture had not at all kept pace with other branches of mechanical industry, nor with the requirements of the country, yet manufacturers could not procure enough of the raw material for their own limited wants; so that, even without the extraordinary demand created by the shortening of the cotton supply in consequence of the war, there was pressing need for the extension of flax culture. One great obstacle however was to be first overcome. The old methods of preparing the fibre for market were tedious, expensive, and unpleasant. Enterprising men accustomed to mowers, reapers, threshing machines, etc., could not be prevailed on to adopt the slow process of hand pulling, or to take hold of the antiquated handbrake and swingle, and hence where flax growing had been found profitable for the sake of the seed alone, the straw was neglected and either burned, or suffered to accumulate in unsightly heaps. About the time



SANFORD & MALLORY'S FLAX BRAKE.

the war broke out, and just when the need of improved machinery began to be most severely felt, the new and improved Flax Brake, invented by Messrs. Sanford and Mallory, was brought before the public. Its importance justified the favorable notice made of it at the time in the *Agriculturist* and other leading journals, and its subsequent successful working has more than confirmed the good opinion of it then entertained. Prominent manufacturers who have put these brakes to practical test for two or three years, are unanimous in their testimony to its great superiority to the brakes formerly in use, both in the amount of work it performs, and in the saving of stock. Another feature of hardly less importance is the fact, that while the use of the old brake required skilled labor, and that even with this there was danger to life or limb of the operator, the new machine can be run with entire safety by any ordinary farm



SANFORD & MALLORY'S STRAW STRAIGHTENER.

hand. In the November *Agriculturist* is an account of its being successfully worked by the daughters of a gentleman who exhibited it at the New York State Fair. This enables the farmers of a neighborhood who engage in raising flax, to unite in purchasing a brake to be run with horse power by themselves, and thus to turn their straw as well as seed to account. At present rates, the straw will give the largest returns, and none can afford to let it go to waste. Enterprising men are entering the business of flax dressing, contracting for the straw and preparing to dress it for the manufacturers' use, and there can be little doubt that they will find it most profitable. In France this preparation of fibre forms a distinct branch of labor, entrusted to men called *liniers*, and by this division of labor the work can be more easily and successfully conducted. The new machinery will do much toward establishing such an arrangement in this country to the benefit of all parties concerned.

Hardly second in importance to the improved brake is a new machine, called the "Straw Straightener," just brought out by the same inventors, for the purpose of preparing tangled straw for the brake, and thus making available the supply which is raised only for seed and threshed out by horses or otherwise. We give an illustration of the implement above. It consists of a revolving skeleton cylinder, armed with teeth set at a proper angle, which take hold of the tangled straw as it leaves the feeding board. The top of this cylinder is enclosed by a concave cast iron cover, provided with grooves through which the teeth of the cylinder run. At the rear of the machine opposite the middle of the cylinder and parallel with it, are two fluted rollers, between which the flax passes as it leaves the cylinder. These revolve a little faster than the cylinder, so that they slightly draw the flax over the teeth and through the grooves in the cover, and by this action, together with the revolving of the cylinder, the tangled straw is straightened and prepared to pass at right angles over the fluted rollers of the brake, so that it may be broken as perfectly as straight

hand-pulled straw. This machine was visited by three editors of the *American Agriculturist* in company with several gentlemen engaged in the flax business, who examined it carefully while in operation, and all agreed as to its efficiency and great value. Perhaps the best evidence of its excellence is the fact, that fifteen of the machines were at once ordered by manufacturers upon the first inspection, and before any circular or advertisement of it had been issued.

This implement is all the more valuable, because it can be used as an adjunct, to prepare tangled straw for any style of brake now in use.

Cotton was introduced because it was cheaper—not better—than flax, and now that by the aid of these improvements flax can be produced cheaper than cotton, the scale must again turn, and those who engage in the business will reap the profits. Already since the introduction of these brakes, the production of dressed fibre has more than quadrupled, being 30,000,000 lbs. now, against 7,000,000 formerly. The seed alone will handsomely pay for raising a crop, leaving the lint to greatly increase the profit. The market can not be overstocked for years, as new uses are constantly calling for increased supply. A single India rubber belt manufacturing company, in New York City, now use flax annually amounting to more than one seventh of the entire product of the whole country before the war; they find it better than cotton, and will never return to their former method of manufacture. While those who now engage in flax raising and flax breaking, will reap splendid profits, the return of low prices will not cause failure, as the demand and price will inevitably continue remunerative. Thus a most inviting field is open for capital and enterprise, which for the good of the country as well as individual profit should be at once entered upon.

Full and interesting details concerning the above machines are given in a pamphlet issued by the Sanford & Mallory Flax Machine Co., which may be obtained by addressing

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VOLUME XXIV—No. 4.

NEW-YORK, APRIL, 1865.

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Contents for April, 1865.

Advertisers and Readers—A word to.....	105
Asparagus—Directions for Culture.....	117
Bees—Apiary in April.....	104
Books for Farmers and others.....	105
Boys and Girls' Columns—About the Month of April— Make Friends among the Birds—Beware of a Prevalent Vice—The Play of Charades—A Good Hint for the Boys and Girls—Damaged Glass—Puzzles and Problems—No Hand Like a Mother's—A Cunning Old Rat—Harry's most Successful Effort—Look out for the Weak Point.....	125-126
Broom Corn—Notes on Cultivation.....	113
Cabbages—Notes on Varieties.....	121
Carpets—Management of.....	124
Cattle—Warbles, Cause and Treatment.....	113
Claytonia or Spring Beauty.....	122
Cold Grapery—Experience with.....	120
Cold Grapery in April.....	104
Corn Ground—How to Plow.....	113
Corn—Selecting Seed.....	112
Cows—Direction for Spaying.....	114
Cows—Treatment at Calving Time.....	116
Cranberries in the Garden.....	121
Current Bushes—Plant this Spring.....	121
Daphne Mezereum.....	119
Farm Work in April.....	101
Fashions, Comfort and Health.....	123
Flax Culture—\$50 Prize Essay.....	107-111
Flower Garden and Lawn in April.....	103
Flowers—Herbaceous Perennials.....	117
Fruit Trees—Cultivation of.....	120
Fruit Garden in April.....	104
Fruit Growers' Meetings.....	104
Garden—Kitchen in April.....	103
Garden Seeds—Notes on Raising.....	117
Gardens for Farmers.....	118
Grape Vines—Directions for Planting.....	120
Grass—Distinguishing Species.....	115
Grass, Kentucky Blue—Notes on.....	115
Grass, Orchard—Notes on.....	114
Green and Hot-Houses in April.....	103
Harkness' Nursery Tree Digger.....	119
Hay—Amount Required by Cattle.....	113
Hoes—Benefit of Sharpening.....	124
Household—Practical Odds and Ends for the lands Cheap—on the Atlantic Coast.....	105
Lawn or Grass Plot—Making.....	122
Market Reports, etc.....	104
Notes and Suggestions for April.....	101
Orchard and Nursery in April.....	102
Papering Walls—Suggestions.....	123
Poultry—Bones Useful for.....	117
Poultry—Preventing Gapes in Chickens.....	113
Premiums for 1865.....	104
Recipes—Sweet Apple Syrup—Potato Syrup—Cheese Omelet—Crackers—Potato Yeast—Drying Squash or Pumpkin—Baked Hubbard Squash.....	125
Seeds—Starting in Pots.....	121
Sheep Raisers "Striking Ile".....	118
Shrubbery in Spring.....	119
Socks Made of Cloth.....	123
Soda, Saleratus, Quick Yeast, etc.....	124
Strawberry Show in June.....	104
Strawberries—Notes on.....	121
Stump Pulling Apparatus—Cheap.....	114
Swine—Best Large Breed.....	112
Tainted Meat, Fish, etc.—Treatment of.....	124
Tallow Candles—Improved.....	124
Tin Bunker on "Striking Ile".....	116
Wheat—Preparation for Sowing.....	113
Wheat, Spring—Best Soils for.....	112
Whitewashing—Directions for.....	123
Wood Anemone or Wind Flower.....	122
Wool—Value of York.....	118

INDEX TO "BASKET," OR SHORTER ARTICLES.

Advertisements, Land.....	107	Catalogues Received.....	107
Agricultural Reports.....	106	Cider, Keeping Sweet.....	106
Beef for Soldiers.....	107	Clubs, Increasing.....	105
Bene Plant.....	106	Cork Oak.....	106
Black Currants.....	106	Crowded Out.....	105
Books, Good.....	107	Downing's Landscape.....	107

Everlasting Flowers.....	106	Park Row, Park Place.....	106
Farms in Iowa, etc.....	106	Premiums for all.....	107
Flax and Hop Books.....	105	Rags, Sell Now.....	107
German Edition.....	105	Rust, Preventing.....	106
Gipsies' Charms.....	106	Sheep and Fences.....	106
Gladiolus bulbs.....	106	Sorghum, How to Plant.....	106
Gloves for Gardening.....	106	Sorghum in China.....	106
Howard Association.....	106	Steam Engine, Glass.....	107
Humburg.....	106	Strawberry Distribution.....	107
Humburg Advertisements.....	106	Subscriptions—Date.....	105
L'Estragon.....	106	Sweet Potatoes.....	107
Magazine—New.....	107	Tobacco Book.....	107
Mails from Pacific.....	107	Tobacco Seed Beds.....	107
Manure for a Garden.....	106	Turpentine Making.....	106
Massachusetts Coffee.....	106	Vinegar in Cement.....	106
Monstrous Capacity.....	106	Wash Machine—Doty's.....	107
Name for a Seed.....	106	Weed, Elecampane.....	106
New Magazine.....	107	Willow Frauds.....	106
Number—Large.....	105	Wolves and Gophers.....	106
Osier Willows.....	106	Woodward's Houses.....	107

Notes and Suggestions for the Month.

With the advent of April, all animated nature merges from the long reign of winter and commences life anew. In this latitude the tender grass comes springing up everywhere; in secluded nooks of the fields and on the sunny hill-side flowers are opening their petals to catch the sunshine. The song of the blue bird—"There'll be no more winter"—admonishes us that it is time to prepare for field operations, and all the forces of the farm have already commenced, or are just beginning the labors of the season.

Animals.—April is one of the most critical periods of the year with our domestic animals, especially with the females. Have a care beforehand that none suffer from lack of a sufficiency and variety of feed. Let roots be fed at least in small quantities wherever practicable. Use the card and brush freely on horses and neat stock, and see to it that the active fermentation which the warm weather will cause in the manure does not affect the stock unfavorably. See "Basket" item on vermin. Mares, cows, ewes and sows, are all liable to sink their young at this time of the year, unless they receive constant care, not once a week, but several times a day. It is an erroneous notion that the causes of abortion are very obscure. It is unnatural for animals to bring forth prematurely, and the reason for their doing so is often plain. Sometimes it is caused by lack of sufficient nourishment, water and feed, sometimes by ergot, and perhaps smut, or poisonous fungi in the hay; sometimes by over-exertion, by slipping down, or by some act of violence, such as a kick in the flank with a big boot, a severe hooking, or worrying, or something else. Mares and cows frequently sink their young in April for want of water and sometimes from being compelled to drink impure water, especially that impregnated with manure—either upon the surface, or from wells in the barn-yard into which the leachings run. Feed whole grain to no animals, except sheep having good teeth. See that enough coarse grain is ground to last teams and stock until pasture time, so that it will not be necessary to go to mill when teams should be plowing. As the warm weather comes on, and ani-

mals begin to shed their hair, they will consume as much feed as in the winter, if it be good.

Barley.—If the soil be in a good state, sow as soon as the ground will do to plow. If possible, obtain seed free from oats, buckwheat and spring wheat, as all such grain is a nuisance when the barley is malted. In the best regions for barley, good farmers are so careful to keep the crop free from oats that they will not allow unground oats to be fed to their teams while they are preparing the ground or putting in the seed. Always keep the two-rowed, four-rowed, and six-rowed barley separate, because, during the malting process, different kinds will not malt in the same time. Old barley should never be mingled with new when sold, as the two will not malt alike, and a loss must be sustained by the brewers to the farmer's discredit.

Birds.—Whatever havoc birds may make among the fruits in summer, during April and May they live upon insects, and the number they destroy is immense. Happy is he who has his garden full of them. Wrens and bluebirds especially should be courted and furnished with houses of appropriate sizes; for wrens, boxes 4x4 with an inch hole for entrance two inches above the floor; for bluebirds, 6x6 with 1 1/2 inch hole. Colonize the different birds in separate places, for the wrens are quarrelsome.

Cattle.—Cows that have not yet calved should be allowed to stand several hours daily in large sunny yards. If the calves be removed from milch cows as soon as dropped, the cow is less worried than if they are taken away after she has become attached to them. New milch cows ought to have roots or some green succulent feed at this season: what is called "slops," supplies the place of more natural and better things. This is one of the worst months for caked bag, garget, milk fever, etc.; watch for the first symptoms and check the disease if possible. *Beeves.* Increase the amount of meal fed to fattening bullocks. Do not require them to eat too much cut straw with it. Coarse meal will digest more readily if soaked over night. During April, bullocks three years old should receive from ten to fifteen pounds of fine corn meal mingled with wet straw during the day. Meal fed at this season of the year will prepare them to lay on fat and flesh when they are turned to grass. This is equally true of fattening sheep designed for early mutton.

Working Oxen.—See that the yokes are right and bows are not so short as to choke them. Feed working cattle well and handle them carefully, and they will grow fat every day and be worth more for beef next summer than they may be bought for now. Oxen will endure the heat nearly as well as horses if fed as well and not abused and worried by bad driving. Always allow them at least two hours during the middle of the day for rest and chewing the cud—time for which is quite as necessary as time to feed.

Carrots.—May be sown as early as the ground can be put in good order. The Loug Orange is the favorite field variety, though the White Belgian is said to be more productive; and, if so, it is better for feeding, but not for market. Sow 2 pounds of seed to the acre by hand, and 1 to 1½ by machine.

Cellars.—Do not neglect to clean them out thoroughly, removing all decaying vegetables, wood, etc. Where cabbages or potatoes have lain and decayed in part, it is well to sprinkle dry ashes or fresh loam, removing it after a day or two. White-wash every part, except the floor, which may well be sprinkled with lime. See article on page 123.

Clower.—See article in the Basket.

Draining.—This is the best season to see where drainage is needed, and to appreciate its advantages as shown in land well underdrained, though the maximum effect may not be seen for a year or two. If there is any time to spare from other and more important work, push forward the drains. Round tiles with collars are the best, but not easy to get.

Fences, Posts, and Gates.—See article in Basket.

Fowls.—Collect eggs of all kinds before evening, lest they be injured during cold nights. Place those designed for setting in a pan of bran or oats, little end down, to keep the yolk from the side and adhering to the shell. Hens and other female birds turn over their eggs frequently, both before and during the period of their incubation. Mark choice eggs with red chalk or pencil.

Grain Fields.—As soon as the frost is out, and the ground is settled, it is well to go over the land and pick off the stones that have been heaved up. On much land the grain is benefited by rolling, especially when it has been thrown out by the frost. On other soils this is injurious. Top dressings of ashes, ashes and plaster, superphosphate, guano, ammoniacal salts or similar substances which can be sowed by hand, usually produce good results, especially if the grain is winter killed in spots or does not look thrifty. Coarse weeds may often be pulled easily or cut up with a "spud" at this time.

Hogs.—Secure a good stock of pigs or shoats for manure makers. Give good care to brood sows. See hints in last *Agriculturist* about farrowing.

Horses.—While they are shedding their coats the skin makes heavy demands on the organs of nutrition; it is peculiarly sensitive to cold, to wet and drafts, and horses are liable to take cold. They should, therefore, be well fed, and groomed, and blanketed when exposed, quite as well as in mid-winter. Be careful about letting horses that are shod get loose in the lots together. They are playful, and in their play often kick one another severely. Horses intended for the market should never be used before the plow nor for hard labor. Neither should those used for fast work on the road, nor showy carriage horses; it makes them stiff and awkward and will seriously affect their value.

Irrigation.—Tons of good fertilizing matter are carried off in small streams, which might be conducted over our farms, especially grass lands with great profit. Turn streams of muddy water from the highway on fields so that it will spread over a large surface. Fine earth, horse-droppings, etc., washed from the beaten track will increase the quantity of grass quite as much as a top-dressing of manure, and the water, aside from what is suspended or dissolved in it, is of great benefit.

Implements.—Purchase no new kinds but those that have been well tested. Look out for such as will require the least force to work them. If possible, procure those made near home, that in case of a break-down they may be repaired at the least expense. If a wheel of a reaper or mower were to break, and one were obliged to send four or five hundred miles to the factory for a new one, he would probably sustain much loss before it could be put in running order again. Protect all tools and implements from rain and sunshine.

Improvement.—This should be the watchword of farmers during the entire year. Improve the fertility of the soil by a better system of management, and by making more manure. Improve stock by disposing of inferior animals, substituting better ones; and improve the man himself by reading good

agricultural papers, and in every way gaining and communicating useful knowledge.

Manure.—If possible spread a good dressing of barn-yard manure upon corn ground unless you have a short supply, and it is fine enough to be applied in the hill. When barn-yard manure is hauled to the field several weeks previous to being plowed under, put it in close heaps to prevent loss by evaporation, and if possible shovel a little soil over it. Spread no faster than it can be plowed in. Make a compost rich in manure, when fine muck can be obtained, for manuring Indian corn in the hill. Where dung heaps heat, devise some means for pumping the liquid over it, which leaches from it.

Meadows.—Keep all kinds of animals off meadows in the Spring if you would have a good crop of hay. Better pay double price for hay than to allow animals to graze on meadows. Make a light, long-handled mallet, and knock to pieces all the droppings of animals on meadows and pastures. Pick up small stones in heaps, and haul off as soon as the soil will bear up a team. If ashes, leached or unleached, gypsum or lime, or ground bone is to be sowed, the sooner it is done the better.

Oats.—Sow as early as practicable. Drill in both ways using half the desired quantity each time. Sow not less than three bushels per acre, with all the light kernels and foul seeds removed.

Pastures.—Never allow animals to graze on newly-seeded pastures before the grass has a good start. The feet of heavy animals destroy much grass. At first let cattle graze about two hours, then yard them. On new land where the blue grass starts soon, feed it off early in the spring, and keep it short; few animals like it after seed-stalks appear.

Plowing.—Never plow heavy soils when wet, because as soon as the surplus water has settled away they will be as compact as before. Plow dry portions of a field first, and aim to plow heavy soils when they are just moist enough to pulverize well. Never plow with a dull share or point; and grind every part of the plow until the earth will slip off readily. If earth adheres, a plow runs harder, holds harder, and does its work imperfectly.

Potatoes.—If it has not been done already, select the best for seed. As the largest eyes are best for seed, save the seed ends of those that are used for cooking, and start them in small flower pots, or oyster kegs, placed on the shelf in the kitchen. They can be turned out of the pots and transplanted in drills as soon as danger from frost is passed. Better pay double price for ripe seed of fair size selected when dug, than to plant potatoes that have not been raised and assorted with care.

Rye.—Sow spring rye as soon as the soil has settled and is dry enough to plow. The straw will be needed next fall for binding corn stalks, and it is considered better than other straw to cut for horses. The grain makes the best kind of meal for teams. Seed can be obtained in most seed stores.

Roots.—Every farmer ought to raise roots enough to feed his horses and neat stock, including calves, from a peck to half a bushel a day, on an average, and have enough for his sheep besides. Calculate to get, with good cultivation, 800 to 1,000 bushels to the acre. Begin in April to prepare the soil, manuring well, plowing deeply. Harrow thoroughly. Sow parsnips and carrots in April and mangels in May, rutabagas in June and sweet turnips in June or July. Select a few of the best beets, turnips, carrots and parsnips before they are fed out, and transplant them for raising seed. It is quite as important to raise and select seed for roots with care as it is for a crop of cereal grain.

Sheep.—Keep their yard dry and well littered, and protect them from cold and wet storms. Sheep dislike wet yards and leaky roofs as much as a cat hates a wet floor. Give them a few hemlock or pine boughs to browse at least twice a week, even when they receive a daily allowance of roots. Keep a watchful eye on early lambs. When chilled, warm them thoroughly by the fire. When they cannot stand, put them into a tub of tepid water and rub them with a soft cloth till they revive, then rub dry and feed with warm sweet milk, and put the dam in a comfortable place. It is an erroneous notion that chilled lambs must not be near the fire.

Sunshine.—Every animal should have the benefit of the sunshine as well as light. Such as have been kept in close quarters all winter should be allowed to go out and bask in the sunshine every day. Sunshine in the spring is a great luxury for all kinds of animals, and promotes their health and thrift.

Wheat.—The varieties of spring wheat that appear to take the lead at present are the Scotch Fife, Golden Drop, the Canada Club and the China Tea. In different localities one kind appears to succeed better than another. When none of these kinds can be obtained in the country, get them of dealers in seed in the large cities. Prepare the seed as directed on page 112, and drill in, or sow in good season. If sowed early, unless the land is very wet, the young plants will root deeper, tiller more, and the yield of grain will be larger.

Wood.—Read remarks on fire wood and wood-houses in the *Agriculturist* for last month. Saw, split and pile before both the hands and the teams are required in the field.

Work in the Orchard and Nursery.

—April is usually a busy month with the nurseryman, and he will now appreciate the value of all preparations made in advance to meet the rush of business. The purchaser of trees, if he has prepared his lands, staked out the places for the trees, and even made the holes to receive them, will find the work of planting an orchard more than half done. The general remarks of last month's calendar should be heeded now. We repeat the caution to exercise the greatest care in procuring trees from a reliable source. An orchard is to last for a life-time, and we well know the disappointment which is felt at finding trees which have been carefully planted and brought into bearing, untrue to name. No honest nurseryman will object to this advice, and we wish to encourage such only.

Almonds.—These will grow and fruit wherever the peach will do well. Plant early.

Grafting.—The proper time is when the buds show signs of bursting. Clons put in too early often dry out before they form a union with the stock. It is not practicable for us to publish each year full directions for grafting and similar operations. A very fully illustrated article was given in the issue for March of last year, which may be procured by those new subscribers who have had no practice in grafting. Directions for grafting clay were given last month, to be used in place of grafting wax, now so expensive on account of the high price of rosin. Those who live where Balsam Fir Trees grow, can make use of the resinous exudation furnished by these, known as Canada Balsam. A correspondent in Chester Co., Pa., uses four parts of beeswax to one of balsam, the wax being melted and the balsam stirred in until thoroughly incorporated. He finds it to be an excellent composition to be used by itself or upon cloth. In renewing old trees it is sometimes advisable to head them back a year or two before grafting, and graft into the the shoots which start.

Insects.—Look out for eggs, and destroy as directed last month. A strong solution of soft soap, as before recommended, will remove scale insects and destroy parasitic vegetable growths.

Manure may still be applied to trees. See p. 120.

Planting.—When trees are received from the nursery, do not hurry the planting any faster than it can be done properly. Heel them in by making a trench deep enough to receive the roots, and set the trees in it close together, and cover the roots. In this way they may remain a long time without injury. Presuming that the land is drained, manured, and well plowed, the holes should be opened with a liberal hand, not a mere post hole into which the roots can be crowded, but one large enough to allow the roots to be spread out well. Make a bed of good soil at the bottom to receive the roots, and sufficiently deep to bring the tree to the proper height, then place the tree with the roots spread as much as possible, having previously pruned them if they have been mutilated. Throw on some fine soil and work it in between the roots with the fingers, and gradually fill up the hole, pressing the earth down with the foot. The

tree should stand a little above the general surface, to allow for settling. Put a mulch of some kind around the tree. If properly headed back, as advised last month, no staking will be needed.

Peach Trees.—These need a well-drained new soil. Probe for borers, and put on a paper or some other protection. Ashes is a good manure to apply over the roots of unhealthy trees.

Seeds.—Those of fruit and nursery trees, including pits and nuts of all kinds, may be planted as soon as the ground is ready.

Kitchen Garden.—As we write by the open window the air feels spring-like, and everything betokens an early season. When the ground can be worked, the preparatory operations of clearing up, plowing, and spading may be pushed. A good gardener, whether he works on the large or small scale, has his plans all laid beforehand, and has made up his mind what to plant and where to put it. Some hints upon the arrangement of farmers' gardens will be found on page 118.

Asparagus.—Remove the coarser portion of the manure, and fork in the rest. See last month's calendar, and an article on page 117.

Beans.—In those localities where there is no longer any danger of frost, the early sorts may be planted. Start Limas on pieces of sods in hot-beds. Secure a stock of poles for running kinds.

Beets.—Sow Early Turnip or Bassano, in drills, 12 or 15 inches apart. Soak the seed in warm water for 24 hours, pour off the water, and keep covered in a warm place until the sprouts just show themselves; roll the seed in plaster and sow.

Broccoli.—This is grown by those who think they cannot raise cauliflower. Treat like cabbage.

Brussels Sprouts.—A variety of the cabbage with small heads on the stalks, and grown like cabbage.

Cabbages.—The plants started in hot-beds will need an occasional sifting of ashes to keep off insects. Thin them, and set the surplus plants in a cold frame. Plant out where the season will admit.

Sow seed in open ground. See article on page 121, for early varieties. If we could have but one cabbage, for early and late, it would be Winingstadt.

Carrot.—Early Horn is the best early. Soak the seeds as directed for beets, and sow in 15 inch drills, in a mellow, deep, well-worked soil.

Cauliflower.—Attend to plants in hot-bed as directed for cabbage. Sow Early Paris in open ground. Early Erfurt is said to be very early.

Celery.—Plants in the hot-bed are often injured by the sun. Shade the glass during the heat of the day, and air. It may still be sown in a mild hot-bed or cold frame. Do not sow in open ground until it is well warmed. Early White Solid is best. Celeriac, or Turnip-rooted Celery, is sown in the same way.

Cold Frames.—In many places at the North these will still be found useful. See page 83 (last month) for a cheap plan. They are very convenient as places in which to set plants from the hot-beds to gradually harden them off. Most plants are benefited by this second transplanting. A frame which can be covered with boards at night is better than nothing. Give the plants free air during the day whenever the weather will allow.

Cress, or Peppergrass.—Sow early and cover lightly.

Cucumbers.—Start seeds on pieces of sods, or in small pots, as recommended on page 121. Early Russian is earliest; White Spined, largest and best.

Egg Plants.—These are provokingly slow in their early growth, and need a good deal of coaxing. When large enough to handle, put them in small pots, or transplant to a gentle hot-bed. Sow seed in hot-bed, if not already done.

Garlic.—Break up the bulb, and plant the sets six inches apart, in rows a foot apart.

Hot-beds.—In the colder parts of the country, the present month is quite early enough to start the hot-bed. See calendar for previous months, and page 83 of last month. Those already in operation need care. Air should be admitted during the day, whenever the outside temperature will admit, by opening the sash a few inches, or removing it altogether, according to the activity of the heating materials, and the warmth of the sun. If neces-

sary to keep the sash on, shade in the middle of the day. Weed, thin the plants, stir the soil among them as needed, and use water slightly warmed.

Kohl Rabi.—This is a variety of the cabbage, with a turnip-shaped, eatable stem, and it is sown and treated afterward precisely like cabbage.

Leeks.—Sow in light, rich soil, in drills 15 inches apart or broadcast in a bed, for transplanting.

Manure and Compost.—It is presumed that the needs of the garden have been anticipated, and that a heap of refuse of the garden last year, sods, ashes, manure, and fertilizing materials generally, has accumulated. The heap should be looked to, and if it has not sufficiently decomposed, build up a new heap, using the materials of the old one, with fresh stable manure, to start fermentation. Brewers' hops, and sprouts from the malsters, are valuable for the garden. Night soil should have been prepared before. Even now, it will pay to prepare it with a plenty of soil as heretofore directed. Provide a tank of some kind for liquid manure. Clean out hen roosts and pigeon-house, barn-yard and pig sty, privy and sink drain; every deposit of fertilizing material should be used.

Lettuce.—Transplant from hot-bed, and sow seed in open ground.

Mustard.—Sow early for salad or greens.

Melons.—A few for early may be sown on sods, or in pots, as directed for cucumbers.

Onions.—Potato Onions, Sets, and Top Onions are to be planted in rows, a foot apart, putting only one bulb in a place. Sow seed as early as the ground can be prepared, manuring highly with well decomposed manure, ashes, hen-manure, or any strong fertilizer. Burn brush over the bed to destroy weed seeds, and sow in drills, 15 inches apart. Onions from seed do not usually do well much South of the latitude of New-York City.

Parsley.—The seed is some weeks in germinating. Soaking for 12 hours will help it along.

Parsnips.—Sow last year's seed as early as may be, in deep, rich soil.

Peas.—Sow every two weeks for a succession, first soaking the seed in tepid water. Daniel O'Rourke is one of the standard early sorts, and several new ones have appeared this year, with great claims. The Dwarfs are hardy. Provide brush in readiness for the tall growing sorts.

Peppers.—Sow in hot-bed or cold frame.

Potatoes.—The early sorts should be put in the ground as soon as the frost is well out of it.

Potting and Pricking Out.—It is a good practice to transplant tomatoes, egg plants, cauliflowers, etc., from the hot-bed to small pots. These are set in a gentle hot-bed, and when their roots fill the earth, shift them to larger-sized pots, and set in a cold frame. By the time they can be put out with safety, they will be stocky plants, and ready to turn out without disturbing their roots. Similar advantages may be obtained by preparing a cold frame over a rich spot, and setting, or "pricking out" the plants into it, at 4 inches apart. Both these methods give better results than transferring plants directly from the hot-bed to the open ground.

Radishes.—Sow in any spare places in the hot-beds, and in light quick soil in the open ground. A sandy soil, if rich, is best. Sow at intervals of a week or ten days for succession.

Rhubarb.—Treat as directed last month.

Salsify.—Sow in the same manner as parsnips.

Spinach.—Sow the Round-leaved. Stir the soil among the plants which were wintered over.

Sweet Corn.—Seed for a few hills of Extra Early may be placed in hot-beds on sods. See Cucumbers.

Seeds.—Follow the hints on raising given on p. 117.

Swiss Chard.—Sow like beets. The leaf of this variety of beet furnishes most excellent greens.

Sweet Potatoes.—When small quantities are grown, it will be cheaper to buy the sets of those who raise them for sale. The plants are started this month in hot-beds. Cut the potatoes through lengthwise, and lay them, cut side down, on the bed, and cover them with rich soil to the depth of two inches, when the shoots have pushed above this another inch is added. The plants are to have the usual treatment of those in hot-beds, being watered, aired and covered as needed. The sprouts,

when well rooted, are slipped off and the younger ones allowed to remain until they are fit to remove.

Tomatoes.—Pot or prick out the plants when they have made three rough leaves. Sow seed under glass, or in pots or boxes in a sunny window in the house. Give the young plants plenty of light and air.

Tools.—Much of the comfort of working in the garden depends upon good tools. A spading-fork is better than a spade for preparing soil. This and a bayonet-hoe are indispensable. If the garden is of considerable extent it will pay to get a seed-drill of some kind. We have found the Wethersfield seed-sower to give complete satisfaction.

Turnips.—Sow the Dutch or some early sorts as soon as the frost is out, in foot-drills. The Teltow is a very small early sort with a high flavor, and is prized by Germans. It is excellent to put into soups.

Flower Garden and Lawn.

Have the preparatory work done up as soon as possible. For new lawns, prepare the ground and seed early according to hints on page 122. Fork over and manure the borders as soon as the ground will do to work. Many hints in the March Calendar are timely for this month.

Annuals.—Do not sow the seed of tender sorts in the open border until the soil is warm. Start seed in hot-bed, cold frame or green-house. The hardier kinds, such as Gillias, Whitlavia, and the California annuals generally, may be sown early.

Bulbs.—Uncover those which were protected by manure. Stake the tall-growing Hyacinth and Crown Imperials if needed to prevent falling over.

Climbers.—A free introduction of these adds much to the beauty of a place, and they can frequently be made useful in shutting out undesirable views. See notes given in last month's paper.

Edgings.—Old Box edging needs to be taken up and reset every few years. This will not endure very severe winters, and then grass, Dwarf Flag, or some other substitute must be used.

Frames and Pits.—The plants in these must be gradually prepared for removal to the borders by removing the sashes and giving air every warm day.

Gravel Beds.—Make new and repair old ones. Coal ashes are excellent upon gravel that will not pack, and where gravel cannot be had, coal ashes make a good walk by themselves. Do not forget the notice of coal tar and sand given last year.

Lawns.—Root out all large weeds and give a top-dressing of compost, bone dust, or ashes. Trim all the margins along paths or beds neatly. If there are any depressions or unsightly elevations, pare off the turf and fill in or remove earth as the case may be, and replace the sod. Sprinkle seed on thin places, and to make smooth work, roll thoroughly.

Perennials and Biennials.—Sow seeds in an out of sight bed for a stock for next year. Take up old roots and divide; transplant last year's seedlings.

Roses.—Prune the strong branches of perennials to three or four buds. Thin out the weaker branches. Cut old superfluous wood from climbers.

Shrubs.—See last month's Calendar.

Trees.—Plant deciduous sorts upon the lawn and along the roadside, exercising the same care in setting as is indicated elsewhere for fruit trees.

Green and Hot-Houses.—The fires in the hot-house may be much diminished, and in the green house may be discontinued altogether, unless a cold snap comes on. Ventilate freely every pleasant day to harden the plants.

Bedding Plants.—A good stock of these should be coming forward. Pot off the rooted cuttings, and when they become established, gradually harden them by exposure in a cold frame.

Bulbs.—Turn those which have finished blooming in the house into the open border.

Cornellias.—These are mostly through flowering. Prune into shape; they bear cutting freely; syringe and keep the foliage clean. Cuttings may be made.

Fuchsias.—Cuttings of the new growth will make good plants for summer blooming. The old plants will need water as they are now growing rapidly.

Insects.—Keep them in check by free use of the syringe and occasional resort to tobacco fumigations.

Potting.—Those plants which are now starting into growth will need repotting. If not desired to increase the size of the pot, put the ball of earth into water and wash the roots clean. Carefully repot with dry earth, which is to be well worked among the roots. Water and shade for a few days.

Pruning.—Head back those plants which have made a feeble growth, and thus induce the starting of a new top. Thin out all the surplus limbs.

Seeds.—Those green-house varieties, such as Calecolarias, Lobelias, etc., with very small seeds, should scarcely be covered or they will fail.

Cold Grapery.—The experience of Mr. Low given in the last and the present number, will afford useful hints to beginners. Every one growing grapes under glass should use Chorlton's Grape Growers' Guide as a hand-book, as it gives the results of the long experience of one of our most successful horticulturists. The vines are to be uncovered and so attached to the wires that they will bend like an arch. As the buds begin to swell, this position may be altered so as to induce them to break evenly. The tendency is, if the vine be put in place at once, for the upper buds to start first and get the advantage of the lower ones. Fork over the border, and syringe the interior of the house to make a moist atmosphere. If the vines have been injured during the winter they will show it by bleeding from cracks caused by excessive cold. In this case it is best to cut the vine back to one of the lower shoots, which must be trained to replace the portion removed. If the vine is in good condition, put it up to the wires after the shoots have made a growth of two or three inches. Keep the temperature at an average of 65°, until toward the end of the month when it may be allowed to reach 70°, or even to 80°. Avoid drafts, and syringe the wood-work of the house as well as the vines, morning and evening when the temperature increases.

Fruit Garden.—The notes of last month will in most places be as applicable now as then, and the notes on grape-planting on page 120, leave but little to be said in this department. Dwarf trees may be grafted as noticed under orchard. Planting of all kinds is to be done. Uncover raspberries and fork in manure around their roots. Remove the mulching from strawberries, exposing their foliage to the sun and air but keeping the ground covered. Prepare beds for planting by manuring well and working deeply. Beds four feet wide with three rows of plants eighteen inches apart each way are best for gardens. Plant them when practicable as soon as the hard frosts are over.

Apiary in April.—This month the bees are usually very busy gathering pollen. Sometimes severe weather temporarily cuts off the supply, and then there is danger of the ever busy bees, robbing. Keep a watch upon them. Spread finely ground unbolted rye flour in the vicinity of the hives. The bees will use it instead of pollen. If bees are suspected of robbing, kill one or two leaving the hive, and see if their honey sacks are full—if so contract the entrance. If the robbers all come from one hive, it may be ascertained by sprinkling flour on those that are leaving, and then watching the other hives to see where they enter. It is sometimes well to change the robbed hive to the stand of the robbers, placing the latter upon the stand of the former. This will often equalize matters. Colonies short of stores ought to be fed. If not already done, lift and clean out all hives. See hints for last month. Employ spare time in repairing old hives, cleaning them out, and making them, with new ones needed, ready for swarming time.

The Fruit Growers' Meetings, held in the Office of the Agriculturist, at 1½ o'clock, P. M., on Thursdays, are increasing in interest, and the attendance of late has been quite large. Persons interested in fruit-growing come together and have a free familiar talk about different fruits, best varieties, modes of culture, etc. A new Chairman and a new subject for talk, are chosen at each meeting, for the next week, so that there

is always a freshness and familiarity introduced. Everybody is invited, and all enjoy equal privileges in exhibiting fruits, and in soliciting and giving information.

Strawberry Show in June.—We propose to have as usual our "American Strawberry Show" at a favorable time in June, probably on Thursday, the 15th, or the 22d, according to the season. These exhibitions have excited very much interest in years past, and have come to be looked upon as the great Strawberry Shows of the country, both in intrinsic merit and for the influence exerted by them.

Commercial Notes—Prices Current.

NEW-YORK, March 18.

The condense and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the notes of our own reporter.

Table with 3 sections: 1. TRANSACTIONS AT THE NEW-YORK MARKET. 2. Comparison with same period at this time last year. 3. Exports from New-York, January 1 to March 18.

"Sell as soon as you can get a fair price," is the standing advice of this Journal. That it is risky to "speculate on a rise," is shown by the present condition of the markets. Since our last, gold has slid down from 204 to 157 (on March, 17th), and Produce of course goes down with it, though not quite so rapidly, except in the article of butter. A subscriber visited the city to see about selling his butter. He asked our opinion, and we advised him to accept the offer of 57½¢ per lb., and gave our reasons; but he "hoped it would go higher," and held on; he will be lucky if he gets 37½¢. Prices of every thing are very unsettled, and we can only give the rates current now. There is an extensive effort now making among holders of merchandise to run gold up again, so as to keep up the prices of their stocks until disposed of, and these efforts may be temporarily successful; but if the military victories now looked for are realized, it will be impossible to prevent a pretty heavy decline in gold. Until a decided decline is established, business will be stagnant, for few will dare to buy anything beyond what is actually needed, until people cease to expect a further fall in prices.

CURRENT WHOLESALE PRICES.

Table of current wholesale prices for various commodities like flour, wheat, corn, rye, barley, etc., with prices for Feb. 18 and March 18.

New-York Live Stock Markets.—BEEF CATTLE have come in much more freely and uniformly for four weeks past than previously, averaging

5,708 head weekly. The snow and frost troubles on railroads are over, and Western animals now come directly through. Prices were higher, but range this week at 24c.@25c. per pound, estimated dressed weight for extra beees; 21c.@22c., for first quality; 17c.@20c., for good; and down to 11c.@12c., for the poorest. See "Basket" note on Beef for Soldiers.

Milk Cows.—Average weekly receipts, 204. Prices have changed but little since last month. There is little call for cows, owing to the high price of city feed. Rates range from \$50, for poor, to \$80@90, for good milkers, and \$100, and upward, for extra.

Veal Calves come in less freely at this season, the weekly average for four weeks past being only 610. The best bring 14c.@15c. per pound, live weight; common to poor, 13c.@11c., per pound.

Sheep arrive in quite large numbers, the weekly average being 13,382. The demand has been quite large, at 13½c.@14½c., per pound, live weight, for extra, and down to 10c.@11c., per pound, for poor animals.

Live Hogs have been in small supply, and high, but have arrived more freely at this week's market, though still scarce. They find ready sale, at 13½c.@14½c. per pound, live weight, for prime corn-fed.

Good Premiums.

The following good premiums are still open to all wishing them. We desire those having commenced premium lists, to fill them out and receive the articles offered. New clubs may also be commenced at this season. We are constantly increasing the value of the paper. The prize articles on Flax and Hops, the many other valuable hints and suggestions, the numerous engravings, etc., can but commend the paper to every one, and with a copy in hand to show, a large number of our readers can, in a brief time each collect names enough to secure for himself one of the desired premiums.

Table of Premiums and Terms, For Volume 24.

Table listing various premium items like Good Books, Case of Drawing Instruments, Best Family Clothes-Wringer, etc., with their respective prices and terms.

No charge is made for packing or boxing any of the articles in this Premium List. The Books, also Premiums 2, 15, 16, 17, 18, 19 and 20, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

Send along the names as fast as obtained, that the subscribers may begin to receive their papers promptly. When any list is completed, notify us which of the articles is desired, and it will be promptly forwarded. To save mistakes and the keeping of money accounts, send with each name or list of names the exact subscription money.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designed for a premium list be so marked when sent in. (Such names will be credited to the sender in a separate book, as fast as received—ready for instant reference.)

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

For full description of the other premiums see pages 2 and 3 of January Agriculturist. We have room for only

Premium 1.—Good Books.—Any person sending 25 or more subscribers, may select Books from the list on page 105, to the amount of 10 cents for each subscriber sent at \$1.00 to the amount of 60 cents for each name at \$1.50. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use. Many Farmers' Clubs have done so.

Premium 20.—The "Agriculturist Strawberry Plants."—Any person sending 25 subscribers at club rates (\$1 each) will be presented with one dozen of these plants. For 15 subscribers at regular club rates (\$1.20 each) we will send half a dozen plants; and for over 25 names, plants at the rate of a dozen for 25. These will be sent out early this spring, free of expense to premium takers. Independent of

the above, any new subscriber may have a plant, if 5 cents be sent for expense of packing and postage—but only on condition that the application comes with the subscription, (to save looking up the name)

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the Agriculturist at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to May 1st.]

Allen's (L. F.) Rural Architecture.....\$ 1.50
Allen's (R. L.) American Farm Book..... 1.50
Allen's Diseases of Domestic Animals..... 1.00
Americana Bird Fancier..... .30
Americana Rose Cultivator..... .30
American Weeds and useful Plants..... 1.75
Art of Saw Filing..... .60
Beecher's Fruit Garden..... 1.75
Beecher's (Henry Ward) Fruit, Flowers and Farming.. 1.25
Bement's Poultryer's Companion..... 2.00
Bement's Rabbit Fancier..... .30
Blake's Farmer's Encyclopedia..... 1.50
Bridgeman's Fruit Cultivator's Manual..... 1.75
Bridgeman's Young Gardener's Assistant..... 3.00
Bridgeman's Kitchen Garden Instructor..... .75
Bridgeman's Florist's Guide..... .75
Brandt's Ace of Horses (English and German)..... 1.50
Breck's Book of Flowers..... 1.50
Brown's Field Book of Maures..... 1.25
Brown's Poultry Culture..... 1.50
Rust's Flower Garden Directory..... 1.50
Bull's Family Kitchen Gardener..... 1.00
Burr's Vegetables of America..... 4.50
Carpenters and Joiners' Hand Book (Holly)..... .60
Chorlton's Grape-Grower's Guide..... .75
Colburn's American Gardener..... .75
Cole's (S. W.) American Fruit Book..... .60
Colman's Agriculture..... 5.00
Copeland's Country Life..... 4.50
Cottage Bee-keeper..... .75
Cotton Planters' Manual (Turner)..... 1.50
Dadd's Modern Horse Doctor..... 1.50
Dadd's (Geo. H.) American Cattle Doctor..... 1.50
Dadd's Anatomy of the Horse..... (colored)..... 5.00
Dana's Muck Manual..... 1.25
Dog and Gun (Hooper's)..... .30
Domestic Poultry..... .50
Downing a Cottage Residences..... 3.00
Downing's Fruits and Fruit Trees of America..... .75
Eastwood on Cranberry..... .75
Elliott's Western Fruit Grower's Guide..... 1.50
Employment of Women—By Virginia Peany..... 1.50
Every Lady her own Flower Gardener..... .80
Fessenden's Complete Farmer and Gardener..... 1.50
Flax Culture..... (Ready next month)..... .50
Fletcher's Farm and Garden..... 1.50
Field's (Thomas W.) Pear Culture..... 1.25
Fish Culture..... 1.25
Flint (Charles L.) on Grasses..... 2.00
Flint's Milch Cows and Dairy Farming..... 2.00
Fuller's Grape Cultivator..... 1.50
Fuller's Strawberry Culture..... 1.50
Goodale's Principles of Breeding..... 1.00
Gray's Manual of Botany and Lessons in one Vol..... 4.00
Gray's How Plants Grow..... 1.25
Guenon on Milch Cows..... .75
Hill's (Miss) American Cookery..... 1.25
Hilzschy's Grapes, Culture, &c..... 5.00
Harris' Insects Injurious to Vegetation, plain..... 3.50
do. do. do. colored plates..... 4.50
Herber's Hints to Horsekeepers..... 1.75
Hints to Riflemen, by Cleveland..... 1.50
Hop Culture..... (Ready April 15th)..... .40
How to Buy a Farm and Where to Find One..... 1.75
Jacques's Fruits and Fruit Trees..... 1.60
Jennings on Cattle, Sheep, &c..... 1.50
Johnston's Agricultural Chemistry..... 1.75
Johnston's Elements of Agricultural Chemistry..... 1.25
Kemp's Landscape Gardening..... 2.00
Langstroth on the Honey Bee..... 1.50
London's (Downing's) Ladies' Flower Garden..... 2.00
Louchard's How to Build Hot-houses..... 1.50
Liebig's Familiar Letters on Chemistry..... .50
Liebig's Modern Agriculture..... 1.25
Linsley's (D. C.) Morgan Horses..... 1.50
Manual of Agriculture by G. Emerson and C. L. Flint..... 1.00
Mayhew's Illustrated Horse Management..... 3.50
Morton's Illustrated Horse Management..... 3.50
McMahon's American Gardener..... 2.50
Miles on the Horse's foot..... .75
Morrell's American Shepherd..... 1.25
My Farm of Edgewood..... 2.00
National Almanac and Annual Record..... 1.50
Neill's Practical Gardener (Parade)..... 1.75
Norton's Scientific Agriculture..... 1.50
Olcott's Sorgho and Imphee..... 1.25
Onion Culture..... .20
Our Farm of Four Acres (bound) 60c..... (paper) .80
Pardee on Strawberry Culture..... 1.75
Parsons on the Horse..... 1.25
Phonon Bonquet, or Skeleton Leaves..... 1.50
Peltier's Land Measurer..... .60
Quincy's Mysteries of Bee keepng..... 1.75
Rabbit Fancier..... .80
Randall's Sheep Husbandry..... 1.50
Randall's Fine Wool Sheep Husbandry..... 1.00
Rand's Flowers for Parlor and Garden..... 3.00
Rivers' Orchard Houses..... .50
Rural Adfairs..... 3 Vols. each..... 1.50
Saxton's Farmers' Library, set of 3 Vols. morocco..... 9.50
do do do 3 Vols. cloth..... 8.50
Schenck's Gardener's Text Book..... .60
Shepherd's own Book..... 2.25
Skillful Housewife..... .75
Smith's Landscape Gardening..... 1.50
Spencer's Education of Children..... 1.50
Stewart's (John) Stable Book..... 1.50
Ten Acres Enough..... 1.50
Thacker's (A. D.) Principles of Agriculture..... 2.50
Thomas' Fruit Cultivator..... 1.50
Thompson's Food of Animals..... 1.00
Tobacco Culture..... .25
Todd's (S. E.) Young Farmer's Manual..... 1.50
Tucker's Register Rural Affairs..... 1.30
Vaux's Villas and Cottages..... 3.00
Walden's Complete Soil Culture..... 1.50
Warder's Hedges and Evergreens..... 1.50
Waring's Elements of Agriculture..... 1.00
Watson's American Home Garden..... 2.00
Wax Flowers (Art of Making)..... 1.50
Wheat Planting and Culture..... 1.50
Woodward's Country Homes..... 1.50
Yale College Agricultural Lectures..... .60
Youatt and Spooner on the Horse..... 1.50
Youatt and Martin on Cattle..... 1.50
Youatt on the Hog..... 1.00
Youatt on Sheep..... 1.00
Youmans' Household Science..... 1.75
Youmans' New Chemistry..... 1.75

"Cheap Lands on the Atlantic Coast."

There are considerable tracts of uncultivated lands on the Atlantic Coast—in southwestern Massachusetts, on Long Island, in New Jersey, and further southward—which have never been brought under cultivation. During a few years past these have been extensively advertised, sometimes in large blocks, and at others cut up into small plots or farms. A question naturally arises, why have these lands lain so long in a comparatively wild state, if they are half as valuable as now represented by parties interested in their sale, situated as they are near good markets, and surrounded with enterprising cultivators. This is a very reasonable question, and one which properly places them in the position of a suspected man, who is required to prove his good character before being admitted to confidence. There is this to be said, however, that portions of them were purchased cheaply in large tracts, many years ago, by foreign proprietors who have given little or no attention to them in some cases, and in others the titles have been a long time in dispute, and it is only on the settlement of their ownership that they can be offered to the public. But in reality, a large proportion of them were not worth cultivating, while cheap good lands could be obtained by going only a moderate distance westward, and while farm produce was less valuable than now; and, further, a good deal of this kind of land is not now, and never will be, worth buying for cultivation. It matters not at how low a price land may be offered, nor how favorably it may be situated, if it will not give a reasonable return for the money, labor, manure, and seed expended on it.

A prominent defect in these lands is their light, sandy character, not only upon the surface, but especially in the subsoil. The whole region referred to, good and bad, rests upon a bed of porous sea-sand of unknown depth. The top of this underlying sand bed is very uneven, sometimes coming up to the surface, and sometimes five, ten, twenty, a hundred, a thousand feet, or more, below. For example, we have found it in one place by digging 10 feet, while less than a dozen rods distant, it was not struck nearer than 18 feet from the top. A neighbor on one side, on much higher ground, found it within 12 feet of the top; while one in the opposite direction, on much lower ground, found it 27 feet down. Its surface forms frequent basins, sometimes half a mile or more across, and sometimes only a rod or two. At different points on Long Island and New Jersey we have found the sand-bed running generally on or near the top, but with frequent depressions of from one to ten or fifteen feet. Wherever there is found, over this sand layer, a depth of five or more feet of good, firm soil, it is worthy of cultivation. Three feet may answer in an ordinary season, but not in a very dry one. The trouble is, that this sand-bed carries off the water reaching it. There must be over it a sufficient depth of firm, water-holding soil to supply moisture to plants during dry seasons. It is this lack of moisture that produces the growth of short, stunted, dwarf forest trees and bushes on much of the land in question, even where there is a layer of good soil upon the surface. In examining these lands, the only safe rule is, to first find a good surface soil, and then dig into it at several points, or examine cellars, wells, and other recent excavations, to ascertain the actual condition of the sub-stratum. Right in the midst of a wide barren tract, one may find a small or large plot having a sufficient depth of good soil to make it valuable for cultivation. If there is not enough of this good land to make a farm, and if not near other good land, so as to form a neighborhood, it will be of little value. We advise any one prospecting or contemplating a purchase in any part of the regions referred to, to make thorough examination of the subsoil by digging into it four or five feet at different points. If there is found within five feet of the surface a bed of gravel or sand, one may be cautious in making a purchase. It may be well for such persons to consult an article in the Agriculturist for May, 1860, referring to Long Island lands. The statements there apply to a good deal of land along the Mid-Atlantic coast.

To Advertisers, and to Our Readers.

The business columns of this journal have become a very important department, both to the readers and to the advertisers. But for the additional income from this source, it would be utterly impossible to furnish, at the present subscription rates, so large and expensive a journal—one so carefully prepared, so well printed, and so fully illustrated. Further, the character of the advertisements makes them of great value as a reliable source of information, in regard to supplies of seeds, plants, trees, implements, etc., etc. As our rules to advertisers are quite strict, we like to have our readers let them know that their advertisements are appreciated by noting where they were seen, when writing to them.

That this medium is valued by business men is abundantly shown, not only by the crowd of unsolicited good business cards, especially from those who have been the longest and largest advertisers, but also by numerous incidental statements that reach us. Here is one example: Mr. R. C. Browning writes, March 14,.... "The \$600 paid the Agriculturist in 1864, brought me more answers to the advertisement of the 'Universal Clothes Wringer,' than were received from the \$10,000 spent in advertising the same article in other papers."

Messrs. Bliss, Parsons, and many others, speak similarly. This is not at all surprising to us, as from the best information we could gather at the close of the year, the circulation of the Agriculturist probably exceeded the combined circulation of all other agricultural and horticultural papers in this country; while from the censorship exercised, the readers are the more ready patrons of those who are admitted to our business department.

And here let us call the attention of advertisers to our rules: I. We want no patent medicines, and nothing of a secret character. No remedy, for man or beast, or other compound, can be admitted, until we know and approve the ingredients.—II. Doubtful or suspicious enterprises, involving much hazard, cannot be admitted.—III. Distant parties, or those unknown to the Editors personally, or by good repute, are expected to furnish satisfactory references, or other evidence that they will honestly and promptly perform all they advertise to do. We do not of course undertake to decide that any thing and every thing here advertised is worth the price asked for it, but we desire to have sufficient well-grounded confidence in every advertiser admitted, to warrant us in sending or advising our friends to send him orders or money, if we wanted his articles at the price asked.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

CLUBS can at any time be increased, by remitting, for each addition, the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will of course be sent to added names.

Another Extra Number.—Lest any of our jealous contemporaries should not be so prompt, as they were last year, to inform the unobserving readers of any slight change in size of this journal, we would direct their attention to the fact that this number, like the previous one, contains 36 pages! We add these extra pages in order to give the valuable prize Essay on Flax, without curtailing the usual variety. If any other journal furnishes an equal amount of valuable, original matter, for the same money, we would be glad to see it.

Crowded Out.—Notwithstanding the increased size of this number, the long Flax article crowds out a large number of "Basket" articles, already in type, which we will try to make room for soon, if paper enough can be found in the market to print them on.

When?—All Subscriptions Date at the beginning of the volume (January), unless otherwise specially ordered, and the back numbers are forwarded. These are printed from stereotype plates as needed.

The German Edition of this Journal, (Der Amerikanische Agriculturist,) contains all the principal articles and illustrations of the English edition, and, in addition, a Special Department edited by Hon. Frederick Muench, of Missouri, a well known and popular writer and cultivator. The paper is of special value to all Germans who cannot read the English language, and particularly so to new comers from Germany. It is, we believe, the only such Agricultural and Horticultural paper published in this country. We shall be glad to have our readers call the attention of Germans to the matter. Many take this edition for their German gardeners and farmers. Price \$2 a year; four copies \$7.

FLAX and HOPS, how to Grow them!—We have in the printer's hands two most valuable works on these subjects, giving full details of every part of the treatment, from preparing the soil to harvesting and marketing the crop, being the practical directions of a large number of experienced cultivators residing in different parts of the country. No equal works on these subjects have ever been issued. They will be in cheap form, on large octavo pages, with many illustrative engravings. Price of Flax Culture, 60 Cts.; Hop Culture, 40 Cts. Sent post-paid, also, at these prices.

Sheep and Fences.—A "Connecticut" correspondent who approves of dog laws and their rigid enforcement, writes feelingly in regard to his neighbors' sheep, which range his rye fields, and feed down his pastures, bringing good returns to their owners, but none to those who pasture them. This we agree is not fair. In fact the whole theory of making farmers fence their farms, adjoining proprietors doing half the fencing, is unfair and wrong. Every man should fence in his own animals or control them in some way. It is unjust to make any man fence out his neighbor's cattle on the highway or anywhere else. The laws enforcing it are arbitrary, not naturally right, and should be changed.

Wolves and Gophers.—J. Molony, Jr., Dubuque Co., Iowa, finds that he does not succeed in destroying these enemies by means of strychnine. Can any one give him a better remedy? Will the Kansas contributor send on the drawing of his gopher trap?

Manure for a Garden.—"O. W." and several others ask about fertilizers for a garden, as they object to stable manure on account of the weeds it brings in. Spent hops and the barley sprouts from breweries are both good manures. Where circumstances will allow, home-made poudrette should be made. Hen manure will be useful for many strong growing plants. Bruce's manure has a good reputation, but we have not tried it, and are very cautious about recommending any fertilizer of this kind. Cow manure can be used in the liquid state, without danger of bringing in weeds, and ground bones are always a strong and valuable manure.

Willow Frauds.—We continue to hear of frauds practised upon farmers by selling common swamp Willows for the White (or Gray). The fact that when the cuttings grow they are recognized as a familiar kind, is not, however, proof of fraud, for this willow is common in many parts of the country—not wild, but grown in neglected and swampy places, or for charcoal.

Turpentine from Pitch Pine.—John Haist. The Pitch Pine does not afford a resinous juice in sufficient quantity to pay to tap the trees. Some time ago a patent was taken out for distilling the wood, but we have not heard of its successful application.

Sorghum in China.—Mr. Gouverneur Emerson, of Pa., stated in the Office of the *American Agriculturist* last month that Rev. Mr. Williams, a Missionary in China, wrote in answer to some inquiries of his own: 1st, that *Chinamen do not make sugar from the cane and do not even make syrup.* 2d, that it is largely cultivated, the leaves and stalks being used for fodder. From the seeds a kind of spirituous drink is made. The stalks are also used for thatching buildings, and for fuel. It is very extensively used for these purposes, and in some sections the people could hardly live without it.

Reports of the Commissioner of Agriculture.—"How can a man who has no acquaintance in Washington procure a copy?" asks "W."—Answer: Write direct to the Commissioner, by his title, and ask for one, giving your own address in full.

The Cork Oak.—J. H. Morris, Orange Co., N. Y. The tree is a native of Southern Europe and Northern Africa, and it is doubtful if it would be hardy in the Northern States. An experiment was made with it in California, and the young trees did well for some years, but we have not heard about them recently. The bark or cork is taken from the tree once in 7 or 8 years.

L'Estragon.—"J. L." wishes to know the English name of the plant the French call L'Estragon. It is Tarragon, a perennial herb, which has aromatic leaves used for flavoring salads. It is botanically *Artemisia Dracunculus*, and own brother to the Wormwood and Southernwood, but quite different from either in flavor. Thorburn advertises the seeds with a note that they are very scarce. The plant is hardy and when once obtained may be multiplied by dividing the stools.

"Park Row" not "Park Place."—

Many persons address us at 41 Park Place, and the Office is sometimes looked for on that street, instead of on Park Row. Park Row runs along the southeastern side of City Hall Park, from Broadway at the Astor House and Barnum's Museum, to the *Times* and *Tribune* offices, where Chatham street begins, and extends on to Bowery at Chatham square. Park Row is one of the busiest short streets in the city. The Office of the *American Agriculturist* is at No. 41, adjoining the *Daily Times* office on Printing House Square, as the triangular space is called at the junction of Park Row, Nassau, Spruce and Chatham streets. It is an interesting fact that the first Office of this journal was opened 23 years ago in the Basement

of the buildings occupying the very site of the present magnificent "Times Building," the first floor of which is now the Headquarters of our journal. The Office was subsequently removed to 189 Water street, where it remained until 1860, when we secured a ten years' lease of the present convenient location. Our business office extends eighty feet through from Park Row to Nassau street, opposite the American Tract Society buildings. Our folding, stitching and mailing rooms occupy the whole basement—a busy bee-hive the last half of every month. The composing (type-setting) is done in upper rooms. The stereotyping and press-work are done at the largest establishment of the kind in the country, we believe—that of Messrs. John A. Gray & Green, corner of Frankfort and Jacob street, a fourth of a mile eastward.—Park Place is a short street beginning at a Point on Broadway across the Park, opposite our office, and running westward towards the Hudson River.

Small Gladiolus Bulbs.—Mr. T. P. Nelson, Putnam Co., Pa. The little bulbs, about the size of wheat grains, will grow and make large bulbs, but according to Rand, they need to be kept out of the ground a year, otherwise they are not apt to grow.

Elecampane as a Weed.—James McClure, Logan Co., Ohio, is troubled by Elecampane in his pasture, and wishes to know how to eradicate it. Does any one know any better way than to grub it up?

Big Name for a Seed.—J. G. F., Phila., has a package of seed marked, "Pied d' Alouette vivace grand fleur." "Delphinium elatum et grandiflorum," and wishes to know if it is anything good to eat. All of this French and Latin stands for two very common kinds of Larkspur. Both are perennials for ordinary culture.

Improving Black Currants.—To the writer's taste they need it.—Mrs. C. E. Pond, says it is done by pouring boiling water upon them, leaving until cool, and then drying, which will remove the rank disagreeable taste.

The Bene Plant.—Daniel Bender, Williams Co., Ohio, has received from the U. S. Patent Office some bene seed, and wishes to know what to do with it. The seeds furnish oil, but at the North the season is not long enough to perfect them. The only use made of the plant among us is a medicinal one. The fresh leaves when placed in cold water, render it very thick and ropy, like gum water. Two or three leaves will convert a tumblerful of water into a mucilaginous drink, which may be used instead of gum-arabic, or other bland drinks, in dysentery and other bowel complaints. Sow when the ground is warm, and thin to about 8 inches apart.

Massachusetts Coffee.—A Boston friend informs us that the article called "Massachusetts Coffee," alluded to on page 38, (February,) is the common field bean, universally grown in Great Britain, and known there as the "Egyptian" or "horse" bean. Our informant last spring purchased a pint of these beans for half a dollar—not knowing that the bargain was to turn out an old acquaintance with a new name. Fifty cents would almost purchase a bushel of such 'coffee' in any English market.

Everlasting Flowers.—If any one does not know how pretty these are, he should see a bouquet made from these and ornamental grasses, which Mr. James Vick of Rochester has sent us, and which now adorns our new exhibition tables. The plants are all hardy annuals and easily grown, and they make most beautiful parlor ornaments.

A Monstrous Capacity any one must have who can swallow the statements made in the "Good Samaritan," professedly published by Dr. E. Andrews, and sent out by the thousand for distribution by Postmasters principally at the West. The "Doctor" who "edits" the concern, offers to do almost anything for money—to cure all diseases: tell how to make soap; pander to licentiousness; make fraud easy by enabling persons to remove ink and signatures from every kind of paper by invisible means; to make ink at one cent a gallon; to do all sorts of impossible things. Humbug!

"A Cat in Gloves Catches no Mice," runs the old adage, but that was before India rubber came into general use. The "Goodyear Rubber Glove Company" manufacture gloves, of which some are so thin and elastic that they would be no impediment to feline hands. We have received some samples, two for gentlemen and two for ladies, designed specially for work in the garden. They afford admirable protection against wet and cold, and are yet so pliable that one can work with them among plants almost as delicately as

without anything upon the hands. One pair of each kind is lined with flannel, for cold weather, for driving, etc. These gloves will prove a blessing in one respect, at least; they will induce ladies afraid of soiling their hands to engage more frequently in the healthful and enjoyable exercise of working in the garden. They are sold at a reasonable rate, lower than "kids", we believe, and can be obtained in the usual places for such articles. We advise dealers in seeds, implements, plants, etc., to keep a supply, and induce their customers to try them.

Humbug.—Mart & Co. offer to send for 10 cents a certificate entitling the holder to buy a fine gold watch, a silk dress, a piano-forte, a gent's vest chain, locke, pin, ring, etc., etc., for \$1, if his ticket draws the name of such an article from a lot of envelopes containing them. One might as soon expect to catch a pearl cyster with a pin-hook in 70 feet water on the codfish banks, as to get his money's worth in such a venture.

Beware of the Gipsies' Charms.—E. F. Mayo wants to humbug the public by selling them "Secret Charms." He says they are in liquid form, prepared from certain roots, and are to be rubbed on the hands and forehead, "as the forehead is the grand center of thought and feeling together with the five senses of the human system"—including tasting and hearing of course! These wonderful liquids "make you as it were a telegraphic battery to send out and receive communications of thought"! For all these wonderful preparations he wants fifteen dollars, which fools, and fools only, will perhaps send him, and buy hard experience.

Howard Association.—This a humbugging concern. One of the letters from a so-called "doctor," attached to it, has been sent. Aside from the stupidity of professing to cure diseases by letter, he recommends things which have no existence under the names he gives them. He repeats the old story, "you will consult your own interest by obtaining the necessary medicines from the Association, as but few of them are kept in the common drug stores, and I find it impossible to administer them successfully unless prepared under my directions." Of course not—and he will send the stuff by mail for \$20. Of course he will. J. Skillin Houghton, either drop your "M. D." or stop writing such nonsense and humbug.

Farms in Iowa, Rosewood Piano Fortes, Gold Watches, and any quantity of Pistols, Jewelry, etc., are to be sold at \$2 to \$5 each, provided you get one of D. McDowell's Business Cards, containing the right numbers. Of course he wants the money in advance. His circular comes to us from the town of Big Flats, where, being a sharper, he had sent it hoping to fleece some of the inhabitants; they were not the flats he took them for; they read the *American Agriculturist*.

Sorry to See our neighbors of the Country Gentleman and Rural New-Yorker advertising a cheap jewelry establishment, where you pay for a certificate enclosed in a blank envelope and then buy what the certificate calls for. Humbugs of this sort should be exposed, not encouraged, by journals professing to give reliable reading to farmers. They have repeatedly been shown up in this paper.

Vinegar in Cement Cisterns.—Geo. Nelly, of Burlington, Iowa, inquires "If common cement cisterns will keep cider for vinegar through the winter without damage to the cider or cistern?" They will not. The lime in the cement would unite with the acid of the cider or vinegar, and destroy the solidity of the cement, and also spoil the liquid. A large wooden tub, about four feet high, and five or six feet in diameter, would be quite as cheap and much better. The cider needs exposure to the air to change into good vinegar, but it should never freeze.

Keeping Iron Vessels from Rust.—"E. E. M." writes that after the vessels are clean and dried while still warm, she pours in a little sweet milk, rubs it in well, then dries again, with care not to scorch.

Sweet Cider.—A. M. Ward, Hartford Co., Conn., writes: "After years of 'fussing' with cider to 'make it good' I have this season found the short road to perfection. Took cider direct from the press, heated it nearly to a scald over the fire, returned it to a barrel, and have since made daily use of it with great satisfaction."

How to Plant Sorghum.—J. L. The culture of this may be precisely the same as Indian corn. When the plants first appear, the leaf is very small, and may be mistaken for that of a coarse grass.

Osier Willows.—"Bowring." These are never raised from seed. Most nurseries supply cuttings,

Woodward's Country Houses.

Geo. E. & F. W. Woodward, Architects of this city, have just issued a little work very tastefully gotten up, on country dwellings. It contains thirty or more original designs, including cottages, gardens, houses and villas, a country church, fences, gates, etc., with a valuable chapter on balloon frames, fully illustrated. Price \$1.50.

New Magazine.—Messrs. Chas. Scribner & Co., announce a new Magazine, called "Hours at Home." It is to be distinctively religious in character, and, as will be seen by the advertisement, many prominent clergymen and laymen are engaged as contributors.

Starting Sweet Potatoes.—"J. W. C.,"

Salem Co., N. J., sends us an account of the method he has followed for the past 24 years. He commences early or late in April, according to the season. The hot-bed is made by digging a trench 6 feet wide, 2½ feet deep, and one foot in length for each bushel of potatoes. The trench is filled with stable litter, well trodden down, and watered with one bucket of warm water to every 2 feet of bed. A layer of the best horse manure is spread over this, to the depth of 4 or 5 inches, and over this, 4 or 5 inches of light, rich soil. The potatoes are then laid upon the soil, nearly touching each other, and are covered with the same kind of soil, to the depth of 1½ inch. The whole is then covered with hay, to the depth of a foot on the edge, and forming a heap 5 feet high in the middle of the bed. The heat of the bed is tested at the end of three days, by running the arm through the hay, and if the soil is found to be more than blood warm, the hole left by the arm is left open, and if the heat continues to increase, the hay is turned over and shaken up. If the heat increases too violently, take off the hay, put some rails across the bed, and place the hay over them. Be careful not to cool the bed too much, as it is difficult to restore the heat if once lost. In 10 or 15 days the bed is uncovered, to give the plants air and sun. Leave it uncovered for two hours daily, at first, gradually increasing the exposure until past danger of frost, when they may be left open night and day. The plants will be ready by May 15.

Mails from the Pacific Coast

Greatly Delayed.—On March 8th, we received a very large batch of letters, with money for subscriptions and books. Many of these date back as far as Dec. 12. This extraordinary delay explains our late responses.

A Transparent Steam Engine.

One of the prettiest and most instructive things we have ever seen in Barham's American Museum, is a late addition in the form of two complete steam-engines made almost wholly of glass, one a high-pressure and the other a low-pressure engine. The formation of the steam in the glass boilers, its course in the pipes, steam chest, condensers, etc., as it drives the wheels, are all visible to the eye. It affords a capital opportunity for grown up people, as well as children, to study and understand this most interesting source of power, in practical operation.

Doty's Washing Machine.—The proprietors write that they can supply orders west of the longitude of Washington, most cheaply from their headquarters at Janesville, Wis. This includes part of the territory assigned to Mr. Lane, of New-York, in the notice of the Washer in *March Agriculturist*.

Land Advertisements.—This class of advertisements we admit to our columns without special care or examination, where no money is asked of parties at a distance, for the reason that it is not supposed that any one will buy a farm or plot of land without a personal examination both of the character of the land and the title, and therefore there is no such danger of parties being imposed upon as there is when one sends money or orders for seeds, plants, etc., to unknown parties.

Good Books.—Any one desiring good books on Agriculture, Horticulture, and Domestic Economy, can receive a descriptive trade list with an account of some fifty different books, by addressing this office.

Catalogues, &c., Received.—Transactions of the American Pomological Society, 1864. This volume gives the revised list of fruits, as well as the discussions which took place at the meeting held last autumn, and is a valuable work of reference to the fruit-grower. . . The Transactions of the Massachusetts Horticultural Society gives, besides the reports of the thirty-fifth year of this pioneer institution, an account of the laying of the corner stone of its new Horticultural Hall. . . Brill & Kumerle, a new firm at Newark, N. J., send their catalogue of vegetable and flower seeds, and Francis Brill, of the same firm, issues a catalogue of small fruits, containing all the novelties. . . F. K. Phoenix, Bloomington (Ill.) Nursery, is out with a catalogue

which, besides the usual price lists, contains much lively reading. Our friend Phoenix is always very much in earnest. . . The Greenvale Nurseries of W. D. Stronger, Oswego, N. Y., offer a general assortment of nursery stock. . . The seed list of James J. H. Gregory, Marblehead, Mass., contains the usual assortment, besides a number of Mr. G.'s specialties, some of which we have already noticed. . . McElwain Bros., Springfield, Mass., send an illustrated vegetable and flower seed catalogue. . . C. B. Schotte & Co., Humboldt Gardens, Armstrong Co., Pa., offer a select list of fruit and ornamental trees. . . Vilmorin, Andreux & Co., the world-renowned seedsmen of Paris, send their catalogue of novelties, most of which are announced by our own dealers. . . J. Knox, Pittsburgh, Pa., has issued his small fruit catalogue. Grapes and strawberries are specialties with Mr Knox, and his list includes all the desirable sorts.

Downing's Landscape Gardening.

—This most valuable and beautiful work has been out of print for some time, owing to the burning of many of the engravings, at the great Frankfort street fire. The book has been so scarce, and so highly prized, that \$10 to \$12 per copy has been readily paid for all that could be obtained. The illustrations are nearly re-engraved, and a new edition is now in press. It will probably be ready the last of April. The price is reduced to \$6 50.

Good Beef for our Soldiers!

—At the present time, a large proportion of the fresh beef for our principal armies, in Virginia and North Carolina, can be best forwarded from this City, the cattle being sent on steamers (transports). A government contract, under heavy bonds, has been taken by Henry Westheimer, to furnish all the beef cattle required at this point, from March 15th to June 15th. The cattle are to be strictly *first quality*, and without the slightest imperfection or blemish; every lot is to average 1800 lbs., live weight, and no single animal to be taken weighing under 1250 lbs., on the scales, nor under three years old. All the animals are to be examined by the government inspector, and they are to be delivered at such points in or near New York City, and in such quantities, as may be ordered by the Commissary of supplies, from time to time. We notify the contractor and the inspector that there are several friends of the soldiers who intend to watch over the matter, and see that the inspection be rigid. The price will pay for good cattle. The contract price of \$13.49 per 100 lbs. live weight is equivalent to 24c@25c per lb. for the dressed or net weight, as bullocks of the required quality should dress full 56 lbs., to 100 lbs. live weight.

Premiums for every one.—We invite special attention to the premiums on page 104, which have been omitted, but are restored again this month. The articles offered are all very good, and worthy of no little effort to secure them. See particular description of each article, on page 2 of January number, which we cannot spare room to repeat. Partially completed premium clubs can be filled up, and new clubs started now. The spring work in field and garden, now beginning, will lead many to feel the want of a journal like this. There are many thousands who would get some hints or suggestions from these pages, that would in the end be worth far more than the cost of the paper. Aside from the premiums, we solicit a good word from each of our readers. An invitation to neighbors or friends, will often lead them to subscribe—to their own benefit as well as that of the Publisher.

Sell the Rags Now.—The papermakers don't fall a peg on the price of paper from last December rates, but rather go up as gold goes down. They say rags are scarcer and higher than ever. Better take them at their word, and sell every white rag that can be gleaned up. These prices can't hold long.

The Agriculturist Strawberry Plants to go out this month.

—With the present prospect of good weather, we hope to begin mailing the Strawberry Plants soon after April 3d. They will be first sent to the more southern points, and an northward as the season allows—probably to the most northern regions the last of April. Those to receive them, will do well to arrange to get them soon after their arrival. Open the parcel, and if ready, set them out at once. If not ready, set the roots into moist earth. Have a plot of ground for each plant, lightened a little, if needed, by black earth from the woods, or rotten muck, and a little well-rotted manure, well mixed in. Set the plants nearly even with the surface, but not so that water will wash in soil upon the crown when they settle. Only have the ground damp; too much water is injurious to any plant. Spread out the roots. This spring, we shall remove all the foliage. The experience of last fall was that the attempt to send out the leaves on, furnished too large evaporating surface. The best planters always remove nearly or quite all the

leaves in transplanting strawberries. The main point is to have a supply of fibrous roots, and an uninjured crown. Plants look small with the leaves off, but we shall follow our best judgment, even if they do not show so well.—Many who thought their plants dead last fall, simply because the leaves did not always come fresh, will find the plants alive this spring.—We only send the plants where they were specifically asked for at the time of subscribing, and the 5 cents extra enclosed for postage and expense of putting up. On counting the applicants so far, we find we shall have some more plants for the first new subscribers applying for them.—Aside from the reservation made for subscribers, as previously announced, our entire stock was sold to Mr. Knox. (See his advertisement.) We have no plants or seeds of any kind to sell.

Premium Strawberry Plants.—For terms see last item under "Good Premiums," page 104.

Tobacco—Seed Beds.—"J. F."

The seed beds are generally prepared in the warmest, sunniest spots, where the ground is rich, dry, and free from weeds. Its soil is manured and well worked, by spade or plow, then brush with straw and other light stuff, is burned upon it, which not only gives a dressing of ashes, but destroys weed seeds, and warms the soil. The bed is made smooth by raking and rolling, the seed sowed, lightly brushed in, and the surface patted with a board, or rolled with a hand-roller. The seed should be tested beforehand, and it may be kept mixed with moist soil, in a warm place, a few days, till it nearly sprouts. When sowed, tobacco seed ought to be moistened at least, and rolled in plaster, so that the sower may see where it falls. A tablespoonful of seed to the square rod, and a rod of seed bed to the acre, will furnish plenty of plants.

Tobacco.—How to Grow it.—The best possible information on all departments, from selecting seed, through the harvesting, curing and marketing the crop is given in the Book containing the practical directions of fourteen experienced growers. Price 25 Cts.

ESSAYS ON FLAX CULTURE.**Award of Prizes.**

Thirty-five essays were presented, in response to the offer of prizes made in November by the Publisher of the *American Agriculturist*. The writers of the essays, as well as our readers, are equally fortunate in that we were able to avail ourselves of the services of a Committee of extensive practical experience and scientific knowledge. The report of the chairman (Dr. Warder, of Ohio), is a valuable document, but too extended for publication here. We are happy to have been able, following a suggestion of Dr. Warder, to secure the services of the writer of the first prize essay, to assist in preparing the other essays for publication in book form, and we have also now made arrangements with him to become one of the editorial corps of the *Agriculturist*.

Report.—"The Committee award as follows: For the best essay, No. 33, by S. E. Todd, Auburn, N. Y. (now of New-York City), \$50. For the second best, No. 24, by James Cairns, Ballydurane, Clonokilly, County Cork, Ireland, \$40. For next five which were considered better than any of the remainder, \$10 each; these are respectively, No. 17, by G. S. Kuester, Newcastle, Lawrence Co., Pa.; No. 5, by Win. H. White, So. Windsor, Hartford Co., Conn.; No. 18, by Hugh McKee, Norwich, Canada West; No. 19, by James Barker, Hoosick Falls, Rensselaer Co., N. Y.; No. 20, by John E. Stewart, Redding Ridge, Fairfield Co., Conn.

"All which is respectfully submitted by your Committee." [Signed,] JOHN A. WARDER, Chairman. Cincinnati, Feb. 12th, 1865.

First Prize Essay.

The subject of flax culture may be properly considered under three parts: 1st. The preparation of the soil. 2nd. The seed, the growth and culture of the plant and harvesting. 3d. The rotting and dressing for market. The first two parts belong particularly to the tiller of the soil; while the third is more properly a process of manufacture, and though very distinct from each other, they are frequently performed by the farmer. Flax is grown sometimes for the seed only, and sometimes for both the seed and lint. The seed yields a drying oil of the best quality for painters' purposes, the residue being oil cake, used for feeding stock; and the straw yields lint of two qualities, called flax and tow. Flax is the long, straight fibre, and tow consists of the short and tangled fibre, which separates in dressing the long lint. Sometimes, however, the entire fibre is prepared as tow. The lint that is separated from the long fibre, when the flax is dressed, is called in market, "fine tow"; it is man-

ufactured into tow-cloth, or into small ropes and cords. The flax is made into linen thread, and linen cloth. "Coarse tow" consists of the entire fibre of flax, the shives having been simply removed. This is pressed into bales, weighing 300 to 400 pounds each, and is sold in most of our large cities, at 2 to 6 or more cents per pound, according to the locality and the demand, for stuffing the cushions and backs of carriages, and household furniture, for making ropes, coarse cloth, etc. There is always a good demand for flax fibre, whether it is in the long-line commonly called "flax," or fine tow, or coarse tow. Consequently, a farmer can always dispose of his crop of lint with a little labor, at low price; or he can bestow much labor in preparing it for market, and receive a proportionately larger compensation. This is one of the excellences of the flax crop; and for this reason there is no other crop that may be raised in our grain-growing regions—where a three, four, or five-years rotation of crops has been adopted—with more profit to the farmer, and more advantage to the soil. If a farmer desires to raise it for seed only and get quick returns, it can be done with a limited amount of labor; but if he desires to have work for his laborers at those seasons of the year when nothing can be done in the field, he will always find it profitable, if he is a good manager, to grow a crop of flax every year, and prepare the fibre for market.

CHARACTERISTICS OF THE PLANT.—Flax has one very important characteristic, an understanding of which is of great practical advantage. When a flax stem is growing alone, it will throw out numerous branches, many of which will be as large as the main stem; as shown by the accompanying engraving, fig. 1; and each of these will produce other branches, all of which will yield seed. On the contrary, when the seed is sown thickly, each seed will produce only a straight stem, without any branches, with but little seed. The practical point is, to decide before the seed is sowed, whether the purpose be to raise flax for the seed chiefly, with coarse tow in connection, or principally for the fibre. See paragraph upon thick and thin seeding in another place below.

SOILS.—Flax will flourish well on any soil that will yield good crops of cereal grain, and some soils that do not produce abundant crops of certain kinds of grain, will produce an excellent crop of flax. Flax likes a deep, fertile, and mellow loam, and on such a soil a heavy crop of both seed and lint may be produced, provided there be not an excess of water in the soil. These river bottoms, and uplands where the predominating characteristic of the soil is black muck, if fertile enough to produce heavy grass, will yield a good crop of flax fibre, and a small crop of seed. But, if the soil is in a good state of fertility for yielding potatoes, oats, Indian corn, or rye, the yield of both seed and fibre will be large. Flax will not flourish on wet soils of any kind, and the crop will be light on heavy, slippery clay soils, unless thoroughly underdrained, well pulverized, and enriched with fertilizing materials. A good crop of flax can not be produced on a poor, wet, and half-pulverized soil, any more than a good crop of wheat.

PREPARING THE SOIL.—There is no kind of grain, wheat not excepted,—for which the soil needs as much preparation as is required for a good crop of flax, and there is no crop that farmers are accustomed to raise, that will pay better for fertilizing and pulverizing the soil. Not only will the seed be better, but the fibre also, when the flax is grown on soil that is very fertile, and has been kept clean by thorough cultivation. Weeds and grass will not only be a nuisance when the fibre comes to be rotted and dressed, but they will seriously injure its growth. And if the dressed lint, the tow or the flax, have grass, straw or weeds in it, the value will be greatly reduced. My own practice in getting the soil ready for a crop of flax has been, to commence its preparation at least three years before, with especial reference to flax. I have always raised it in rotation, with Indian corn, barley, oats, winter or spring wheat, and red clover. A clover sod, well manured, would be plowed for Indian corn. If the soil were a heavy, slippery clay, or a gravelly, calcareous clay, it was plowed in the fall. If there were any wet places in the field, they at least would always be underdrained. The corn was kept clean, and no weeds allowed to go to seed. The next year, a crop of barley was raised, and as soon as the barley was harvested, the soil was well harrowed with a heavy harrow, or cultivated with a wheel cultivator, for the purpose of covering the seeds of all noxious weeds, so that they would vegetate and die before winter. In October, or November, the soil was well plowed; and if deep, we used a double team, and a Michigan double plow. The dead furrows were cleaned out, so as to carry off the surface water. If the soil were light and porous, and not disposed to bake in the summer, we would never plow it in autumn. Where black muck predominates in the soil, or where it is a very porous, sandy, or gravelly loam, or a light alluvial deposit, it should not be plowed in late autumn, but rather in August, or September. Then, if any weeds come up before winter, use the har-

row, or the cultivator to destroy them.—In the following spring, as soon as the ground has settled and become sufficiently dry, we plow it, cutting narrow furrow slices, as deep as it has previously been plowed; and always take especial pains not to have any balks or holes between



Fig. 1.—FLAX PLANT GROWING ALONE.

the furrows. After the ground is plowed, we harrow it twice, and then roll previous to sowing the seed.

The great object in harrowing and rolling before sowing the seed, is, to have the surface of the ground as smooth and uniform as it can be made, so that the flax may get an even start, and grow more uniformly, and the surface of the ground be better to work on when the flax is pulled. If the seed is sowed on an uneven surface, where there are lumps, sods, and little furrows and holes, much of it will be buried too deep, and consequently, the growth of the straw (and fibre) will not be uniform, and the seed will not mature alike. In case there are no lumps, the roller should not be used, but the soil should be gone over with a harrow having numerous small teeth. Where the soil has been cultivated as it should be, while a crop of Indian corn, or barley, or potatoes was growing, the surface of it will be as free from lumps as a neatly prepared carrot bed. On such soils, flax will often grow from three to four feet long; the seed will be of a superior quality, and the lint will be heavy and of great length. Where the soil is well adapted to raising potatoes and other roots, if it is well manured about two years beforehand, and the weeds thoroughly eradicated, the proprietor may be sure of a heavy crop of both lint and seed. Thoroughly rotted manure is quite as essential for flax, as it is for wheat; but, coarse unfermented manure produces a rank growth of straw, not much seed, and the flax is very liable to rust.

When there are many stones in the soil, the larger ones should be removed, and the smaller ones may be pressed down with a heavy roller, before the seed is sowed, for the purpose of making a smooth surface to work on at harvest time. In some portions of the country, a black muck soil rests directly on a stratum of rich clayey loam. Now, by using a double team and a Michigan sod plow, or any other plow turning a deep furrow well, and by turning up two or three inches in depth of this fertile subsoil in late autumn or winter, so that the rains and frosts will thoroughly pulverize it before the next spring, then plowing and harrowing as just directed, a very heavy crop of lint, and a fair crop of seed may be raised. But it must be kept in mind, that a large crop of seed can not be raised on an inferior soil, without good manure of some kind. Clean culture, a deep soil thoroughly pulverized and in a good state of fertility, will always produce a good crop of both lint and seed, if the season is at all favorable for other crops. Flax will do as well as oats, barley, or wheat, when sowed on sod ground.

ERADICATING SMALL WEEDS BEFORE SEEDING.—After the soil has been well prepared for the seed, let it remain about ten days, when nearly all the seeds of noxious weeds will have vegetated. Now, on the day that the seed is to be sowed, give it a thorough harrowing, for the purpose of destroying the little weeds that have appeared in the "seed-leaf." In case lumps of earth, or small stones are harrowed up, the surface must be rolled. And while the surface of the soil is fresh, let the seed be put in as speedily as possible, because flax seed, or any other seed will germinate much sooner thus, than if put into soil that has not been disturbed for a number of days.

PROPER SELECTION OF SEED.—Most farmers appear to think that flax seed is all of one quality, so far as its productiveness is concerned. There is just as much difference in the productive quality of flax seed as there is in Indian corn; and a large proportion of that which is sold in market is no more fit for seed, and no more productive than Indian corn would be, were all the half-ripe ears shelled with the good ones for seed. No good farmer would ever think of planting such corn, because, although it might vegetate, it would not, and could not produce a good yield of grain. Half-matured flax seed cannot produce a good crop of either lint or seed.

But unless farmers raise their own seed they will be obliged to take up with such as they are able to find in the market, whether good or poor. My own practice has been to obtain the plumpest and brightest seed to be found. Then run it through the fanning mill twice; and blow out all the light seed, by a heavy blast. Then at harvest time, select those stocks of flax that grew on the best ground and that ripened first, and keep them separate from the rest. Thresh off only about half of the seed, and save it for sowing the next season. Continue this practice for a few years, and even on the same soil, with the same cultivation, both the quality and quantity of the seed will be greatly improved; and the length and excellence of the fibre very much increased. The seed first matured—which will be the plumpest, fairest and most productive—will be shelled out first. Every intelligent farmer will readily perceive the importance of growing his own flax seed when it can be done with so little trouble and expense.

THICK AND THIN SEEDING.—Flax may be sowed too thick as well as too thin. The correct quantity depends upon the object for which the flax is raised. If we desire to obtain the largest yield of lint, we must sow the seed very evenly, and as thinly on the ground as it will grow and not throw out branches, as shown in fig. 1, but having the branchless habit shown in fig. 2. If the object is simply to raise seed and coarse tow, it may be sowed very thin—say from half a bushel to one bushel per acre. The old rule is, half a bushel per acre, but in my experience half a bushel is not enough, because, when it stands so thin on the ground, new branches, and new bolls will continue to grow, and when much of the seed is ripe, many bolls will be only half-ripe. And besides this, the fibre of such large branched flax will not make as good lint as the longer less branched stalks. It may be worked into coarse tow; but it is not so good for dressed lint as the straight stalks. There is also a difference in the lint of the single stalks. If the flax seed be sowed at the rate of three or four bushels per acre, the stalks will be very small, and the fibre fine and thin, and very soft. But if only one bushel and a-half be sowed per acre—if it be sowed as evenly as it should be—all the stems will be of a very uniform quality; the bolls will grow for the most part near the very top end of the stalks; and consequently the seed will ripen more evenly, and the crop will be better in every respect than if thicker or thinner. The habit of flax is such that it will accommodate itself to the fertility of the soil better than most other plants, when the quantity of seed per acre is too small. If the soil is in a very good state of fertility, and one bushel of seed be sowed evenly on an acre, almost every stem of flax will throw out only two or three branches close to the ground. When flax forms branch

es we have the assurance that the seed ought to have been sowed a little thicker in those places. But when

no branches are formed near the roots, it is a sign that there was as much seed sowed per acre as could grow profitably; and if the stalks appear small and slender, we need no better evidence that the seed was sowed too thickly. My own practice has been to sow about one bushel and a half of seed per acre, whether the chief object was seed or lint. I have always thought that this amount of seed would produce a better yield of seed and lint than any other quantity per acre.

TESTING THE SEED.—Many dealers in flax seed will contend that, as flax seed contains so much oil, it will not lose its vitality in many years. But my long experience justifies me in stating that it will sometimes lose its vitality in only a few years. Several years ago, I procured a two bushel sack of Russian flax seed, at a large price, and not a single seed germinated, although the soil was well prepared before it was sowed, and the seed was put in when the surface was fresh and mellow, and the seed possessed all the external appearances of the best. It was of a lively, brownish color, very plump, and heavy, but its vitality was gone. To test seed, select a few grains and sprinkle them between two thin pieces of sod laid earth sides together, and put them on a shelf in the kitchen where they must be kept warm and not allowed to dry. In a few days every seed that has not lost its vitality, will germinate. Then by counting them, we readily ascertain about what proportion of them is good.



Fig. 2.—THICK SEEDING.

WHEN TO SOW.—Almost all writers recommend putting in the seed as early in the season as practicable. But my experience and extensive observation warrant me in saying that flax seed is almost always sowed too early. A certain season of the year that would be considered early in one locality, might be very late, one or two hundred miles distant in either direction. Therefore, to fix a definite period for every locality, I would say: Sow when the soil has settled, and is warmed by the influence of the sun, and weeds and grass have begun to spring up, and the leaves of trees begin to unfold. If sowed too early in the season, much of it is liable to be stunted; late frosts are very apt to injure it, more or less; and noxious weeds are sure to get the start of it, unless extra pains have been taken to destroy them. The soil should not be at all adhesive or sticky when the seed is sown. The very best time, with reference to the condition of the soil, is, soon after a shower, when the small lumps will crumble at a very slight touch, and the entire surface is friable and "lively." Then it will germinate in a few days, get the start of weeds, and keep the ascendancy through the season. By this means a vast amount of weeding will be saved, the fibre will be more abundant, the seed better, and the yield greater.

HOW TO SOW FLAX.—Every practical man knows that flax seed is very slippery grain to sow by hand. Consequently, unless a man take great care, the seed will be sowed very unevenly. As it is so very slippery, it is not practicable to sow it with a grain drill, nor with any kind of broad-cast seed sower, that we have ever met with. The details of my own practice, which I have never before put on paper, are as follows: After the soil has been harrowed as directed above, mark out the ground two

ways, in lands about 18 feet wide. This breadth is wide enough to sow at one round, or at two casts. Let the seed be soaked in warm water, about two or three hours, and then rolled in plaster or gypsum. Then count the lands both ways, and make calculation to sow a given quantity of seed on each land, each way. Take as much seed as you can hold conveniently with one thumb and three fingers. If you are liable to take too much seed, hold a small round stone in the hand while sowing. The object of rolling the seed in gypsum is, to render it less slippery. I could always scatter the seed much more evenly by sowing a few rods wide all one way, instead of going directly back and forth. This I did, by going around a land about five or six rods in width, as in plowing. The best way to mark out flax ground is, to drag a log chain behind you across the field, from one stake to another. It will pay well to carry out all these practical details in full. As flax seed is much more difficult to sow than most other kinds of seed, it is very important that none but an experienced sower, one able to move with a very steady and uniform gait, and to cast every handful with the accuracy of machinery, should be employed to sow flax seed. If the ground be marked out, the sower can always see where his seed falls. But, when he sows by means of stakes, a deviation of only a few inches, to the right or left, will drop the seed too thin in some places, and too thick in others. The sower should always set a small stake where he commences to sow, at both ends of the plot, so that he will be sure that no strip will anywhere be sowed too thick or too thin.

HOW TO COVER THE SEED.—I never would allow a team of any kind to pass over the field, after the seed has been sowed, for the following reasons: If the soil is at all light and porous, a team would, with their feet, bury much of the seed so deeply that it would be several days behind, and would never be able to attain an equal growth with the rest of the field. Another reason is, when the seed is buried so deep, the flax will pull much harder. Flax seed requires but little earth to cover it deep enough to vegetate in a short time, and by depositing it all on a smooth surface, where several seeds will not be gathered into depressions in the soil, it will all vegetate alike, will stand evenly on the ground, and pull easily, may be cut with scythes, cradles, or horse mowers, close to the ground, and the straw and lint will be of a uniform length, and quality. My practice has been to "bush in" the seed by drawing a brush-harrow by hand. With a suitable brush, one man would bush in four or five acres per day, and do the work well. Such a harrow covers a strip about five feet wide, and an active

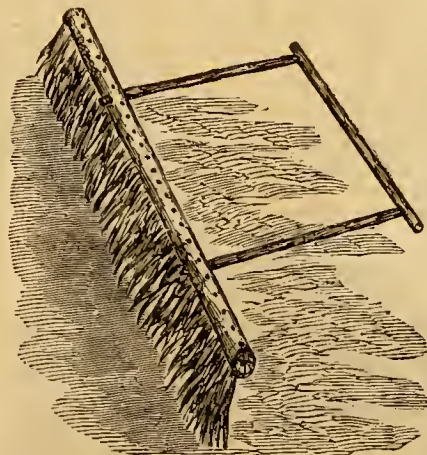


Fig. 3.—BRUSH-HARROW.

man or a strong boy would cover the seed nearly as fast as he could do it with a team, and much better.

TO MAKE A HAND BRUSH-HARROW.—Procure a piece of hard-wood scantling, or a round stick, about five feet long, and three by four inches square, for the brush head, put two thills into it, and bore two sets of three-quarter inch holes through it, for receiving the but-ends of brush which are fastened in the holes with nails. Brush about two feet long should be selected, and after the holes are filled with them, another course may be nailed on each side of the brush-head, if necessary. This will be found a most complete implement for covering flax seed. The effectiveness of such a brush-harrow may be increased at pleasure, by lashing billets of wood to the upper side of it. The length of the head may be greater or less, according to the evenness, or the unevenness of the surface of the soil. If it should be somewhat uneven, it would be better to make two such harrows, four feet long, for two men to use, than one harrow, eight feet long, to be drawn by two men, because a short one would adapt itself to the inequalities of the surface of the ground, and cover the seed much better than a long one.

Such a brush-harrow will always be useful to have at hand for putting in many other small seeds.



Fig. 4.—EFFECT OF DEEP AND SHALLOW SOWING.

The accompanying illustration represents five young plants of flax, three of which are about three or four inches high, the seed of which was covered about half an inch deep. The seed of the one at the left hand was buried nearly two inches deep; and the one just in the seed-leaf was buried still deeper. The illustration is designed to show the importance of covering all the seed of a uniform depth, in order to have all the stalks as nearly of a uniform length as practicable. When some of the seed is buried too deeply, those plants that spring from such seed as may be covered only half an inch deep, will get the start of the other by several days' growth, which will produce stalks of various lengths. This ought carefully to be guarded against in putting in the seed. Moreover, when a flax seed germinates, the kernel is carried on the end of the stem to the surface of the ground, where it forms two leaves, as shown by the smallest plant. When seed vegetates in this manner, it is longer coming up than when only a spear is sent up, like Indian corn, wheat or oats. The difficulty is greater on heavy than on a light soil. And if flax seed be covered deep on a heavy soil, and the weather be somewhat dry, it will be impossible for it to come up, while oats or wheat would come up with no difficulty.

WEEDING FLAX.—If the soil has been prepared, and the seed put in at the time and in the manner directed in foregoing paragraphs, very little weeding will be required; but if Canada thistles, dock, wild mustard or other noxious weeds should show their heads, let a careful man, shod with two or three pairs of old woolen socks, remove them when the flax is eight or ten inches high. A lot of boys, or heedless men should never be allowed to go among flax, unless when it is very young; because if it is trodden down after it has grown a foot or more in height, most of it will never recover its erect position. The object of covering the feet with something soft is, that the plants may be injured as little as possible. Hard boots and shoes will crush the stems so badly that if they should straighten up again, there would be a bad spot in the fibre. The weeds should be cut off close to the surface of the ground, gathered in the arms, and carried to a pile—not thrown down. If pulled up, much of the flax will be rooted up with them. In some parts of the Old World, men, women, girls and boys do the weeding, when the flax is only a few inches high; they sit flat on the young flax, hitch along, and weed on each side of them as far as they can reach. It is better to destroy the weeds before the seed is sowed, and keep every thing off the young flax.

WHEN TO PULL (OR CUT).—As the time of ripening approaches, the observing farmer will appreciate more than at any previous period, the importance of the details heretofore given. When the seed has been harrowed in and buried deep by the feet of teams, the flax will

ripen very unevenly; and a portion of it will be very green, while the remainder will appear fully ripe. Under such circumstances it will be necessary to estimate what proportion of the heads are fully ripe, and how large a proportion are still too green to be pulled. When the bolls have assumed a brown color, and the leaves have died for one-fourth the length of the stems at the butt ends, and the stems have changed from a dark green to a light yellowish color, then the flax is fit to pull or to cut. At this stage of growth, it will yield more and better fibre than if cut at any other period. In case it is too green when pulled, there will be a great loss both in quantity and quality. If the seed be put in as directed, almost all the bolls and stems will ripen uniformly; and it will be very easy to decide as to the best time for pulling or cutting without incurring any loss. When a man has a number of acres of flax to be pulled,

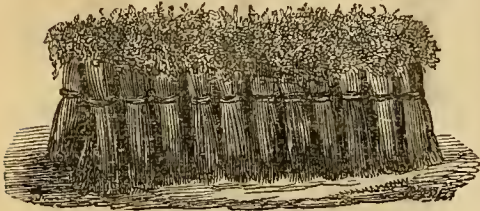


Fig. 5.—STOOK OF FLAX.

he should not wait until it is all ready before he commences, lest much of it become too ripe. Should the soil be variable in its character, the flax will ripen unevenly, and the ripest portions may be pulled first. When flax is allowed to stand until it is all dead ripe, the seed will be of a superior quality, but the fibre will not be so heavy, strong, or soft, as if cut earlier."

PULLING FLAX.—When flax is pulled by hand, each laborer takes a strip about four feet wide, and either spreads it in a swath behind him, or throws it down in gavels, or binds it himself, as fast as he pulls it. The flax is grasped just below the bolls, with both hands, and pulled up with a sudden jerk. If it be pulled slowly, a much larger quantity of earth will adhere. As soon as one handful is pulled, it is set on the ground close to the standing flax, and held with one hand, while the other gathers as much as can be held conveniently: then both hands grasp the whole and pull. When enough has been pulled to make a gavel as large as the puller can grasp with both hands, which will make a bundle about five inches in diameter, it is "butted" once or twice on the ground, to even it. Any scattering stalks, standing or lying on the ground, are gathered for bands, and the gavels are bound at once. This mode is usually adopted in preference to spreading in swaths. If the weather be wet and lowery, it will be better, at any rate, to bind the flax as fast as pulled, and to set the gavels in long stooks, as shown in fig. 5. These should always be set up North and South, so that the sun may shine on both sides of the stook in the course of the day. Before the gavel leaves the hands of the puller, he should strike it once or twice on the ground, or on his foot, to knock off the dirt. In case the weather is pleasant, it is always better to spread out each gavel, as it is pulled, about one inch thick, for the purpose of sunning it. After it has lain in the sun from half a day, to a day, it ought to be turned over, to sun both sides. An expert puller will throw every gavel down in such a manner, that they may be readily taken up when cured enough to be bound. As flax will hang together, if in a continuous swath, it is better to leave a space of two or three inches between the spread gavels, and sometimes they are laid alternately heads and butts. This is important, so that they may each be turned over readily, or taken up and bound, without tangling. When it is bound as soon as pulled, and set in stooks, it will require from one to two weeks to cure, before it will be fit to stack or mow. When it is bound as fast as it is pulled, the outside of the flax will all appear sufficiently cured to be stacked, in only a few days, while much of the middle of the bundles will be too green. It is quite as important to cure all the stalks and seed bolls thoroughly, before stacking, as to cure hay, or any kind of grain. The question is frequently asked, why it is not as well to cut flax as to pull it? The fibres of flax diminish in size, tapering from a few inches above the root until they run entirely out at the root of the plant. It will, therefore, run much smoother when spun, and will form a cleaner and smoother thread than if the fibre is cut in two. If the stalks can be cut within an inch of the root, nearly the entire length of the fibre will be secured, as well as a part of the advantage of this tapering of the fibre. In some parts of our country, dealers make a difference in the price between "reaper-cut" and pulled flax.

PULLING WITH MACHINES.—Several different machines have been invented for pulling flax, which have done tolerably good work, when the ground was smooth, level, and so dry that but little earth adhered to the roots.

Most of them injured the fibre more or less, and some could not be adjusted to pull short and long flax equally well, neither would they always deliver it evenly; and when much earth adhered to the roots, it would either obstruct the machinery, or too much hand labor was required to remove the dirt before it came dry. In some instances where the soil was prepared with much care and the seed put in as previously directed, the writer has seen flax pulled in a neat manner at the rate of three to four acres per day, with two hands and two horses. But, flax-pulling machines have not been introduced except to a very limited extent.

CRADLING AND MOWING FLAX.—When the soil has been prepared, as previously directed, and the surface made very smooth, if the flax stands up well, an expert cradler will cut it very close to the ground, and lay it evenly in a swath. But I have always found that I could cut it closer with a scythe than with a cradle, do it with less fatigue, and at the same time lay it in a swath quite as evenly as it could be done with a cradle. The scythe must be placed flat on the ground, and both heel and point kept well down, not only when it is set in, but in pointing out. I was always accustomed to cut a swath about $7\frac{1}{2}$ or 8 feet wide, and to jerk the point of the scythe towards me, when pointing out, as soon as the last stalks were cut off. This motion of the scythe tended to straighten the under side of the swath, and by bringing the heel around just so far every time, and giving the scythe just a certain motion, I could always lay the flax as straight as if it had been pulled, and, if the ground was smooth, could shave it within an inch of the surface. The small amount of fibre that remained in the stubble would not be an equivalent for the greater expense incurred by pulling. When any of the flax has grown so large that it falls down, it can be cut with a scythe much better than with a cradle. If it is very long and heavy, when it is down it will be better to pull such plots, than to mow them. Let the swaths be turned over after they have been sunned sufficiently. In turning use a pole, let it be thrust under the swath, and every time turn only enough to make one bundle, keeping the divisions distinct. Whether the flax is pulled, cradled, or mowed, it is important to keep the butts as even as practicable before binding the gavels.

ASSORTING FLAX.—When flax of various lengths is bound together, a large portion of the fibre of the short stalks will be separated from the long fibre, in the dressing, and be wasted in the tow. Furthermore, when the seed is threshed off, if the short stalks be bound up with long ones, many bolls will not be threshed, and all their seed will be lost. For these reasons, it is important that the long flax should not be bound in the same bundle with short flax. If it be pulled by hand, it will be very easy to assort it, when pulling it, by pulling a handful of the long, and then of the short, putting each in separate gavels. When it is mowed, or cradled, by taking a little pains, the short stalks may be laid, for the most part, in a swath by themselves, and the long ones in another swath. Long bundles and short ones need not be kept separate. It is only necessary to keep the long stalks and the short ones in separate gavels, in order to dress those of the same length together.

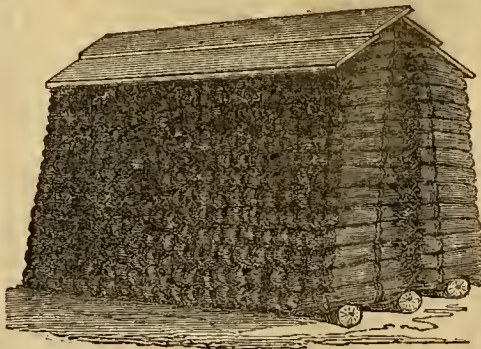


Fig. 6.—STACK OF FLAX.

MANNER OF STACKING.—It is not always convenient to put flax in a barn, and it is important to keep it where hay seed, chaff, and straw will not be mingled with it, and where mice and rats will not work. The best way of stacking it is, to make a long stack-bottom, by placing three poles, sticks of timber, or plank, side by side, from two to three feet apart, according to the length of the haulm, and one foot above the ground; and then lay two courses of sheaves, with the tops together, and with one course above another, as represented in fig. 6. As flax haulm will hang together so well, the ends of the stack may be carried up square, without any posts or stakes. In order to give the sheaves a good pitch, the heads of a few of the top courses may be laid on each other. Then cover it with canvas, or with boards, as represented in fig. 6. If barn room can be had, let all chaff and hay seed be swept away before the flax is hauled in.

TANGLED FLAX.—When flax is mowed by hand, or with a mower, and the stalks are not kept straight, it is called tangled flax. My own practice, which coincides with the practice of other farmers who are accustomed to raise flax, was, to cut it as close to the ground as possible, and cure it, rake it, cock it, and stack it, or put it in a mow, just as if it were hay. When it was mowed with scythes, I let it remain about one day in the swath, and then turned it over. As soon as it appeared sufficiently cured, I raked it into bunches with hand or horse rakes. If the weather were favorable, we were always accustomed to let it remain in bunches about as large as a man could pitch at one forkful. When flax was managed in this way, we were always accustomed to put it in the barn, in preference to stacking it. When it is stacked, however, the top of the stack should be built sloping, instead of pointed, like a roof, and covered with sound boards, or with canvas, as a stack of tangled flax will not turn rain so well as hay. When the flax was to be cut with a reaper, and it was desirable to keep the stalks straight, we put on the platform as for reaping grain, forked off the flax in gavels, and let them be set on the butt-ends, as soon as cut, as illustrated by fig. 7, which represents a gavel of flax placed on the end. Sometimes the flax is so long and heavy that it will not be practicable to rake, or fork it off, while the reaper is in motion. In such a case, as soon as enough for a gavel has been cut, stop the machine, remove it with the hand, and set it on the butts, and let another hand straighten it up. A little longer time will be required, if the reaper is stopped for every gavel, but the work will be done enough better to compensate for the extra pains to keep the stalks straight, and time will be gained in the end.



Fig. 7.—GAVEL.

THRASHING FLAX.—When flax is bound in small sheaves, we used sometimes to take a bundle in both hands and strike the heads on a large stone, or plow turned upside down on the barn floor. Sometimes the seed was threshed off with flails. If the sheaves are not too large, the best way is to whip it out on a large boulder. Strips of canvas, or blankets, should be hung up on three sides, to keep the seed from flying beyond the floor. When the seed is whipped out on a stone, all the loose seed will of necessity be separated from the haulm; but when it is threshed with flails, the sheaves require much shaking to separate the shelled seed. Moreover, flails will break the stalks, more or less, which works an injury to the fibre during the rotting process. When the seed is whipped out on a stone, the stalks will not be broken, and a man can thus whip out more seed than he can thresh with a flail. Another way is, to thresh with a common threshing machine. If the cylinder is what is called an "over-shot" cylinder, raise the concave so that the ends of the spikes in the concave and in the cylinder will just meet, but not pass between each other. If the concave is beneath the cylinder, and can not be lowered, adjust the feeding table so that a bundle of flax may be thrust directly against the middle of the cylinder. This done, thrust the top of each bundle against the cylinder when it is in motion, and be careful not to let it be snatched out of your hands. The bundles should not be held to the cylinder, after the bolls are removed, as the spikes would lacerate the fibre. Thrust the bundle against the cylinder, and withdraw it, turning it partly over, and give it another thrust, until all the bolls are removed. We never unbind our bundles of flax to thresh them with a machine.

Tangled flax is sometimes threshed with horses by treading it out, and sometimes it is run through a threshing machine, as oats and wheat are threshed. But the concave must be raised, or lowered, as the case may be, from the cylinder, so as to make as much space as possible between them, and still thresh clean. When the concave is not adjustable, some threshers take out half or two-thirds of the spikes in the cylinder. As flax seed will thresh very easily, it is not necessary to set the concave as close to the cylinder as to thresh cereal grain, and, furthermore, when it is set close to the cylinder the machine will not thresh one half as fast. In case the flax is long and damp, the machine must be fed with care, or it will wind up on the cylinder, and choke the machine, or damage the fibre.

RIPPLING.—Rippling and threshing are frequently used in America, as synonymous terms. In the Old World, the bolls are usually separated by rippling, which is done as soon as practicable after the flax is pulled, and before it has been allowed to cure. The flax is pulled while a portion of the seed is yet in the dough state, and the tops are drawn through a rippler, a coarse hatchel, or comb, with long, sharp-pointed iron teeth, which tear off all the bolls and chaff, whether green or matured, and the flax

is hurried away to be rotted as soon as practicable, before it has been allowed to cure. The bolls, seed, and chaff are all spread out on a floor and dried, and mingled with oats or barley, and ground into meal for feed. This constitutes the difference between rippling and threshing. Both green and dry bolls may be separated from the baulm by rippling, but green ones can not be threshed.

ROTTING OR RETTING.—After the seed has been separated the stalks are passed into the hands of the manufacturer, whose business it is to prepare the fibre for market by rotting and dressing it. If the producer desires to perform a portion of this labor himself, he should understand what to do and how to do the work. The stalk straw or haulm of flax consists of two parts, the fibre, which is the inner bark, and the shives, which is the woody interior portion, and which is also frequently called shove, boon and hurl. The fibre adheres firmly to the stalk by means of a glutinous substance, and the object of rotting the stalks is to dissolve and decompose the mucilage which holds the fibre and the woody parts so firmly together; and when the flax is properly rotted, the shives will separate from the fibre as readily as bark will peel from a young willow sprout in early summer. There are two ways of rotting flax, preparatory to dressing it. One is called aerial rotting, and the other water rotting or steeping.

Aerial or Dew Rotting.—This is accomplished by spreading the flax on a smooth grass plot in long straight swaths, about half an inch thick. A lad goes before the man who spreads the flax and divides the bundles into handfuls, throwing them down where the swath is to be made. The spreader either bends his body forward, or squats down with the tops of the stalks toward him; and with a quick motion spreads the handfuls as fast as they can be thrown to him. There are only two things to be observed when spreading flax, which are, to keep the butts even, and to spread it of a uniform thickness. Some men spread the swaths so closely that they touch each other. But I always prefer to leave a space of a few inches between the swaths to prevent the tops of one being tangled with another. After it has lain a week or ten days, it should all be turned upside down, by running a long slim pole, say twenty feet long, beneath the swath, near the top ends of the flax, and let a man and a boy turn over a section of about twenty feet at once. I have always found that two hands would perform this part of the work better than one man could do it with a short pole; because every time a portion of a swath is raised, unless some one stands on the swath where the separation is to be made, it will be more or less tangled.

The length of time required for rotting will depend entirely on the state of the weather. If alternate rains and sunshine prevail, two, three, or four weeks will be sufficient. The length of time that flax has been spread must never be relied on as a correct guide for determining whether or not it is rotted enough. There are certain rules which all experienced flax growers understand, which will enable a beginner to determine correctly, when it is sufficiently rotted. The most reliable rule is, the stalks when dry if bent with the fingers, will snap like pieces of glass, and the shives separate freely from the fibre. Beginners should watch their flax every day and apply this test, lest it be rotted too much, which will cause a great waste of good fibre. When flax has rotted too much the fibre will separate from the shives at the junction of the main stem and branches; and sometimes the fibre of the main stems will separate from the shive; and portions of the stem will be seen in the form of an Indian's bow, when adjusted for the arrow. It needs a little experience to determine the point at which flax is sufficiently rotted.

Steeping or Water Rotting.—The true way of rotting flax is to steep it in water, because it cannot be well done by dew rotting. If the weather be ever so favorable, a good proportion of it will be rotted too much if it be kept on the ground until all the stalks are rotted enough. But when flax is steeped or water-rotted, there is greater uniformity in the process. In case it is kept in the water just long enough, it will all be rotted alike, and it will be done very much better than it can possibly be accomplished by dew rotting. Moreover, flax can be rotted very much sooner by steeping, than by dew rotting, the object being simply to dissolve the mucilage that holds the fibre and woody parts together, so that they will separate readily as soon as the flax has been dried.

Prepare a pond of water in the same way that a mill dam is constructed, with a waste gate in the dam, to let the water off at pleasure. A suitable place can be prepared on almost every farm at a trifling expense. The bundles must held in an erect position, a few inches from the ground, so that the water may pass both beneath and above them. For this purpose a platform may be made of rails or boards, and fastened down with stones or stakes. Then set up the bundles and drive down stakes, and nail strips of boards from one to the other, over the

tops of the bundles to keep them from rising out of the water which should be a few inches deep over the flax. Then shut the waste gate and let the pond fill. Sometimes a crate is made, and launched on a mill pond and the bundles secured in it, when it is floated into deep water and sunk sufficiently with stones placed on the crate. Soft rain water is superior to spring water for rotting. While it is in the water a partial fermentation commences which must be arrested at the proper time, or the fibre will be damaged in proportion to the degree of fermentation beyond the proper state.

WHEN TO REMOVE FROM THE STEEP.—As the process of fermentation will progress very slowly in cool weather and rapidly in warm, it is impossible to state any definite period of time for keeping it in the water. If the water were of the correct temperature, the process of rotting would be completed in six or seven days. The cooler the water is the longer the flax will be in rotting. After it has been steeping about five days it should be examined carefully every day, for the purpose of ascertaining when it is rotted just enough. Pull a few stalks out of different bundles in several places and break into pieces a few inches long and pull out the shives. If they separ-

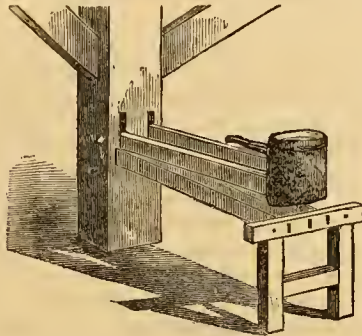


Fig. 8.—HAND-BRAKE.

ate very freely from the fibre, the water should be let off without delay, and the flax spread out on clean grass to dry; and as soon as dry enough, it should be bound in large bundles and housed.

BREAKING.—The Hand-Brake.—Fig. 8 is a cheap hand-brake. The lower part consists of three slats of hard wood, 4 feet long, 5 inches wide, 1½ inches thick, fastened firmly into the post of a building, at one end, and the other ends mortised into a frame. The upper edges of each slat should be dressed to an edge. Two blades of the same form and size are bolted in long mortises in the post, as shown, and the outer ends of these slats are, fixed in a block. Set the two upper opposite the spaces between the lower slats; and the edges of all, when shut together, should be on the same level. A wooden pin in the head above the blades serves for a handle. The slats in brakes of this form are sometimes made to shut between one another, as a knife blade into its handle. This is a wrong construction, because when the edges of the slats pass by each other, they stretch and tear much of the fibre, and break out the shives no better. In using such a brake, crush a handful of straw between the slats, working the upper part up and down, moving the handful along, and turning it over, until the shives are well broken from end to end.

Fig. 9.—GAVEL HOLDER.

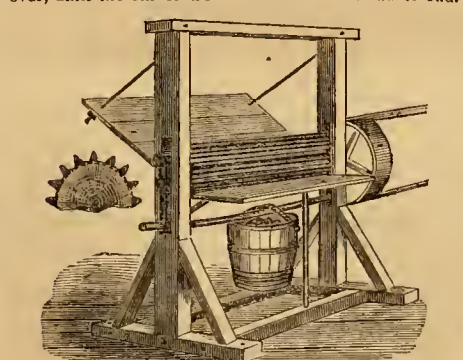
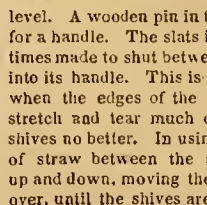


Fig. 10.—POWER BRAKE.

For convenience in holding a handful while breaking it, make two sticks, (fig. 9.) about a foot long, and three-

fourths of an inch in diameter, and tie them together, about 15 inches apart, with a small cord. The cord is

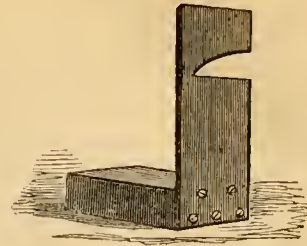


Fig. 11.—SCUTCHING BOARD.



Fig. 12.—SWINGING KNIFE.

passed around the handful of flax, as shown by the dotted line, and the two sticks are grasped with one hand. By this means a man can hold the flax firmly and keep it even, which he can not do with his hand alone.

The Horse-Brake.—Figure 10, shows a cheap revolving brake, which is driven by horse, or water-power. It consists of two fluted, or corrugated rollers between which the bunches of flax are passed repeatedly, until the stalks are broken so finely that the shives may be readily separated by shaking and with the scutcher. The rollers are about two feet long, and six inches in diameter. The lower roller is stationary, and the bearings of the upper one play up and down in slots three inches long. This roller is held down to the other by iron rods, or strips of band iron, which pass over the gudgeons and beneath a stick, which holds a tubful of stones. The weight can be increased at pleasure. A large driving pulley on the journal of the lower roller, gives them a velocity of about one hundred revolutions per minute. The rollers may be made of cast iron, or of wood covered with iron ridges, screwed firmly to its surface. A handful of flax is placed on the inclined feeding table, and a man catches it as the rollers bring it through toward him. He then places it again on the feeding table, and continues to run it through until it is thoroughly broken. After the flax is broken, the loose shives are shaken out, and the remainder are scutched out.

SCUTCHING.—Figure 12 represents a hand scutcher, or swinging knife. It is of hard wood, 2 feet long, with two edges. The hand scutching board is about 3 feet long, and one foot wide, with a notch as shown in the cut, and fastened securely to a heavy block as shown in fig. 11. The length of the scutching board is regulated by the stature of the man who uses it. A handful of flax is held by the operator in one hand in the notch of the scutching board, when the knife is struck on it as if it were to be cut off on a line with the surface of the board. The handfuls are turned over, and both ends are scutched until the shives are removed. A revolving power scutcher is shown in fig. 13. This consists of a wooden shaft, with a system of scutching knives set in it, like the spokes of a wheel. These knives have but one edge; and they must revolve as true as a mill stone. The shaft should make from one hundred and fifty to two hundred revolutions per minute; it may be of any desirable length, with scutching knives every four feet. The knives revolve close to a scutching board. After the bunches have been well scutched, they are hatched. The teeth of a fine hatchel are about six inches long, one eighth of an inch in diameter at the large end, and taper to a sharp point. About 10 of these are set about one fourth of an inch apart, in a hard board, and the fibre is drawn through them until it is sufficiently lacerated and combed. The handfuls are then twisted a little, and packed in a clean box for market. In some markets, however, hatcheled fibre will command no larger price than the unhatched, because the process of hatcheling is the business of the spinner, and requires skilled labor to do it properly. An inexperienced hatcheler will waste a large percentage of good fibre. For this reason, flax growers should aim simply to remove the shives or "boon," and leave the fibre as whole and long as possible, and let the spinner perform the hatcheling, unless dealers make a great difference in the price between the hatcheled and unhatched fibre.

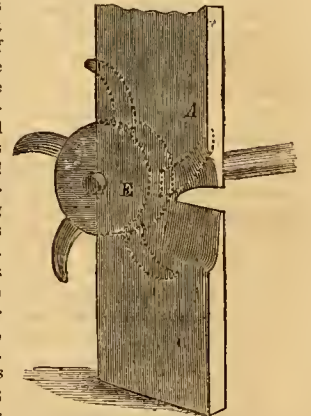


Fig. 13.—POWER SCUTCHER.

Selecting Seed Corn.

"When seed corn has not been saved in autumn," writes an experienced person, "it should be selected from the crib with much care. Choose the long ears, with large kernels and small cob. Let every ear be broken in two, before shelling. If the pith and cob be bright, the seed will vegetate; but if they appear to have been water-soaked and are dark-colored and somewhat mouldy, the vitality of the germs has been injured, if not entirely destroyed. Then with an ax cut off an inch of the top end of the ears selected, and all the irregular kernels at the large end. They can be cut off quicker than shelled off. The small kernels on the tip, and irregular ones on the butt of the ear will not produce as much, nor as handsome grain as those that grow in the middle of the cob. By continuing to plant the small kernels of the little end of ears, for a few years in succession, the ears will be shorter, and the kernels smaller; and the irregular kernels of the butt end will produce ears destitute of kernels in rows. The writer once planted irregular kernels for a few successive years, and the product was short, thick ears, the kernels of irregular form, not in rows, on large cobs. When seed corn is obtained from another part of the country, it will usually ripen earlier when carried south of the locality where it grew. A few miles, however, would make no perceptible difference. The practice of some farmers in Central New-York is, to obtain seed that grew near the shores of lakes and rivers, which had ripened ten to fourteen days before that grown on the upland. By this means their corn is usually fit to cut up a few days sooner than it would have been, if they had planted their own seed, and will often escape early frost."

Preparation of Wheat for Sowing.

Adjust the fanning-mill to give a light shake, and heavy blast, and put in the screen-board to carry the grain outward, to drop within three or four inches of the end of the coarse screen, which will allow all the small kernels and seeds of various weeds to fall into the screen-box. The wheat sieve should be set in the slanting gains, for carrying off the oats and other foreign matters. Most of the light wheat will also be blown over the screen, and the largest kernels will run down through the mill to the floor. The grain that is blown over, as well as that which goes into the screen-box, will make good flour, but is not good for seed. If the oats be not all blown out of the seed, at first a wheat sieve of perforated zinc, or pressed wire cloth, must be put in the slanting gains, the screen-board removed, and the seed run through again, with light shake, and slow feed. The holes of the perforated zinc, or meshes of wire cloth, should be just large enough to allow the wheat to pass through. Then, if the shoe of the mill be adjusted to shake level, the remaining kernels of heavy oats will slide over the holes, and fall beyond the sieves. By this means, all the half-ripe and sbrunken kernels, not fit for seed, will be separated from the large ones, which will produce earlier and better grain. These directions are applicable only to those farmers who have nothing but an ordinary fanning-mill. In some of the improved grain-separators, with only once running through, nearly every kernel of oats will pass over the screen, while the wheat will be neatly assorted and dropped into four different boxes, the largest

kernels, most suitable for seed, being deposited in the first box, and the smallest in the fourth box. Before sowing, prepare a strong brine. Half a barrel will be needed to pickle as little as 4 or 5 bushels of grain, but of course, would answer for much more, and to this quantity add half a pound of blue vitriol (*sulphate of copper*). A portion is done at a time, stirring it well, and skimming off all that floats, dirt, foul stuff, smutty grains, etc. As fast as each portion is soaked, throw it out into a basket to drain. The pickling should be done 4 to 12 hours before sowing. Just previous to sowing, the grain should be spread out upon a clean floor and rolled in lime slaked to a dry powder, stirring the heap with rakes. Wheat should always be drilled in where this is practicable.

Soils for Spring Wheat.

Wheat, whether winter or spring, does best in soils in which there is a good portion of clay. When the soil is composed for the most part of muck, as occurs in many places in New-York, Canada, and some of the Western States, it requires much preparation before it will produce well, and such soils can only be made to yield heavy crops of wheat, with profit, when clay, in some form, can be supplied. A firm, fertile, and dry soil, is particularly adapted to wheat, and such soils as have been under-drained are more productive, and require much less manure. In many places, where a black, mucky soil, several inches deep, rests on a heavy sub-soil, by turning up two or three inches of the latter in autumn, and mingling it thoroughly with the soil, draining if necessary, and manuring, a very good wheat soil may be formed in a few years. Where the muck is so deep that the clayey sub-soil cannot be reached with a plow, and clay can be obtained within a distance of half a mile, it will pay to apply eighty or a hundred loads per acre. The best time to spread it is late in autumn, or in winter, that it may be acted upon by rains and frosts. Still, if applied in the spring, and plowed in, the effect will be good on the crop the same year. Portions of fields frequently are very heavy, while other portions are composed, for the most part, of vegetable mould. The practice of the writer has been to haul mucky soil and spread it on the heavy clay, and in all cases the application has produced an equal or better effect for wheat than a liberal application of good barn-yard manure. As there is a great difference in muck, this might not always be the case. Such compact, heavy soils contain a large amount of wheat-producing material, but need to be made light and porous, so that the roots of the wheat plants can permeate the entire soil as deeply as it has been pulverized. The best preparation of the land for wheat, is a dressing of well-rotted, or composted, barn-yard manure. Unrotted manure tends to produce a heavy growth of straw, which will be liable to rust, and yield less grain. The best practice is to apply it late in autumn, simply harrowing it in after the land has been well plowed. By spring it is well decomposed. Where it is desirable to apply the manure in the spring, scrape the hog-yard for it with broad hoes, and use heaps of fine manure previously collected, and if the soil be compact and heavy, add well-rotted chip manure. On soils in which there is a great amount of vegetable matter, never apply any barn-yard manure, unless it has been thoroughly composted, or rotted. On land where there is usually a great growth of straw, wood ashes,

either leached or unleached, applied at the rate of 10 or 12 bushels per acre, of the unleached, or any quantity of the leached, will go far to correct the evil, and the heads will be better filled, and the kernels plumper. The writer has experienced great advantage from the use of liquid manure, especially on light soil. It was pumped into a large hogshead, on a stone-boat, or on wheels, at the barn-yard, and distributed from a trough filled with small holes. If the hogshead be on wheels, this application may be made any time before the grain is six inches high, and always gives greater stiffness of the straw, and increases the amount of grain.

The Best Large Breed of Swine.

Several inquiries have been received from subscribers as to what are the best hogs. Perhaps there is no large breed that will be found superior, or even equal to the Chester White, for general purposes. Of course when we say Chester White swine, we mean nothing but that breed in its purity. There are thousands of swine that are sold at exorbitant prices for Chester Whites, that have only a large infusion of the Chester White blood. We would not be understood as stating that such swine are best for farmers, or for any one. The Chester Whites are often denounced as an inferior breed, and a common complaint is, that they do not do as well as they did a few years ago. The fault is not in the swine, but in their management. For example, a man procures a Chester White boar which has proved himself to be an excellent animal for transmitting his good points to his progeny with great uniformity. He serves a large number of sows which possess only a limited infusion of Chester White blood. Their progeny, to appearance, may be in every respect equal to the full blood Chester Whites; and they may possess fattening qualities quite equal, and sometimes a little superior to the Chester Whites. Therefore, as farmers reason that "like will produce like," they breed from the best specimens of this grade, and they find that all their care and efforts to improve their swine by breeding from such animals, carries them farther and farther every year from the point of improvement at which they were aiming. This failure to improve the breed, when one has an excellent animal to begin with, has a great tendency to discourage farmers in their efforts to render good swine a little better.

Breeding In-and-in.—Nothing is more common than for men of limited experience in raising improved stock of any kind to attribute every failure to breeding in-and-in. They guess, they think, or they know, that such a failure, or such a development of form in a young animal, is in consequence of breeding in-and-in, when the truth in the fact is, they know nothing at all about it. Sometimes the dam and sire are both good grade animals, but their offspring will seldom be equal to either of them for fattening purposes, and never will they prove to be as good for breeders. Consequently, the numerous failures in raising improved stock are much more attributable to breeding from grade animals than to breeding in-and-in. A grade animal may be quite as profitable for beef, mutton, or pork, as a full-blooded one, but they are not the kind for breeders. Those who attempt to raise improved stock of any kind should be careful not to impute the development of certain bad points in their animals to in-and-in breeding, when it is the natural and certain result of breeding from animals that are said to be full-

blooded, when really they are nothing but grades. In-and-in breeding may be practised with the best of results, with proper care; but breeding from grade male animals never. Whenever possible always employ well-bred males.

How to Plow Corn Ground.

We commend to our readers a practice which we have followed with great satisfaction in plowing corn ground, whether it was sod or stubble, namely: by what is called "back-furrowing"—commencing in the middle of the field, turning the furrows *inward*, thus plowing the entire field "geeing round." Find the middle of a field with a measuring pole or tape and set a stake. Then turn a ridge of two furrows in a straight line from each corner of the field to the stake. These ridges will enable a plowman to do his work well at the turning points. The advantages of plowing in this manner are, there will be no dead furrows in the field. A row of corn, if planted in a dead furrow will not amount to much, except for fodder. When a field is plowed in lands, the soil will not be thoroughly broken up beneath the ridges. When a field is plowed by going around the outside and finishing in the middle, there will be a dead furrow from each corner to the middle of it. The team, moreover, must turn on the plowed ground, which treads down a wide strip from the corners to the middle of the field. But when a field is plowed by beginning in the middle, the entire team, whether double or single, always turns on the unplowed ground, and it is easier for the plowman to turn out and set in his plow at the corners, than when he turns the furrow outward. By plowing in this way, the surface will be kept level, and the work performed in a more workmanlike manner. In order to have every side of the field finish alike, measure each side from the plowed ground to the outside of the field every day. Then the furrows may be varied in width, or omitted on one side, while the plowed plot is small. Aim always to keep the furrow slices of a uniform width.

Broom Corn.

There are two kinds of broom corn, dwarf and tall. Both kinds are good, but no well-conducted experiments within our knowledge have proved which is superior. Many think that the dwarf is most profitable; while others prefer the tall. If proper care be taken to secure good seed, there will be but little difference in the amount and quality of the brush. There is much bad management in planting half-ripened seed, which produces weak and slender brush fit only for small brooms. Of course, all such brush will lessen the value of the crop; and if the common careless practice of saving seed be pursued from year to year, an increasing proportion of the brush will be inferior. Good brush is long, thick and uniform. The way to secure good seed is to tie a colored string to those long straight panicles that begin to ripen first. The seed of these should be kept separate; and before planting run it through a fanning mill, that all the small, light seed may be blown out. By adopting this practice for a few years, seed may be obtained that will mature earlier, and thus probably escape early frosts; and the brush will be prevailingly thick, heavy, and nearly two feet in length.

The soil for Broom corn should be prepared just as for a crop of Indian corn. As the plant

is very slender, the seed should not be placed too deep; the soil should be made very mellow, and the seed put in freshly stirred soil. The best time for planting is immediately after Indian corn, or as soon as the ground has become thoroughly warmed and trees are in full leaf. If it be planted too early, it will be a long time coming up, and weeds and grass will get the start of it. Barn-yard manure ought to be applied a year beforehand, as much rank manure tends to make a coarse brush. The seed may be planted in shallow drills, or in hills. If the soil be foul, it is usual to plant in hills, so that the horse-hoe may be worked both ways, to save hand hoeing. But if the soil be free from weeds, much more broom corn will be produced if planted in drills. In hills, six stalks are enough, as they will yield better brush than a larger number. If in drills, the stalks may be four, five, or six inches apart. When the dwarf broom corn is planted, the drills may be about two feet six inches apart. But for the tall kind, they should be not less than three feet, or three and a half feet apart. Let it receive the same—level—cultivation as is given to Indian corn. Directions for the securing and management of the crop will be given at a future time.

Raising Chickens—A Word in Season.

Last year the subject of gapes, especially the method of curing the disease was a good deal discussed in this journal. There is no doubt but the ailment comes from little worms, the larvæ of some fly or other insect, which are found in considerable numbers in the throats of the chickens and cause their death. These flies or insects no doubt abound about fowl houses and yards, so that keeping the chickens in places which fowls do not frequent, and where they have not before been kept, goes far toward protecting them from the evil. A correspondent "Coxsackie," writes as follows: "About a year ago I communicated to the *Agriculturist* a certain mode of treating chickens, to prevent gapes. Since that time I have seen various modes stated to cure the ailment. Now, Mr. Editor, I insist upon it that 'an ounce of prevention is better than a pound of cure.' There is no need of having gapes at all. Last year I raised nearly one hundred chickens, and had not a sign of gapes among them. My method is as follows: When the chickens are in condition to take from the nest, I put them with the hen in a coop with a board bottom, so as to keep the young ones from the cold and damp ground. They are fed with Indian meal on which boiling water is poured from the teakettle, well stirred and allowed to cool. I believe the whole secret is to keep the chickens dry and warm when quite young, and give them cooked feed."

How Much Hay Will Cattle Eat?

There has been a vast amount written on the above subject, which has tended to mislead, rather than to instruct. Some writers have endeavored to fix a certain number of pounds as the usual standard that a cow or a bullock will ordinarily consume. But some cows, as well as some bullocks, will require twice as much, daily, as others. Ordinarily, a good-sized cow will need about twenty pounds of hay per day, when she has a supply of roots, or is "slopped." Some cows will consume thirty pounds, and some oxen will eat even more than that amount. With yearlings and calves, the amount will vary, just in proportion to the size

and feeding condition of the animal. This is the writer's own experience.

S. S. Whitman writes to the *Country Gentleman* that: For several years he kept cows, and sold the milk; and much of the hay fed to them was purchased by the ton. He often noted the quantity, and the time of consuming it, and it varied so little from twenty pounds each per day, that he fixed on that number of pounds as the necessary daily amount of hay for a cow, in addition to slops sufficient to supply the ordinary draught made upon them by milking. John Johnston—whose authority is often quoted as final on such subjects—says: "It is all nonsense to talk of those Hohenheim oxen eating sixty-six pounds of hay per day! It must be different hay from any that I ever saw, if they would eat half that amount. Twenty pounds per day would satisfy any cattle that I ever have fed."—The quality of the hay will also make a difference in the amount. If the grass were not cut until the seed had well matured, the hay would not of course be so palatable as though it had been mowed when it was in full bloom. A cow, or bullock, therefore, will consume several pounds more of good hay than of poor hay, on the same principle that a man will eat more good beef than poor. Nevertheless, the amount that an animal needs depends upon the demands made upon its digestive organs, dependent upon its size (weight), the demands made upon it for labor, for milk, in parturition, etc., and to sustain its animal heat—an animal exposed to the weather eating more than one stabled and warm.

Warbles in Neat Cattle.

Several subscribers to the *Agriculturist* have inquired as to the cause of, and manner of treating this affection, which is common to neat cattle. When we pass the hand along the back of some cows, bullocks, oxen, and, in some instances, yearlings, we feel numerous little bunches upon the back. This is called "the warbles," and cattle in the best condition are no more exempt from it than those that are very poor. The word "warbles" is applied also to hard lumps which form in the skin under the saddle of horses. A correspondent, who has been familiar with the warbles for thirty years, and says he has never known neat cattle to experience any *serious* harm from them, writes: "No doubt every observing farmer has noticed that, during the months of July and August in our latitude, neat cattle are much annoyed by the stings of a large, dark-colored fly, called the Gad Fly (*Estrus Bovis*), which will often light on the backs of cattle, and put the whole herd on a gallop; and sometimes they will drop on the backs of oxen and horses, while at work, and, in a moment of time, render them as unmanageable as if they had disturbed a hornet's nest. This Gad Fly punctures the skin of the animal—fat animals are better than lean ones—and deposits an egg, which produces a maggot that continues to grow for nearly a year in the flesh of the animal, when it emerges through the skin and falls to the ground, secretes itself beneath some protection, and, in a few days, commences its attacks on the cattle.

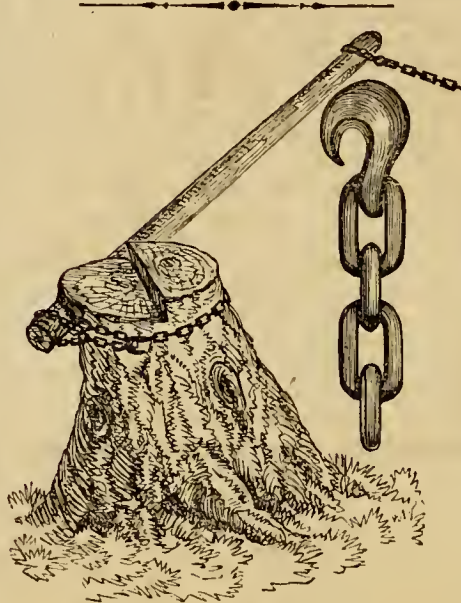
During the months of April, May, and June, in our latitude, these bunches on the backs of cattle will continue to enlarge, until the black head of a large grub will have worked its way through the skin of the animal's back. In this condition they will live and develop themselves for several weeks, with their black heads

just protruding through the skin. I have seen hundreds of them on the back of a single animal; and I have seen leather that was made of the skin of an animal that was afflicted with the warbles, that appeared like perforated tin. My opinion always has been, that such maggots—to say nothing of the great annoyance by the severe bites of the flies—are quite as injurious as lice. My practice always was to kill every Gad Fly, if possible, as soon as I would a snake. Then, the backs of my cattle were carded frequently, and as soon as a maggot's head appeared through the skin, it was drawn out with a pair of tweezers. In warm weather, when cattle were not handled much, we would thrust a needle into the heads of the maggots, before they had worked through the skin. Gad Flies are usually not very numerous; therefore, if a little pains be taken to kill every one, and if the maggots are all destroyed before they leave the cattle, they will not be a source of serious inconvenience to them. In case maggots are removed in wet and cold weather, the animals should be protected from cold storms, because it might prove injurious, if much rain were to fall before the deep holes close, from which grubs had been withdrawn. S. E. T.

Spaying Cows.

This delicate operation may be successfully performed by any man of nerve and caution. The best time is within six weeks after calving. It is necessary to study carefully the relation of the parts, and the *feeling* of the ovaries in place, in a slaughtered animal; and well, also, to practice the administration of chloroform, till familiarity with this desirable preliminary is gained. The cow must be firmly held, so that she will stand, if possible, and should have fasted twenty-four hours. The incision is made in the loin, just in front of the haunch. Such incisions, where the skin is loose, are made by first shaving off the hair, an inch or more wide, on the line of the proposed cut; then making a fold of the skin, at right angles to and across the middle of the shaved place, the operator grasps this in his left hand, on one side of the line, and gives into the right hand of an assistant a similar grip of the fold on the other side, leaving the shaved line exposed. Then a quick, strong stroke with a sharp knife across the fold will, if properly directed, make an opening through the hide of about the right length (five inches), clean and true. Should an artery, or large vein, be cut, it must be taken up (the end found, drawn out and tied with a thread), or, if a small one, twisted up so as to stop the flow of blood. Cutting through into the cavity of the abdomen, the hand is introduced, and the ovaries felt for, found, and worked off with a strong thumb nail. A "steel thumb-nail" is sometimes used to advantage. Care should of course be taken not to tear the parts, nor to make the incision too large, nor too low. If too low, the contents of the abdomen will interfere. So, also, if the intestines are full, they will fill up the abdominal cavity, and seriously embarrass the operation. When the ovaries are removed, the wound is wiped with a damp cloth, and closed with sutures—which are single tied stitches. Stout linen thread is used, well tallowed, and a curved sail-needle, new and bright. The sutures are placed an inch and a half to two inches apart, and tied loosely, only so as to bring the lips of the wound together; they will swell so as to close perfectly. It is well to leave the lower

part of the wound sufficiently open to allow pus to discharge freely, and always encourage the wound to heal from the top downward, for the same reason. Protect with a greased linen cloth laid over the wound, and a blanket or sheet, according to the weather. The cow should be kept stabled, and her diet should be simple, and loosening rather than heating, consisting of roots, with cut and soaked hay, or cut grass in the spring, and with a warm, thin mash of wheat bran now and then, perhaps.



A Cheap Stump Machine.

Inquiries are made for "a cheap stump machine, such as a farmer can make with the expenditure of a few dollars, and with which he can extract stumps that a yoke of oxen can not remove with a straight pull." The accompanying illustration represents a very convenient and efficient stump puller, for such stumps as are not very firmly rooted, and especially for those of which the small roots have decayed. It will be seen by the engraving that a strong chain is first placed around the stump, with a rolling hitch, and the other end is then fastened to the large end of a stiff pole, 20 or 30 feet long, and a team is hitched to the small end, and driven in a circle around the stump until it is turned or twisted entirely loose. About the only expense of such a stump puller will be a strong chain, with two very heavy hooks. When the stump is a small one, let the chain be passed twice or thrice around it, before it is hitched to the pole. By cutting off a portion of the large lateral roots, a green tree of large size may be uprooted in a short time, especially where the principal roots do not strike very deeply.

For such heavy work very strong hooks are required, as they will usually break first. A large hook of the best form which will be equally as strong as the chain, is shown in the illustration. But very few blacksmiths know how to make a good hook. Procure a bar of the best Swede's iron, one inch thick by two and a half inches wide, and draw the end to as short a point as can be made, and admit a bending of the right shape; and make the inside circle of the hook just large enough to hook on to the middle of the chain. Bevel off the back side of the hook at the widest place so that it will be not less than three inches wide where the greatest strain comes. Hooks usually break a little beyond the middle of the turn towards the eye; here they should be wide and strong.

Orchard Grass.—(*Dactylis glomerata.*)

The excellence of Orchard Grass, both for grazing and for hay, has not only been very much underrated, but a great many farmers do not even know the grass when they meet with it. In the *Agriculturist* for March, figures and descriptions were given which will enable any careful observer to recognize this species. In some localities, good farmers esteem it as superior to almost any other grass. Wherever Red Clover and Timothy flourish well, Orchard Grass will not fail to be most luxuriant. As Orchard Grass will mature about the same time with early Red Clover, we have always found it very much superior to Timothy (*Phleum pratense*) to sow with clover, whether for grazing, for feeding green as soon as large enough to mow, or for early hay. For a number of years the writer has tried various kinds of grasses, in Central New-York, to obtain such as would afford early pasture, as well as excellent hay, and has found that Orchard Grass and early Red Clover, when sown in about equal quantities, would always be fit for pasture, or for mowing, from eight to twelve days earlier than any other mixture experimented with. It is nutritious, well adapted to all soils that will produce good crops of cereals, and in orchards, or shaded fields, it is superior to any other grass that we are familiar with. When farmers wish to feed a few bullocks for early beef in spring, or wethers, or dry ewes, for early mutton, if the soil be not wet, and is in a good state of fertility, and the Orchard Grass and Red Clover have not been eaten off late in autumn, it will be fit to graze very early, besides which, two good crops may be mowed in a season, and it will also furnish much fall feed in addition.

Another consideration in favor of Orchard Grass is, it will endure the drouth of summer with much less injury than almost any other kind of grass. When Timothy has ceased to grow, Orchard Grass will continue to send up new spires until the moisture of the soil appears to be entirely exhausted. As Orchard Grass is disposed to grow in tussocks, if it be sowed alone there will often be spots of bare ground between the tussocks. But, if some Kentucky Blue Grass seed and Red Clover be sowed, the entire soil will soon be covered with a swarth turf, and the quality of the Orchard Grass will be much better.

In some parts of the country, there exists more or less prejudice against Orchard grass, for both pasture and hay, on account of its coarseness. But this is the fault of the farmer, not of the grass. If the soil is kept in a good state of fertility, and there is not an excess of water in it, and Kentucky Blue Grass and Red Clover be sowed with it, the Orchard Grass will not grow so rank and coarse.

AS DULL AS A HOE.—Why should the hoe be made the whipping post for so many blunted scythes, axes, knives, and other tools? As dull as a hoe! Many a farmer works the year through with a hoe whose edge is thicker than an old-fashioned copper, when a few minutes turning of the grindstone would put it in good working order. A sharp hoe saves time and strength, and does one's work better than a dull one. No farmer will mow ordinarily longer than a day, without grinding his scythe; why not always keep an edge also upon the hoe?

IT behoves us to ever pay respect to old age, because we are all desirous of attaining to it.



Fig. 9.—SWEET-SCENTED VERNAL GRASS.

Talks About Grass....III.

In the article last month upon Orchard and Kentucky Blue Grass, some practical remarks upon their culture were promised. These are given elsewhere in separate articles. One grass chosen for description, at the present time, is the Sweet-scented Vernal Grass—*Anthoxanthum odoratum*. This can hardly be called a valuable grass, yet it is one we would not willingly do without, as it is this which fills the air with fragrance, when "The ripe harvest of the new-mown hay gives it a sweet and wholesome odor."

It is a grass which readily "comes in" upon meadows, and growing here and there in tufts, imparts its peculiar odor to the hay with which it is enred. It has a perennial root, and its foliage appears very early in spring. The engraving, fig. 9, shows the manner of flowering, the flowers forming a loose spike, appearing in May. When the structure of the flowers or spikelets is examined, it will be found to be quite different from that of either of the grasses already described in these articles. In fig. 10, a magnified spikelet is shown at the top of the figure, and below its parts are shown separate and still more enlarged. The glumes, *a, b*, are as in the other figures; within these are a couple of empty paleæ, *c, d*, without any stamens or pistils within them, and each furnished with a long bristle or awn; above these are shown two paleæ, *e, f*, of a different shape, which enclose the stamens and pistil, *g, h*. Comparing this with the enlarged figure of the Orchard grass (fig. 6 of last month), it will be seen that it is a three-flowered grass, of which only one flower, the central one, is perfect, *i. e.*, bears stamens, and pistil, while the side flowers, *c, d*, fig. 10, are abortive, and each reduced to a single empty palea. This grass does not find much favor among our farmers, but in England it is valued to mix with other grasses for pasturage, both on

account of its earliness and the late feed it furnishes in deep, moist soils. It has been asserted that the high flavor of the butter produced in certain localities is due to the abundance of the Vernal Grass. The peculiar vanilla-like odor is most perceptible if the grass be a little wilted. In some parts of the West, where this grass has not made its way, we have noticed that the hay fields are quite without the delightful fragrance that they have in older parts of the country. It is the odor, as well as the car-



linearity of the grass, which gives the popular name of Sweet-scented Vernal Grass. The name *Anthoxanthum* is from the Greek, meaning "flower of flowers," while the application of the specific name, *odoratum*, is sufficiently obvious.

Another grass often seen in our fields may be noticed here, as, like the Sweet-scented Vernal Grass, it becomes readily introduced. It is the Velvet Grass, or Meadow Soft-Grass (*Holcus lanatus*), which is readily distinguished by the velvety character of its stem and leaves, and the very pale and whitish color of its flower

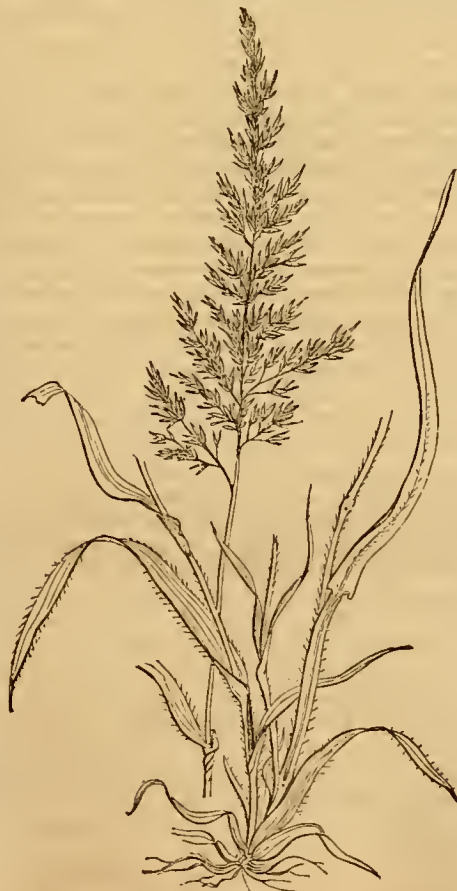


Fig. 11.—VELVET, OR MEADOW SOFT-GRASS.

clusters. The general appearance of this grass is shown in fig. 11. When the spikelets are ex-

amined, they are found to be two-flowered; the lower flower having both pistil and stamens, while the upper one is imperfect, producing stamens only. The lower palea of the upper flower bears a short awn or bristle. This grass is very little eaten by cattle, and it is usually regarded as a worthless intruder. It is said to be valued in some of the Southern States, where good grasses are exceedingly scarce, but no Northern farmer would think of cultivating it.

Kentucky Blue Grass.—Culture.

This kind of grass flourishes well in all our grain growing regions; and in many places where the soil is better adapted to dairying than raising grain, Kentucky Blue Grass has no successful rival, except where there is an excess of moisture in the soil. On the table lands and river bottoms of Central and Western New-York, and on the wheat soils of Ohio and other Western States, where the land has been under-drained, or is naturally dry enough for raising good crops of grain, this grass grows luxuriantly. On the slopes of the Lakes in the State of New York, it grows well; and where the soil is naturally fertile, it will take complete possession as soon as the timber is removed. Where the timber is tall, and there is little shrubbery and underbrush in the woods, Kentucky Blue Grass often forms a beautiful tender turf all over the forest. In those grain-growing localities where a crop of Red Clover constitutes one of a four, or five years' rotation, this grass is sometimes a little troublesome, as it will often supplant a large proportion of the Red Clover; and when Indian corn, potatoes, or other root crops are grown in such fields, the Kentucky Blue Grass will often spring up in a few days and cover the surface of the ground. But if it be not allowed to cast its seed, and the soil is cultivated every year, it will be no more troublesome than Red-top or Timothy.

The chief excellencies of the Kentucky Blue Grass are: it starts very early in the spring, thus affording early pasture; it will grow very rapidly after it has been grazed off; it will furnish more late fall feed than most other grasses; and it is better than almost any other grass to sow with either Red or White Clover and Orchard Grass, for forming a good sod, which is so desirable in pasture fields, especially where heavy animals are allowed to graze. It will not flourish as luxuriantly on our heavy clay soils, as it will on light soils; and we would not recommend it as a good grass for heavy soils, except when the object is early pasture or early hay; and even then it should be sowed with clover and Orchard Grass. When it is designed for hay it should always be mowed early before the seed has matured, as the seed stalks will be very wiry and tough if they are not cut while they are quite green. In case a field is to be pastured, it is important to graze it off early in the former part of the season, and not allow it to grow large before stock are turned on it. Kentucky Blue Grass is very nutritious. All kinds of stock like it well, and it will afford a large amount of good pasture if it receive the proper management. For hay, Timothy is much superior to this grass, especially for market. Where the soil is not wet, and is in a good state of fertility, and grass is desired for dairy purposes, it is probable no other pasture will yield a larger quantity of butter and cheese, than Kentucky Blue Grass and Red and White Clover, with the addition of Orchard Grass. Thickly seeded, and kept closely mowed, this grass is almost unsurpassed for the lawn.

Tim Bunker on "Striking Ile."

"Have you hee'rn the news, 'Squire Bunker?" asked Jake Frink, as he came into our house last evening, after a long absence.

You see Jake has been mighty shy of our house ever since my trip to Washington, and the upsetting of his light-house, etc. It took some great excitement like the present oil fever to bring him round.

"No, I haven't. It is the latest news, neighbor Frink, to see you here. You're welcome."

"Wal," says Jake, "they du say that Deacon Smith has made five thousand dollars on ile within the last few weeks."

"And how did that happen?"

"It didn't happen at all. He made it by speculation in ile stocks. Ye see, he and a few men in Wall-street bought a lot of land for forty thousand dollars, and then bought an ile well, jest to sweeten it, and sold out sheers enuff to come to a quarter of a million, and talked about a working capital of a hundred thousand dollars, and all the work that capital did was jest to work money into their own pockets, and the Deacon's share of the spiles was five thousand dollars. I guess I shall want to hear the Deacon pray arter this!"

"Hear him pray!" exclaimed Sally, taking off her gold-bowed spectacles. "Little chance of that, Jake, for you haven't been inside of a meeting house in a year."

Jake did not heed that shot, but proceeded.

"Now I should like to know, Squire Bunker, whether there is anything in this ile business, or whether it is all bosh. Did you see any ile when you was in the city?"

"Lots of it, neighbor Frink, and heard a great deal more than I saw. There is no kind of doubt that the bowels of the earth is full of ile."

"And do you suppose, Timothy, it is prepared for the great conflagration of which the Bible speaks?" interrupted Mrs. Bunker.

"I couldn't say as to that. I guess it will light up a good many parlors and kitchens before it will help burn up the world. You'd be astonished to see the quantity that comes into the city from the West, and the quantity that goes out of it to the East. Why, what a change it has made in all our houses! Just think of the different sorts of lights we have had since we went to housekeeping. Tallow candles, with tow wicks that you used to spin from the tow from my hatchel, dipped in tallow about Christmas; then candles with cotton wicks, and run in moulds, six in a bunch; then whale oil lamps; then camphene and burning fluid, and lastly, kerosene, the best of all."

"Du tell if kerosene is the same thing that comes out of the ile wells? I thought they called it ketrolum, or some sich name."

"That is it, neighbor Frink, only kerosene is Petroleum, after it is purified at the factories."

"Wall neow, du ye think there is any chance for me to make money easy in these ile companies?"

"I shall have to say yes and no according to circumstances; just as I would say about gold mining. There is, no doubt, plenty of gold in California, Idaho, and the Rocky Mountains in general. But it is my private opinion, that if all the money and labor expended in those regions had been applied to the soil in regular farming, or other common industrial pursuits, they would have produced more property and more happiness than can be found in those countries now. A few lucky adventurers have made fortunes, but the most who have gone

thither have either failed, or got a bare support. Thousands upon thousands have lost capital and labor, and life itself, in the vain pursuit of sudden riches."

"I'm sorry to hear you talk so, Squire. Ye see I have tried the plan of slow riches for more 'n forty years, and it's no go. I've dug airly and late, and stuck tew my business as close as the next man, and I aint out of debt yet. And now if you say there is no chance for sudden riches, I am done for."

"Perhaps if you had stuck to the farm more and to the bottle less, the result might have been different."—"I don't see that," said Jake, gruffly.

"Well, your neighbors do, and it is no use to try to shift off the faults of the man upon the farm, or the business of farming. Nothing pays better in the long run. There is money in ile, just as there is in gold, only the ile business is not quite so risky. To those who know the ropes, I suppose there isn't any risk at all. The men who buy the land, and get up the companies, as a rule, make money. In the present fever heat of the business, there is no trouble about selling shares, and they mean to sell enough to pay for the land, and line their own pockets, whether they ever strike a drop of ile or not. If they are fortunate enough to strike ile, they make a good thing for their shareholders. If they do not, their stock is not worth a chaw of tobacco. They do not tell that it costs four or five thousand dollars to sink a well, and that thousands of these wells are bored without ever returning a red cent for the labor. They do not tell how many wells yield lots at first, and, after a while, 'kind o' gin out,' like the Paddy's calf. And what is a hundred acres of land worth, with a dozen dry wells on it?"

It is astonishing, Mr. Editor, to see how crazy people are getting on this subject. The Multicaulis fever, thirty years ago, wan't a priming to this. When I went through your city a few weeks ago, I did not hear much of any thing else talked about. The war was nowhere; dry goods didn't amount to much, and I couldn't get even a butcher to talk of beef cattle more than five minutes. Every old acquaintance I met offered me oil stocks, as if it was a medicine and I was ailing badly. I was told they were going to get up an exchange on purpose to sell ile stocks. The papers were all full of it, advertising companies with a capital anywhere from a quarter of a million up to ten millions. And it is not much better out here in the country. These things are advertised in the religious papers, holding out to everybody the prospect of sudden riches. The women get hold of the papers and read these advertisements just as if they were law and gospel, being in a religious paper, and indorsed by the editors, you see. I am afraid they read more about ile than they do about religion. It does seem as if everybody's face was shining with ile. They get all stirred up, and half the time forget to wash the dishes, or get the dinner into the wrong pot. They carry the matter to the minister, as they do all their other troubles, and he thinks there may be something in it. Then they tease their husbands to buy stock, and dream of rivers of ile and fine houses. "What is the use of scrubbing away at the wash-tub, or grubbing with a hoe, when you can have somebody pump money into your pocket just as easy as you pump water into a pail?"

Now you see, Mr. Editor, this business has gone about far enough. It is unsettling the foundations, as Mr. Spooner would say. It is well enough for people who have got money to

throw away, to go into these speculations. They may make a heap of money, and they may lose every cent. Farmers, generally, are not of this class. There is nothing we want so much as more capital in our business. If I put a hundred dollars into tile drains, or into a mowing machine, or a stone digger, I am sure to get a good dividend. If I put it into ile stock, I may get three per cent. a month, but more likely I shall not get three cents in as many years. Keep your capital where you can watch it. Drive at your business, if you would prosper in farming, there is no ile like elbow grease

Hookertown, Conn. } Yours to command,
March 10th, 1865. } TIMOTHY BUNKER ESQ.

Cows—Farmer "Old Style's" Advice.

GOOD RESULTS AT CALVING-TIME.

Mr. Editor:—I am an enthusiastic farmer and gardener. Being a reading man, in general farm operations I take the key-note from Solon Robinson. I have despised the antique, and hugged radical reforms to my bosom. "Dig Deeply!" In trenching and burying manure, I follow Downing and Grant, and Beecher and Pardee. A museum of broken ox-vokes and plow-beams testifies to the depth of my plowing. "Raise Roots!" Haven't I—until my cellar was full, and the house dripped with moisture, and the wall-paper tumbled about my ears, and wife's best gown got mouldy! "Raise Green Corn Fodder!" Acres of it—so that my cows needed no water, nor did their milk. O, I have responded to the shouts of all the banner-bearers in improved culture, by practice. I have echoed the shouts, too, and, thanks to patient Nature, have taken a deal of comfort in my single blundering successes in dozens of failures. Before my neighbors, I carry a "stiff upper lip" still, but inwardly, I am modestly itself, in view of my farming experience, and when I advise as to the road to success, I point out so many routes, that I'll defy any man to say I sent him wrong.

I was pleased to observe, last spring, a slight wall among our writing farmers, concerning the cows. Miscarriage—failure to deliver the placenta, and so on. It did me a deal of good to have company in my misery—for that's the trouble with my cows. Fat and sleek cows, too, apparently without blemish, and cared for in the full blaze of agricultural light! In my desperation, I have thought of going back to the "barbarous practices" of my neighbors. They have no trouble with calves, or their dams—the latter are lean and the former are fat; and there is no trouble about their cleaning. Their cattle get the range of bleak pastures and mouldy fodder from frozen stacks.

It was a little tough, but I flung away pride, went and told one of my old style, skin-flint, farming neighbors of my difficulties, and frankly asked his opinion as to the cause.

"O, you nuss yer keows tew much, 'Square,—morn'n what's nat'ral—with yer tight stables, and rutes. Rutes aint nat'ral feed for a keow,—and yer fine hay and meal, and warm slops, spile their constitoshuns. Turn yer cattle eout, Square, 'n' let 'em git their livin along under the walls, with a 'casional bite of suthin rough,—corn-butts, or sich. Do you give your keows any nubbins o' corn, just afore you 'speat 'em to cum in, 'Square?"

"Why no. Why should I give an extra feed when they are in such good condition?"

"I don't keer nothin' for condition. My father allus gin his keows nubbins o' corn two or three weeks afore he 'spected 'em to come in,—

'n' his keows done well,—'n' that's the way I sarve mine."

Drowning men catch at straws. I tried the feed of corn upon the ear, last spring, and whether by chance or not, the calves all dropped without any trouble, and I am trying the same "superstition" this year. One of my finest cows, I will add, had given me a deal of trouble each of the two previous years.

Raising Garden Seeds.

The ease with which the different vegetable seeds can be raised, varies considerably. With cucumbers, tomatoes, and many others, we have only to select the earliest and finest specimens, and the variety can be kept true year after year with but little trouble. With biennial plants, more care is required, and unless especial pains are taken, the sorts are apt to degenerate if propagated from home-grown seed. Hence cabbage, onion, turnip, and many other seeds of this class are usually procured from seedsmen, who obtain them from persons who make it a business to grow them upon a large scale, and who are careful to produce a reliable article. For those who wish to grow their own seeds, a few hints upon the treatment of the leading sorts will be timely, as the season is now at hand when biennial roots, bulbs, etc., are to be set out for seed. It must be borne in mind that all our finer sorts of vegetables are in an unnatural state of development. They have been brought to their present excellence by carefully propagating from those plants which present the desirable qualities of size and form, and these peculiarities can only be continued by observing the same conditions. Hence the plants from which seeds are to be raised must be the best of their kind, and must be placed under the most favorable conditions for development.

ONIONS.—There is no crop more affected by care in seed raising than the onion. By a proper selection, the shape of the bulbs may be modified from very flat to globular, and by choosing the earliest ripening bulbs for seed, the maturing of the crop may be appreciably hastened. At the time of ripening of the crop, the earliest, as well as the largest and best formed, should be selected for seed-bearing next year, and preserved, with good ventilation, during the winter. As early as the ground can be worked, a plot should be prepared, by heavy manuring and deep plowing. Drills are made about three feet apart, and five inches deep, into which the onions are set, at four or five inches apart, cutting off any long sprouts at the time of planting. Cover the bulbs with fine earth, which is to be gently pressed over them. When the tops appear above ground, clean out the weeds with a hoe, and draw the earth towards the onions; this should be done at each hoeing, so that by blossoming-time there will be a hill eight or ten inches high around them. After the onions blossom, the roots should not be disturbed by working among them. If properly hilled, the stems do not usually need any support, but if they are inclined to fall over, a line, or strips of wood, may be placed at a proper height to hold them up. When the seed pods begin to crack, or the stalks turn yellow near the ground, cut off the heads, with about six inches of stem, and expose them on a cloth to dry. A large portion of the seed will rattle out, and the rest may be removed by rubbing with the hands, or threshing with flail. By placing the seed in a vessel of water, the good will sink, and the imperfect may be separated. The seed which

sinks should be thoroughly dried in the sun before packing it away, else it will deteriorate.

CABBAGES.—The great difficulty in raising cabbage seed is in keeping the heads in good condition during the winter. The manner described in November last (p. 308), is the one followed by seed-raisers. In the spring, the cabbages are set up to the head in rows, in very rich soil, and a cross-like incision made through the outer leaves to facilitate the escape of the flower stalks. All but the strong central shoots should be cut out, and any of the weak branches of these must be removed.

BEETS, TURNIPS, AND CARROTS.—The best developed specimens of these are to be selected in autumn, and not cut so closely as to destroy the terminal bud, or crown. They are best preserved in sand, but may be kept in holes, in the cellar, or in any way which will preserve them from wilting or decay. Set them out in well prepared soil, remove all secondary shoots which start up, and, if need be, give the stems some kind of support to keep them from falling over. In order to keep varieties pure, the different kinds should not be set near each other.

PARSNIPS AND SALSIFY.—In digging from the bed, the best should be preserved for seed, and they may be left to flower where they stand, or be removed to a more convenient spot. The parsnips should have the later flower bunches cut off, and only the seed from a few of the earliest allowed to perfect. The salsify should be cut, with the full length of the stem, as soon as the seeds are plump and full, and placed in an airy room. If left until quite ripe, and the involucre which surround the seeds opens, the birds will take the most of the crop.

CELERY.—The seed of this is raised from strong plants, which have been well kept through the winter. The stems usually need stakes to prevent them from falling down.

Asparagus.

We cannot let the spring go by without saying a word for this old-fashioned vegetable. It affords one of the earliest products of the garden, and every family, large or small, should have a bed. The plants can be raised from seed sown in a bed by itself, in the spring. The seeds are slow to vegetate, but are quite sure to come up in three or four weeks. Plants one to three years old can be had at the nurseries. In making a bed for the permanent occupation of the roots, choose a dry, well-drained spot, open to the sun, and if sheltered on the north side, all the better. Suppose the plot is to be four feet wide, and sixteen long—a good size for a small family—mark it off with stakes at the corners. Remove the top earth to the depth of a spade, and lay it at one side of the bed. Wheel in coarse manure, to cover the bottom, three inches thick, and spade it in. Having trodden this down moderately, to prevent much settling afterward, throw back the top soil, and spade three inches more of fine old manure into this. Work the whole intimately together. If convenient, two or three inches more of rich, sandy loam may be spread over the plot, to receive the roots, though this is not essential. The bed, when finished, should be several inches higher than the walk. Three rows of plants, lengthwise of the bed, and eighteen inches asunder, each way, is a suitable distance. The common mistake is to set the roots too near together, making them crowd one another, and speedily exhaust the soil. Cover the crowns about four inches deep with good soil.

No cuttings should be taken off the first year, and never, until the plants are three years old from the seed. Keep the beds clear of weeds throughout the summer, and in the fall remove the tops, spreading over the crowns about three inches of manure. The coarse parts are to be raked off in the spring, and the finer carefully forked in. Asparagus beds are benefited by an annual coat of salt, just enough to cover the ground like a white frost. Soap suds, and other slops from the kitchen, may be applied occasionally with profit. A bed well made and cared for, will produce well for many years.

Perennial Herbaceous Plants.

The growing fondness for "bedding-plants," is somewhat likely to lead to neglect of the old-fashioned perennial flowers. Surely, we are not of those who would disparage the first named; for who could get along without the Verbena, Petunia, Heliotrope, Lantana, and others of this sort? But there is one great defect in these "bedders"; being tender, they cannot safely be put out in the border until, or after, May 20th, and then it takes several weeks for them to get established and come into bloom.

Now, every lover of the garden wants a set of plants to supply this lack of flowers between the first of April and the middle of June. How can he do this, save by having a good assortment of perennials? And we urge the cultivation of these plants, moreover, because they are such old friends, and because their management is so simple and easy. All they require is a little manuring every other season, and a division of the roots, and a re-setting once in two or three years. Any one who is unwilling to take this little trouble, doesn't deserve to have a garden. How different this slight labor and care from the annual potting and re-potting, the housing in winter, and replanting every spring required by the tender bedding plants! Leaving out of question the Bulbs, such as Snow Drops, Hyacinths, Crown Imperials, and others which should have been planted last autumn, we give a list of common early blooming herbaceous perennials, which, if set this spring, will give a fair bloom that will increase in beauty and abundance in following years: Violets, blue and white, single and double, and very fragrant; Daisies, Polyanthus, Creeping Phlox, Columbines, Pulmonaria, Lily of the Valley, Coreopsis, Fraxinella, Pinks, Dodecatheon, Lychnis, Oriental Poppy, Potentilla, Ranunculus, Larkspurs, Valerian. Of these, all come into bloom between April and June 15th, and nearly all have numerous varieties. It would be a great loss to our gardens to be deprived of them.

Bones For Poultry.

Fasten pieces of wide boards on three sides of a hard stone, and with a hammer break the bones from the kitchen in small fragments, not larger than peas. Hens that are laying will eat them with avidity. Bones from fresh meat, if broken fine so that hens will swallow the pieces, are excellent to make them lay. Poultry of all kinds should be well supplied with sharp gravel also at this season of the year. Pounded oyster shells, where they can be obtained, afford one of the best means of supplying lime.

Good men have the fewest fears. He has but one who fears to do wrong. He has a thousand who has overcome that one.

Yolk of Wool.—Greasy Fleeces.

There exists in all animals a provision for softening and lubricating the hair, wool, fur, or feathers, without which their coats would soon become harsh, stiff, and brittle; the skin would become dry, and dust and dirt easily working through the dry covering would adhere to the cuticle, and disease would ensue. In sheep, this oily and lubricating substance is called the *yolk*; it is possessed of remarkable qualities, and is of inestimable value. It consists of an oily soap, which exudes pure and limpid like oil from the skin, and coats the fibres of wool. As it is drawn up by capillary attraction towards the surface of the fleece, it soon begins to thicken, in some cases quite uniformly, until it agglutinates the ends of the wool fibres on the surface; in others, it accumulates in an oily mass in the wool, or it fills the wool with specks like gummy, greasy dandruff; while in other cases, especially with the long-wool and hairy sheep, it is never found in considerable quantity, but only manifests itself by its odor, and by giving a greasy feel to the fleece. When a mass of wool or fur is wet and pounded, or kneaded in the hands, the fibres work together, and finally form a compact mass, called felt. This felt-

ing property is possessed by the finest wools in a much greater degree than by coarse ones, and is the property which gives to broadcloths, beavers, etc., the beautiful firmness and closeness of texture which they possess, making it difficult to part the threads of the cloth. The presence of the yolk in these fine wools entirely prevents the wool felting on the sheeps' backs—though occasionally it does so, to a small extent, when severe storms have washed it out from the surface, and the sheep have crowded and rubbed against each other while wet. The protection the yolk affords to the wool in this way, is scarcely less than that which it gives to the skin, by its forming a barrier which dust and dirt cannot pass. These substances being arrested on the surface of the fleece, by the yolk, assist in forming the coating which the clotted yolk makes. It is of no use whatever to the manufacturer, except perhaps as its soapy nature may make the yolk and gum of some fleeces aid in washing others. The quantity of yolk found in the wool of some of the Merino family amounts, sometimes, to several pounds in a single fleece, and such is the heedlessness of wool-buyers, that they pay just as much, as a

general rule, for wool thus overloaded with grease, if it be only called "washed," as for that which will cleanse with much greater profit to manufacturers. It is, therefore, an object with shepherds and farmers to wash their wool little, and to encourage the production of as much

On this subject, Hon. H. S. Randall writes: "I esteem it particularly fortunate for the preservation of the intrinsic value of our Merino sheep, and fortunate for the public interest, that it is already incontestably ascertained that the greatest amount of yolk is not consistent either

with the greatest amount of wool, or with the greatest aggregate amount of both yolk and wool. The black, miserably 'oily,' 'gummy' sheep, looking as if their wool had been soaked to saturation in half inspissated oil, and then daubed over externally with a coating of tar and lamp-black, never exhibit that maximum of both length and density of wool which, with a proper degree of yolk, produces the greatest aggregate weight. And animals exhibiting this marked excess of yolk, are invariably feebler in constitution, less easily kept, and especially less capable of withstanding severe cold. Such excessive secretions appear, then, to cause or else to be the results of an abnormal or defective organization. For these reasons, those comparatively worthless animals, once so eagerly sought, have already gone out of use among the best informed breeders; and where they linger, it is, like antiquated fashions, in regions where the current ideas of the day penetrate slowly!"— This was written some



HOW THE "INFANTADO" AND "PAULAR" FOLKS "STRIKE I.E."

FARMER: "Twenty-six and three-quarter pounds, good weight!"—NEW-YORKER: "And twenty-two pounds of it 'clear ile.' That's more oil and less wool (to pull over peoples' eyes,) than we use in Wall street."

yolk as possible. In the earlier part of the present century, farmers and sheep-breeders conscientiously studied the interests of manufacturers, and tried to produce fine fleeces, and to put them into market well washed; now, however, they are driven, by a reasonable regard to their own interests, to the opposite course. The results are likely to be, as we conceive it, most unfortunate. Our breeders have improved greatly upon the form of the original Merino; they have increased the weight of the carcass, and have not suffered the fineness of the wool to deteriorate, but they have increased the weight of the fleece chiefly in the vast quantity of oil the animals exude from their skins, and which dries in the fleece. We hear of fleeces of 18 to 27 pounds weight, and when we consider that without doubt such fleeces would often diminish in cleaning to 4 or 5 lbs. each, and perhaps less than that, and that one-fourth part of the yolk which so abounds in them would be abundant for the purposes for which it is so indispensable, we must say that there is a very considerable waste of vital power in the production of this article, which, by judicious management, should be turned to better account.

time ago, and now we really fear that our American Merino breeders are losing sight of the truths inculcated. In these oil times, the engraving our artist presents this month, not inaptly institutes a comparison between two equally mad kinds of speculation. We hope the lesson may be heeded and practised upon.

Farmers' Gardens.

Perhaps one reason why farmers' gardens are so neglected, is this: they think they must be laid off into formal beds or departments, and kept up with a great deal of system and care. They imagine they require much time and skill in sowing and planting, in weeding and training. Now, of course, much time *may* be profitably spent in the garden, if one's taste and desires so incline him, but this is not necessary for raising a large quantity of good vegetables. Let us see what can be done in an easy way: If the plot needs manuring, no farmer will object to giving it. Plowing it needs of course, deep plowing, and then harrowing. All this can be done in the spring, when the team and hands are doing the same kind of work in the field,

As for planting: a part of this can be done early before similar work will begin on the farm. For example: take the driest end of the garden and plant it with early peas, and early potatoes. In some warm corner, prepare a bed for a little lettuce. This is the first job, and it can all be done up in some odd half-day early in April. After the farm work has proceeded a few days, give the garden an hour, to put in some early sweet corn and potatoes. Plant in drills about 3 feet apart. The farm work may now take another jog of a week or thereabouts, when the garden will need a day's work, to finish up the major part of the planting. Mark off the land in drills about three and a half feet apart, and plant more corn and potatoes. Put in a second crop of peas. A few beds will be needed for beets, onions and such roots. Arrange these to occupy about the width of two drills, so that the cultivator, as it goes among the rows of corn and potatoes, may pass along the alleys of these beds. Cucumbers, squashes, etc., will require patches by themselves, but the larger part of the ground can be so planned as to be tilled by the horse-cultivator, which will save much time and labor. Such a garden will yield greater returns than any corresponding part of the farm, and be productive of health and comfort for the family.



DAPHNE MEZEREUM.

The Shrubbery in Spring.

With a little care, a variety of shrubs can be selected, which will give a succession of bloom throughout the season. Early flowers, whether produced on shrubs or herbaceous plants, have a charm which is not possessed by later blooming ones. We watch the spring flowers as a floral index to learn how the season is coming

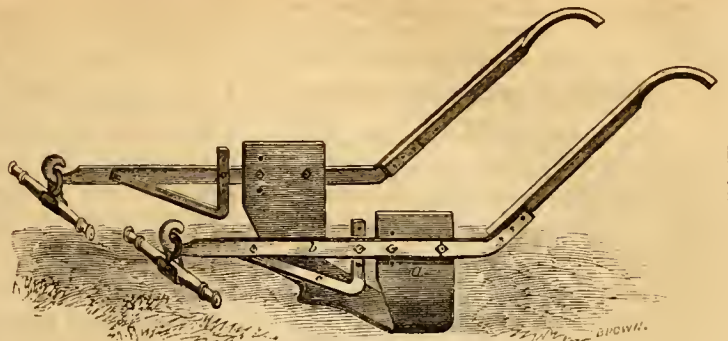
on. The Chinese Magnolia was noticed last month as one of our early flowering favorites, and we are also indebted to China for another hardy spring flowering shrub, the Forsythia, which now hangs out its golden bells before the leaves have found out that it is spring-time. We have a strong liking for the floral friends of

our early days, and though we may much admire new things, we have not the love for them which we feel for those old and tried friends. Among the old-fashioned early spring shrubs, we hold the common Daphne (*Daphne Mezereum*) in especial estimation. It is a low shrub, about four feet high, and a native of Northern Europe. In England it flowers all winter, but in our colder climate it awaits the first warm days of spring, when it suddenly clothes its branches in "blushing wreaths" of small pinkish flowers, which are often so thickly bestowed as to quite hide the stem. The engraving shows the summit of a stem, with the flowers of the natural size. The flowers have a pleasant fragrance, and are succeeded by red berries. Thus far, we have only spoken well of our old friend Daphne, but to tell the whole truth, it must be stated that its bark is found in the drug shops, and it consequently has some bad qualities. The fresh inner bark, when applied to the skin, produces blistering, and if chewed, causes a great irritation in the mouth and throat, and if taken into the stomach, produces violent effects. In England the plant is sometimes called "Garland Tree," but in this country it is usually known as Daphne, or Mezereum. There is a variety with white flowers, and one with purple foliage. The plants are sold in the nurseries at 50 cents each, and may be raised from seed, or by layers. Sow seed as soon as ripe, or they will not germinate until the second year.

Our native Spice-bush (*Benzoin odoriferum*), which has its slender twigs covered with small yellow flowers, is very common in damp woods, and should be introduced into the shrubbery where there is a rather moist and shady locality.

Harkness' Nursery Tree Digger.

Mr. S. T. Kelsey, McLean Co., Ill., sends us a drawing and description of an implement used in western nurseries, for digging up trees as they stand in nursery rows. The machine was invented by Mr. Edson Harkness, was brought into use and improved by Mr. C. R. Overman, and further improved by Mr. Kelsey. We allow Mr. K. to describe its merits in his own language, with the remark that the machine is not patented, and that, while it is used in some large western nurseries, the eastern nursery-men do not think favorably of digging in any other way than by the spade. The engraving represents the machine drawn to a scale. "The plate, *a*, is of steel, $\frac{1}{4}$ inch thick, and bent, as shown in the sketch, it being 28 inches wide between the upright portions. The point in front of the blade serves to steady it; it should be bent a little downward. The blade passes through the earth, under and along each side of the trees, at any desired depth, cutting off the roots with a clean, smooth cut, without injury by breaking or mutilation. The iron bars,



HARKNESS' NURSERY TREE DIGGER.

b, b, are $\frac{3}{4}$ inch thick, and 3 inches wide, and bent outward, so that the whiffletree hooks are 36 inches apart. The handles are set so that the bows are 4 feet apart. Two sharp knives, *c, c*, serve to cut any rubbish which would otherwise clog the digger. If kept sharp, they seldom pass over any rubbish without cutting it, and, being placed obliquely, they never clog. The whiffletrees are 15 inches long, and are the same as used for ordinary nursery work. The plate must be polished smooth and bright, and sharpened with a file. It is well to carry the file along while using the machine, so as to sharpen it as needed. The machine is drawn by four strong, steady horses, with a gait as nearly alike as possible,—in heavy digging, we have used six. The hind team is hitched so that a horse will go each side of the row. The head team is hitched to the same whiffletrees, in front of the other by lengthening out the tugs by means of ropes or chains, which are kept out of the way by fastening them up to the harness of the hind horses. To work the machine, a man, or good boy, is required on each horse, and a man at each handle. The "boss" of the work should be a man of good, practical common sense, and have charge of one of the handles of the machine. The digger is set a few feet back from the end of the row, in order that it may run deep enough when it comes under the trees, and the horses should all start together, at a steady walk. The men at the handles guide the digger, and see that all goes right. If the blade runs too deep, lower the front end of the bars, and raise them if it runs too shallow. This can be done by changing the attachment of the bars, *b*, to the upright portion of the blade which has several holes, to allow the bolts to be placed at different heights, as shown in the engraving. If there is not room at the end of the row to allow the team to pull the digger through, the remaining trees must be dug with a spade. With a team and men, as above described, we have dug 40,000 heavy 4 year old apple trees in a day, but 25,000 is a good average day's work. We have dug maples, 3 inches through, with 4 horses. The digger now costs \$40 or \$50 to make; it would probably work well in sandy soils, but not among gravel or stones. The advantages of using the digger are: 1st. The trees can be dug at one-fourth the expense of digging with spades. 2d. They can be dug in a very short time, and there is no delay in filling orders. 3d. It does the work better than it can be done with spades. 4th. The trees are dug and heeled in at the same time. The roots being simply cut at a distance from the stem, the tree is left standing, with the earth undisturbed around its fibres, and may be left, with perfect safety, over winter, or through the next summer. Any tree can be taken from the row without disturbing the others. 5th. We can dig evergreens, and if we do not wish to take them all out, we can

leave a part, which will be finely root pruned, without the expense of transplanting them."

Experience with a Cold Grapery.

(Concluded from March Agriculturist, page 84.)

SECOND YEAR.—The last of April the vines were uncovered and fastened to the lower wire, letting the top end fall down in the form of an arch. The borders were then cleaned, forked over and watered. In a few days and after the buds burst strong, the vines were put up. As soon as the bunches appeared, three of the best were left on the strong vines, and one on the weak vines; all the rest were taken off. The upper shoot was left to grow for next year's bearing cane, and carefully trained to the wires. All the other shoots were pinched when they had formed the fifth leaf. The laterals were checked twice during the season, always leaving one leaf of the new growth. When the grapes were the size of peas, they were thinned, taking out about half on each bunch, leaving room for the remainder to grow to good size, without becoming crowded. During the growth of the grapes, the vines were syringed nearly every day, and good air secured by opening the top ventilators in the day time, but closing at night.

When the grapes commenced coloring, syringing was discontinued, and water gradually withheld from the borders, as a dry atmosphere hastens the ripening process. The grapes were all ripe on the 1st of October, there being 60 lbs. of good-sized, well-colored grapes, mostly Black Hamburgs. After the grapes were cut, the front border was extended from 3 to 5 feet, with a compost prepared like that used at first. The vines were then taken down, the side spurs shortened to 2 buds, the leading cane to 10 feet. They were then laid down on the borders, and covered the same as last year. The house was kept cool during the winter, by leaving the doors open in fair weather.

THIRD YEAR.—The first of April the vines were uncovered and washed with a mixture of soft soap, sulphur, and warm water, to clean and soften the bark. The borders were then cleaned and forked over, and watered with liquid from the barn-yard. As I uncovered the vines sooner than usual, and fearing there might be some cold, frosty nights, I put in the house a common coal stove, to be ready, if occasion should require it, to guard against frost. The vines were fastened to the lower wire, leaving the upper part swinging in the form of an arch, which causes the buds to burst more uniformly than if fastened directly in their place.

In a few days the buds commenced swelling, and burst strong and evenly. The top ventilators were kept open in fair weather, never letting the temperature get above 80°, until the vines had made 2 or 3 inches of growth, when they were fastened to the wires, and the temperature gradually increased to 100°, in the middle of bright, sunny days. The vines were syringed every warm day, until they commenced blossoming, when it was withheld. As the blossoms expanded, I went over the house every morning, and gave the bunches a slight shake with the finger, to assist in distributing the pollen, and thus enable the grapes to set with more certainty. After blossoming was over, the vines were thoroughly syringed, to clean off any portion of the flowers which might cling to the bunches. As there were many more bunches on the vines than they ought to bear, I took off all but 12 or 15 from each vine on the front border, and from 10 to

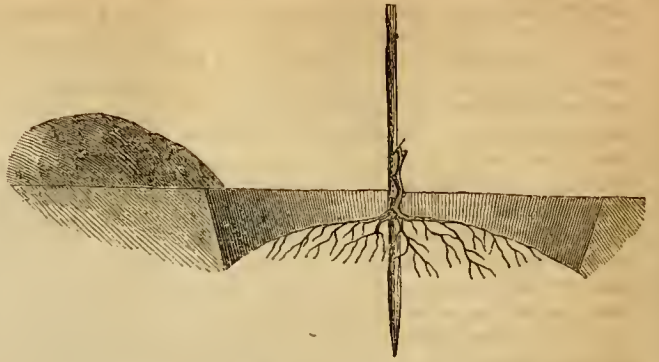
12 on the back vines, leaving of the largest and handsomest bunches one on a spur. As the house was quite moist, with a good degree of heat, the berries swelled rapidly. The bunches were thinned twice during the season, taking about half from each bunch, but I found when they commenced ripening, if I had taken out more, the berries would have grown some larger. The grapes commenced coloring by the middle of August, and by the second week, or on the 10th of September, the grapes on the White Frontignan vine and the Chasselas Fontainbleau were ripe; the rest being Black Hamburgs, were not fully ripe till October. The treatment of the vines this season was the same as last year, though from a half dozen of the Hamburg vines I have raised strong canes to fruit next year, cutting out the old ones to the base of the new cane, at the fall pruning. Aside from these six, the rest of the vines are pruned on the common spur system.

I have not had any trouble with mildew, or the other diseases common to grapes raised under glass, though, as the vines grow older, I do not always expect to be as fortunate as now. Perhaps my taking the precaution to scatter flower of sulphur on the borders, in July, may be one great reason of my being entirely exempted. After the frost had bitten the leaves in November, the vines were taken down, pruned, laid on the borders, and covered as last year.

I find, on referring to account with grapery, the cost of the house and fixtures, with vines, all planted, to be \$160; care of house for 1862-3-4, \$100; widening front border, in 1863, \$10; total cost to this time, \$270. I have received for tomato plants raised in house, \$55; grapes in 1863, \$25; grapes in 1864, 350 lbs., \$150; grape vines 1864, \$50; total, \$280.

Short Directions for Vine Planters.

It is presumed that every one who has not a vine but has room to put it, will plant one this spring—and more if space and means allow. The following brief hints will answer for a single vine or for an acre: Having determined on the varieties, procure them from some grower who has a reputation for quality of stock and correctness as to varieties. The soil must be drained, if at all disposed to be wet. More failures result from the neglect of this than from any other cause. The soil must be enriched and well worked to the depth of 20 inches or two feet. If sandy, the character of the soil must be amended by the addition of leaf mould, or other vegetable material. Do not over manure, but enrich the ground with well decomposed manure to give the vines a good start. Vines of the age of two years from the bud or cutting, are old enough, and of the quick growing sorts, those one year old will answer. Vines are sent out with as long roots as possible. These are to be cut back to about 18 inches before planting, and the top is cut back to three buds, if the nurseryman has not already saved the trouble. Dig a circular hole large enough to allow the roots, after pruning, to extend in every direction, making the surface of the earth in the hole convex, so that the ends of the roots will be from six to ten inches below the surface, while the point from which they start will be from



MANNER OF PLANTING A GRAPE VINE.

four to six inches below. Set stout a 6 or 8-foot stake in the center of the hole, then place the vine beside it, spreading out the roots equally in every direction, as in the figure. Cover the roots carefully with fine soil, and then fill up the hole and press down the earth with the foot. In spring planting, it is well to leave a depression around the vine to allow the rains to sink into the soil. When the buds start, rub off all but the strongest one, and afterward keep the shoot from this tied up to the stake.

The Cultivation of Fruit Trees.

In looking over a file of letters containing queries upon fruit culture, we find that the majority of them may be summed up in the questions: "What will make my pear trees bear?" "What shall I do with my old apple orchard?" The greater part of these numerous inquiries may be answered by commending the writers to the experience of two correspondents whose letters are found in the same file. As the communications are rather long, we extract their essential points. Mr. D. W. M., of Adrian, Michigan, planted some years ago a number of pear trees along his garden fence, where the ground soon became covered with a tough sod, and those trees which survived this treatment at the end of eight or ten years were not worth as much as when first taken from the nursery. Having occasion to move the fence, it became necessary, in order to bring the ground into better shape, to plow around the pear trees, and the space near them was devoted to a hoed garden crop. This treatment caused such a marked improvement in the trees that Mr. M. was encouraged to further efforts. Accordingly, in the autumn he dug a trench around each tree, about two feet from the trunk, and 15 to 18 inches wide and deep. These trenches were filled with scrapings of the barn-yard, and as a consequence, the trees were thrown into vigorous growth. Ever since, the space around the trees has been manured and occupied by some light garden crop that needed frequent hoeing, and the trees now bear an abundance of fruit. A good share of the unsatisfactory pear trees are just in the condition of those above cited—that of starvation and neglect. Surface manuring and mulching would have produced the same effect, and it is not too late to apply this remedy now.—Another matter of complaint is, that dwarf pear trees are disposed to make a too vigorous growth of wood, grow out of bounds, and cease to be dwarfs, while they bear little or no fruit. In many instances this rampant growth arises from the fact that the tree is set below the junction of the quince and pear; as roots strike from the latter, the early bearing quality induced by growing solely on quince roots, is lost. If trees are wanted in miniature,

they must be kept dwarf by a persistent course of summer pinching, and to this may be added root pruning as described on pages 17 and 18, (Jan.) of the current volume. Mr. L. B., of West Nottingham, Md., some ten years ago came into possession of an old and partly neglected orchard. Since taking the trees, which were from 20 to 25 years old, under his care, each one has received a load of manure yearly. Some rows of potatoes or other crop demanding care are planted between the trees, not for the sake of profit, but to ensure the cultivation of the ground. The result is, from three to seven barrels of marketable apples from each tree, and a large quantity of the less handsome fruit is made into cider. While all through his section of country a good crop of apples is the exception, his crop is generally abundant, and last autumn, which was not generally a good fruit season, he gathered about 1500 bushels of fruit from four acres of orchard, the trees of which were mostly planted 40 feet apart. The necessity for manuring trees which afford a crop year after year, would seem to be so obvious that it is unnecessary to insist upon it; yet a well cultivated orchard of any kind is the exception, and not the rule throughout the country.

Plant Currant Bushes this Spring.

Strawberries and raspberries, like all delicate and delicious things, are soon gone and then we fall back on the substantial and ever refreshing currant. This fruit is so healthful, so generally liked, and so easily raised, that no farmer nor any one who has a garden spot, need be without it as long as the season lasts for it in the fresh state, and an abundance of preserves can be made for the winter. There is no plant more easily grown from cuttings than the currant. The cuttings are best set in autumn, but may be put out now with a prospect that a majority will make plants. Six inches to a foot of the wood of last year's growth makes a cutting. Set them early and leave one eye above ground. Much of the success with cuttings depends upon having the earth closely in contact with them. Open with a spade a shallow trench, deep enough to receive the cuttings, set them six inches apart, and put on a little soil, and then with the edge of a board, or some similar implement, crowd the earth firmly about their lower ends. As to the form of bushes, they are sometimes grown in a tree form, with a single stem; or vase shaped, with several stems arising from the ground. The latter form is preferred by many good cultivators, as there is less difficulty from the breaking down of branches, and if the bush is kept open by pruning, good results may be obtained. The subject of varieties was discussed at a recent Fruit Growers' meeting, and it was the opinion that the Cherry and Versailles were the best for red, and the White Grape the best white variety. The Prince Albert was recommended for its late bearing.

STARTING VEGETABLE SEEDS IN POTS.—A hundred or two pots will cost but little. A quantity of these, filled with good surface soil, mixed with well-rotted manure, may be planted with various kinds of vegetable and flower seeds some weeks before the open ground is warm and dry, and set together on the south or east side of a building or fence, where they can be watered as needed, and covered with a blanket, carpet, or straw, on cold nights. The plants will be well up, and ready to plant out as soon as the ground will admit, and two to

five weeks in time be gained. Small, cheap pots, with one plant in each, are most desirable.

Cranberries in the Garden.

In reply to inquiries, it has been more than once stated in these columns that we had seen no attempts at growing Cranberries upon dry soil which would warrant its practice upon the large scale. That Cranberries will grow, and sometimes bear fairly in ordinary garden soil, we have no doubt, and while we would say nothing to deter those from making the experiment who have space and means, we have considered it a duty to our readers to caution them against those interested parties who would advise them to plant by the acre, as a profitable investment. That some variety of the Cranberry may be so far changed from its ordinary character as to fruit with certainty in dry soil, we hope, and even believe, may be done, but thus far, we have not seen this desired result. One of the most favorable accounts of the garden culture of the Cranberry is given by Mr. B. H. Stevens, of Middlesex Co., Conn. Some years ago, he planted out 10 square rods of cranberries in his garden, where the soil was rather moist, but still such as would grow corn and potatoes. The bed gave a return of one bushel of fruit the second season, which increased each year until the crop harvested amounted to fourteen bushels. The only failure was last season, when the drouth reduced the crop to one bushel. Mr. Stevens has experimented with many different varieties, and has promised an account of his results, which we shall be glad to receive. Those who wish to make the experiment, should procure vines from the drier part of bogs, or those which have become somewhat acclimated by cultivation in dry localities. The plants should be set in a moist place, about a foot apart each way, and kept carefully weeded until they take complete possession of the ground.

Notes on Strawberries.

As the season for planting is now at hand, and many are still in doubt as to what varieties they shall select, we shall endeavor to aid them by brief opinions of varieties condensed from remarks made at some of the recent Fruit Growers' Meetings. It is to be regretted that the *Triomphe de Gand*, which has so many good qualities, has in some localities proved a total failure. In places far inland, it seems to succeed better than it does near the coast. Mr. Cavanagh places the *Monitor* and *Brooklyn Scarlet* very high for quality and productiveness. The *Brooklyn Scarlet* will doubtless prove a good market fruit, as its brilliant color is very attractive. Doct. E. Ware Sylvester, of Wayne Co., N. Y., regards *Burr's New Pine* as the best amateur berry. This variety has a remarkably high flavor, but, according to Dr. S., it is very difficult to procure true to name. The *Austin* he regards as a profitable berry for a near market, but is too soft for distant transportation. *Feast's Fillmore* is a fine variety in his locality.

Mr. E. Williams, if confined to but one variety, would choose *Downer's Prolific*, which is of excellent quality, and an abundant bearer, and a good market fruit. It continues a long time in bearing. Judge Vanderpool, of New-York, objected to *Wilson's Albany*, at the present price of sugar, the fruit being so acid as to require a great amount of sugar when eaten. He had been better satisfied with the old *Hovey's Seedling* than with the newer sorts he had tried.

Mr. W. S. Carpenter considered that the *Hovey* had had its day, and though in some seasons it bore well, it must give place to better sorts. *Russell's Prolific* will, in his opinion, become very popular. It is a great bearer, but has the fault of not holding up its fruit. He had seen nothing among the new varieties that would compare with the "*Agriculturist*," it being the most beautiful, hardy, and the greatest bearer. Mr. C. thought that *Lennig's White* had not received the attention that its good qualities deserve. It is the best white variety yet introduced. For a selection for family fruit, he would choose *Wilson's Albany*, *Russell's Prolific*, *Downer's Prolific*, and *Lennig's White* from among the generally known varieties, but he believed the "*Agriculturist*" would prove itself in every respect superior to either of these.

Some Notes on Cabbages.

Noticing that Mr. Gregory, of Marblehead, Mass., advertised a new early cabbage, the *Cannon Ball*, we requested some account of it. It is to Mr. G. that we are indebted for the *Marblehead Drumhead*, and other valuable winter varieties, and from the excellent qualities of these, we look with interest upon his attempts to introduce a new early sort. Of the *Cannon ball*, he says: "This matures about 10 days later than the *Early York*. It is remarkably round, hard-headed, and heavy for its size, being about as 'round and hard as a cannon ball,' excelling in hardness every known variety of cabbage. It is of good quality, and perfectly reliable in heading. The size of the head will depend somewhat on the soil, manuring, distance apart, and cultivation. With me it grows from 6 to 8 inches in diameter. It may be pronounced a first-class cabbage, among the early sorts, for market purposes. It is somewhat singular that, with such varieties as this, and *Winnigstadt*, *Early Wakefield*, and *Ox-heart*, the flabby trash called *Early York* should be cultivated so extensively."—We hope that none of our cabbage-loving friends will forget the *Savoys*. They are so different from, and superior to the ordinary cabbages, that English writers treat of them under a separate head. To those who do not know them, we can say that, next to a cauliflower, a *Savoy* is the richest and most marrow-like of all the numerous sports of the cabbage. It is a remarkable variety of the cabbage, with its leaves very much wrinkled and blistered, and in point of flavor and richness is vastly superior to any of the drumhead kinds, while in hardness it excels them. The original *Savoy* has been much improved upon, and has given rise to many sub-varieties. While that was late, small, and uncertain in heading, we have now an *Early Savoy*, a *Late Drumhead Savoy*, and the *Improved Green Globe Savoy*, extending the season of this choice class of cabbages, and giving us all that is desirable in regard to size and certainty of heading. While we would have a stock of the *Drumhead* sorts for slicing raw, we would not, for cooking, grow any for family use but *Savoys*. Whenever the soil is in good condition, the seed of the early sorts may be sown this month, though where there is a hot-bed the plants should be well along by this time. In garden, as well as in field culture, cabbages are not likely to do so well on land that has been cropped by them within three or four years, as upon a fresh spot. Give an abundance of good, well-rotted manure; that from the hog pen answers well for this crop.



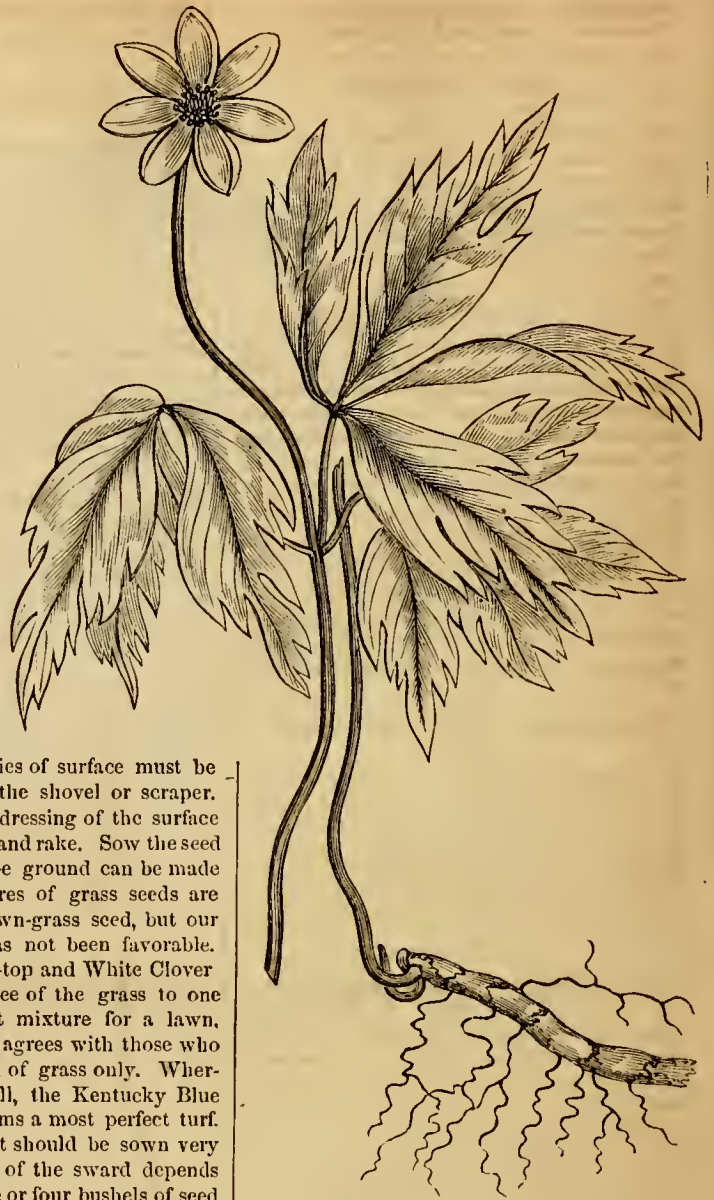
The Claytonia, or Spring Beauty.

Besides the Wood Anemone, figured on this page, another favorite of our early rambles in the woods is the Spring-Beauty (*Claytonia Virginica*). This genus commemorates the name of Clayton, one of the early American botanists. The botanical name is, in this case, a smoothly sounding one, and we wish it could be generally adopted, as we like to have the memory of those old fellows kept alive, and their names pass into the popular language. However, the plant merits the name of Spring-Beauty, as it is just as pretty as a flower need be, and were it not to be found so commonly in our moist woods, especially at the West, our florists would think as much of it as they do of Cyclamens and other exotics. The engraving shows its underground tuber, from which arise the two long, narrow leaves and slender stem. The flowers are of a pale rose color, and marked with delicate veins of a deeper color. It belongs to a very hardy family, the Portulacaceae, and would doubtless make itself at home in the garden.

Making a Lawn or Grass Plot.

What a carpet is to well-furnished rooms, a lawn is to the grounds, be they large or small. As the finest furniture looks finer upon a well-chosen carpet, so every plant, whether the humble annual, or the stately evergreen, shows all the better when it is set off against a well kept turf. To make a good and permanent lawn, the preparation must be thorough. Drainage is all important, and if needed for the adjoining garden, it must be provided for

the lawn. The preparation of the soil must be as carefully attended to as if for some garden crop. Trenching must be practised on small places, and deep plowing on larger ones. By the use of a sub-soiler, or by running a plow two or three times in the same furrow, sufficiently deep tilth may be secured. Manure will usually be needed to enrich the soil, and when the work of preparation can be begun sufficiently long beforehand, a crop of oats may be sowed in the spring, and plowed in, to be followed by one of buckwheat which is also to be turned under. Thorough harrowing is required, and all inequalities of surface must be remedied, by the use of the shovel or scraper. In small plots, the final dressing of the surface can be done with the hoe and rake. Sow the seed as early in spring as the ground can be made ready, and roll. Mixtures of grass seeds are sold by seedsmen as lawn-grass seed, but our experience with these has not been favorable. Some consider that Red-top and White Clover in the proportion of three of the grass to one of clover, make the best mixture for a lawn, but our own experience agrees with those who prefer a lawn of one kind of grass only. Wherever it will flourish well, the Kentucky Blue Grass (see page 115) forms a most perfect turf. Whatever seed is used, it should be sown very thickly, as the closeness of the sward depends on thick seeding. Three or four bushels of seed to the acre are none too much. It often helps the grass much to give it a top dressing of plaster, when it has made a growth of one inch or so. Weeds will make their appearance from seeds already in the soil, and from those sown with the grass seed. It will save much after trouble to remove the weeds while young. When the fine lawns on Central Park were first established, long lines of men could be seen upon their knees, removing every weed that sprang up among the young grass. When the grass has become well established and of sufficient length, it may be mowed, leaving the mowings as a mulch to the roots. It is advisable, whenever the lawn borders on a walk, road, or flower-bed, to lay down an edging of turf, six or eight inches in width, as this gives a much neater appearance, and enables us to keep the edge of the lawn well defined. Small grass plots are more readily made by laying close and fine turf from an old pasture, but the same care should be given to preparing and levelling the ground, and the sod should be laid in a neat and workmanlike manner. If the piece to be covered is not very large, strips may be cut to reach across it. Provide a board 9 to 12 inches wide, and with a sod-eutter, or a sharp spade, cut by each edge of the board through the turf. Then loosen the strip at one end, sliding a spade under it, and roll it carefully, and convey it to the place where it is to be laid.



The Wood Anemone, or Wind-Flower.

"Do tell us more about wild flowers," writes a correspondent, who is enthusiastic upon the subject. If we had unlimited room, we would gladly devote more space to illustrating the beautiful natives of our woods and fields, but as it is, few can be described aside from those which we can recommend for cultivation in the garden. The request shall be gratified so far now as to notice two of our earliest and most beautiful spring flowers. The Wind-flower, or Wood Anemone, (*Anemone nemorosa*), is always a favorite, both on account of its early appearance and its delicacy and gracefulness. Its name, Anemone, refers to the wind, from some old notion that it opens only when the wind blows. However this may be, its slender habit and its lightness make it the sport of the winds of spring, and it might, for this reason, if for no other, be properly called Wind-flower. A simple stem bears three deeply cut leaves, and above these, on a slender stalk, is the flower, which, before opening, is a pretty white bell, often tinged with pink. Doubtless the flower might be cultivated, if proper care were taken to give it a suitable place, but we much prefer to leave it in its native woods, where its wild look is more in keeping with its surroundings than in the garden. The other flower, the Spring-Beauty, is figured and noticed in the left hand column of this page.

THE HOUSEHOLD.

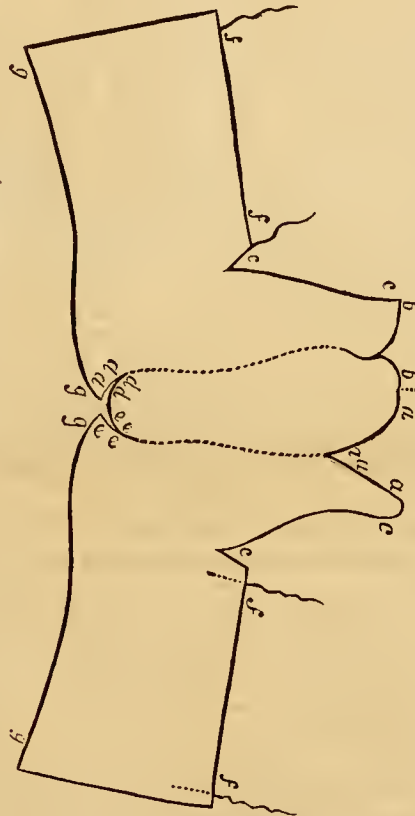
How to Whitewash.

Procure fresh-burnt lime, not that partly air-slacked. The large lumps are best. The fine portions and small lumps will not make a wash that will stick well. For this reason, lime that has been burned several months is not as good as that just from the kiln. Put a pound or two into a vessel, and pour on boiling water slowly, until it is all slacked, and is about as thick as cream. Then add cold rain water until it will flow well from the brush. Stir often when using it. A few drops of blueing added will give it a more lively color. One or two table-spoonfuls of clean salt, and one-fourth pound of clean sugar to a gallon of the wash, will make it more adhesive. If the walls have been whitewashed, let them be swept thoroughly, and if colored with smoke, wash them clean with soap suds. A brush with long, thick hair, will hold fluid best, when applying it overhead. If a person has the wash of the right consistence, and a good brush, he can whitewash a large parlor without allowing a drop to fall. When it appears streaked after drying it is too thick, and needs diluting with cold water. Apply the wash back and forth in one direction, and then go cross-wise, using a paint-brush at the corners, and a thin piece of board to keep the brush from the wood work, or the border of the paper. Coloring matter may be mingled with the wash, to give it any desired tint. To make a light peach-blow color, mingle a small quantity of Venetian-red. For a sky-blue, add any kind of dry, blue paint, stirring it well while mixing. To make a wash of a light straw-color, mingle a few ounces of yellow ochre, or chrome yellow. The coloring matter should be quite fine to prevent its settling to the bottom of the vessel.

How to Paper a Wall.

Hanging wall-paper is light and easy work, which may be done by females, as well as males, and as females are usually neater than the other sex in performing such manipulations, they should have the privilege of doing this work, instead of calling men from their urgent business. The materials necessary for papering are: a papering-board, ten or twelve feet long and about two feet wide, planed smooth; a large paste-brush, a pan of paste, a pair of long shears, a light, straight-edged pole, and a soft brush-broom. Now take a roll of paper, and measure around the room, to ascertain how many whole strips are required for the walls. Cut the desired number of strips of the right length, so that the edges will match, and lay them all on the board, with the wrong side up. If the wall has been whitewashed, sweep it thoroughly, and wash it with vinegar and water. If the vinegar be strong, mingle three quarts of water with one of vinegar. When the wall is dry, sweep it again. Previous to putting on the paper, paste the wall. Then apply paste to a strip of paper, and turn up the lower end about two feet, the pasted sides together, and hang the strip as quickly as possible. As paste expands paper, and renders it tender, it must not be put on until the wall is ready to receive it. When the paper is so tender that it will hardly hold itself together, double the upper end of a strip over a smooth stick. Begin in one corner of the room, and let the strip hang perpendicularly, and as soon as it is right, stick the top fast to the wall. Instead of using a bunch of cloth to rub it on with, sweep it on with a soft brush-broom, by commencing at the top, and sweep downwards and outwards from the middle of the strip. A bunch of cloth will sometimes blot the colors, but a soft broom will not. Run the back of the shears along the upper edge of the base, or mop-board, and pull the lower end of the paper away from the wall, and cut it off, and afterwards sweep it on. When a strip does not hang exactly plumb, take hold of the bottom and pull it from the wall, until it hangs

only by an inch or so at the top. Then adjust it, and sweep it on again. When there are uneven places in the wall, so that the paper will not adhere without a blister, or wrinkle, cut through the long way of the blister, and sweep it on again. When turning a corner of a room, it will be more convenient to cut a strip of paper in two, lengthways, so that the joint will come exactly in the corner, than to attempt to put on a whole strip by bending it in the corner. After all the whole strips have been put on, the piecing can be done around the doors and windows. New paper can be pasted over the old, if that be on firmly. Otherwise, it should be pulled off. Sometimes, by washing old paper with soap suds, two or three times, it will peel off with little labor. New walls need not be pasted previous to papering. It is better to apply the paste to the paper than to the wall only, as dry paper is elastic, and will not adhere until it has become wet.



For the American Agriculturist.

Cheap Socks.—Use for Old Cloth.

The time was when the "rag bag" was an institution to be found in every family. It was the receptacle for all odds and ends of calico and other cotton fabrics. According to my best recollection, the rag bag was almost always stuffed full, with the fragments of its contents protruding through the rents and holes, and once a quarter they were emptied out, done up in a convenient bundle, and sent to the store to be exchanged for goods. But now, though it may hang in its accustomed niche, it contains little but dust and lint at the bottom, the collections of the last quadrennium, with scarcely a rag big enough to tie around a sore finger. Not so is it, however, with respect to woolen rags. These, in the shape of pants, coats, cloaks, and "wrap-rascals" generally, being unsuitable for the manufacture of paper, and no one feeling rich enough now-a-days to undertake a rag carpet, have increased during the last four years to an alarming extent, and lie in heaps in the kitchen chamber, threatening to engross the whole space to the exclusion of every thing else. Now to what use can these garments be economically applied? I answer, for making men's socks. Above is a reduced pattern, which the writer prepared for his own use. One pattern answers for both feet, by simply in-

verting it. I take an old pair of pants, rip open the two outside seams, spread out the cloth on the table, lay on the pattern, and cut out the cloth, with or without the lining, according as I want warm or cool socks. Next sew the two edges, *a, a*, and *a, a*, by lapping one edge upon the other, and sewing through and through. This makes the least objectionable seam. In like manner sew the edge, *b, to b; c, c, to c, c; d, d, to d, d; e, e, to e, e; and g, g, to g, g*. The edges *f, f*, are not sewed, but folded, one over the other, and tied with strings. I have worn cloth socks, made as above, for several weeks. They are rather light for winter use, but for spring and fall use I prefer them to the common knit socks. If made by a correct pattern, they will not wrinkle under the feet, as other socks do, especially if a little too large. It is not claimed that they will wear as long as socks which have been knit,—though their wear depends a good deal upon the quality of the cloth,—yet, as an offset to this, they are made with the greatest facility. I presume that any woman, who is expert with the needle, can cut out and sew up twenty, and perhaps thirty pair in the time it would require to knit one pair. Knit socks, in these days when wool is worth a dollar a pound, cost money, but socks made of old, cast-off garments, which have no exchangeable value, of which a whole family supply for a year can be made in a day, may be considered the cheapest article of apparel that can be worn, especially in hard times. To make a correct pattern for a given foot, is rather nice work, yet it need be made but once, as it can be preserved. O. B.

The Fashions.—Comfort and Health.

There are happy people in this world, living in the free country, so far from busy cities, up-start villages and towns, dull and fashionable in stagnation, who may and do live so independent of the changes of the fashions, that, except when they make a journey out of their happy world into that ruled by "shoddy," and Paris milliners, they do not know or care what the fashion is. The rest of us are compelled to heed the laws of this tyranny, or submit to the worse thraldom of the feeling that we are dressed noticeably unlike other respectable people. All that we can do is, to avoid being *outré* in dress, and clothe ourselves so as not to attract attention in modifying the fashions. We may even sometimes dress in an old-fashioned way till some especially outrageous style has passed away. We commend the following sensible views of a correspondent of the Independent:

"The dress of woman will never be rid of its present absurdities—its cumbrousness, its extravagances, its elaborate nothings, its meaningless changes, and its still more meaningless attachment to preposterous styles—until the objects to be secured in dressing are understood and placed in their proper order. These are (after a mere protection to the body): 1st, health; 2d, comfort; 3d, beauty. Of two styles equally healthful, that which is the more comfortable is to be preferred; of two equally healthful and comfortable, the more beautiful should have the preference; but we should never sacrifice the comfortable to the beautiful, nor the healthful to the apparently comfortable. For, although an unhealthful dress is never really comfortable, yet custom, or whim, will often make a person insist that it is so; as to those unused to a pure atmosphere, warm, vitiated air seems more agreeable than cool, pure air.

"These rules are generally inverted in woman's dress, and yet they are in essence the same as those applied in every department of art and manufactures. What would be thought of an architect who should sit down to plan a church with but the one idea of *beauty* in his mind? What kind of a structure would a bridge be, if the primary regard were paid to making it agreeable to the eye, and only a secondary or remote attention given to the uses it was to subserve? Yet churches, bridges, furniture, machinery are all made handsome when desired, by adapting the ornamentation to the object ornamented, and not the object to the ornaments. So

is in nature. Every blade of grass, every corolla, however fine its texture and delicate its tint, answers a purpose, is made for some end, and must fulfill that end. But in the dress of woman, it is required that the eye be satisfied at any cost; consequently health is disregarded, comfort and use unthought of. Yet, notwithstanding this supreme regard—in fact, because of it—we get not even beauty itself; for that apparel is beautiful which sets off the face and figure to advantage, and how will our common fashions stand this test? How would they look in sculpture? A few persons have features and forms so fine that no style of dress could make them look otherwise than attractive, while some others have such exquisite taste that, whatever the style, under their manipulations, it seems the most graceful possible to be worn; but the vast majority of women of all stations fail utterly of grace in their daily dress, and, gaining neither of the other two desiderata, they thus secure no other end above that of the semi-civilized—the simple one of having the body covered.

“One would suppose in the oppressive number of interests at the present day—amid all there is to do and to learn; all there is to see and to hear; all the people there are to help, and all the books to read—woman would like that which is so strictly personal as their own garments, to combine the greatest amount of health, comfort, and beauty with the least outlay of time, labor, and expense. Instead of that, they have an attire which sacrifices health, is entirely inconsistent with comfort, as boys and men understand comfort, and at the same time requires, to make it presentable, the greatest possible expenditure of thought, work, and money. Is this a consummation devoutly to be wished?”

“If woman had always worn a suitable dress, no sane man would ever think it worth his while to speculate whether, such and such alterations changing it entirely, it would not look better. He would take it for granted that an ideal dress might be devised for some ideal being that would show off fabrics finely, but he would recognize that—given a being with a head and body, two arms and two legs, intended to talk and walk and sew; to cook, to wash, to sweep; to nurse the sick, to tend the store, to keep the house; to go up and down stairs, to run, to skate, to walk out in rainy weather; in short, in the pursuit of some avocation, to use every muscle of her body, and use it to the best advantage—no other style would answer the purpose, and he would never ask for any other, but would rest content with that forever, only requiring that it should be so modified as to be made as becoming as possible to each wearer. As it is, no thought is given to the real requirements of the case. Does a milliner sit down and consider that, the purpose of a bonnet being to shield the head from the elements, and shade the eyes from too great a glare of light, she must first devise a frame which will accomplish these ends, and then select such materials, such colors, and such ornaments as, combined, will harmonize with each other, and suit the complexion, figure, etc., of the person for whom this special head-gear is designed? Not at all; but she says, “People are tired of last year’s shape, and we must have a change.” So she pulls out here and pushes in there, has her cape twice as large, or takes it off altogether; makes the “ears” longer or shorter, and the whole more distressing and useless, if possible, to the head than before; and forthwith every woman rushes to buy a bonnet after the new pattern. *Ex uno disce omnes.* When women shall have learned in time to put the objects of dress in their right order, there will be seen a greater revolution in the form of their apparel than the world has yet dreamt of in its philosophy.” G.

Tainted Meat, Fish, or Poultry.—

The following directions in regard to the use of charcoal, in cookery, are given by “Percrutatio”: “When meat, fish, etc., from the heat of the weather, or long keeping, are likely to spoil, powdered charcoal, sprinkled over it, will not only stop the progress of putrefaction, but it will sweeten that which has already become tainted,

If meat, or fish has acquired an unpleasant flavor, or does not smell perfectly fresh, when prepared to boil, by tying up a few pieces of charcoal in a small cloth, and putting them into the pot while boiling, it will remove everything disagreeable. The addition of a teaspoonful of saleratus, instead of the charcoal, will remove any unpleasant taste or smell, unless it is very bad. Poultry sometimes becomes tainted by being kept too long; to make it sweet and good, put some powdered charcoal in a piece of cloth, and put it in the inside of the fowl for sometime before cooking; it will draw out all the bad smell, as may be perceived by smelling the cloth, which is often most offensive.”

Management of Carpets.

All kinds of carpets will wear much longer if fine straw be spread evenly on the floor, about half an inch thick, before they are fastened down. When they lie on the bare floor, the gritty dust works through them to the floor, and as they are pressed down on and among it, they will be worn out much more than when kept up from it by straw. To aid in drawing carpets close up to the base board, preparatory to nailing them, drive 8 or 10 small nails into a piece of wood, allowing them to extend about three-eighths of an inch beyond the surface, similar to a weaver’s stretcher, and file them to a sharp point. With such an instrument as this, having a long handle, one person can thrust the side of a carpet up close to the base board, and hold it with ease, till it is nailed. There is some science also in the manner of sweeping carpets correctly. Instead of inclining the handle of the broom forward, and rolling the dirt along and pressing it into the carpet, by bearing down on the broom, the handle should be held nearly erect, and the dirt brushed along, by touching the carpet very lightly. In this way, both broom and carpet will be worn less, and the sweeping be done better.

Soda, Saleratus, Quick Yeast, Baking-Powders, etc., for Bread-Making.

The question is asked us, how one may know that too much alkali is used in bread, rolls, or biscuit, made with soda and other alkaline carbonates. Bread which is yellow at all, or has that peculiar “soda-biscuit odor” (to most intensely disagreeable), has either too much alkali, or not enough of acid. Cream of tartar, buttermilk, sour milk, molasses, or sour dough, each contain an acid which, when it unites with the carbonate of soda, sets carbonic acid gas free; and when well stirred into a dough of just the right consistence, it puffs it up uniformly and makes it light. The art of the cook is shown in putting in just enough, and never too much soda for the acid which she adds, or which the dough contains. One teaspoonful of soda should, in a fresh dough for bread, or a batter for cakes, always be used with two teaspoonfuls of cream of tartar. When sour milk, or molasses, or anything else of the kind is used, the proportion must be guessed at; but always guess so that the soda will be more than neutralized, for a little acid will not be perceived, while an excess of alkali gives rise to dyspepsia and indigestion. The principles upon which depend the rising of dough have been often explained in these pages. Now, therefore, we only say, avoid as poison yellow bread, or that which has the alkaline odor. Even vinegar may be used to neutralize soda, when other preferable acids can not be readily obtained.

Tallow Candles.—If people must use tallow candles, in these days (nights rather) of bright kerosene, the following, from our correspondent “*,” of Macoupin Co., Ill., may throw some light (star-light) on how to make good ones. Mr. Star writes: “In return for hints about hard soap, I will suggest an improvement in making ‘tallow candles.’ Double the wicks, as is usually done, and twist until tolerably tight, then wax them

with beeswax, so they will not untwist. They are then ready for the mould. I claim that the candles will last much longer, and will give a brighter and better light, resembling sperm candles. Impurities in the tallow will not affect the light, as is usual.”

Practical Odds and Ends.

Contributed by Subscribers to the *American Agriculturist*. Please send plenty more of the same sort.

HARD PUTTY around broken window panes is quickly softened by pouring kerosene oil on it.

PUTTY is made by mixing “whiting” with linseed oil, to the consistence of dough. Every farmer should keep a supply.

THE CEMENT used to fasten glass lamp burners in place, is made of calcined plaster and water. Mix them thin and apply quickly, as it “sets” soon. This plaster is the same as used by masons, stereotypers, etc.

A SOLDERING IRON, which is not iron but copper, is a convenient money-saving implement. Practical instructions for its use were given in the *Agriculturist*, Vol. 18, page 342. (Nov. number, 1859.)

FROZEN CREAM should be placed near the fire, gradually thawed and then allowed to become very warm, not hot, then churn it, and bring the butter easily. The churn should be warmed to prevent chilling the warm cream.

TO PREVENT FLANNEL SHRINKING.—Put it into cold water, place over the fire, and boil half an hour.

TO REMOVE FRUIT STAINS.—Dip the stained part into boiling water, and hold it over the fumes of burning sulphur, until the stain changes color, then wash in clear water. Boiling water alone will remove many fresh stains, especially of cooked fruit.

Hints on Cooking, etc.

Sweet Apple Syrup.—Contributed by Elizabeth Carlton. Nicely wash a quantity of sound sweet apples, put them in a steamer and cook until tender. Then press out the juice and boil it until quite thick. For many uses it will be found greatly preferable to New Orleans molasses.

Potato Soup.—Peel and slice 6 large potatoes, boil them 20 minutes in 3 quarts of water. Then mash them finely in the water, salt to the taste, stir in a heaping tablespoonful of flour, well beaten in a teacupful of cream, and add about 2 ounces butter. Let it cook until the ingredients are well incorporated together.

Cheese Omelet.—Butter the sides of a deep dish, cover the bottom with thin slices of cheese place upon this very thin slices of bread, well buttered, a little red pepper and mustard, another layer of cheese, and, just before put in the oven, beat the yolk of an egg in a cup of cream and pour into the dish. Bake half an hour, or until nicely browned.

Crackers.—Contributed by E. Allen, Lake Co., O. Take 3 teacupfuls of sweet milk, 1 of butter, 13 of flour, 4 teaspoonfuls of cream of tartar, 2 teaspoonfuls of soda. Dissolve the soda and a little salt in the milk, put the cream of tartar into the flour, and also rub the butter into the flour, then mix with the milk. Roll very thin, prick very thickly, cut into squares, and bake in a quick oven.

Potato Yeast.—Contributed by a subscriber, who says she “can safely recommend it, as she never uses saleratus for raising bread, nor has any sour.” To $\frac{1}{2}$ of a cup of hops, add 1 quart of water; when boiling, pour it on one cup of raw potato, grated; to that add $\frac{1}{2}$ cup of sugar, $\frac{1}{2}$ cup of salt, and when cool add 1 cup of yeast to raise it. The salt in the yeast seasons the bread enough.

Drying Squash or Pumpkin.—If squashes are wasting by decay, remove the seeds, pare, slice, and put in a kettle with a little water. Boil until the water is out, then slowly simmer and stir to remove all the moisture possible without burning, and spread the paste half an inch thick on buttered plates. At first these can

be set in the stove oven with the doors open, taking care when it is almost dry not to let it burn. If dried too slowly it may sour. Next spring or summer this will make as good pies as fresh squash if prepared as follows: Rinse the dried squash in cold water at night, pour on sufficient boiling water to cover. In the morning simmer a few minutes and stir until all seems softened, then sift and proceed as with fresh squash.

Baked Hubbard Squash.—Contributed by T. Haskell, Essex Co., Mass. Cut off a piece at one end, sufficient to make an opening to admit a spoon, and scrape out the seeds and the fibers surrounding them. Pour half a teacupful of water in a spider, put the squash in open side down, and bake one hour in an oven rather hotter than is needed for loaf bread. Remove from the oven, scrape the squash out of the shell with a spoon, and all will like it who are fond of sweet potatoes.

BOYS & GIRLS' COLUMNS.

About the Month of April.

The month of April was represented by the ancients as a playful dancing boy with a rattle in his hand. Children are easily made to smile or to cry, and the figure was therefore quite appropriate, as we expect sunshine and rain to follow each other in quick succession during the present month. The name April, it is said, is derived from the Latin word *aperire*, which means to open, and at this season the buds and blossoms are opening under the warm sunshine and frequent showers. The Dutch call it the Grass month. It will be interesting to our young friends to observe each year at what time the various trees and plants in their neighborhood first open their buds, and to write down the dates. See how much earlier the lilac bush in the front yard puts forth leaves, than does the apple tree in the orchard; and so with other shrubs, trees and plants. Such a record kept from year to year will show the comparative earliness of the different seasons. It will also lead the observer to notice other facts about vegetation, all of which will furnish most agreeable employment for leisure hours.

The first day of April is known as April Fools' day, and all over Europe, as well as in America, the custom prevails of sending people on foolish errands or playing other practical jokes, and then laughing at the victims. How this singular practice originated is not certainly known. Some think it first prevailed among the Hindus, who keep up similar performances at a feast called *huli*; this however does not account for the origin of the custom. Others, perhaps with more truth, say it is kept up in commemoration of our Saviour being sent back and forth between Herod and Pilate at the time of his trial. Whoever attempts to play a trick upon another should make it a pleasant one; such for instance as was carried out by a party of young men on a poor neighbor, whose corn needed hoeing badly, while he was sick. Some twenty of them assembled one fine moonlight evening and by 10 o'clock had it all in prime order. You can imagine the poor man's feelings a few days after when he crawled out to try and do a little for his suffering crop.

Make Friends Among the Birds.

Birds can provide quite well for themselves, but they are very thankful for any assistance. The robin asks only to be let alone and he will be likely to choose some snug covert in the branches of an evergreen, or other thick foliaged tree near the house in which to commence housekeeping. He and his mate may be made very tame by frequently scattering bread crumbs and other dainties near their haunts. They have been rendered so familiar by such means, that they would come when called and feed at the feet and in some cases from the hands of their friends. The blue birds will hunt all about the premises for some suitable hollow with a narrow opening in which to build their nests. They some times choose very singular dwellings. An old boot hung in the wood-house was for years a favorite nesting place for a pair of these birds. A workman once left his coat hanging on the fence in a back lot. Several weeks after, he remembered it, but found other claimants in possession, two blue birds being very busy rearing a family in one of the sleeves. A few plain boxes with entrance holes just large enough, placed in trees or on the buildings, will attract these pleasant visitors. The pert and lively wrens, will quickly occupy similar accommodations, and give much pleasure with their sprightly songs and noisy clatterings. The martins go in flocks and will require larger accommodations. A box three feet long, six to nine inches wide and a foot high, with openings six inches apart will suffice for a small

colony. The barn swallows will find quarters in the barn, if openings be left in the gable end, and the mud swallows if undisturbed will make quite a cornice under the eaves. All these birds will work faithfully for the neighborhood where they are encouraged. Moths, caterpillars and worms will be devoured by wholesale where birds abound, and the music they make will certainly afford more pleasure than can be derived from shooting or stoning such innocent creatures. If our young readers desire feathered pets in a cage, let them procure a pair of Canaries, which have always been accustomed to such a life, and not rob the free field birds of liberty. Perhaps before the summer is over, some of the boys or girls will have pleasant stories to tell of their success in making friends with the birds; we should be pleased to hear and if of enough interest to publish them.

Beware of a Prevalent Vice.

Boys, if by a few earnest heartfelt words you may be induced to keep clear of a vice now fearfully prevalent in this country, it will be worth more to you than a large present in money. We refer to the use of profane language. It is almost the only sin that has neither excuse, pleasure, or profit. Offensive alike to God and good men, it marks a vitiated taste, a want of refinement, and a disregard both of virtue and the feelings of others. Instead of relieving the passion of anger as some declare, it only strengthens it by giving it expression. If it be urged that it is a habit difficult to be broken, this is a confession that disregard of right has become a settled part of the character. No boy old enough to know the meaning of words, utters his first oath without a shudder; if by repetition he is able to swear without compunction, it is not that the sin is less, but because his own sense of right has been blunted; the crime and its penalties are the same. But the habit can be subdued. Scarcely a boy or man will use profanity in presence of his mother; then, if he will, he can restrain it at other times. Let every boy respect himself too much to yield to this habit, but rebuke profanity wherever heard, by expressive silence and a good example, if not by words.

The Play of Charades.

This amusement is quite common in many localities, but may be new to some. A director is chosen who may employ as many assistants as he needs. They retire from the room, and select some word which is to be acted out, part at a time, or otherwise, in presence of the company, and the spectators are to discover the word from the acting. Thus, suppose the word "Alternate" be chosen. The director may come in and make on a slate or paper a large figure 8; then each of his assistants turns eight over; that is all turn eight (alternate). The word "Intemperance" may be divided into four parts or acts. The first to represent a scene at an inn; next a display of temper; then a meeting of aunts, and finally a representation of the whole word, by a person feigning Intoxication, etc. If the words are well chosen, and the actors ready with suitable impromptu dialogues, this play may be made very entertaining, and often instructive.

A Good Hint for the Boys and Girls.

Miss "Hattie" writes to the *American Agriculturist*: "Sweeping is unpleasant and unhealthful work. Dust was not made to be breathed. Now, nearly or quite half the usual amount of sweeping can be avoided. How? Keep the litter and mud out of the house. Do not bring it in on your shoes; then it will not have to be pushed out with a broom. The next time you go to a neighbor's keep your shoes as clean as possible, but if you get them muddy, look for a scraper and mat to wipe them, and if you can find none, don't go into the house unless it is necessary; do your errand at the door, and say, "my shoes are muddy, I will not go in." If you are particular to clean your shoes, other boys and men will be so, when they come to your house. And as the price of brooms is now very high, you may save as much as three cents a week on the wear of them, just by keeping your shoes clean; I think you will save more than that on your shoes, for the cleaner they are kept the longer they last. The mud takes the oil from them, renders them very hard and unpleasant to the wearer, they will soon crack, and you must have a new pair. Now, instead of all this trouble you cause your mother, in removing dirt by sweeping, show her that you can do something to lessen her labors by learning to be always neat and tidy."

Damaged Glass.—F. S. Mitchell, sends the following to the *American Agriculturist*. His man Sam and wife were unpacking a box of glass fruit jars. While taking them out one by one, Sam would say, "Here is a good one," or "This one is broken, or cracked," as it happened to be. He found one that had been somewhat flattened on one side in making it. He says, "Here is one that is not cracked, but is badly bruised." He evidently did not understand the nature of glass.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the March number, page 89. No. 124. *Illustrated Rebus.*—*Awls wear th at ends well, or "All's well that ends well."* No. 125. *Mathematical Problem.*—Diameter, 173.2 ft.; Whole area, 985.8 ft....No. 126. *Curious Word.*—The word "Written"....No. 127. *Illustrated Rebus.*—*Rebel lion will B over throne and piece re T urn two cheer our country; or Rebellion will be overthrown, and peace return to cheer our country....*No. 128. *Abbreviation.*—R. U. L....No. 129. *Anagrams.*—1, *Merchandise*; 2, *Surgeon*; 3, *Reformations*; 4, *Conversation*; 5, *Locomotive*; 6, *Transmission*....No. 130. *Conundrum.*—*The fin is (finis)....*No. 131. *Mathematical Problem.*—60.16 ft. to one corner, 64.34 ft. to each of the others....No. 132. *Ethical Mathematics.*—The preponderance of truth is in C's favor....No. 133. *Charade.*—*Mad-a-gas-carth....*No. 134. *Puzzle.*—C (100)-I (1)-V (5)-I (1)-L (50). = Civil.... The following sent correct answers up to March 10th: E. Prevost, 124; R. H. Wilson, jr., 127; Harry, 123; M. E. Waring, 124, 127, 145; Eddie Sheldon, 128; Augusta Brigham, 117, 128, 133; Arthur Shriver, 124, 127, 128, 130, 132, 133, 134; "Subscriber," 124, 127, 128, 130, 133, 134; Lucy R. Weeks, 124, 125, 127, 128, 130, 133, 134; Robt. G. Weeks, 127, 128, 130, 133; George F. Weeks, 127, 128; Budgar, 124, 127, 128, 130, 132, 134; Jas. H. Chidlaw, 127; D. Sheaffer, 124, 126, 127, 128, 129, 130, 131, 134 (well done).

New Puzzles to be Answered.

No. 135. *Illustrated Rebus.*—Something to remember.



No. 136. *French Riddle.*—*Je suis capitaine, de vingt-quatre soldats. Sans moi Paris serait pris.*

No. 137. *Latin Sentences for translation.*—1, *Equus est in stabulo, sed non est.* 2, *Mea mater sua mala est.* 3, *Pugno pugnas pugnati.*

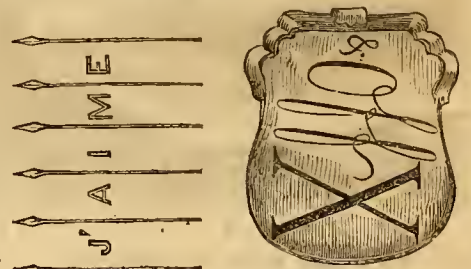


Fig. 1.

Fig. 2.

No. 138. *Illustrated Rebuses.*—Fig. 1, A French sentence. Fig. 2, Advice for business men. What are they?

No. 139. *Charade.*—My first denotes company; my second shuns company; my third calls company, and my whole delights company. What is it?

No. 140. *Conundrum.*—What light is most generally diffused throughout the world?

No. 141. *Word Puzzle.*—Behold a small wild animal, and leave a large, strong useful domestic one.



No. 142. *Illustrated Rebus.*—An important truth.

No. 143. *Geographical Names.*—1, Part of the body and a small pond, 2, Men of high rank and a weight, 3, Strife and a tool, 4, A lady, a taste, and a pie.

No. 144. *Philosophical Question.*—Suppose the earth to cease its annual motion around the sun, but continue its daily revolution. Would it be necessary to lengthen or shorten the pendulum of our clocks to make them keep correct time? Why?

No. 145. *Geographical Question.*—At what line on the earth does the Christian Sabbath begin?

No. 146. *Planting Problem.*—How many twenty-four trees be planted in eighteen rows, with four trees in each row?



"DON'T LIKE TO BE WASHED!"—Engraved for the American Agriculturist.

No Hand Like a Mother's.

This picture certainly speaks for itself; at least the little fellow who is vainly struggling to escape his morning bath is speaking for himself most lustily. It looks like a little thing to make such a fuss about, but to him it is a serious matter. The water is cold, he dreads the shock it will give him, but that is not all; he is not in the hands of his mother. She would manage it so gently and pleasantly, that it would almost be a frolic for him; but the servant girl is rough and careless, and seems to enjoy his struggles. There is no hand like a mother's. A story is told of a young soldier who lay sick in one of the hospitals. His mother left her distant home to nurse him, and arrived at the hospital at night. She was told that her boy was sleeping, that she must not disturb him. "Let me only sit by him and watch him," she pleaded. The request was granted. The boy lay in a feverish, uneasy slumber, and the mother gently passed her hand over his forehead. "Whose hand is that?" he eagerly exclaimed; "it feels like my mother's." He knew the touch of affection that had often before soothed him. It was better than medicine and aided in bringing back his wonted health.

A Cunning Old Rat.

A Connecticut subscriber, "F. G. H.," sends to the *American Agriculturist* an extended account of the artful proceedings of a rat, the substance of which we give below. He first attracted notice by diving through the wall paper with which an opening had been covered. A trap was set at night to capture him. It was of the kind in which a stout wire moved by a spring, flies down upon the animal and drives him upon sharp spikes. It was carefully baited with a kernel of corn, so that a slight touch would spring it. The rat, however, succeeded in removing the corn, leaving the spring undisturbed. The next night several kernels were strung upon strong linen twine, and tied to the catch. In the morning, the string was cut, the corn gone, and the rat too. A piece of catgut was substituted for the string, but with the same result. Then a bit of copper wire was used, and the shrewd

old fellow wouldn't meddle with it at all. Finally the trap was baited with a kernel of corn, and a shingle laid with one end resting on the catch, so that the rat must step upon it to reach the bait, which would let the spring go. This proved too much for his cunning, and the next morning he was found caught by the neck, having paid the penalty of his numerous offences.—There are other recorded instances of intelligence and cunning on the part of rats that would almost seem to indicate the possession of reasoning powers. Our young friends will find both interest and instruction in studying the acts and habits, not only of rats but of many other familiar animals.

Harry's Most Successful Effort.

Contributed to the *American Agriculturist* by Lizzie Nevins: All through one fine October day, Harry Nash had followed the plow up the lot, and down the lot, behind the old farm horses, and now as the sun was setting he was getting so foot-sore and weary that several times he nearly fell asleep in his monotonous walk. "There goes the horn at last," he exclaimed, as the welcome sound broke the stillness. Harry did not wait to listen to its echoes, but quickly "turning out" he soon presented himself at the supper table, looking tired, it is true, but with a cheerful face, made more bright and shining from an intimate acquaintance with soap and water, and a coarse towel. "You have got over quite a large strip to-day, my son," said Mr. N. kindly, as he helped Harry to the plain but wholesome fare with which the table was spread. The boy looked pleased with this commendation, but said ingenuously, "I'm afraid I haven't accomplished much for the last hour or two; I was so tired I could scarcely walk." "On the contrary," said his father, "I think you accomplished more in the last two hours, than during all the rest of the day." Harry opened his eyes in astonishment, as he called to mind the straight, neat furrows of which he was so justly proud in the early morning hours, and contrasted them silently with the shallow and uneven track he was leaving behind him when called to supper. Mr. Nash enjoyed his son's perplexity for a while and then said, "I will tell you a short

story to illustrate my meaning." Harry brightened up. "Not long since," continued his father, "a gentleman bought a book, feeling sure it would be both interesting and useful to his son and daughter at home."—Harry moved a little uneasily on his seat.—"Carrying it home he presented it to them with the remark, 'Read this my children, and give me your opinion of it.' 'O yes father, thank you,' they both exclaimed, 'We shall surely be delighted with it.' And so they were. Now the young lady was passionately fond of reading; it was therefore but a pleasure to her to sit down and read the book before she slept, and she gave her father her opinion of the work next morning in glowing terms." Harry glanced at his sister and laughed. "The son, on the other hand, though always pleased to listen to reading, was seldom ready to take a book and master its contents for himself. I suspect he was naturally a little indolent. 'But now he said to himself 'my father has kindly given me this nice book, and wishes me to read it, and I will—I am determined I will.' A duty attempted in earnest, brings its sure reward, and this boy, although he fell asleep over the first chapter once or twice, soon became interested, and actually finished the book in a week, well pleased with his success. Now my son," continued Mr. Nash, "wherein lies the greater virtue, in the act of the young lady, who swallowed the interesting volume at one sitting, or in that of the boy who conquered his natural indolence, and laboriously mastered the book recommended by his father?" It was amusing to witness the various changes which passed rapidly over Harry's face during this recital. At the closing question, he looked up quickly and exclaimed "I haven't read the book yet." "O!" said Mr. Nash, "Wife, where is the milk pail?" and rising he took the pail from that lady's hands, and went to milk the cows.

Look Out for the Weak Point.

The old fable of Achilles should be remembered by every boy and girl of whatever age. The ancients said that when he was a babe, his mother held him by one heel and plunged him into the river Styx, which made him invulnerable, except the small place on his heel which her hand kept from being wet. He became a noted warrior, and as no weapon could wound his body, he made great havoc among his enemies; no one could stand before him. But at last one of his foes finding out his weak point, shot him in the heel with a poisoned arrow, which caused his death. If Achilles had properly guarded his heel, he might have escaped such a fate. Every person has some weak point, very few have only one. Here are two illustrations. Thomas is a cheerful, sprightly, wide-awake boy, ready for any kind of work or play, a favorite with all his companions; but he is fond of change. He does not stick to a thing until it is finished. He is ready to run after every novelty. This is his weak point which will prevent him from ever having much success in life. Susan is very pretty, very pleasant, neat as a pink, and a great help to her mother; yet she has a very weak place in her character. She is vain; she loves to display her good looks and accomplishments, and is always seeking a compliment. She is fond of showy dress and jewelry, and of whatever will attract attention to herself. This feeling may prove her ruin; thousands have lost honor and happiness by such a weakness. What is your weak point? Impatience? Angry passion? Indolence? Exaggeration? Stubbornness? Negligence? Whatever it may be, give it especial attention at once and try to correct the falling,

For other "Business Notices" see last page (136).
(Business notices \$1 25 per agate line of space.)

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Fourteenth Annual Report

OF THE

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Nos. 156 and 158 Broadway,

NEW YORK,

JANUARY 1, 1865.

Net Assets, January 1, 1864.....	\$1,478,968 59
Receipts during the year.....	973,534 02
	\$2,452,502 61
Disbursements.....	461,277 39
	\$1,991,225 23
Assets.....	\$1,991,225 23

Life policies are issued, payable in annual, or in one, five, or ten annual installments; also non-forfeiture endowment policies, payable in ten annual payments, which are paid at death, or on arriving at any particular age. Life insurance as an investment has no superior, as it has saved millions of dollars to the insured, and thousands of families from ruin. Dividends are paid to policy holders, thus enabling them to continue their policies, if otherwise unable to do so.

HENRY STOKES, President.
C. Y. WEMPLE, Secretary.
J. S. HALSEY, Assistant Secretary.
S. N. STEBBINS, Actuary.
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VINELAND

FARM AND FRUIT LANDS, in a mild and healthful climate. Thirty miles south of Philadelphia by Railroad, in New Jersey, on the same line of latitude as Baltimore, Md.

The soil is rich and productive, varying from a clay to a sandy loam, suitable for Wheat, Grass, Corn, Tobacco, Fruits and Vegetables. This is a great fruit country. Five hundred Vineyards and Orchards have been planted out by experienced fruit growers. Grapes, Peaches, Pears, &c., produce immense profits. Vineland is already one of the most beautiful places in the United States. The entire territory, consisting of forty-five square miles of land, is laid out upon a general system of improvements. The land is only sold to actual settlers with provision for public adornment. The place on account of its great beauty as well as other advantages has become the resort of people of taste. It has increased five thousand people within the past three years. Churches, Stores, Schools, Academies, Societies of Art and Learning, and other elements of refinement and culture have been introduced. Hundreds of people are constantly settling. Several hundred houses are being constructed, and it is estimated that five hundred will be built during the summer. Price of Farm land, twenty acre lots and upward, \$35 per acre. Five and ten acre and Village lots for sale. Fruits and Vegetables ripen earlier in this district than in any other locality north of Norfolk, Va. Improved places for sale.

Openings for all kinds of business, Lumber Yards, Manufactory, Foundries, Stores, and the like.

For persons who desire mild winters, a healthful climate, and a good soil, in a country beautifully improved, abounding in fruits and possessing all other social privileges, in the heart of civilization, it is worthy of a visit.

Letters answered and the Vineland Rural, a paper giving full information, and containing Reports of Solon Robinson, sent to applicants.

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A Novel Enterprise.

Upon the line of the Cape May Railroad one of the largest enterprises of this most active period is thus referred in a new work—"How to Get a Farm and Where to Find One," by the author of "Ten Acres Enough."

As it has uniformly been in the West, on the opening of a new railroad, so it was in New Jersey on the opening of that from Camden to Atlantic City. Enterprising men were drawn to the region thus inviting speculation, investment and improvement. They brought capital, skill and energy, and quickly made an impression. Among the earliest and most thorough going of these was Mr. CHARLES K. LANDIS, of Lancaster, Pennsylvania. This gentleman was impressed with the great value and availability of organized colonization. He secured five thousand acres on the railroad at Hammonton, and in 1858 his colony was fairly under way. His ideas with respect to colonization appear to have outstripped all others for comprehensiveness, whilst his plans were definite, practical and liberal. He sold to none but actual settlers, telling the mere speculators to go elsewhere, and gave special encouragement to fruit growing. He introduced the New England School system, and kept out the sale of liquor.

He laid out streets and roads, and in other ways expended money liberally in promoting the welfare of the settlers. These were of the best class, principally from New-England; intelligent, tasteful and industrious. Home manufactures of various kinds were introduced, churches and school-houses were built, good crops were yielded to the farmer, and a general prosperity prevailed which astonished all who witnessed it. The settlement speedily numbered two thousand persons, who now produce more food than they need, and ship large quantities to New-York and Philadelphia.

The experience acquired in settling Hammonton enlarged the views of Mr. LANDIS, showed him his omissions and mistakes, and gave him ideas which he considered so valuable that he determined to carry them out on a wider field. Accordingly, in 1861 he secured 25,000 acres in one body in Cumberland county, all in the same wild and uncultivated condition. This tract of waste land lay on the then newly opened railroad from Camden to Cape May, passing through Milville and Glassboro'. It covered an area of forty-five square miles, with the railroad passing through it, and was within thirty-five miles of Philadelphia. This settlement he named

VINELAND.

In this great undertaking his plan was to establish a perfect, regular and comprehensive system of public improvement, for the benefit of the community to be there located; to found a town in connection with and as an adjunct to an agricultural settlement; to develop therein a system of home manufactures and industry; to promote religion, morals and a high standard of education, and to provide homes for intelligent and worthy families who might be seeking them.

It was a gigantic project, such as no other individual in this country had ever undertaken to carry out. It required experience, incessant personal attention, great administrative and engineering ability and the expenditure of a large capital. There have been owners of tracts as large, but none who undertook to transform them from a desolation into a populous community. The lay of this land was such as to admit of its being plotted out as the owner desired. There were no rocks to blast, no mountains to remove, no unwholesome swamps to drain or to fill up. He began the enterprise amid the gloom which overspread the public mind immediately after the outbreak of the slaveholders' Rebellion. His friends predicted difficulties and discouragements, while all advised him to wait before commencing such an undertaking.

But his confidence was not to be shaken; he knew that the very convulsion against which his friends were warning him, was one of those which, of all others, induce men to look for pecuniary safety by purchasing land.

In August, 1861, Mr. LANDIS went upon his new purchase with a surveyor, for the purpose of locating the first street that was to cross the railroad, since called Landis Avenue. As there was no carriage road either to or through the woods, they traversed the narrow cow-paths afoot until they reached the spot where the surveyor was to plant his first stake. A profound stillness reigned around them; nothing could be heard beyond the rustling of the leaves, there was not a house within several miles. While the surveyor was planting his stakes, an old dweller among the pines and scrub oaks of that region came up to them, looked at the instruments, and inquired of Mr. LANDIS what they were doing. He replied that they were locating an avenue a hundred feet wide for a new town, and that within two years he would see the spot they then stood on, surrounded with buildings for miles, with farms and orchards where now the forest alone could be seen.

The man turned away incredulous, and pitying the infatuation of the projector. No wonder; he had lived seventy years in that particular locality as a wood-chopper, had never been to Philadelphia, did not know how a city looked, and considered the idea of building one in that wilderness as the dream of a lunatic. But the town was laid out, with many five and ten acre lots, and many farms. Miles of spacious streets and roads were opened, public squares and a park. Every purchaser was required to plant the front of his property with shade trees, to build a house within a year, at a certain distance from the roadside, and affording room in front for shrubbery and flowers. Unity of plan was thus secured, insuring the utmost neatness and the highest embellishment. It was to be, in fact, a vast assemblage of beautiful cottage residences.

Mr. LANDIS has already, at his own expense, opened nearly eighty miles of streets and roads, building bridges wherever needed, cleared out acres of stumps and rubbish, established the grade, and on many other improvements expended thousands of dollars in making his great enterprise acceptable to the numerous families who have located on his property.

I visited this remarkable spot in the summer of 1864, to examine its condition and surroundings. I had known and passed over the spot years before, when it was a perfect solitude, with neither hut nor clearing. It would be impossible within these limits to specify the marvelous changes that had been made. The forest had disappeared, and in its place was to be seen a settlement containing some six hundred and fifty houses and four thousand inhabitants. There was a rapidly growing town, having churches, schools, stores, mills, and other conveniences. I conversed with numerous settlers as to whence they came, and how they fared in their new location. As a body they belong to the better class of citizens, are educated, intelligent, moral and enterprising. The drones which infest other communities are never found in hives like this. Great numbers of them are from New-England, while the neighboring States and even the West are largely represented in this common centre. Many have built costly and elegant houses. Many are professional fruit-growers and gardeners. Those who buy farms are practical farmers. There are wealthy families in Vineland who remain there because of the mildness of the climate and healthfulness of the place. Taken altogether the settlement has an old and cultivated look already.

The soil of this great tract varies from a sandy to clay loam, is retentive of manures and abundantly productive. It produces from 100 to 250 bushels of potatoes per acre; 15 to 25 of wheat, though the premium crop for wheat in Cumberland county, in 1855, was 44 bushels per acre. Of shelled corn, 50 to 75 bushels is the ordinary crop, and two tons of grass.

Fruit trees and vines bear abundantly. I saw new peach orchards of thrifty growth, some trees showing fruit, and grape vines giving promise of abundant crops. The winters are so mild as to allow of out-of-door work nearly all through them. Mr. LANDIS told me that for seven years he had not known the ploughing to be interrupted by reason of frost, for five days in any one winter. All kinds of fruit are cultivated, the five and ten acre lots being mostly devoted to the smaller descriptions. All such are planted so that the picking will come in succession; thus, strawberries, raspberries, blackberries, peaches, grapes, apples, etc.

In driving many miles over Vineland, I entered into conversation with numerous settlers at work by the roadside. Most of these happened to be farmers from the West, New-England, and Western New-York. All were busy on their growing crops, sometimes in groups of two or three, in the cornfield. Not one of them but expressed his preference for his new location over the bleak climate he had left. I saw but one desirous of selling and removing, and but one house having on it a handbill as being in market. Most of these farms were just carved out of the woods, showing piles of roots that had been grubbed up. They are, of course, rough looking, like all new clearings in a new country; but the hand of industry was rapidly taming their wildness, and bringing them into prime condition. The general testimony was, that one day's labor on this soil would accomplish twice as much work as if expended on the heavy or strong soil from which they had migrated.

Such was the condition of the farms bought within six months or a year. Those which had been taken up by the first settlers, those of two and a half years ago, presented a very different appearance. The genial and tractable soil had enabled their owners to work a great transformation, even in that brief period. From most of these the stumps had disappeared. Great fields of grain were whitening to the harvest; many acres of peach and apple orchards were to be seen, the former promising to yield a crop the coming season. Gardens were full of fine vegetables. The front upon the road had been trimmed up and seeded to grass, while shrubbery and flowers were visible on many of the lawns.

Of the thirty-acre farm of Mr. WILLIAM O. H. GUYNNETH a brief notice may serve as an illustration. This gentleman is from Boston, and was among the earliest of the settlers. He bought thirty acres, then utterly wild, now completely tamed. His dwelling house is so beautiful a structure as to command admiration anywhere. He has planted orchards, now growing finely, and has acres of excellent wheat. His large corn field showed as fine a growth as farmer could desire, and so also did his clover crop. I walked over his ample garden, vineyard, and fruit grounds. Every kind of ordinary garden truck was growing with a luxuriance altogether unexpected, and fully equal to the average of that on lands that sell readily at seven times the cost of his.

Several hundred grape vines, Concord, Isabella, and Catawba, two years planted, showed such an excess of fruit as to compel Mr. GUYNNETH to remove at least half. In no section of New-Jersey have I seen the grape vine grow so rampantly as in this ground. Cherry trees, pears, and other fruits flourished equally well. It was the same with strawberries, gooseberries, and blackberries. This ground had not received a particle of manure. What it now is, affords a practical illustration of the real value of this section of New-Jersey. Three years ago a forest, now the productive and really elegant home of an intelligent and accomplished family.

On reaching the extreme boundary of the Vineland tract, I called on Mr. ROBERT G. BRANNARFF, who has here cultivated a farm of ninety acres during the last eleven years. This length of tillage I judged likely to show what was the real stamina of this soil, whether it had any enduring heart in it, or whether it would speedily run down to barrenness.

As Mr. BRANNARFF's land was of even lighter character than that of Vineland, its behavior under long cropping would afford a favorable test for the whole neighborhood. He gave me, without reserve, all the particulars of a truly remarkable history, with permission to use them. Eleven years ago this farm was covered with forest. The owner offered it to Mr. BRANNARFF for four hundred dollars for the ninety acres, and an ample time for payment, and being a storekeeper, a few miles off, added the important help of a credit on his books for supplies for family use, and materials for building to the amount of six hundred dollars. At this time Mr. BRANNARFF was not possessed of a dollar, but he went to work, cleared up his land little by little, a few acres yearly, and thus conquered all difficulties, until now he has sixty acres in cultivation, from which his receipts in 1863 were two thousand dollars.

His family consists of six persons, who have lived well during this time. His fences and buildings cost him some \$1600. He keeps four cows, pigs, and one horse, by which all the work on the easily tilled soil of the farm is done. He hires but one man, except in busy times. For the wants of his family, and the prosecution of other improvements, his annual outlay is \$1,000.

Mr. BRANNARFF showed me his account-book for the eleven years he had been at work, in which all his receipts and expenditures were clearly entered, with the balance accurately struck at each year's end. His farm is now worth \$6,000, and he has abundant property outside of it to represent any debt he owes. His residence here has not been the humdrum existence of a mere sandpiper or woodchuck. He is a keen sportsman with line and gun. At the proper season, he plunges into the forest that covers much of this section of New-Jersey, camps out at night as naturally as an Indian, considers sleep of no consequence when compared with a coon hunt, and is a dead shot at any unlucky deer that crosses his path. The huge antlers hanging up in his shed afford evidence of his skill with the rifle. At other times, he visits the neighboring waters of Delaware Bay, where squadrons of wild ducks make generous contributions to his fondness for the gun.

Mr. BRANNARFF sells his crops at Milville, two miles from his farm. His wheat crop has been twenty bushels per acre, seventy-five of shelled corn, two hundred of round potatoes, one hundred of sweet, five hundred and sixty of carrots, six hundred and twenty of turnips, while his cabbages pay one hundred dollars per acre, and of grass the yield is two to three tons. For manure, his main dependence is on the home product, sometimes using the fertilizers. The particulars of his experience have been thus recited as affording unanswerable evidence of the character of nearly all the land in this heretofore neglected region of New-Jersey. Much of it is superior to this particular farm.

The visitor to Vineland cannot fail to notice the absence of fences, even in a ride of fifty miles. No farms have been fenced in, and not a dozen town lots. It had been calculated that five million dollars would be required to do the fencing of the whole tract. To save the settlement from this useless tax, Mr. LANDIS invoked the aid of the Legislature. A new township was erected bearing his name, in which the running at large of cattle and swine was prohibited, thus each settler fences in his own stock only, and is saved the great cost of fencing out the

vicious road thieves of his neighbors. No other town-ship in New-Jersey is found with a similar regulation.

Another peculiarity will be noticed, the total absence of grog-shops, with gangs of loafers congregated about their doors. The law erecting Landis township gave to the people the power of saying whether rum should be sold or not. So far, they have rigidly refused to have it among them, and the character of the settlers coming in will guarantee exclusion in future. The fine hotel which accommodates strangers, has been at no expense for either bar or toddy-slick. These two enactments were portions of Mr. LANDIS' original plan, and afford satisfactory evidence of the sound morals and practical good sense which he has brought to bear in carrying it out.

No one can spend a day at this place without being strongly impressed in its favor, nor converse with its proprietor without being struck with his remarkable executive capacity. His whole enterprise of settling a tract of forty-five square miles of wild land has been conceived and carried out on the most comprehensive scale. It is now successfully established on what was three years ago a perfect solitude, by the energy of a single capacious mind. I have seen much of the process of making new settlements on the waste places of the earth, but no instance of methodical planning, of far-seeing judgment, of just calculation, of greater ends from a great beginning, than is here exhibited. The original plan, as it was transferred from the projector's mind to paper, can now be seen unfolded in all its symmetrical vastness. Even the details are everywhere visible, all of them in harmony with the whole.

That these results have been actually realized, is shown by the rapid and astonishing success of the settlement. Families are daily coming in from a distance, and selecting homes wherever they think best. As at the beginning, the proprietor continues to convey these locations at low prices and on liberal credit. Mere idle speculators, the men who buy but do not improve, were not wanted, and have been kept out. Many purchasers, being well supplied with means, paid cash for what they bought; but to many worthy families the credit given has proved extremely useful.

The railroad from Camden through Milville and Glassboro', to Cape May, renders the spot accessible to all.

Vineland is probably increasing as rapidly as any new town in the West. In March last lots were selling so rapidly as to insure the erection of forty new houses every month, or four hundred and eighty per annum. No such annual growth as this was realized by WILLIAM PENN in the early history of Philadelphia. These new buildings are not ephemeral structures, mere shanties to keep off sun and rain, such as one connects with the idea of a new settlement, but substantial and durable houses. Some of them are truly elegant, such only as would be built by men possessing means and taste. When the whole tract has been disposed of, the population of Vineland will be 15,000. Now, the population of the entire county of Cumberland, in 1860, was only 22,605, so that in a few years more it will have been nearly doubled by the energy and enterprise of a single individual.

Whichever way you turn, progress and improvement of some kind are visible. Here a new house is going up, there a new farm is being cleared. The settlement must become in the end an immense fruit garden. Its products reach the two great cities, over cheap and rapid railroads, and command cash at generous prices. Its history shows the great public benefit that can be realized from the ownership of a vast tract by one man, when the man uses it and handles it as this tract has been managed. Such wholesale colonization may have been attempted by others, but it has nowhere been so successful as here.

No ducal owner of hereditary acres, either in England or on the Continent, with an annual income greater than the value of the fee of all Vineland, has ever undertaken a similar scheme of colonization. Such men devote their enormous wealth to acquiring more land, not to sharing their acquisitions with their less fortunate neighbors.

Instead of clearing forests and letting in population to improve and beautify, and acquire permanent and happy homes, they plant the already cleared ground with trees, and shut population out, increasing the difficulty of the masses for acquiring even the smallest freehold.

It has been left to a single American citizen to set before all others thus extensively endowed with land, an example which will add more largely to the sum of human happiness, the oftener it may be imitated.

As may be supposed, such a transformation as Mr. LANDIS has thus effected has powerfully affected the condition and value of thousands of acres within miles around Vineland. Prices have risen, settlers are coming in from abroad, and the area of the great body of waste land is annually becoming lessened by the creation of new farms. The cloud of prejudice which overhung this portion of New-Jersey has been effectually dispersed. Railroads have made it as accessible as any other region. Within two hours' ride of it there is a population of a million of consumers, whose consumption of its products must annually increase. Within such an atmosphere, these lands, which now sell at from \$20 to \$30 per acre, must rapidly rise in value until they reach the prices commanded north of Camden, where having enjoyed railroad facilities for a longer period, they bring from \$100 to \$200 per acre.

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SEED SWEET POTATOES.—For sale at \$5.50 per bushel, and the sprouts after May 1st, at \$5.00 per thousand, safely packed and delivered in New York free of charge. Address **P. PHILLIPS, Middletown Point, New Jersey.**

AMERICAN ARBOR VITAE PLANTS, 6 to 10 inches high, for sale at \$5.00 per 1000. For particulars, Address **L. B. CHAPMAN, 133 Fulton-st., (Up stairs) N. Y.**

500 BUSHELS FLUKE POTATOES will be

sent by Express or mail to any point. **J. B. WILSON, Washington, Pennsylvania.**

New Strawberries.
GREAT AGRICULTURIST.

The largest Strawberry in the World.

I exhibited in June last at the Office of the Agriculturist, 41 Park Row, N. Y., at the great Strawberry Show, a plant less than 10 months old, with 294 perfect berries on it: this is about twice as many as has yet been produced from the Wilson, Russell, or any other variety, from a plant of the same age. The plant exhibited was no more remarkable in productiveness than a hundred others in my garden, which were examined by Charles Downing, W. F. Heins, Prof. Thurber, and P. B. Mead. The berry is a bright, glossy crimson, the size is enormous, the average berries exceeding anything ever before seen in the Strawberry line.

The plant from which my stock has been produced, exhibited remarkable bearing properties; nearly all the young plants bore fruit from June to October, the first season. Last season the young plants were constantly fruiting every month until frost. I have a large stock of prime plants at the following rates: 2 plants \$1.20; 6 plants \$3.00; 12 plants \$5.00; 100 plants \$25.00; 1000 plants \$300.

The following four Belgian Seedlings took the first prizes at the great Belgian Show of 1864.

Bijou..... Raised by de Jonghe.
Lucida Perfecta..... " " Glade.
Haquin..... " " Haquin.
Souvernier de Kieff..... " " Jonghe.

Plants of the above, \$2.00 per dozen, or the four varieties, one dozen each, \$6.00.

Also the following 8 varieties from France and Belgium, all of which took prizes in 1863 and 1864.

Exposition Chalons, Lucas, La Delicieuse, Frogmere late, Pice, Madame Cologne, Orb, La Negress, and Quinquetolis.

Plants \$1.00 per doz., or the 8 varieties, one dozen each, \$8. Russell's Prolific, 50 cts. per doz., or \$2.00 per hundred.

French's Seedling, the best early berry in cultivation, 60 cts. per dozen, or \$2.00 per hundred.

Lenning's White, the best white berry, fruit very large, a great bearer, and fine flavored, one of the most beautiful berries in cultivation, 75c. per dozen, \$3.00 per hundred.

Deptford White, White Pineapple, and White Albion, these are all very large and valuable, 75 cts. per doz., or \$3 per 100.

All orders addressed to WM. S. CARPENTER, 329 Greenwich-st., New-York.

THE GREAT BUFFALO STRAWBERRY

SMITH'S BUFFALO SEEDLING.

Originated in 1857. In Buffalo, N. Y.

ABNER H. BRYANT, Sole Owner and Proprietor.

THIS STRAWBERRY IS DESTINED TO TAKE THE LEAD OF ALL OTHER VARIETIES YET BROUGHT TO PUBLIC NOTICE. IT COMBINES IN ITSELF AND DISTINCTLY AND PERFECTLY DEVELOPES EVERY ESSENTIAL QUALITY THAT CAN BE FOUND IN ALL THE BEST VARIETIES; IN FACT, IT IS NOT DEFICIENT IN ANYTHING ESSENTIAL TO A SUPERIOR AND UNIVERSALLY POPULAR STRAWBERRY.

Having carefully tested its merits for seven years, I know whereof I speak and am ready to defend the **BUFFALO STRAWBERRY** from any attacks made upon it.

Its great productiveness, size, flavor, and firmness, and its wonderful vitality and hardiness, perfecting its fruit even in extreme drought, and enduring the winter without protection, make it the best Strawberry ever introduced, and I challenge the world to produce its equal.

(Extract from "Moore's Rural New-Yorker," July 16th, 1864. Mr. Bragdon having previously visited my grounds in Buffalo.)

"The plant is evidently a strong grower, hardy, and has vitality enough to perfect all its fruit." "The fruit is more acid than the Triumph, and less than the Russell. It is both firm and solid. It is a firmer fruit than the Russell. It is remarkably solid. We cut open a hundred berries and failed to find one that was not perfect in this respect. And this is important to consumers. It is a very attractive berry—far more so than the Wilson, and not inferior to the Triumph. In beauty and regularity of form and brilliancy of color, it excels the Russell, as we have seen the latter."

(Extract from testimonial of Benj'n Hodge, Esq., Buffalo, one of the oldest and most experienced fruit growers in the State.)

"Is combination of superior qualities renders the 'Buffalo Seedling,' in my opinion, the best Strawberry that has yet been introduced to the American public."

From Lewis F. Allen, Esq., Black Rock, N. Y.

"After making thorough trial of the best of our popular varieties, I do not hesitate to pronounce the 'Buffalo Seedling' the best I have known. I know of no strawberry which in all its combinations of excellence is equal to this."

Lewis F. ALLEN.
As some parties have advertised plants purporting to be "Buffalo Seedling," at a reduced price, to whom I never sold any, and as others from either ignorance or interested motives are endeavoring to make it appear that the "Buffalo" is identical with the "Russell" (which is absurd, there being no similarity in character and appearance of the fruit). I advise all who want the genuine article to send direct to me for it, thus avoiding all danger of imposition.

Lithographs of Fruit and Descriptive Circulars containing testimonials sent to all who request them.

I have a large stock of Plants for FALL and SPRING sales, and will fill orders for any quantity. 100 plants or less sent by mail free on receipt of price.

\$3.00 for..... 20 Plants.
\$5.00 "..... 50 " "
\$10.00 "..... 100 " "

AGENTS and AGRICULTURAL HOUSES that purchase to sell again, will be allowed a liberal discount.

ABNER H. BRYANT, Box 2759 P. O., Buffalo, N. Y.

STRAWBERRY PLANTS. Fruit and Ornamental Trees, Shrubs, Vines, and a general assortment of Nursery Stock. Catalogues mailed to all applicants.

FRANCIS BRILL, Nurseryman and Seed-grower, Newark, New Jersey.

N. B.—My Seed business will hereafter be conducted under the name and style of BRILL & KUMERLE, 153 Broad-st., Newark, N. J. FRANCIS BRILL,

GREAT Agriculturist Strawberry.

I have a stock of unusually Strong Plants of this celebrated variety, warranted true to name which I will send post-paid to any P. O. address, packed with unusual care, as follows: 2 plants, \$1; 6 plants, \$2.50; 12 plants, \$5.

ALSO

RUSSELL'S GREAT PROLIFIC, 30 plants by mail, \$1. By Express, \$2 per 100; \$15 per 1000; \$50 for 5000. Seed for my Price List, embracing all the very choicest and newest varieties of **STRAWBERRIES** and **SMALL FRUITS**. Plants taken up and packed with much more than usual care, as letters from my customers in all sections amply testify. EDWIN MARSHALL, Po'keepsie, N. Y.

STRAWBERRY PLANTS for sale. Five of the best varieties of plants for cultivation, viz.: Russell's Prolific and Buffalo Seedling at \$2 per 100; French's Seedling at \$5 per 1,000; Cutter's Seedling and Downer's Prolific at \$3 per 1,000. Also other varieties at reduced prices.

For sale by THOS. C. ANDREWS, Moorestown, Burlington Co., N. J.

By Mail. GRAPES

CHEAPER THAN THE CHEAPEST. First quality of Plants, One Year Old. Single Eye Plants grown in the open ground.

PRICES---POST-PAID, BY MAIL.

	One.	Two.	Three.	Six.	Twelve
Adirondac.....	\$3.00	\$6.00	\$9.00		
Concord.....	30	55	75	\$1.80	\$2.40
Creveling.....	30	1.75			
Cuyahoga.....	90	1.75			
Delaware.....	50	1.00	1.50	3.00	5.50
Diana.....	40	75	1.10	2.10	4.00
Elslogburg.....	40	75			
Hartford Prolific.....	50	1.00			
Herbemont.....	50				
Rebecca.....	50				
Taylor.....	50				
Union Village.....	90	1.75			

STRAWBERRIES.

Russell.....	6	12	25	50	100
Fillmore.....	30	45	80	\$1.50	\$2.25
Golden Seeded.....	35	40	70	1.25	2.25
Triomphe de Gand & Wilson.....	30	50	90	1.60	3.00
	20	35	60	95	1.40

RASPBERRIES.

	Three.	Six.	Twelve
Brinkle's Orange.....	40	60	\$1.00
Franconia.....	50	90	1.50
Improved Black Cap and Fastolf.....	30	50	80

By mail, postage paid. No order for less than \$1 received. Descriptive catalogue of Grapes sent free.

Address J. H. FOSTER JR., Box 600, West Newton P. O., West'd Co., Pa.

Adirondac Grape Vines.

1 year, No. 3, layers from small wood.....	each.	doz.	hund'd.
1 " No. 2, Strong, pot vines and layers.....	\$2.00	\$18.00	\$100
1 " No. 1, Very Strong—layers.....	3.00	30.00	210
2 " No. 2, Strong Vines.....	4.00	36.00	280
2 " No. 1, Very Strong Vines.....	5.00	48.00	350

Also, Iona, Isabella, Allen's Hybrid, Creveling, Concord, Delaware, Diana, Hartford Prolific, Northern Muscadine, Rebecca, Rogers' Hybrid, and To Kalon. Priced Circulars will be sent on application.

Will be forwarded, securely packed in boxes, without charge or small packages by mail, **pre-paid**, if so ordered. The discovery and introduction of the Adirondac Grape is an event of the highest importance to fruit growers, and the greatest advance yet attained in Native grapes.

Its peculiarities are, extreme earliness, large berries and clusters, tender and thin skin, melting without any perceptible pulp, and of the most delicious and delicate flavor, resembling one of that splendid Hot-House Grape, the "Black Hamburg." Address JOHN W. BAILEY, Plattsburgh, Clinton Co., N. Y.

Hale's Early Peach.

This new peach stands unrivalled for its earliness, productiveness and early bearing qualities.

The fruit resembles the "Large Early York," and ripens 6 to 10 days earlier than "Troth's Early Red," hitherto the best very early variety.

Price of good size yearlings, 50 cts.; small yearlings, 42 cts. AUSTIN J. ROBERTS, "PEACH ORCHARDS," Lakeville, Mass.

GRAPE VINES FOR SPRING 1865.—Adirondac, Iona, Isabella, Allen's Hybrid, Delaware, Concord, Rogers' Hybrids, No. 15 and 19, Hartford Prolific and Clinton. For sale at low prices by J. W. CONE, Vineland, N. J. Formerly Norfolk, Conn.

The above vines are of best quality and warranted true to name. Samples sent on receipt of price per dozen. Vines sent by mail post-paid, when so ordered.

THE HOLCOMB BLACKBERRY.—"A very fine fruit indeed; in fact the finest of the three blackberries." Hovey.—"The Chair concurs."—Prest. Wilder. Now offered to the public, for the first time. Four for \$1.00; Ten for \$2.00. Conn. Hort. Agency; Hartford, Conn. D. S. DEWEY.

THE TRUE CAPE COD CRANBERRY for Spring planting, for Upland and garden culture, and for swamps. Under my method of cultivation the yield last season on Upland was over 400 bushels per acre. Explicit directions for cultivation with prices of plants, with nursery catalogue complete, will be sent to any address. B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

Buy the Lightest---Halsted's.

PARSONS & CO.,

offer **VINES**

of all the leading varieties of excellent quality. Among them are

	each.	per doz.	per 100.	per 1000.
Iona.....	\$2.00	\$18.00	\$125	
Allen's Hybrid.....	75	7.00	40	
Concord, 1 year.....	25	2.50	13	\$100
2 ".....	50	4.00	25	
Delaware.....	50	5.00	25	

Foreign Vines of all the sorts and finely grown at 1 year, \$5 per doz.; \$35 per 100 2 years, 8 " " 50 " "

In addition to their other

FRUIT TREES

They offer PEAR TREES of extra size. They commend to the special attention of nurserymen their stock of choice

EVERGREENS,

embracing nearly 200 varieties, which they offer at low rates; among them are

CUPRESSUS LAWSONIANA.....	\$6 per doz.
THUIOPSIS BOREALIS.....	6 " "
JUNIPER.....	\$35 per 100
ARBOR VITAE, Siberian.....	10 " "
do American.....	5 " "
PICEA NOEDMANIANA.....	50 " "
FINES, Austrian.....	20 " "
do Scotch, large.....	20 " "
UPRIGHT YEW, quite hardy.....	35 " "
NORWAY SPRUCE.....	12 " "
GOLDEN YEW.....	

STREET TREES, large and handsome. FLOWERING SHRUBS in great variety. ROSES, Hybrid Perpetual, on their own roots, not grafted or budded, \$20 per 100. CAMELLIAS, in excellent health. STOVE PLANTS in variety.

RHODODENDRONS, both seedling and worked plants, and in great variety of color.

For varieties and prices they refer to their Catalogues for which address them at

Flushing, near New York.

Trees and Vines.

The undersigned, having entered into a partnership with LINDLEY M. FERRIS, Nurseryman of Poughkeepsie, N. Y., to which place he will remove his Nursery Stock at the opening of the Spring, would call the attention of his customers and the public to their extensive stock of EVERGREENS, DECIDUOUS AND ORNAMENTAL TREES; APPLE, PEAR, CHERRY, PLUM, and all the smaller Fruits.

With our ample propagating and growing houses, we hope to offer as large a supply of the best and most rare varieties of Grape Vines, as well as the leading kinds now cultivated, at as reasonable prices as they can be obtained elsewhere.

As it is necessary to clear a portion of our Nursery grounds this spring for other purposes, on which are Apple, Pear, Deciduous, and Evergreen Trees, inducements will be offered to those who wish to purchase. A. J. CAYWOOD, MODENA, Ulster Co., N. Y., Feb. 1, 1865.

Address FERRIS & CAYWOOD, "DUTCHESS NURSERY," Poughkeepsie, N. Y.

Evergreens! Evergreens!

We have an immense stock of NORWAY SPRUCE, BALSAM FIRS, SCOTCH AND AUSTRIAN PINES, AMERICAN ARBOR VITAE (White Cedar), SIBERIAN ARBOR VITAE, &c. &c., from small to large sizes. All have been transplanted once, and the larger sizes two to THREE times in the nursery, so that success is ensured in planting. They are offered at LOW RATES per doz., per 100, or per 1,000, and prices will be given, packed in a superior manner, delivered at Depot in Rochester, or otherwise. FROST & CO., Rochester, N. Y.

Reid's Nurseries, Elizabeth, New Jersey.

David D. Buchanan, successor to Wm. Reid.

Offers for sale this Spring a large assortment of Dwarf and Standard Pears, Apples, Peaches, Plums, Nectarines, Apricots, Currants, Gooseberries, Raspberries, Grape Vines, &c. Also a fine collection of Hardy Evergreens, consisting of Norway Spruce, Arbor Vitae, Irish and Swedish Junipers, Cupresses, &c. &c.

The stock of Deciduous Trees, such as Maples, Elms, Lindes, Oaks, &c., is fine and can be furnished in any quantity. Orders by mail, addressed as above, will meet with prompt attention.

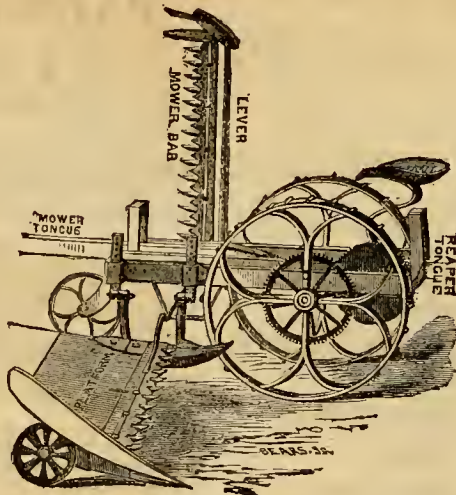
N. B.—Priced Catalogues just published, forwarded on receipt of stamp.

Onions and How to Raise Them.

What soil is best; how to prepare it; how to manure it; how to tell good seed from bad; how to plant it; how to grow onions from seed, potato onions, onion sets, shallots and top onions; when to pull onions; how to store them; how to prepare for market, and when and where most profitable to market them; what onions to select for seed, and how to grow it, and a hundred minute details so valuable to beginners, with many facts relative to peculiarities of onion raising in the Southern, Eastern and Western States of value to old growers. Illustrated with original engravings of the "Dave Warren" Onion, Early Crocker Onion (new), Red Wethersfield and Potato Onion, Sowing and Weeding Machines. In paper covers, forwarded by mail, prepaid by the subscriber at 30 cents each. Seedsmen and Booksellers supplied at wholesale rates. JAMES J. H. GREGORY, Seedsman, Marlborough, Mass.

IMPORTANT IMPROVEMENTS FOR FARMERS.

This Machine is as Perfect a Mower as any Single Mower now offered for 1865.



It is the most perfect Reaper and has a Self Rake which gave universal satisfaction in over 2,500 cases last year.

We admit many good Machines were made before, but the combination so that singly they should be both excellent, having Forward Cut in Mowing and Bar off the ground, and the Reaper with Rear Cut and Side delivery and Self Raking, and then an arrangement by which the Machine might wear out BOTH SIDES of ALL COGS AND MACHINERY, were points none had attained. We warrant the 2 in 1 to do all this, MAKING IT WORTH DOUBLE PRICE, and yet we can afford it the SAME as the best first class Machines. Cash price, \$175 for No. 1 Mower; \$200 for Mower No. 2; \$240 for Mower with Hand-Rake; but the best of all, the cheapest of all, and embracing all, is the Self Raker, only \$265.

SMALLEY'S CORN PLOW AND CULTIVATOR



on wheels. Driver's Seat, does the work of Harrow, Shovel Plow, Cultivator, Stubble plowing, and Drill. With two horses and a boy all this work can be done and ride comfortably twice as fast and much better than formerly. Cheapest implement, considering its uses and durability, ever made. Ride when you plow corn, &c., henceforth. Cash Price, with 7 Steel Cultivator Teeth and four Cast Plows, \$68. Improved by using Steel Plows, polish in any soil, \$72. ADDRESS AND ORDER IMMEDIATELY, for Agents who sold 16 last year order now 100 to 200.

J. W. BAIN, Prest. American Agricultural Works, 17 Courtlandt-st., New York City.

All kinds of Implements and Machinery at Manufacturers' prices. Self-Acting Gas Machines for from 10 to 300 Burners. Warranted entirely satisfactory.—Preserve this advertisement.

Union Mowing Machine.

This Machine has been in use four successive harvests, and has met with the hearty approval and well merited praise of practical farmers. We call the attention of farmers to our Mower for 1865, of superior manufacture, and possessing new and valuable improvements.

Price, No. 1, 4 feet 6 inches cut.....\$190 00
 " " 2, 4 feet " 170 00
 " " 3, 3 feet 6 inches " 160 00

AGENTS WANTED.

WHITCOMB'S HORSE HAY RAKE.

PRICE.....\$40.00.

AGENTS WANTED.

We call attention to HALSTED'S Patent Hand Cultivator and Seed Drill combined

SHARE'S Patent Coupler Harrow.

BROWN'S Ice Cream Freezers.

NEW WORLD WRINGING MACHINE.

Agricultural Implements of all kinds.—Seeds, Fertilizers, &c.

HAINES & PELL,
 27 Courtlandt-st., New-York.

WIRE FOR HORSE RAKES, best quality, at lowest rates. For Sale by **JOHN W. QUINCY,** 98 William-st., New York City.

The Clipper one Horse Mower

is adapted to every variety of surface, and to cutting every kind of grass.

This Machine is capable of cutting three-fourths to one acre of the heaviest grass per hour, and can be drawn as easily by one horse as ordinary two-horse Mowers by two horses.

The height of cut can be varied by the driver while the Machine is in motion, and without leaving his seat. It is simple, durable, and not likely to get out of order.

Two-Horse Mowers and combined Machines of the same pattern. **R. H. ALLEN & CO.,** 189 & 191 Water-st., New York.

Clement's Improved Hay Fork.

This Fork, having been thoroughly tested, is now recommended to Farmers in its IMPROVED form, as the SIMPLEST and MOST DURABLE, as well as the MOST COMPACT and CONVENIENT FORK to use. It is so balanced that it CANNOT DRIBBLE the Hay from the point of the tines as is the case with almost every other Fork in use. It is made of Iron and Steel, in the most DURABLE manner, having no wooden head to split and allow the teeth to get loose.

Price, Two Tined, with Pulleys and Hooks, \$14 00
 " Three " " " " 16 00
 " Four " " " " 17 00

AGENTS WANTED. SEND for a CIRCULAR. Agricultural Implements of all kinds.—Seeds, Fertilizers, &c., &c. **HAINES & PELL,** 27 Courtlandt-st., New York.



W. & B. DOUGLAS' PATENT ROTARY BARREL PUMP.

Arranged with the Patent Barrel Attachment, the most complete and perfect article ever invented for PUMPING OIL and ALL KINDS of LIQUIDS from BARRELS and other CASES up into CANS, TANKS, &c. A most invaluable Fixture for OIL STORES, OIL REFINERIES, DRUG STORES, PAINT MANUFACTORIES, &c., &c. We make two regular sizes of this Barrel Pump, viz.: Nos. 1 and 2. No. 1 will pump from 8 to 10 gallons, and No. 2, from 16 to 20 gallons per minute. Orders respectfully solicited by

W. & B. DOUGLAS,

MIDDLETOWN, CONN.

Sole Proprietors and Manufacturers of the article.

Branch Ware House, 87 John-st., N. Y., where samples of these and our various other kinds of Pumps, Hydraulic Rams, Garden Engines, Ship Pumps, Oil Well Pumps, Power Pumps, Churn Pumps, Iron Well Curbs, Iron Horse Posts, Gridstone Trimmings, Wrought Iron Butts and Hinges, &c., can be seen.

ALL the principal HARDWARE MERCHANTS, PLUMBERS, TINNERS, and AGRICULTURAL DEALERS in this and other Countries, keep our MANUFACTURES, or will order them from us when called for.

Mallory & Sandford's FLAX BRAKE.

What it will Do.

Read the following Interesting Letter from a Manufacturer.

SALEM, N. Y., Nov. 30, 1864.

Mr. John W. Quincy, Treasurer, &c.

I started a new Flax Mill this year, and feeling that the price of your Brakes was so high, thought I would economize by purchasing an improved old-fashioned Brake, which I did, and placed it in my new mill, and ran it four days. After running two days, I was determined to test it thoroughly with the two Brakes I purchased of you, two years since, and have been running in my old mill at Lake, ever since. My tests are as follows:

On average rotted straw, your Brake would give every time full 100 lbs. more of dressed flax to the ton than I could with the greatest care get from the old Brake. On over-rotted straw I got over 200 lbs. more than I could get by the old Brake. I stopped dressing and went to figuring, and found that to dress the flax I now have, with the old Brake, would cost me over \$8,000 (loss). I therefore want you to ship one of your Improved No. 1 Brakes by Express, as my men will dress no more flax in this mill until the new Brakes arrive. Enclosed please find check for \$455.

Yours respectfully,
P. T. BUELDICK.

For further particulars of this case and many similar ones, and for full information concerning the **M. & S. FLAX BRAKE**, send for a circular.

N.B.—READ LAST MONTH'S AGRICULTURIST FOR DESCRIPTION of a NEW and VALUABLE FLAX MACHINE, and NEXT MONTH'S for ANOTHER.

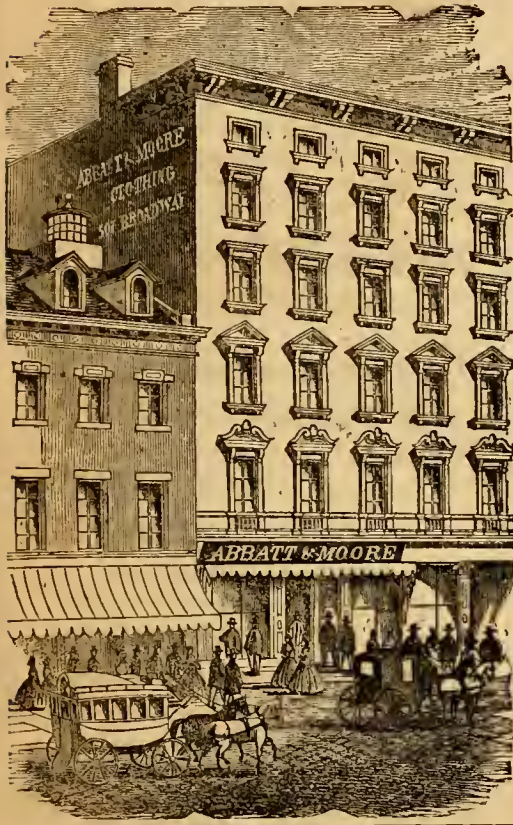
Send for Circular to **JOHN W. QUINCY, Treasurer,** 98 William-st., New-York City.

To Farmers and Butchers.

The following, from H. S. Ward, Esq., of Deep River, Conn., explains itself:—"Messrs. Goldsmith & Gregory, Sirs: Please find enclosed \$2 for two of your Hog-Catching implements, for my neighbors. The one I received from you works to a charm—a decided success." Every farmer should have one. Price \$1.50 for \$1. Illustrated circulars sent. Agents wanted. **GOLDSMITH & GREGORY,** Goshen, N. Y.

Every Farmer should have one of Halsted's Horse Hay Forks.

MERCHANT TAILORING AND CLOTHING ESTABLISHMENT.



ABBATT & MOORE, having for many years paid particular attention to the manufacture of Boys' Clothing and attained a degree of excellence rarely equalled, would call the attention of Parents and Guardians to the large and attractive stock they are now offering for the Spring and Summer Trade. The CUSTOM Department is supplied with Choice Goods for those who prefer to have their Clothing MADE TO ORDER.

MEN'S CLOTHING
READY MADE
AND MADE TO ORDER.
PARTICULAR ATTENTION IS PAID
to MILITARY CLOTHING
and UNIFORMS for
SCHOOLS.
FURNISHING GOODS
IN GREAT VARIETY

always on hand.

ABBATT & MOORE
No. 507 BROADWAY,
Under St. Nicholas Hotel,
NEW YORK.

N. B.—Persons in the country, by sending to us, will be furnished with plain directions for taking such measures, as are necessary to insure a good fit, and the article will be sent by Express. Samples of goods also sent on application.



STRAWBERRIES.



Great Agriculturist.

It is claimed for this New Seedling that it is of unequalled size and productiveness, single plants producing as high as 294 berries, many of them weighing one ounce each, of bright glossy crimson color, very firm, high flavored, and a first class market berry. For an account of its origin; introduction; purchase by us; character and productiveness of the plant; size and character of the fruit, and other information, see our circular. We have bought of Mr. Judd his entire stock of plants for sale, and are now able to furnish them at the following prices:

1 plant.....	\$ 75	50 plants.....	\$ 15
2 plants.....	1 50	100 ".....	25
6 ".....	3 00	500 ".....	125
12 ".....	5 00	1000 ".....	200

Our stock of Strawberry plants this season, including Golden Seeded, the best early; Russell and Fillmore, of wonderful size and productiveness; French's Seedling, Triomphe de Gand, Wilson's Albany, and all other desirable kinds, is the largest and best we have ever offered.

Strawberry Plants by Mail.

We will send safely packed and post-paid by mail
For \$1, 1 Agriculturist, 8 Golden Seeded.
For \$2, 2 Agriculturist, 10 Golden Seeded, 12 Russell.
For \$3, 3 Agriculturist, 10 Golden Seeded, 12 Russell, 12 Fillmore.
For \$5, 6 Agriculturist, 12 Golden Seeded, 12 Russell, 12 Fillmore, 12 French's Seedling, 6 Kitley's Gollah.
For \$10, 12 Agriculturist, 24 Golden Seeded, 24 Russell, 24 Fillmore, 24 French's Seedling, 12 Kitley's Gollah, 12 Lennig's White.
For description of above, and many other kinds; our select lists; mode of culture; prices, &c. See our illustrated catalogue.

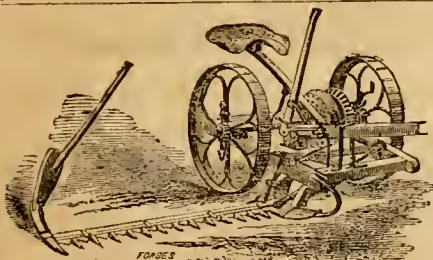
Send for Catalogue enclosing stamp.
J. KNOX, Box 155, Pittsburgh, Pa.

GROVER & BAKER'S HIGHEST PREMIUM



ELASTIC STITCH AND LOCK STITCH
SEWING MACHINES,
459 BROADWAY, NEW YORK.

TRUE'S POTATO PLANTER SAVES THE LABOR of twelve men. Send for circulars.
J. L. TRUE, Garland, Maine.



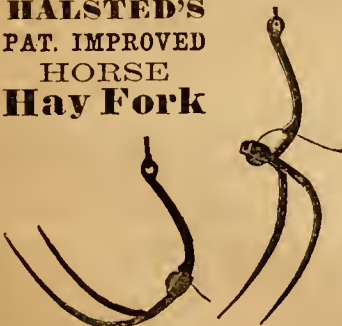
Nishwitz's Monitor Mower and Reaper.

The success of the Monitor is without parallel. It embraces every point necessary to make a Perfect Mower and Reaper. It recommends itself to every farmer for the simplicity of its construction. It is proved to be the Lightest Draft. It takes the preference for durability, ease of management and good work. Four different sizes. Fully warranted. For circulars giving full description, references, &c., Address
F. NISHWITZ, Manufacturer,
Williamsburgh, L. I., N. Y.

J. N. CLOVES,
(General Agent, Centra. and Western N. Y.,) Utica.
P. S. MESEROLE,
(General Agent, Ill., and the West,) 204 Lake-st., Chicago.

HALSTED'S PAT. IMPROVED HORSE Hay Fork

Lightness, Simplicity, and



Durability Combined.
PATENTED MARCH 7, 1865.

After its extensive introduction and use last year, is now offered to the public in its improved form. Agents wanted. Town, County, and State Rights for sale. Send for a circular. Address
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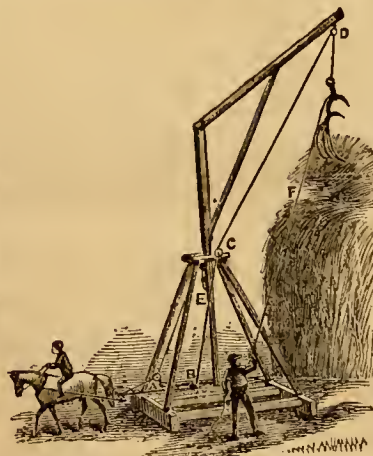
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VOLUME XXIV—No. 5.

NEW-YORK, MAY, 1865.

NEW SERIES—No. 220.

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Contents for May, 1865.

Advertising Tribune, Herald, etc.	162
Agricultural Department at Washington	145
Beans—Culture of	150
Beans—Varieties of White	4 Illustrations. 154
Bees—Apiary in May	140
Black Knot on Plum Trees	156
Bladder Nut Tree	2 Illustrations. 153
Bog Land—Reclaiming. II.	147
Boys and Girls' Columns—The Good News—Something about the Hair—Be Acquainted with your Neighbors—Selfishness Properly Rewarded—Advice for Boys—My Mother—Problems and Puzzles—The Young Performers—About Keeping the Balance—New York City at Night—Making a Tall Man Short	8 Illustrations. 159-160
Bread—Pictorial History of a Wheaten Loaf. Illus.	153
Carpets—Suggestions about	157
Carrots—Field Culture on Heavy Soils	151
Clover Hay—Good Way to Cure	151
Columbines—Notes on	Illustrated. 156
Cooking School—Bachelor's Wish Realized	158
Corn Marker—A Good One	Illustrated. 149
Corn Seed—Method of Tarring	150
Death of President Lincoln	144
Farm Work in May	137
Flower Garden and Lawn in May	139
Fruit Markets in New York City	153
Fruit Garden in May	149
Fruits—Nye's Method of Keeping	155
Furniture—Hints on Varnishing	139
Garden—Kitchen in May	155
Garden—Little Things in	150
Gas Tar—Uses and Value	157
Glycerin—Nature and Uses	157
Grafting—Herbaceous	Illustrated. 154
Grapery—Cold in May	140
Grapes—Notes on Culture—Care of Vines—Mission—For Cold Climates—New Varieties—Mildew	155
Green and Hot-Houses in May	140
Hog and Cattle Raising—Relative Profits	146
Horses—Turning out to Pasture	147
Insects—Repelling Striped Bug	155
Lily—Jacobean	Illustrated. 156
Lily— <i>Lilium auratum</i>	153
Manure—How to Pitch	Illustrated. 149
Maps and Pictures—Mounting	157
Market Reports and Commercial Notes	162
Notes and Suggestions for May	137
Orchard and Nursery in May	139
Orchard upon a Gravel Bed	151
Oxen, Working—Management of	147
Pannies—Varieties and Cultivation	156
Periwinkle, (<i>Vinca minor</i>)	Illustrated. 157
Planting—Deep and Shallow	148
Plowing Sward Ground	4 Illustrations. 145
Plows—Dragnet of Light and Heavy	145
Potatoes—How to Drop	Illustrated. 148
Potatoes—How to Plant	146
Potatoes—Planting Large and Small	Illustrated. 148
Potatoes—Tan Bark for	155
Recipes—Unleavened Rye and Indian Bread—Bofled Indian Pudding—Scalded Meal Johnny Cake—Wheat and Indian Cake—Apple and Pie Plant—Rye and Indian Apple Pudding—Cooking without Milk—Pumpkin Pies—Custard Pies—Graham Biscuit—Poor Man's Pudding—Steam Pudding—Mock Sponge Cake—Apple Jonathan—Potato Cake—Breakfast Cake—Nice Breakfast Dish—Substitute for Cream—Rusks—Pop-Corn Pudding	158-159
Seed Time	Illustrated. 152
Sheep—Evils of Washing	147
Sheep—Feeding with Grain	153
Soils—Pulverization of Heavy	151
Soils—Renovating Sterile	149
Strawberry Show at <i>Agriculturist</i> Office	144
Strawberries—New Mutch for	151
Sweet Potatoes—How to Cultivate	154
Tim Bunker's Visit to "The Oaks, Esq."	150
Tobacco—Care of Seed Beds	151
Tomatoes—Method of Training	154
Trees—How Nature Plants	151
Weeding Hoe—Adams' Patent	Illustrated. 149
Weeds—Eradicating from Fence Rows	149

INDEX TO "BASKET," OR SHORTER ARTICLES.

Advertisement, Free	141	Buckthorn Seeds	142
Agricultural Implements	141	Butter, Preserving	142
Agriculturist, Loaning	143	Camellias, Fine	143
Beans, Colored	143	Carrots, Mowing Tops	141
Beef for Soldiers	142	Chickweed	143
Bees, How to Hive	144	Corn Husks Wanted	143

Cows, Kicking	142	Onion Sower Wanted	143
Currant Worm	141	Onions, Poor	143
Dogs in New Jersey	142	Photographs, Animal	141
Downing's Book	141	Picture Alphabet	142
Earth Glasses	143	Plaster or Gypsum	142
Farmer, Extensive	143	Potato, Early Shaw	141
Farmers' Manual	143	Poultry Show	141
Fences, Gates and Posts	142	Poultry Statement	142
Flax and Hop Books	144	Primrose, Chinese	143
Grape Trellises	143	Pumps, Best Kind	143
Grapes in Spring	143	Quince for Stocks	143
Grapes, Isabella	143	Rose, Buchanan's	143
Grass Seed, Covering	142	Sheep, Beans for	142
Hard Soap	143	Sheep Convention	141
Horse, Diseased	141	Sheep Dipp'g Compound	142
Ice Cream Freezer	141	Sheep, Old for Wool	142
Insects, Unseasonable	143	Sheep Owning Lambs	142
Laborers, Farm	144	Sheep, Profitable	142
Law Needed	143	Sheep Pulling Wool	142
Lice on Cattle	142	Sheep, Stretches	142
Locust for Timber	142	Spavin in Horses	141
Manett Stock	143	Squash, Large Yield	143
Mangoes Described	143	Strawberries Sent out	144
Maps, Lloyd & Co's	144	Sweet Potatoes	144
Meadows, Pasturing	141	Syrup from Corn	142
Meat, Keeping Smoked	143	Trees, Diseased Apple	142
Music, Good	141	Trumpet Honeysuckle	143
Newspapers, Many	143	Vineland Lands	141
Onion Growing	143	Wild Morning Glory	143

Notes and Suggestions for the Month.

In our latitude, May is the month of toil and care with farmers. The weather is variable, and they are in the midst of seed time. In addition to the labors of the field, stock of all kinds require more personal attention than at any other time. From the early dawn of day till night, good farmers find enough to do, in planting corn, potatoes, sorghum, roots, etc., and preparing the ground for other crops. Besides, grass seed, gypsum, lime and ashes are to be sowed this month; and the farmer must bestir himself and see that nothing is neglected. "Whatever is worth doing at all is worth doing well." If you slight plowing, harrowing, or any kind of preparation of the soil, failure or partial success may be expected. Farmers are co-workers with Nature, and must do their own part well; and they can not do their work over again, if it is has been poorly done. The soil must be properly prepared, and good seed must be put in, for the best treatment that the crops can have will not make up for negligence and inattention to these preliminary operations.

Animals.—Every animal needs as much attention and as good care this month, as during the winter. See that they all have a good supply of feed regularly, at least twice a day, access to clean water and salt, and a comfortable place to stand and lie in. Cold, wet ground at this season of the year often produces colic, scours, or some other disease, which might be prevented by keeping stock in comfortable quarters, until the ground becomes quite warm. Ewes will be yearning this month, and should receive personal attention—not of heedless boys, but of careful men, and there is no eye like that of the owner. Watch breeding animals closely, whose time is near, visiting them late at night and early in the morning. A little timely aid will often save a valuable animal. It is bad policy to feed cows short just before they are turned to grass. If possible, feed some

cut roots daily, to prepare them for green feed, and to keep up the flow of milk.

Bees.—Increase the quantity of meal a few pounds per head, every day. If the weather be pleasant, allow fattening hullocks or dry cows to exercise in a small yard, several hours daily. As the warm weather comes on, their thrift will be promoted by carding, as often as once a day. As soon as grass is large enough, let them graze about an hour daily; then return them to the yard; but do not diminish the quantity of meal. At this period, bees will fatten very fast, if managed rightly. If meal be discontinued they will not fatten much, till their bowels become accommodated to green feed.

Buildings.—Remove earth and manure from sills, or other wood work of buildings. Paint in cool damp weather, so that the oil will remain on the surface, and not be absorbed by the dry and porous wood. When buildings settle unevenly, let them be levelled up at once, as standing on an uneven foundation strains every part and breaks the nails and cracks the walls.

Birds.—Spare the birds, for they are great benefactors to farmers and gardeners. Do nothing to frighten them from your grounds; they destroy legions of insects that are ready to injure your fruit and fruit trees.

Bees.—The profits attending bee-keeping, ought not to be disregarded. Abundant directions are given in "The Apiary" every month.

Bones.—Collect every bone possible; pay poor children for collecting them in the village; (25 cents per bushel will pay them well, and you too; and they will be glad to do it for less).

Calves.—Give calves a comfortable yard or pen, whether raised by hand or the cow. Confined in close quarters, the floor beneath should be cleaned often and littered abundantly. It is as cruel as unprofitable to keep them tied in cold, filthy places. Two calves may often be profitably raised on one cow. Always scald or cook meal for young calves, before mingling it with any kind of milk or feed, as raw meal is very liable to produce scours.

Carrots.—Do not fail to sow early, some long Orange or white Belgian in well prepared soil. Put in at least a quarter of an acre, and better all you can take care of.

Cranberries.—If swamp land has been "pared and burnt," the present is the best time to plant cranberries. Obtain the plants, free from weeds, in any productive cranberry swamp, and set them uniformly all over the land, from 14 to 18 inches apart. The land should be so located that it may be flowed in winter.

Corn.—The season at the East is early. There is danger of a cold May. Have at hand early maturing seed, to plant in case that first planted fails. It is poor policy to be in haste about planting corn. It comes up much surer and does better, planted after the ground is warm, when hot weather is not far in the future.

Drains.—Examine under-drains all over the farm in wet weather, and see that surface water does not work in and displace the tiles or fill the channels with earth. Shovel away all sediment at the outlets, so that the water will flow out freely. A half day's work cleaning out ditches and surface water channels, may be very profitably laid out on every farm. Mark the spots which need draining most, and lay out work for next fall.

Flax.—See article in April number, and "Prize Essay pamphlet" for full directions for culture, etc.

Fence-rows and Hedge-rows.—See page 149.

Grain Fields.—Top-dressings of "haud-manures" (plaster, ashes, guano, nitrate of soda, superphosphate, etc.) may often be applied early in this month to good advantage.

Grass Seed may be sown upon grain or alone, if it be done early, but much seed must be used.

Hemp.—Sow on good soil, in drills or broad-cast, 1 or 1½ bushels per acre, if broad-cast—in drills less.

Horses.—Look to having well fitting harness, sponge the shoulders, legs and feet of hard working horses, nights and mornings.

Hoes.—See that every laborer has a good one. A poor hoe is like a poor ax. A man who attempts to work with either, will, in a short time, expend time and strength enough to no good purpose, to purchase a new one. See that they hang correctly, are made of good material; that they are kept sharp, the surfaces bright, that they may be applied with skill and efficiency.

Horse-Hoes, etc.—Select good, well made, strong implements, of a pattern which you are certain about. Run no risks. There are many good ones. Some which we like, will finish both sides of the same row at once, which has several advantages.

Lime.—It is well to keep a supply of lime on hand, but not much at a time. It assists greatly in ameliorating stiff clays, in composting muck and weeds, etc., and checks the ravages of insects.

Machines.—Decide at once, what kind of machines and implements will be needed the present season. Reapers and mowers, threshing machines, cider and wine mills, should be ordered in time, so that there need be no delay. A long time often elapses after such machines are ordered, before they can be forwarded. It is far better to receive them before they are needed, than to be obliged to wait for them. Mowers especially should be ordered without delay, as early grass will be fit to cut next month. See item on prices in "Basket."

Mangels.—This variety of beet is one of the most productive and valuable to the farmer, as food for stock; it keeps well until grass. Sow in deep mellow land, in rows, 2 feet or 2 feet 6 inches apart, to be thinned to 8 to 12 inches in the rows, according to vigor of the plants and strength of soil.

Manure is like money. No farmer ever has too much of it, who appreciates in what his wealth lies. The days of profligate waste of manure, even on the prairies, are fast coming to an end. Manure hoed crops heavily, especially corn. Sorghum should have a similar preparation of the soil. It is better to use a fine manure for roots, and potatoes in localities where the rot is feared, will not bear that in a state of active fermentation. Superphosphate, ashes, etc., are good substitutes on the last named crops. Make a tank for liquid manure, to save all that leaks from the dung heaps and all the urine of animals, to be pumped over the heaps again, or used in the liquid state diluted with water, being applied by the field sprinkler.

Mowings.—Buy hay, rather than pasture the mowing lands. Top-dressings of soluble fertilizers such as gypsum, guano, ammonia salts, ashes or liquid manures, are effectively applied now, much more so than stable manures, or vegetable and animal composts. Irrigated meadows may be manured by putting well rotted manure (dung and straw) into a pool from which the water, after becoming charged with its soluble portions, may be spread over the field—the best method of manuring grass.

Oats.—If oats cannot be gotten in before the cold rains and wet weather we usually have in May, it

is often best to devote the land to corn or roots. Oats sown late make good hay, and the grass seedling does better than if they ripen.

Onions.—Take pains to get good seed, the supply is very limited. Sow early, 4 lbs. of seed to the acre, in drills 14 inches apart. If the land is now first used for onions, sow carrots in alternate rows.

Peas or Peas and Oats.—It is best to plow in the peas, and harrow in the oats lightly. Sow before the middle of the month. Peas alone may be sown later on good soil. The mixed crop is satisfactory.

Potatoes.—Plant early—use no healing manure.

Poultry.—Confine as soon as the garden is sown, or keep them out of it. Put hens (in coops) and young chickens in the garden. Turkeys' eggs ought not to be set before the first of May; when hatched, put the brood in a dry, warm shed, where no other poultry have been in the habit of frequenting, and keep them out of dewy grass for a week.

Pumpkins.—On under drained manured land, pumpkins do not interfere with the corn crops. They do better alone. Probably the cheese pumpkin is the most marketable and best.

Rakes.—Do you own a horse rake? If not, it is time to procure one for raking hay and grain stubble. There are a large number of wheel rakes, with a seat for the driver, most of which will do good work. As a horse rake is used only a few days in a year, it will be a matter of economy to employ a pair of light buggy or carriage wheels for carrying the rake, and the axle arms may be ordered to fit such as you have. By procuring a good wheel rake, a lame man, or an active young woman can do all the raking. No wire rakes do the work so well as the wooden toothed ones.

Racks.—As soon as the foddering season is over, remove the feeding racks from the yard to some place where they will not be damaged during summer. Stored under shelter, they will last years.

Roads.—Level down the sides of the beaten track of the highway, and sow grass seed. In many localities the sides of the highway are mowed, and the grass yields a good burden of hay. Where the earth is liable to be washed away during heavy showers, sow Kentucky blue grass or red top and form a sod, so that transient streams of water will not wash gullies in it.

Sheep.—Make timely and suitable preparations for protecting all kinds of sheep from the cold storms of rain and snow, which are usually called "May Lamb Killers." If sheep have been turned to grass, they ought to be allowed access to a good shed, during most of the time, while such storms prevail. Also, to prevent scours, caused by changing from dry feed to grass, let them have only a small quantity of grass daily for several days, at the close of the foddering season. See grain for sheep, page 153. Shear early, and without washing.

Tobacco.—Weed plants in seed beds. Sprinkle with liquid manure in showery weather, with pure water in dry weather. Plow and harrow the field.

Work in the Orchard and Nursery.

—The very open spring has caused the press of work to come earlier than usual in the nursery. It is not altogether to the advantage of the purchaser of trees to have a forward season, and we have already, in the middle of April, seen trees sent out with their buds well advanced. The present uncertainty in forwarding freight, owing to the crowded condition of the railroads, will doubtless cause many lots of nursery trees to be injured by long delay in reaching their destination. By proper management, trees that appear to be ruined, may be saved. If the trees have become so dried that the bark is at all shrivelled, we repeat the advice to bury them for a few days; light sandy soil is best, as they can be removed more easily. Dig a trench, lay the trees in with the roots all one way, and gradually cover them so that the soil will sift in among the branches and come in contact with them. Place a stake to mark the position of the roots as a guide in removing them. Allow the trees to remain thus buried for three or four days,

or a week, according to their dryness, when they may be taken up, pruned, and planted. It sometimes happens, that trees during their transportation push out a growth of several inches from their upper buds. In this case cut back to a bud that has not started, before planting. The suggestions about planting, given last month, will still be timely in cold localities. In planting do not allow the roots to become dry, but cover them with earth if only half an hour is to elapse before they go into the ground, and do not be afraid to cut back freely.

Budded Stocks.—Those stocks which were worked last year, upon which the buds have "taken," are to be cut back to within a few inches of the bud, leaving a support to which to tie the growing shoot.

Cuttings.—Any cuttings, the planting of which had been delayed, should be put in at once. See article on currants on page 121, last month.

Evergreens.—These are not only valuable for ornament, but of increasing importance as shelter. People are beginning to learn that they can, within certain limits, modify their climate, and that they can, by the aid of a belt of evergreens, not only help their orchards and gardens, but that the protection they afford is of essential comfort to the inhabitants of the house and barn. May is the month for transplanting. We repeat the caution to protect the roots, for if once dried, no subsequent wetting will ever soften their resinous juice. In sandy soils it is well to enrich the holes with peaty earth or muck. With large evergreens, which are planted singly, it is better to anchor them, by means of large stones placed on the ground, than to stake them. Stoues placed in this manner, besides the mechanical support they give to the tree, are useful inasmuch as they cover the ground and serve as a mulch. The Hemlock is growing more into favor as a hedge plant. The proper time to remove this is when the new growth is well started. The Hemlock, Norway Spruce, and Arbor Vita are the three favorite evergreens for hedges and screens; they all bear cutting to any extent, and are perfectly hardy. The Arbor Vita, when planted closely, will sometimes die out and leave a gap which is difficult to fill. Surface mauling is beneficial to established evergreens.

Grafting.—This may still be done if the cions have been well kept. See previous numbers for hints upon grafting and substitutes for grafting wax. Root grafts should have been put out as soon as the ground was ready. If it has been delayed until now, lose no time, but get them out at once. Recollect that much of the success depends upon proper planting. The roots which have been grafted have usually very few fibres, and it is necessary to press the soil closely around them.

Drainage.—Many orchards, the unproductiveness of which is ascribed to disease, are only troubled with wet feet, and would be brought into fruitfulness if drains were laid midway between the rows of trees. There need be no fear of injuring the roots in laying the drains. The slight root pruning will be beneficial rather than otherwise.

Insects.—All the directions for destroying these are summed up in "kill them." When first hatched, one of the most destructive, the tent caterpillar, is very inconspicuous, but a practised eye will detect their small web, and with one operation of the hand a whole colony may be crushed. Apply strong soft soap wash to the trunks if it is not already done.

Layers of quince, grape vines, and of many ornamental shrubs may now be made.

Mulching.—Cover the ground around newly planted trees with some kind of litter, it does not matter much what it is, provided it prevents evaporation.

Orchards.—Any hoed crop that will leave the soil in better condition than it was before, may be planted in a young orchard, always keeping in mind that the cultivation is done for the ultimate benefit of the orchard. Do not plant too near the trees.

Peach and Apricot Trees.—Probe for borers and put a band of tarred paper around the trunk near the ground. Ashes will be found beneficial.

Flow between nursery rows and keep weeds down.

Seeds.—Sow if not already done, in rich and well

worked soil. Peach and other pits buried last year will probably have started, and in planting them, care must be taken not to break the germinating plant. Plant such singly. Seedling evergreens and most young forest trees need shading.

Kitchen Garden.—May is the busy month in the family garden. With the exception of a few very early things, it is better to wait till the ground becomes warm before putting in the main crops. Thorough preparation of the soil will pay, even if it is secured at the expense of a few days' delay in sowing the seeds. In many localities the hints of the April calendar will be timely.

Asparagus.—Cut with care, taking care not to injure the buds which have not yet pushed. If there is any to send to market, wash it, and put it in neat bunches 4 to 6 inches in diameter, and tie with a string at each end, and cut the but-ends square.

Beans.—Early Valentine and Early Rachel are among the earliest sorts. If early plantings have been destroyed by frost, renew them. Set poles for running kinds, and if danger of frost is over, plant Limas. Frames of lath, with the laths running lengthwise, and two of these set together like a steep roof, form a very convenient support for Lima beans and tall growing peas.

Beets.—Sow early sorts and thin the plantings already up. Try the Swiss Chard beet for greens. It is the next best thing to spinach, grows well in hot weather, and yields all summer.

Borecole, Broccoli, and Brussels Sprouts.—Sow and cultivate in the same way as cabbages.

Cabbages.—Those who live near cities, and have no hot beds, will find it best to buy plants of some of the early sorts. Sow Winningstad for succession and some of the Savoy and Drumheads for late. See notes given last month. Set plants in rich soil and cultivate well from the beginning.

Capiscums, or Peppers.—When cool nights are over, the plants may be set out. Seed may be sown.

Carrots.—Sow if not already done. As soon as the plants are up and the position of the rows can be made out, pass some kind of a weeding implement between them. When large enough, thin out the plants to 4 or 6 inches in the rows.

Cauliflowers.—Seeds may be sown for the second crop. Set out plants in rich soil. Hoe often, and when growing rapidly, give them liquid manure.

Celery.—Seed may be sown as directed last month.

Cold Frames.—If any plants remain, see that they do not suffer from lack of water. Remove the sashes during the day.

Cress, or Peppergrass.—Sow for succession, and if troubled by insects, sift on ashes and plaster.

Compost.—Begin a heap with the earliest garden refuse. If there are any damaged potatoes, turnips, and the like, add them to the heap, and add refuse animal and vegetable matter all summer.

Corn.—Plant as soon as cool nights are over. There are so many local varieties that we are at loss to say which is the best early sort. Darling's is early and reliable, but Dwarf Sugar is sweetest.

Cucumbers.—Set out plants which have been started under cover, and sow seed when the ground is warm. See note on the striped bug on page 155. If there is likely to be frost after the plants are out, provide a shelter of some kind. A newspaper will afford protection against a quite hard frost.

Egg Plants.—It is best to keep these under glass until quite warm weather. If the plants are growing too large in the hot-bed, pot them or prick them out in a cold frame. Rich soil and thorough culture and liquid manure are needed.

Garlic.—Set as directed last month.

Herbs.—Make provisions for a good supply of plants used for seasoning. See article on page 155.

Hot-beds.—Plants often get overgrown before they can be set out with safety. Guard against this in time by transplanting or pricking out to a cold frame. If no frame is at hand, set them in a rich spot and contrive to cover the plants at night. See

that plants do not get burned during the middle of the day. If the weather will not allow of removing the sash, lift it and shade the glass.

Insects.—Young plants of cabbages and others of the same family, as well as many others, are very apt to be attacked by insects, and have their early growth seriously checked. A free sifting of a mixture of ashes and plaster will help protect them, at the same time it is beneficial as a fertilizer.

Kohl Rabi.—This is grown in the same manner as cabbages, and would be more popular but for the reason that it is generally allowed to get too large before it is eaten. When well grown and taken at the size of a teacup, they are very tender and delicious, if boiled and dressed like turnips.

Leeks.—Sow as directed last month.

Lettuce.—Sow in open ground and transplant from hot bed or frame. Set the plants a foot apart each way in good soil and hoe frequently. The two varieties which have proved best with us were the Ice Drumhead and Butter, though there are other fine sorts. The Boston Curled is a very showy kind.

Liquid Manure.—Remarkable results in the way of vegetables may be obtained, even in poor soil, by a free use of liquid manure. Save the slop water from the kitchen, and use it to make an infusion of any kind of animal manure.

Martynia or Martinios.—The tender green pods of these are used for pickles and are highly esteemed by all who have tried them. Sow in rich soil, in hills three feet apart and leave but one or two plants to a hill, as they spread widely.

Melons.—Treat as directed for cucumbers. In field culture the hills are put 8 feet apart and manured in the hill. Put in plenty of seed to guard against accidents. See article on Striped bug, on page 155.

Mushrooms.—Prepare manure and start beds.

Mustard.—Sow for succession.

Nasturtium or Indian Cress.—Sow near a fence and train them up on strings, or supply them with brush to climb upon.

Okra.—Sow the tall kind in a warm spot, in rows 3 feet apart, or the dwarf sort two feet apart. The dwarf is best suited to short seasons.

Onions.—If the sowing is not already done, no time should be lost. See last month's calendar.

Parsley.—Sow in drills a foot apart, and soak the seeds before sowing in ground free from weeds.

Parsnips.—Be sure to get fresh seed. A deep mellow soil is needed. Roll the bed after sowing, or tread the soil firmly over the seeds.

Peas.—Hoe those already up and draw a little earth to the stems, to prevent falling over. Provide the tall sorts with brush. Sow Champion of England, or some other of the wrinkled marrow sorts for late. Sow dwarfs for succession.

Potatoes.—Finish planting the early sorts. Hoe and give the hills a dressing of ashes and plaster.

Radishes.—Sow at intervals of a week or two; when the plants are well up, give a dressing of ashes. A radish to be good must be grown rapidly, and an occasional watering of liquid manure will help. If the roots become infested with small worms, destroy the crop at once.

Rhubarb.—Plants may be set, if they can be had not too much advanced. Established plants will now afford leaves. Never cut the leaves, but remove them with a sidewise pull. Do not take any leaves from plants set this spring or last fall.

Salsify.—Sow in the same manner as carrots and give the same culture. To get the best results, the ground should be deeply worked and manured.

Seeds.—Roots and bulbs kept for seed are to be put out. See article on page 117, last month.

Spinach.—That which was protected last winter should now give an abundant supply. Leave some of the best for seed. The staminate and pistillate flowers are on separate plants, and after the seed is set, the staminate or male plants may be pulled up. Sow the round-leaved for succession, and hoe, weed and thin that which is up. The plants should stand at a distance of 5 or 6 inches in rows a foot apart.

Squashes.—The early kinds started under glass may be put out and seed sown in open ground in well manured hills. The late sorts which run and root at the joints, need a well manured soil. Keep off the striped bug by the use of boxes. A dusting of plaster or air-slacked lime will serve in some degree as a protection. After the plants have made 5 or 6 leaves, they are too strong to be much injured by the striped bug, but the black squash bug must be looked for and killed. They are found in the morning on the underside of the leaves.

Sweet Potatoes.—Sufficient directions for the culture of them are given on page 154, and an approved method is described in a "Basket" item.

Tomatoes.—Sow seed for the late crop in the open ground. As soon as cold nights are over, set out plants from the frame. See article on a convenient method of training upon frames on page 154.

Turnips.—Continue to sow early sorts and dress with ashes as soon as up. Hoe and thin, and forward their growth as rapidly as possible.

Watermelons.—Treat the same as melons. Sow when the soil gets warmed and put plenty of seed in each hill, as much of it fails to come up. A warm, light soil, well manured, is best for them.

Winter Cherry.—This is much prized for preserves, and is grown in the same way as tomatoes.

Weeds.—The hoe or cultivator should be set in motion as soon as a weed shows itself. They are hints that the soil needs working.

Flower Garden and Lawn.—The early spring has hurried the transplanting of trees and shrubs, and the heavier work should be well out of the way. It is well not to be too much in a hurry with the tender bedding plants, and those which have been started under glass, as a cold night will give them a severe check.

Annuals.—Sow the seed whenever the soil is warm, and the heavy rains are over. Cold and wet ground is not favorable to the germination of delicate seeds. Some new annuals are introduced this year, for which we refer to the seed catalogues. The following list gives some of the most satisfactory and reliable annuals: Sweet Alyssum, Antirrhinum or Snap Dragon, Asters, Clarkias, Convolvulus minor, Dianthus or Pink, of the Chinese and Heddewigii sorts, Gilias, Leptosiphons, Martynias, Marigolds, Mignocette, Nemophilas, Pansy, Phlox Drummondii, Portulacacas, Petunias, Stocks, Tropæolums, dwarf and climbing, Whitlavia, Double Zonias, Candytufts, etc. It is well not to use all the seed at once, but to reserve a part to be sown later, to guard against failures, and prolong the time of blooming.

Bedding Plants.—These, unless one has a greenhouse, are usually obtained from the florists. The leading ones are: Geranium, Verbenas, Lantanas, Fuchsias, Salvias, Ageratum, Cnpeha, Nelrembergia, Gazania, etc., and many others can be had of the dealers, who advertise in this sheet.

Bulbs.—As these pass out of flower, do not remove the leaves, as upon the nourishment afforded by the growth of these depends the flowering of next year. The flowers of Hyacinths, Tulips, etc., may be retained much longer, if they are shaded during the middle of the day.

Box Edging.—Propagate from cuttings set in a shaded place. Clip old into shape and set new.

Carnations.—Set out from the cold frame or greenhouse; tie flower-stalks to stakes; sow seeds.

Climbers.—See that the woody ones are properly secured to their supports. Provide for a supply of the annual ones, by sowing the seeds: Maurandias, Cobæa, Sweet Pea, Canary-bird Flower, Morning Glories, and Cypress Vines, are among the well known and satisfactory annuals.

Dahlias.—Set the roots in a gentle hot bed, or a cold frame, and cover with rich earth. Or if these conveniences are wanting, put them in a warm border, and cover them at night. Remove and pot the shoots from those already started.

Dicentra.—Every garden should have a clump of this. It is the most beautiful of our herbaceous

perennials, perfectly hardy and easily propagated by dividing the roots.

Evergreens.—Plant those of the pine family, as directed under notes for orchard and nursery.

Frames and Pits.—If any plants remain, do not let them suffer from heat and dryness.

Fuchsias.—These make good border plants, if not exposed to too much sun. Tie them to stakes.

Geraniums.—If the plants have been properly hardened off, these may be set out. A fine effect is produced by making a raised bed in the lawn, and putting a row of the variegated leaved ones around the margin, and filling the center with the dark leaved sorts, planted rather closely.

Cannas.—These are fine plants for a mound upon a lawn. Seeds may be started in heat, or roots may be had of the florists at a moderate price.

Gladiolus.—Set the bulbs about a foot apart, and two inches deep. Tie the flower stems to stakes.

Grass Edgings.—Clip as soon as the grass is long enough to cut, uproot all coarse weeds, and keep the margins neatly trimmed.

Gravel Walks.—Keep free of weeds, and roll often.

Japan Lilies.—These most beautiful and hardy lilies are now cheap enough to be in every garden. Set the bulbs early.

Labels.—Have a supply to mark sowings of seeds, and all other things, where it is desirable to record the names of varieties. A smooth pine stick smeared with a little white paint, and written with a pencil before it dries, makes a very good label which lasts well enough for a single season.

Lawns.—Mow evenly, as soon as the grass is long enough to cut. Where the lawn is of much extent, it will pay to get a machine for the purpose.

Mulch.—Give a covering of some kind of litter around newly planted trees and shrubs. The mowings of the lawn may be used for this purpose.

Mignonette.—Sow where it is to grow, as it does not transplant easily. It mixes well with candytuft.

Petunias.—Sow seed, and get plants of the finer sorts from the florists.

Roses.—Turn those in pots into the border. Keep the climbers well tied up. Remove layers made last year. If slugs appear, give them a syringing with solution of whale oil soap.

Tuberose.—Plant the bulbs in rich soil. It is better to get those which have been started in pots, as they are more sure to bloom before frost.

Verbenas.—These give the best effect of color when planted rather closely in masses.

Weeds.—Keep them out of the borders and from beneath shrubs by free use of the hoe, and rake.

Green and Hot-Houses.—This month the houses are usually emptied of all but the most tender plants. The time for bringing them out will be fixed by the warmth of the weather. Give the house free ventilation to harden the plants and prepare them for the change. Roses, verbenas, geraniums and other hardier border plants are the first to be removed. Those which are to remain in pots, are to be placed where they will be sheltered from high winds. The tropical plants which remain in the hot house, will need a little fire heat and should have all the ventilation possible, without too much reducing the temperature.

Cactuses.—These make a fine show in the border or upon a rock work. Plunge the pots in earth up to their rims. Make cuttings, allowing them to dry a few weeks before potting.

Camellias.—Syringe freely. When placed out of doors they should have partial shade. Some florists make a large arbor of lattice work for them.

Cuttings.—Provide for next winter's stock of plants by making cuttings. Many things difficult to strike from hard wood do so readily from the newly formed growth. Ordinarily they are struck in damp sand in partial shade, and the air around them kept close by a bell-glass. The plan of putting them in sand kept very wet, and exposing them to full sunlight is very successful, and it is easily done.

Fuchsias.—Turn out the hardy sorts into the borders and make cuttings of the new growth.

Insects.—It will not do to allow the press of outdoor work to cause any relaxation of the war against insects. Syringe frequently and use sulphur and tobacco fumigations.

Oranges and Lemons.—Give the stems a brushing of strong solution of soft soap to remove the scale before they go out of doors.

Pelargoniums.—Cut back into good shape before they are put into the borders and use the prunings for cuttings to make plants for winter.

Water.—The house should be syringed frequently and the plants ought not to suffer for water.

Fruit Garden.—Whatever planting has been delayed, should be done as soon as possible, as the season is already quite advanced.

Blackberries.—Tie up to stakes or trellises. Cut back to near the root any plants to be set out.

Currants.—These may be removed with safety even after the buds have started. Set out cuttings. Cultivate around established bushes. Watch for and destroy the currant worm.

Grapes.—If the vines were taken up in season and have been kept in a cool place, they may still be planted. Directions for planting were given last month on page 120. Set out cuttings of those kinds which can be propagated without heat. Put up vines to the trellis, and if the buds have pushed, use great care in handling. Keep the new growth of young or old vines carefully tied up to the trellis or stakes, using some soft string. Bass, old yara or rye straw are used for tying. See note on mildew on page 115.

Insects.—The rose bug is one of the great pests of the fruit grower. When grapes are in flower they do much injury. Hand picking is the only remedy. See note in Basket on currant worm.

Layering.—In propagating grapes in this manner, prepare a trench about 6 inches deep, and put the branch to be layered in it and fasten it there. The branch should have been shorted at pruning time to about 6 feet. When the shoots have made a growth of 3 or 4 inches, remove all but the strongest, leaving them about a foot apart, and put a stake 6 or 8 feet high to each. When the shoots have made a growth of about a foot, tie them to stakes, and continue to tie them as they grow. Now cover the layered vine in the trench with about an inch of soil and at the interval of a week or so, add another inch and so on until the trench is filled.

Raspberries.—Manure the vines if it has not been done, cut out weak canes and tie the others to stakes.

Strawberries.—Finish planting of beds. Remove the runners from those cultivated in hills. Pull out the weeds that come up through the mulch, and if there is no mulch, keep the plants well hoed.

Water.—If a dry spell occurs, water newly planted trees and shrubs and mulch them. Strawberries, as they are swelling their fruit, will need watering.

Weeds.—Use the hoe freely to keep weeds out of sight, and stir the soil around the plants.

Cold Grapery.—Last month's calendar gave the treatment of the vines after uncovering them. The vines may be forced or retarded, according to the season and climate. Where late frosts occur, keep the house cool, as it is not desirable to start the growth until it can be pushed without interruption. Keep the air moist by syringing over the vines every mild morning, and sprinkling the floor every morning. The manure placed on the outside borders last fall is to be forked in, or if it was neglected, fork over the bed and give a dressing of manure. When danger of frosts is over, the temperature of the house may be gradually increased until it reaches 85° at mid-day, opening only the upper ventilators. When the shoots have sufficiently advanced to show their character, select the best for fruiting and for next year's wood, rubbing out all the others. The shoots are very tender and great care must be exercised in handling the vines.

The Apiary for May.—Prepared by M.

Quinby by request.—The prospect of early swarms was never better than this season, where the weather has been uniform during the winter and the ground well covered with snow. So little of the clover has been winter-killed, that the flowers will appear several days earlier, and there will be little interval between fruit and clover blossoms. Swarms may be expected as early as the last of the month where this state of things obtains. Should the supply of honey from fruit blossoms be scant through wet and cold weather, inferior stocks with little honey may overtake and throw out swarms before those which had a full supply; they having economized their stores, while the strong stocks consumed their honey by raising drones. If then there should occur a dearth of honey, the drones may be killed to save the rest, and where this occurs in any hive, swarming is indefinitely postponed—but it by no means follows that any such droneless colony will not swarm at all. Should swarms issue just previous to a period of wet and cold, they should be fed, and it will be well also to have a care that light hives do not suffer for a lack of honey when a few days feeding will keep them in good condition. Few swarms may be looked for before white clover is in full blossom.

Before a swarm can be reasonably expected we usually observe an increase of bees, both of workers and drones. The colony makes preparation to provide a queen to take the place of the one which will leave with the swarm, and builds queen cells. These may be seen usually without difficulty by blowing in a little smoke, inverting the hive and examining the edges of the combs. When a queen cell is discovered sealed up, a swarm may be looked for at once, and will be very likely to occur the first bright day. There are usually several queen cells started as swarming time approaches, and should one or more be found nearly closed, it is fair to infer that there may be others quite sealed. Swarms usually issue between 10 and 3 o'clock. Italians, however, may be expected both earlier and later, but never before the bees get well engaged at their day's work. When the queen leaves she takes with her almost all the bees that are left in the hive, except the very young ones, trusting to the absent ones to maintain the old colony. The bees depart loaded with as much honey as each can fly with. The swarm usually settles on some tree or bush not far from the hive, where they will stay usually more than an hour (sometimes more than 24 hours), though in case the sun comes to shine very full upon them they may move very soon. The noise of tin pans and bells does no good whatever in inducing the swarm to alight, though should a swarm move to fly away from its first settling place, the throwing of dirt into it often apparently confuses the bees, so as to induce them to settle again at once. Paint no hives at this season. A hive should contain about 2000 cubic inches of clear comb space, (this is the entire space in a box hive, but in a movable comb hive it includes only the space inside the frames,) and should be scrupulously clean and sweet, or the bees may not stay when hived, and moreover, it ought to be cool when the bees are put into it. It is immaterial how the bees get into the hive provided they are put in or induced to go. They may be jarred into a bag held under them, or into the hive, or any box, or the branch may be cut off and the bees laid upon a sheet on which the hive is placed, into which they may be directed by the hands. They are so full of honey that they can hardly sting if they would (except the Italians). Manage to get every small cluster outside the hive to go in by some means, lest the queen be left out, and subsequently depart with the swarm. When the swarm is hived, place it on its stand and keep it shaded; in fact all hives ought to be roofed or protected from the sun in some way.

It is seldom worth while to put on surplus boxes till dandelions are out of bloom, as the honey stored at this time is of poor color, if not bad flavor, yet it is well to put on a single box to give the bees a place to work. Immediately after, certainly as soon as white clover begins to bloom generally, put on as many boxes as the bees will work in.



Containing a great variety of items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Delayed.—This number is issued later than usual. Just as we were preparing to go to press, the news of the terrible assassination came to hand, and as a mark of respect, business was nearly suspended for more than a week in this City. Even had we not consulted our own feelings, the delay would have been unavoidable.

An Unusual Variety and amount of important business items are found in our advertising columns, which will well repay examination by all readers.

Annual Fair of the N. Y. Sheep-Breeders' Association.—This first Fair of the society is announced for the 9th, 10th, and 11th of May, at Canandaigua, N. Y. Liberal prizes are offered in five classes, for I. American Merinos; II. Fine Merinos; III. Delaine Merinos; IV. Long-Wools; and V. Middle-Wools. We hope our Eastern mutton sheep-breeders will be present in force (as it will be to their advantage), that the Merinos may be convinced that Southdowns, Cheviots, Oxforths, Cotswolds, Leicesters, etc., still live and are worthy of consideration. D. D. T. Moore, of the Rural New-Yorker, offers a prize of \$50 for the heaviest fleece sheared and cleaned on the ground, the age of the fleece, which must be of about one year's growth, and the weight of the animal, both being taken into consideration. A very important premium.

Downing's Landscape Gardening.

—We are gratified to be able to announce that the promised new edition of this work is at length ready. The delay has been occasioned by the necessity for re-engraving the greater part of the illustrations. The work upon its first appearance, immediately took rank as the standard work on the subject upon which it treats. It has that happy blending of pleasant writing with practical hints that characterize its author's productions, and its reissue will be welcomed by all interested in rural affairs. Its illustrations, by Steel plate, Lithograph, and Wood-cut, are numerous, and the work will be an ornament to the table or Library of every possessor. The binding is superior to the previous edition. Price \$6 50. —Sent by mail, post-paid, at this price.

Vineland.—To several inquirers. The "Novel Enterprise" published last month, was not an "editorial" article, but simply an advertisement, as we supposed all would understand from its position in the paper. We neither endorsed nor condemned it. As stated elsewhere in the same paper we do not scrutinize farm or land advertisements very closely, because no man would be foolish enough to buy a farm without seeing it for himself. "Vineland" has some good features doubtless, but we are not prepared from personal knowledge to endorse or condemn it. (See *Agriculturist*, for May 1863, p. 153). We intended to return that way last year, for a thorough personal examination, but were prevented by illness.

Unfair Price of Agricultural Implements.—It strikes us that the prices of farm implements, are very high when we first hear them, and in fact they are when couped in dollars; but we urge farmers not to refrain from purchasing, with the expectation that they will be lower. Let us consider rather, the prices we have, as a class, been getting for what we have had to sell, and how easily we have earned the greenbacks which we must now pay out. Compare the prices of all these things, and of books and agricultural papers too, with the prices which corn, wheat, beef, butter, poultry, etc., have been selling for all winter, and the prices which are likely to prevail, at least if the hopes of the farmers are realized. No man now-a-days can afford to use poor implements. It is unfair to apply a measure to others' prices, with which we will not measure our gains.

Blood and Bone Spavin are very different pathological conditions of the hock joint: the former is a distension of the membranous sack which surrounds and connects the bones forming the hock joint, occasioned by an excessive accumulation of the fluid (*Synovia*), by which the joint is lubricated. It takes its name Blood Spavin, because a large vein passes over the sack on the inside of the hock; the vein has nothing to do in producing the disease, but it sometimes suffers and becomes enlarged by pressure from the sack. The treatment for Blood or Bog Spavin, as it is also sometimes called, is to allay acute inflammation by cooling applications. If this fails, stimulating liniments, and

the various compounds of iodine, with continued pressure, may succeed. The disease is, however, apt to return. *Bone Spavin* is caused by an inflammatory condition of the periosteum, bones, and ligaments of the hock joint, producing more or less disorganization, and generally terminating in a union of the bones, and an enlargement of bone. It is generally caused by violence and over-exertion. The treatment is, in the early stages, to check inflammation, by cooling appliances to the joint, and by rest; this failing, repeated blisters, followed by an ointment of the binoxide of mercury, and other compounds of iodine, and, as a last resort, the actual cautery. We are led to this discussion of Spavin by the receipt of a recipe for its cure, sent by Harriet Garlock, with an interesting account of her horse and her management. She will observe from the above, that the apothecary advised judiciously when he recommended the iodine. He can also supply, when you again require it, as you probably will, a much safer and better blister than the one you have named, if you ask for the Ointment of Cantharides. If this be found too hard for application, add a little sweet oil. The swelling left after the acute inflammation subsided in your horse, was fibro-plastic matter. The iodine assisted nature in its absorption.

What Ailed My Horse?—Geo. Lusk describes minutely the disease by which his horse died. It was characterized by dullness, stiffness, and swellings of the legs, formation of pus in the neck, ulcers on the body—up to which time his appetite was quite good. After some time this changed, and he ate little or nothing—labored heavily in breathing, and shortly after died. A gentleman, on whose veterinary knowledge we place great reliance, says of that case: "After a careful consideration of the case described by your correspondent, I consider it an analogous type to these diseases known as glanders and farcy. These diseases, spoken of as separate, are really one and the same. The disease may remain in a latent state for some time, but little affecting the animal, until excited into an active condition by some unknown influences. The treatment must be strengthening—not depletive. Tonics and diffusible stimulants, with generous and nutritive diet. Such cases are generally fatal, and are also dangerous to man. In all suspected cases of glanders, the animal ought to be isolated, and, if the suspicions are confirmed, destroyed."

Animal Photographs.—There are many difficulties in photographing animals so that a correct and agreeable likeness can be obtained. We all want to see the good points, and are only too willing to have faults, though characteristic, extenuated, even out of sight. The result of this is that animal portrait painters have pandered to the wishes of owners till the public is in a measure satisfied with little headed, big square bodied, slim shanked diminutive hooped caricatures of horses, cattle and sheep, which are absolutely hideous to anybody who knows not what points a breeder values, and to what he would be happy to have his stock approximate, but who only knows animals as the creator made them. The photographer of animals labors with many difficulties. They do not stand still long. It is hard to give them pleasing and natural backgrounds, to make them assume agreeable, spirited attitudes, and especially difficult to place them in such lights, that their best points will come out. Great success in this way has been attained by Ridgeway Glover, of Philadelphia, whose card is in our advertising pages. He has made the subject one of especial study, and specimens of his work in our office will go far towards convincing breeders of improved stock that sun-light well managed will almost "fatten."

Carrots.—SOW SO AS TO MOW THE TOPS.

—Lyman Harrington, of Bennington Co., Vt., writes to the *Agriculturist*: "Many who raise carrots cut the tops off with a knife, which takes much time. To avoid this, the ground should be made very smooth when sown, and kept so, and no stones left on it. When ready to dig, let a good mower cut one swath (say 4 to 6 rows), rake off the tops, bearing heavily on the rake. All remaining uncut will be drawn, or leaved, one way. Then having his scythe very sharp, he can easily cut what remains, by sliding the point of the scythe close to the ground by the side of each row. A skillful man, used to it, can cut and dig from 50 to 100 bushels per day. I have practised it for many years, with much saving of time."

Should Meadows be Pastured?

—The temptation to a farmer to turn his stock into his meadows both in fall and spring is great. But is it not a mistaken policy? If the grass could be allowed to grow after haying time until winter, and then lie and protect its own roots in winter, and, at the same time, slowly rot, the annual crop of hay would be much increased. If the regular pastures give out, provide some fresh cut feed for the stock. The best thing for spring feed is roots; for summer and fall, corn sown broadcast at in-

tervals through the summer, and cul up green, as wanted. Sow a quarter, or half an acre at a time, at intervals of ten days or a fortnight. Grass lands so favored, would require less top-dressing, and less frequent plowing and re-seeding, and the hay crop would be largely augmented.

The Early Shaw Potato.—Mr. J. W. Helme, of Lenawee Co., Mich., furnishes us with the history of this valuable early variety. It is a seedling of the Mercer, and was raised by Mr. Bradley Shaw, of the township of Dover in Lenawee Co. According to Mr. H., it yields equal to the Peach Blow, if grown in rich soil, and is preferred by him both for quality and yield to any variety with which he is acquainted.

The Currant Worm.—Mr. Otis Bigelow, of Onondaga Co., N. Y., gives the following account of the appearance of this pest, and the manner of combating it. It is likely that this scourge will increase the area of its desolation each year, and all growers of currants should be on the lookout for its first appearance. "About three years since, people in this vicinity were surprised to find their currant and gooseberry bushes suddenly deprived of their leaves. On examination we found the bushes covered with a myriad of green worms, speckled with black spots on the back and sides, and about $\frac{1}{8}$ of an inch long when full grown. As soon as the leaves start in the Spring, a fly appears and lays its eggs along the stems on the under side of the leaf, or some of the leaves in the middle of the bush; these soon hatch and devour all the leaves clean, for about a week, when they change their skins to a pale green, and falling to the ground disappear. By sifting the earth under the bushes, they will be found enclosed in little balls of it. In three weeks they come out as flies; the size of a common fly, which they nearly resemble, excepting that they are more slim and have a yellow abdomen. The reproduction of these worms is continued until all the leaves are destroyed.—REMEDY.—Dig up all the bushes that cannot be personally attended, and trim the remainder so as to leave them open and accessible. Visit them at least once every day. Look for leaves with little holes in them. The little holes indicate the presence of the newly hatched worms, which are not seen unless the leaf is turned up, as they always begin on the under side. By destroying four or five leaves on each bush per day the whole may be saved, as only a few leaves are selected by the fly to deposit her eggs. The worms never touch the fruit, and the stripping of the leaves does not prevent a new growth the same season, but these will no sooner appear than they are destroyed."

A Great Poultry Show.—Mr. Barnum (of the Museum) announces a great Poultry, Pigeon, and Rabbit Show to take place at the Museum the last of April. We go to press too early to do more than state the fact. Liberal prizes are offered, under the auspices of the "National Poultry Society."

A Free Advertisement.—Many of our subscribers may receive circulars from the parties named below, who are doing a large business apparently, judging from the great number of documents they send out through the mails. Those who patronize them may be sure of not getting their money's worth. Therefore, beware of Kendrick, Harmon & Co., P. Hoffman & Co., J. M. Percival, Thomas Boulton & Co., Hammett & Co., Fletcher Brothers, Fletcher & Co., Egerton Brothers—all professed lottery dealers. Most of these promise that, if the first package of tickets is not successful, they will send another package in their lotteries for nothing. No doubt of it; a ticket in a lottery for nothing would be as valuable as most of them are. Look out also for the following dealers in "Jewelry," on the prize, or "grab" system: Marriott & Co., Klinghorn & Co., McConnell & Co., A. P. Coburn, etc., etc., and all who promise to give more than a dollar's worth of any commodity for a hundred cents.

The Arctic Cream Freezer.—By request, Mr. Torrey brought in one of these, at the close of the Fruit Growers' meeting, April 12th, and before a large company, repeatedly demonstrated its ability to reduce cream of ordinary temperature to a frozen state in less than four minutes. The society unanimously testified by a formal resolution to the smoothness and excellence of the cream, and the efficacy of the Freezer. For particulars see advertisement in this number.

Good Music.—Messrs. O. Ditson & Co., who advertise regularly in the *Agriculturist*, rightly enjoy the reputation of sending out first class music of every description. Some of the most popular songs and melodies, have emanated from their establishment, and our musical readers who patronize them may rely on having their orders by mail promptly and satisfactorily filled.

Remedy for Kicking Cows.—Cows seldom kick without some good reason for it. Teats are sometimes chapped or the udder tender, harsh handling hurts them, and they kick. Sometimes long and sharp finger nails cut their teats, and sometimes the milker pulls the long hairs on the udder, while milking. Shear off the long hairs, cut long finger nails close, bathe chapped teats with warm water, and grease them well with lard, and always treat a cow gently. She will never kick unless something hurts her, or she fears a repetition of former hurts. When handled gently, cows like to be milked. When treated otherwise, they will kick and hold up their milk. It is quite as consistent to whip a sick child to stop its crying, as to whip or kick a cow, to prevent her kicking while being milked.

Cure for Lice on Stock.—1. Wash thoroughly with strong soap suds. 2. Wet every part of the animal with a strong solution of alum in water, well sopped in. 3. Take of mercurial ointment (*Unguentum Hydrargyri*) a portion as large as a filbert, mix it with five times as much lard, or more, apply it rubbing it in behind the horns on the neck and dewlap and along the spine till all disappears. Keep the animal housed during storms or cold weather, and apply again at the end of a week. The last is a very dangerous remedy if not used with care.

Sheep Pulling their Wool.—A subscriber inquires: "What causes sheep to pull their wool?" It is often attributed to high feeding, and as often to keeping poorly. It is a skin disease, probably caused by some parasite, like the itch, or mange insect, and developed by too much exposure to cold and wet storms, foul yards and sheds, a lack of succulent food, and the want of a good supply of water and salt. There are remedies for the disease, such as a decoction of tobacco water, or mercurial ointment, applied to the skin. But there is some danger in applying it to breeding ewes. A sure preventive is clean apartments well littered with straw, two or three feedings of roots every week, access to clean water and salt, and hemlock or pine boughs, fed occasionally during the winter.

To Make a Ewe Own a Strange Lamb.—Ewes recognize their own lambs by a peculiar odor, and by their voice, color, and form. Sometimes a good ewe loses her lamb, while another one has two. In such instances, it is much better to let the ewe that has lost her lamb have one of the twins to rear, instead of allowing them to suck their own dam, while a good ewe has no lamb. To make a ewe own the lamb of another, tie her in a close pen and put the lamb with her. If she is inclined to butt, or kick it, tie her head to the rack, and her hind feet about four inches apart. If she will not butt the lamb, her head need not be tied. In a few days she will own it, and it will forget its own dam. By putting one of a pair of twins on a ewe that has lost her lamb, she may be saved serious injury from garget. A plan often successful is to remove the skin from the dead lamb, and place the whole, or part of it, upon the lamb to be introduced in its place.

Dipping Sheep—Lalor's Compound.

—A most important operation for the health of the sheep and their freedom from vermin. Where there is the least tendency or cause to fear such, or where sheep have been pulling their wool, make preparations to dip the whole flock. When the sheep have ticks only, within a few weeks after shearing, they will all, or nearly all, be found on the lambs, and these should be dipped, though the entire flock ought to undergo the operation as often as once in two years. The dipping liquors used are tobacco water, arsenic water, and sundry other violent poisons, into which the sheep, especially the heavy ones, must be dipped with great care. We have abundant testimony from those who have used the sheep-dipping compound advertised by Lalor Brothers, of its great efficacy, and of the excellent condition of their flocks. Mr. Lalor informed us of its composition before we took the advertisement. It is, of course, poisonous, taken internally, and painful in the eyes or mouth. Used with the cautions enjoined, it will, we doubt not, remove scab, lice, ticks, etc., thoroughly, without hurting the fleece.

Old Sheep for Wool.—W. Farmer, Jefferson Co., Ind., inquires if old sheep will yield as much wool as younger ones, how many years they may be kept for wool with profit, and if their age can be determined by their teeth? Young sheep that have attained their growth, will yield more wool than old sheep that have lost a portion of their teeth. The front teeth are a very certain index to the age of sheep, until they are eight to twelve years old. As soon as the front teeth begin to fall, it is more profitable to fatten the older ones and keep younger ones for wool.

Stretches in Sheep.—When sheep are fed no roots, apples, or evergreen boughs, they are very liable to costiveness, and when this is extreme, it induces cholera, or "the stretches." A prevention is much better than a remedy. Fattening wethers and ewes that are kept, for the most part, on straw and corn, and oil meal, ought to have a feed of roots, at least two or three times a week, as a preventive, and hemlock boughs may be fed freely to advantage—and the same things are curative, if the disease is already apparent. Two or three tablespoonfuls of raw linseed oil, given clear, relieve ordinary cases. More active purgatives are often used.

Beans for Sheep.—"Subscriber," Portage Co., O., asks: "Are beans good for sheep—for wool, for fattening, and for breeding ewes?" There is no better feed for any kind of sheep than beans, and they are even superior to peas for producing a large flow of milk. Fed to fattening ewes and wethers, one pound each daily, with some hay, corn stalks, and bright straw—or nothing but beans and straw—they will make good mutton in a short time. After ewes have dropped their lambs, feed half a pound of beans daily. Breeding ewes, however, should not be fed with beans until after they have yeaned, as such feed, by producing a great flow of milk previous to parturition, may induce garget. Beans should always be steeped ten or twelve hours before feeding, especially if sheep are aged or have poor teeth.

Dog Laws of New-Jersey.—"J. O." writes: "By the laws of New-Jersey the assessors enroll all the dogs; the bills for sheep bitten by dogs are brought in the first Monday in October, and the amount is assessed on dog-owners"—as it ought to be.

Profit of Sheep in 1864.—"J. O.," Somerset County, N. J., writes: "In the fall of 1863, I bought 28 sheep out of a drove, at \$4.25 a piece; kept a ram lamb of my own, worth \$6, which made the cost of flock \$125. Sold to the butcher 25 lambs, for \$143; 4 old sheep, for \$32, and the buck for \$13. Killed 1 lamb, \$6, and sold 84 pounds of wool for \$64.68, (which was sold too soon, as it advanced 30 cents per pound) making in all \$258.68, which is gross profits, cost of keeping not being deducted. I now have left 24 ewes, which last fall were worth as much as the 28 were the year before, and 21 lambs, which I expect to sell by the first of May for \$8 or \$10 a piece, which will bring the receipts on account of the flock up to \$326, or more.

Syrup from Corn.—J. H. S., Stillwater, Minn., writes that some one advertises to send a receipt for one dollar which will instruct one to make syrup from corn.—Don't do it. If any one has a process of any value he will go into the manufacture himself and not peddle his process for a low price. There are only two ways in which corn syrup can be made. One from the stalks before the grain is ripe, by expressing the juice and treating like sorghum; and the other, from the starch in the grain itself, which is a chemical process requiring a large outlay for apparatus to get a product of doubtful value.

Preserving Butter.—J. H. Becktel inquires for "the best method of preserving butter made in June or July for winter use?" When butter comes hard and yellow, and is well worked, salted, and packed in stone pots, and covered with a wet cloth with a layer of clean salt over it half an inch thick, and kept in a cool cellar, where the air is pure, it will be first rate the next winter. If it comes soft, as it sometimes does in hot weather, and the buttermilk is not all worked out, or if it be not well salted, it will not keep well, and if packed with good butter the whole will probably be tainted before the hot weather is over.

How our Soldiers get Fresh Beef.

Comical Exhibitions.—Among other supplies, a drove of beef cattle is usually kept near each army or division of the army, from which the requisite number is drawn for slaughter, from time to time, and served out in rations. These droves accompany moving bodies of troops, on foot. When there is a "water base of supplies" the animals are taken on transports, usually large steam propellers. The transports are anchored in ten or twenty feet of water, a little distance from the shore; a side-door or gangway is opened, from the main cattle deck, usually five or ten feet above the water. The animals are then crowded against this, and they plunge into the water one by one, often two or three or more at a time, and usually head forward but not frequently sidewise or backward. The animals disappear for a moment, but always come up head first, and at once strike out for the shore, where they land well washed from filth, and refreshed by the ducking, especially in warm weather. Though they look down very wistfully, when about to plunge, they always seem to enjoy it afterwards. The whole performance is very comical and always attracts

crowds of officers, soldiers, and others if near, who look on by the hour. At City Point we more than once saw Gen. Grant among the interested spectators—especially toward evening. Sometimes two or three steamers were unloading at a time, and half an acre or so of well washed cattle accumulated on the shore, before they were started for the herd grounds. Though the tide often run very strong, we never heard of a bullock being lost. Cattle are good swimmers.

Covering Grass Seed.—W. R. Rough, Mich., inquires whether the grass seed attachment to grain drills should be behind, or before the drill? Always behind, and never forward of the tubes, or teeth. If forward of the teeth, a large proportion of the seed will be covered too deep. The rain will always cover it deep enough. Such small seeds should never be covered more than one-fourth of an inch. The seed has not strength to throw up a stem through much depth of soil.

Plaster, or Gypsum.—It requires four hundred and sixty pounds of water to dissolve one hundred pounds of gypsum. It must be dissolved before it can be of any service in promoting the growth of plants. Therefore, see that it is ground as fine as practicable, and sowed early in the season. If ground coarse, and sowed after spring rains have fallen, only a portion of it will be dissolved in time to benefit the young plants. Sow from one to three bushels per acre on young clover. There is no danger from sowing it too thick. On some soils, two bushels of gypsum per acre, and a half a bushel of salt, sowed immediately after spring wheat has been put in, have a good effect on the crop.

Poultry Statement.—J. S. Watkins, Bergen Co., N. J., says he keeps fowls for his own use solely. He began in 1864, with 22 hens and 2 cocks, and lost 8 by disease. "They laid 2,793 eggs, which, at the average 18 hens, was 155 eggs each. They raised 100 chickens, which were hatched from 110 of the eggs. The fowls are a cross between the Black Spanish and the White Leghorn, and the hens will weigh about 4½ pounds each. Every hen wanted to sit at least once, and some hatched two broods during the season."

Fences, Gates, and Posts.—A lawful fence in New-York is 4½ feet high. When repairing rail fences, keep new rails together. If not peeled, always put the bark side down, as they will last much longer than with the bark up. A cheap board fence may be made with three boards, six inches wide, with a ridge of earth in place of the bottom board. Improve rainy days in making gates. A laborer who receives thirty dollars per month, and board, ought to be able to make a good gate in a day, and set the posts and hang it. It will require not more than two hours longer to make a good gate than a pair of bars. By making the gate to turn on the heel stile, instead of iron hinges, the expense will be only a little more than for a pair of bars. Posts and stakes will last many years longer, if well seasoned before they are set in the ground. Charred posts will not last as long as those not charred. The bark should always be removed, as it hastens their decay. A heavy coat of coal tar applied to posts a foot below and a few inches above the surface of the ground, will keep them from rotting longer than anything else, except thorough kyanizing. Posts or stakes made out of the but logs will last much longer than the top logs. But-end or top end down, will make no difference in durability.

Buckthorn Seeds.—"W. A.," Marlboro, Mass.—We have no doubt that the seeds from the berries that have remained since autumn upon the bushes will germinate, as they will do so when exposed all winter to the weather in a box of earth.

Diseased Apple Trees.—J. H. Taylor, Siskyou Co., Cal., says that his apple trees are attacked by a peculiar disease. The bark splits a few inches above the ground, separates from the wood, and ultimately the tree is girdled. It is impossible to tell the cause of this without examining the specimens. As to treatment, we should try heroic surgery. On the first appearance of the trouble, cut out the affected part down to sound wood and bark, and put on a liberal plaster of grafting clay. This would probably be an effectual remedy, if the trouble were caused by insects or fungi.

Yellow Locust for Timber.—Yellow locust grows very rapidly, and the timber is valuable for carriage hubs, for pins and wedges in building ships, for fence posts, etc. It is often planted in vacant places in the woods, and along the highways. When planted close together they grow tall and straight. When standing alone too much of their growth goes to branches. If the seeds were not planted last fall, they must be put into scalding hot water to soften the tough skin, otherwise

they will not germinate the present year. Where the whole ground is planted to locusts, they should be in drills about twelve feet apart, potatoes, beans, or turnips being cultivated between the rows for a few seasons, then thin out the young trees to about thirty inches apart, and prune off the lower branches to make them grow tall. The ravages of the borer have been such in many parts of the country as entirely to discourage the planting of locusts, vine plantations of young trees having been destroyed.

Quince for Stocks.—W. B. Dayton, Hamilton Co., Ohio.—The Angers quince is a variety which originated in a French town of that name. It is distinguished by its rapid growth and is better suited for a stock than the slower growing kinds. Any free growing variety will probably answer as good a purpose, and there are those which are preferred by some nurserymen to the Angers. We have not heard that Rea's Seedling has been tried as a stock. It is valued for the large size and fine quality of its fruit, but is rather scarce as yet.

Manetti Stock.—The Manetti rose, now so largely used as a stock upon which to bud the finer sorts of roses, is a seedling variety, raised by a Signor Crevelli, and named after Signor Manetti, the director of a botanical garden, near Lake Como, in Italy.

Grapes in Spring.—In the middle of last March, there were very perfect Isabella Grapes, as fresh as if just picked, upon our exhibition tables. The specimens are from Mr. John Cole, Staten Island, who states his process as follows: "Select a clear day to cut the fruit, when every berry is perfect. Provide a box made water tight, with the top lid to project over one inch all around to keep water out, then lay in the bunches carefully so that they will not touch one another, until the bottom of the box is filled; then place some strips across the box so as to just clear the bunches, and thus fill up the box. Put the cover on tight to prevent the water from getting in, and place the box in the driest part of the garden, down below the frost." Mr. Cole tried stone jars but did not find them to answer as well as wooden boxes. The grapes would doubtless have kept much longer.

The Isabella Grape.—"A Reader," Bristol, Penn.—There is probably no help for an Isabella vine which will not perfect its fruit. If it has failed for several years in succession, it is best to put a more reliable variety, such as the Delaware or Concord, in its place.

Grape Trellises.—A. Kerl, Illinois.—No doubt that the cheapest vine trellis is that described in Fuller's Grape Culturist and in the *Agriculturist* for August, 1863. If the facilities are greater for making it entirely of wood, the excellent plan of Mr. Knox will be found in the April number of the same year.

Beans.—S. D. Rodman, Niagara Co.: The Early Rachel and Refugee are neither of them valued when ripe, and would not meet with a ready sale. The only colored beans we have seen in the New York markets are a black variety, known as the "Turtle Soup Bean," which is sparingly used for bean soup, and a brownish sort known as French Beans. The demand for either sort, as compared with that for the white beans, is very limited, and confined to the seed dealers.

Onions again.—G. A. Harpinger, Snyder Co., Pa.—Generally onions cannot be raised from seed in localities much south of New York City, but we are unable to designate the southern limits of successful onion culture. In this vicinity and northward, large onions are obtained the first year from seed. Where they will not perfect, sets must be grown. In this case it takes two years to raise the crop. The seeds are early sown thickly in shallow drills about 10 inches apart, and when the crop matures, in July, the little bulbs are spread in an airy room to keep until the next spring.

His Onions Stopped Growing.—A. Pratt, Norfolk Co., Mass., had the growth of his crop of onions checked by drouth, and has a lot of small bulbs, as well as a quantity of "bull-necks," or scallions. The well developed bulbs may be planted as sets, and if any of them throw up flower stems, they must be removed as soon as they appear. A scallion will probably never form a good bulb. It may be well enough to set them out to pull for young onions, or "rare-ripes."

A Fine Floral Show.—Mr. Wm. Chorlton, of Staten Island, has another splendid show of Camellias at our office. The collection includes Prince Albert, Dunlap's White, Binney, Candidissima, Imbriolata, Mrs. Abby Wilder, Landrethli, Speciosissima, Fordii, Myrtifolia, Fimbriata, Wm. Penn. Alba plena, Wilderji, Formosa, etc., and other fine varieties.

The Trumpet Honeysuckle.—"E. E. M.," Minneapolis, Minn., in reference to the range of this plant in the wild state says: "It is found here quite abundantly in three varieties, yellow, scarlet, and dark crimson." As there are other species of *Lonicera* besides the *sempervirens*, it will be necessary for us to see specimens before the fact of the far northern locality for this plant can be considered established.

Buchanan's New Rose.—This new rose which bears the name of Catherine Sprunt, has been cultivated by Mr. Buchanan for several years and is now to be sent out as advertised last month. Rose fanciers will value this as a welcome addition to the list of yellow Tea roses, as it has all the good qualities of its parent, the Safrano, with a much better color.

The Chinese Primrose.—Eliza Preston. This is a biennial and suited only to green house culture. It is usually raised from the seed.

Extermination of the Wild Morning Glory.—R. J. Kelly, Clark Co., O., says, that this, which is a troublesome weed in some parts of the West, may be exterminated by turning hogs into the field. He had a lot badly infested and the hogs rooted them out.

Chickweed.—Miss M. E. Coolidge. This occurs "as a nuisance" only in cold and wet soil, and its presence is a pretty sure indication that draining is needed. In old gardens it will frequently form a complete mat over the surface in spring and fall, and is so tenacious of life that it will flourish when every other plant is dead from the cold.

Unseasonable Insects.—Mr. A. T. Frylick of Hackensack, N. J., brought to our office in February, a box containing grasshoppers, all "alive and kicking." He states that although there was snow upon the ground these insects were around his house in myriads. The question is: where did they come from, and what becomes of them?

Large Yield of Squash.—S. T. Ward, Middlesex Co., raised from two seeds of Honolulu variety 1,055 lbs. of squashes, and asks who can beat this.

Death of an Extensive Farmer.—William Wickham Mills, of Smithtown, Suffolk Co., L. I., died on the 6th of January, in the 69th year of his age. He was one of the largest and most prosperous farmers on the Island, having inherited the family estate of 1500 acres, which had never been deeded. This he increased to over 3000 acres. Mr. Mills was successful as a stock breeder, famous for his fine horses and neat cattle, and, we believe, was once President of the old Suffolk County Agricultural Society.

Difficult to Answer.—A gentleman in Ohio writes: "Please inform me how, at the present prices of produce we can realize the largest profit next fall from one acre" a description of which follows. This is a specimen of the many unanswerable questions which come to us. Aside from the difficulty of seeing how the present prices of produce are to be a guide to conclusions, there are many others in the way. If there is but one acre, it will of course yield the most as a market garden, and the articles to be grown will depend upon the facilities for disposing of the product. The most profitable piece of land we ever knew of, bore three crops the same season; lettuce in the spring, which was out of the way in time for tomatoes and celery. An acre of land devoted to any of the field crops will not amount to much at any rate, but if one has the time to make a garden of it, it can usually be made profitable. Cabbages might pay better for either feeding or marketing than anything else, and peas or lettuce might be taken off first.

Loaning the Agriculturist.—A subscriber in Charlestown, Ind., asks if it is right to loan his paper to his neighbors, and complains that his numbers get worn out, while those who borrow them receive for nothing all the benefit which he pays for. This is a question which every one must decide for himself, as in all other cases of bestowing charity. If alms-giving encourages laziness it becomes wrong, while properly exercised it does great good. We should cheerfully loan the paper to worthy people who were unable to pay for it, and to those who were able to take it and did not, we should loan this copy with this article marked, and probably the trouble will cease.

Todd's Young Farmer's Manual.—The 2d and 3d volumes of The Young Farmer's Manual are now in the printer's hands, and will be given to the public before long, uniform with what must now be called Vol. I. The 2d is on—How to Make Farming Pay. The 3d—On The Cultivation of Various Crops.

A Hint to Law-Makers.—W. G. G. Gratacap sensibly suggests a source which has been overlooked in the framing of our revenue laws. As numerous two-legged marauders, without feathers, persist in killing his two-legged feathered friends who destroy the insects which prey upon his fruit, he asks that there be a tax on promiscuous shooting, as well as upon useful employments, and suggests that the place for those who are so fond of pulling the trigger is at the army front. Farmers, doctors, picklers, and all the curing professions are taxed, and we do not see why the killers should go free. Tax the bird destroyers.

About "Earth Glasses."—A "Dr." Andrews sends out circulars offering for \$10 and 25 three cent stamps, to send a pair of "Earth Glasses," by wearing which he says one "can see into the ground and through rocks, rubbish, water, &c., just the same as we usually see objects on the top of the earth, or as Owls, Bats, &c., see at night." The *Agriculturist* is furnished for \$1.50 per year, and with it any one can see through this and many other similar humbugs. Don't be swindled by "Dr." Andrews, or any of his class.

Mangoes.—"Subscriber," Delaware County, Pa.—The pickles called mangoes are unripe muskmelons, about the size of a large orange, stuffed with chopped cabbage, horseradish, mustard seed, allspice, and any other condiments that may be fancied.

Hard Soap.—Several contributors write that having tried the recipe (No. 1) for making hard soap published in the March *Agriculturist*, they found it to produce a good article, but not in as large quantity as there represented. Instead of 40 lbs., only from 9 to 15 pounds are reported.

Onion Sower Wanted.—W. Jackson, Oneida Co., N. Y., inquires for an onion seed drill as described by J. Dennis, writer of Essay No. 3, in the pamphlet on Onion Culture. Those having the article for sale should advertise it.

Smoked Meat Packed in Salt.—"S. W.," of Oyster Bay, writes: "In the March 'Basket' you recommend packing smoked meat in dry salt. I tried it one year; the salt attracted moisture, and kept the meat soft; hence, when exposed, the flies troubled it. Since then, I have hung it in a perfectly dark, dry room, and it has kept satisfactorily."

Forty Million Newspapers.—The "American News Company," of this city, which supplies dealers throughout the country with newspapers, magazines, books and stationery, reports about forty million newspapers as having been distributed by the 70 employees of the Company during eleven months of last year. In that time the receipts amounted to \$2,226,372, and the packing paper and twine cost \$12,000!

Best Kind of Pumps.—Several subscribers have inquired for "the best kind of pumps?" For a pump out of doors, the common chain pump suits us better than any of the same price, for wells of moderate depth, as water will not freeze up in it. When the combined suction and lifting pump is used where water will freeze, careless people will not always raise the handle to let the water down. For this reason, the pump is often frozen up and the pipe bursts. If a well be deep, and a small vent hole be made in the pipe of a lifting pump, above the piston, the water will run out sufficiently before it freezes.

Mother's Picture Alphabet.—Messrs. Carleton & Porter have issued a most beautiful volume, designed for small children just beginning to learn to read. It contains 56 pages considerably larger than a large school atlas, with a splendid full page engraving for each letter of the alphabet, and a page of simple words in rhyme opposite—the whole well calculated to "stimulate investigation, improve the taste, and give pleasant and instructive employment." It is superior to any thing of the kind we have seen in this country. It has been about a year in preparation, and the engravings alone cost nearly \$2000. The price is \$2.

Corn Husks Wanted.—Some of the publishers of newspapers in New-York City intend to test the feasibility of making paper from corn husks or shucks, and they advertise for a supply of the material. A notice given in the daily papers says they wish "proposals from every town, county and State in the United States for supplying clean, sound and well dried husks, as the same are stripped from the ripe corn—the husks to be baled in even hundreds of pounds, and delivered at railroad stations." Proposals to be addressed to Mr. D. H. Craig, Agent of the Associated Press, N. Y. City.

How to Cultivate Sweet Potatoes.

—The following, from Mr. J. C. Thompson, Staten Island, came too late to be used in the notes on page 154, and we give it here. Mr. T. is one of the most successful growers in the vicinity of New-York. He requests us to say that he has no plants for sale: "For garden culture, fine, well-rotted manure is deposited in strips three feet apart, upon undug ground. Make the ground fine between the rows of manure, and throw the pulverized earth upon the manure, thus forming sharp ridges about ten inches high. This should be done in April, or early in May, when the ground is in good working order. Let it stand till planting time,—from May 10th to June 10th,—then rake off the sharp edge of the ridge, so that it is a little flat on top. Set the plants 12 to 15 inches apart. When they have run 10 to 12 inches, break down the ridges. Use a fork, and run it down quite close to the plants, throwing the earth into the furrow. This leaves the plants standing on a thin ridge of earth. Then, with the edge of the fork, knock out the earth between each plant. Each plant will now stand upon a separate mound. This process cleans them thoroughly, and should be performed in dry, hot weather. Make the earth which has been removed as fine as possible, and reform the ridges in an oval, or crowning shape, on top. This moving and fineing the earth the second time prevents its caking, and gives just the condition required,—soft soil at the sides. As the vines run, lay them on top of the ridges once or twice, and keep out weeds, and they will soon cover the ground. Treated in this way, dry weather does not affect them. I grew them at the rate of over 400 bushels to the acre last summer."

To Hive a Swarm of Bees.—Mr. Jones of Dutchess Co., N. Y., communicates a convenient way of hiving a swarm of bees. He says: "Take a long pole and make the small end bulky by wrapping paper around it, making it about as thick as a man's arm, and half as long; then bind a black cloth around it, (I draw an old woolen stocking over it), and secure it with a cord, then when the bees are swarming, as soon as they attempt to settle, put that end of the pole in the place where they are about lighting, and usually they settle on it immediately, but should they persist in settling on the limb, or whatever it is, jar it, so as to disturb them, and they will leave it for the pole; then lay it gently down and set the hive over them. Sometimes when fastened pretty firmly on the pole it is expedient to shake it a little to make them leave it for the hive. We have tried this plan for years, and have seldom failed in bringing them down."

Skilled Labor for the Farm or Garden.—American farmers need labor, and pay a high price for it. They are obliged to put up with a very poor kind, and almost all of this foreign. We have long needed the ability to select from the crowded labor market of Europe just such men and women as we want, without going there. There are thousands of good farm hands, shepherds, herdsmen, etc., gardeners, and young men, with or without families, of every craft, ready and anxious to come to free America, and would, did they know that homes, with steady employment, are sure when they arrive. A company has been formed to do this really benevolent work, which bids fair to be profitable to the company, and of great benefit to all who import labor through its agency. We have watched this matter with interest from its inception, and know it to be in responsible and excellent hands. Persons who have been brought out to this country, selected by the workmen's committees and agencies, with which the company is in connection, have given great satisfaction. See last page of the April number.

Refrigerators.—Housekeepers who do not have a constant supply of ice on hand during warm weather, are at their wits' end to preserve meats, fruits, etc. Those who use ice, and keep it in home-made contrivances, are still very far from enjoying all its conveniences and advantages. A good refrigerator is essential, for convenience, for economy of ice, for security in many ways. There are many forms, but none more philosophical or handy than the one advertised by Lesley & Elliott,—the "Polar Refrigerator." This maintains a dry and cold atmosphere, preserves the ice from contact even with impure air, the water from the ice collecting in a reservoir, while the situation of the ice-holder in the middle divides the space into two chambers, which are each furnished with locks. One side may thus be opened without affecting the temperature of the other. We speak from a year's experience in using one.

Lloyd Maps.—H. H. Lloyd & Co. have sent us a number of excellent and well-finished large maps, including those of the United States, of New-York, of New-Jersey, etc. We have already spoken favorably of the reliable character of this house. See their advertisement. (Note the initial letters H. H.)

The Great Bereavement.

Before these words reach the eye of the reader, all that was mortal of ABRAHAM LINCOLN, will have been laid in the earth. We do not propose to write his eulogy, for it has been spoken in every loyal dwelling throughout the land, and the private grief in every household, not less than the ostentatious mourning of this great City, with its drapery of black, and the almost total suspension of its traffic for many days, tell how universal and sincere is the sorrow of the people. Probably never did the death of any one man come to the hearts of so many as a personal bereavement. Without brilliant gifts or great acquirements, of humble birth, and no greater opportunities than are open to every farmer boy who reads this notice, he had a greater share of the love and trust of the people, than was ever possessed by any single individual. The general deep grief at his death enables us to see the great lesson of his life: that sincerity of purpose, a determination to do right, and a kindness of heart, ennoble the highest as well as the humblest. Without these, ABRAHAM LINCOLN would have been officially mourned as the President, but being true, just and kind, all good people grieve. We can not better express our estimate of the Nation's loss, than by recording the just portraiture of this greatest and best of American citizens, in the words of a distinguished clergyman:

"Our beloved President, who had enshrined himself not merely in the confidence, the respect and gratitude of the people, but in their very hearts, as their true friend, adviser, representative and brother; whom the nation loved as much as it revered; who had soothed our angry impatience in this fearful struggle with his gentle moderation and passionless calm; who had been the head of the nation, and not chief of a successful party; and had treated our enemies like rebellious children, and not as foreign foes, providing even in their chastisement for mercy and penitent restoration; our prudent, firm, humble, reverential, God-fearing President is dead!

The assassin's hand has reached him who was belted round with a nation's devotion, and whom a million soldiers have hitherto encircled with their watchful guardianship. Panoplied in honesty and simplicity of purpose, too universally well-disposed to believe in danger to himself, free from ambition, self-consequence and show, he has always shown a fearless heart, gone often to the front, made himself accessible to all at home, trusted the people, joined their amusements, answered their summons, and laid himself open every day to the malice and murderous chances of domestic foes. It seemed as if no man could raise his hand against that meek ruler, or confront with purpose of injury that loving eye, that sorrow-stricken face, ploughed with care, and watchings and tears! So marked with upright patient purposes of good to all, of justice and mercy, of sagacious, roundabout wisdom, was his homely paternal countenance, that I do not wonder that his murderer killed him from behind, and could not face the look that would have disarmed him in the very moment of his criminal madness."

Fourth Annual Strawberry Show.

The success of former Exhibitions has induced the Proprietor of the *Agriculturist* to hold another Show of Strawberries the coming season, under the auspices and direction of the Fruit-Growers' Meeting. At a recent meeting, a Committee, consisting of R. G. Pardee, Wm. S. Carpenter, C. Taber, T. Cavanagh, and G. W. Huntsman, was appointed, to make arrangements for the Exhibition. The Committee, in order to accommodate early and late varieties, decided to hold Exhibitions on June 8th, and on June 15th, the two days forming one Exhibition. The fruit must all be on the tables by one o'clock on the days above mentioned. The Secretary of the Fruit-Growers' Meeting will be in attendance to take charge of the fruit. At one o'clock the doors will be closed to allow the Judges to make their examination, after which they will be thrown open to the public. The Judges will report after the second Exhibition, and will make the awards to the best fruit shown on both occasions. The following gentlemen have been selected as Judges: S. B. Parsons, Chas. Downing, B. C. Townsend, S. B. Conover, J. W. Degraw.

SCHEDULE OF PRIZES.

- 1.—Best Strawberry, new or old, size, beauty and excellence considered.....\$5
 - 2.—Best 12 approved varieties—(1 pint each)..... 5
 - 3.—Second do..... 3
 - 4.—Largest and best collection of Strawberries..... 5
 - 5.—Best show of Strawberries in bearing (on plants)..... 5
 - 6.—Best market variety—(two quarts)..... 3
 - 7.—Heaviest three berries of one variety..... 2
 - 8.—Best pint White Strawberries..... 1
 - 9.—Best pint Alpines..... 1
 - 10.—Best new seedling, fruited at least two years, but never offered for sale or exhibition, a bearing plant to be shown..... 5
 - 11.—Best collection of the newer imported varieties..... 2
 - 12.—Best show of Strawberries grown on a city or village lot (25x100 feet)..... 2
 - 13.—For the best pint of *Agriculturist*, Russell's Profit, Brooklyn Scarlet, Montic, Col. Ellsworth, Triomphe de Gand, Wilson, Hovey, Buffalo, Burr's New Pine, and Hooker, \$1 each..... 14
- C. TABER, Sec. of Com.

The Strawberry Plants Sent.—The distribution of these by mail began April 3d, and to-day (April 21) we have sent off the last applied for to this date—a little sooner than we expected, as the season is fully a week earlier than usual. Above 20,000 of these have been mailed in turned wooden boxes, made for us by Newton & Thompson, of Brandon, Vt. The others, going to clubs, or in parcels of four or more plants, have mostly gone in paper packages. In both cases, the plants were first enveloped in damp moss, and then wrapped in oil-cloth. Those sent this spring, are, of course, smaller than those distributed in autumn, as those had a longer growth, but these now sent are vigorous and well-rooted. The boxes are partially an experiment, but from our trials of keeping plants in them in warm localities, and for several days, and even weeks, we have great hopes of perfect success. If those thus packed now all go in good order, the plan will be an excellent one, and must come into general use. We have sent plants to all new subscribers (and those failing last autumn) who have applied for them, and forwarded the five cents for postage, packing, etc. Further applications now coming in will be filled daily.—N. B.—A plant will be sent to every new subscriber now received before the plants become too far advanced to take up, if the application be made, and the usual five cents be forwarded with the subscription. These plants, thus offered, are each worth, at the market rates, half the subscription price. Any person forming a club, or filling up a previous club to twenty subscribers, will receive a dozen plants, sent post paid.

Flax and Hops—Very Valuable Information.—These Manuals have been prepared from the Essays on these subjects, with many instructive engravings. That on the Culture and Management of Hops is ready for delivery. It contains the recorded experience of eleven practical hop-growers, to three of whom the prizes were awarded. The Flax-Book, containing about 64 pages, will consist of the seven Prize Essays, and the gist of some twenty more, the amount of labor required in its preparation has delayed it a little, but it will be ready for delivery soon after the 1st of May. These pamphlets will each constitute the most complete hand-books for the American farmer ever published on the subjects of which they treat respectively. They are fully illustrated. Price of the Hop Culture, 40 cents; of the Flax Culture, 50 cents. They will be sent by mail post-paid, at this price.

The Practical Farmer.—J. T. Mapes and others, ask what has become of the Practical Farmer. It died months ago, there not being a demand for that particular style of journal.

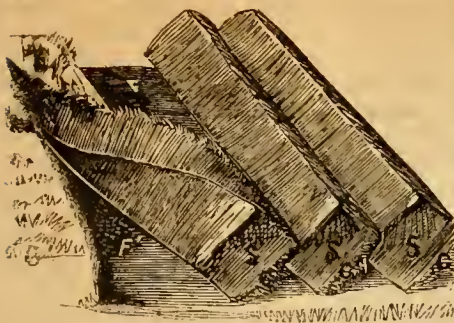


Fig. 1.—LAPPED FURROW SLICES.

Plowing Sward Ground.

There are three ways of turning under a sward in common use, which we propose to consider briefly. They are known as "lapped-furrow plowing," "flat-furrow plowing," and "plowing with the sod-and-subsoil plow," which ought to be called "sod-and-deep-soil plow," for they are not subsoil plows in any sense in which that term is properly used.

HOW TO PLOW WITH LAPPED FURROW SLICES.

This operation is illustrated by figure 1, in which the slice is shown as it would appear if the plow were withdrawn from the furrow. The slices being about 12 inches wide, 7 deep, and lapping about 3 inches. *S, S, S* are the slices; *G, G, G*, the grass sides; *F*, the old furrow; *F'*, the new furrow. To turn lapped furrow slices, if the team be horses, adjust the traces so that the whiffletrees will just clear their heels when the team is turning round. Change the land pin, dial clevis, or the index at the hind end of the plow beam, whichever may be attached, until the plow will run level and true directly after the team. The first furrow will necessarily be turned flat. In turning the second, drive the team close to the last furrow slice and lean the plow handles to the left until the furrow slice will just lap a little, say not more than an inch on the one turned first. If the double whiffletree, or "evener" be more than thirty two inches from the middle to the point where the whiffletrees are attached to it, it will be better to shorten it, as it is impossible to make some plows run right by adjusting the clevis, if the double whiffletree is a little too long. If it is so, and the plow is adjusted to cut a furrow slice eleven or twelve inches wide, the plow must move more or less sidewise, which makes it hold harder and draw harder.

After one round has been plowed, the plow must be adjusted very gradually to cut a little

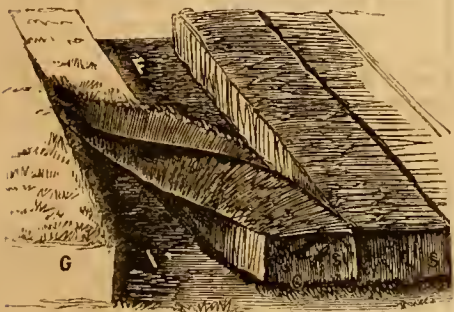


Fig. 2.—FLAT FURROW SLICES.

wider or narrower, deeper or more shallow, as may be required to lap the last turned furrow slice about three inches on the other. The plow should always be held as erect as practicable. If the furrow slice be left standing too much on its lower edge, the plow must be adjusted to run more shallow until it will turn the

slice just right, or it must be made to cut a wider slice and of the same depth, in order to turn well. The form of the plow will always determine which of these ways may be adopted. If the mold-board be of such a form as is not calculated for turning deep furrows, the plow must be adjusted to run more shallow and to cut narrower until it will turn the slices in the desired position. It is always essential when plowing sod ground either with lapped or flat furrow slices, to have the plow cut a certain depth and width in order to turn well, which must be determined by the form of the mold board. The most desirable form of a plow for turning lapped furrow slices is wide at the base, and proportionably narrow at the top of the mold board, with a sharp coulter or a broad and sharp wing on the point, for cutting the furrow slices entirely loose.

HOW TO TURN FLAT FURROW SLICES.

The "flat furrow" involves a complete inversion of the sod, as shown in fig. 2, which is particularly desirable on light loamy soils, where very rapid decomposition of the sod is not sought.

For turning flat furrow slices, the plow should be adjusted as for any other plowing, except the coulter should be set so as to cut under a little instead of straight down; and the clevis must be set so that the plow will cut not quite wide enough when the handles are held straight. In plowing, the handles must be inclined more or less to the right. A plow having a narrow

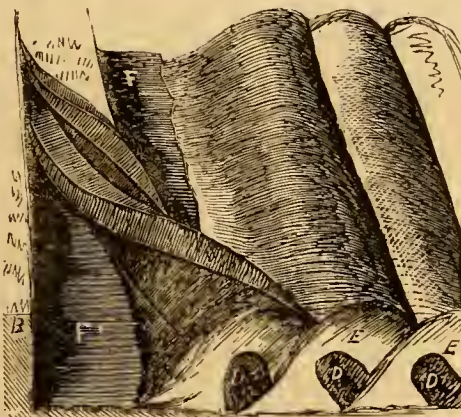


Fig. 3.—DOUBLE FURROW SLICES.

base and broad at the top of the mold board, is desirable. The width of the furrow slices must be greater in proportion to the depth, especially when turned with certain plows. With some plows it is quite difficult to turn a flat furrow, while with others, either flat or lapped slices may be turned as described. When a plow runs seven or eight inches deep in order to turn the slices flat, it must cut from fourteen to sixteen inches wide. A skillful plowman will soon learn how to adjust to turn a flat slice. But, where it is desirable to plow much land with flat furrow slices, a plow should be obtained that is better adapted to turning flat, than lapped furrows.

PLOWING WITH THE SOD-AND-DEEP-SOIL PLOW.

These plows are familiarly known as Michigan, or Double plows. They include all those plows which have a small plow attached to the beam in front of a large one, and are or should be used only in deep soil. The engravings (figs. 3 and 4,) illustrate the working of these plows when cutting a slice about as deep as wide. The little plow, or "skimmer," as it is appropriately termed, cuts a slice of turf about half the width of the furrow and turns it over flat, laying two grass sides together as in *C*, fig. 4. Then

the big plow follows, turning this doubled up sod into the bottom of the furrow and burying it (*D*) under the loam (*E*). When a proportionally wider furrow is plowed, the same effect

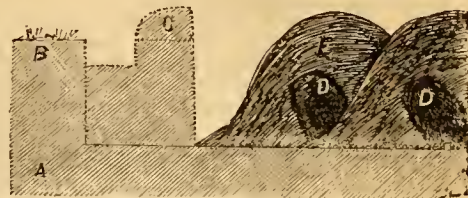


Fig. 4.—SECTION OF FIG. 3.

takes place, but with less regularity. If, however, the slice cut is so narrow that the skimmer slice is turned off into the furrow, *F*, then the sod is buried flat in the bottom of the furrow. Thus used these plows are very useful in a sort of trench-plowing, where it is desirable to bury the top soil, or a dressing of manure, 12 inches or more beneath the surface. The top soil may be quite deeply and thoroughly worked without stirring the sods or manure.

Draught of Heavy and Light Plows.

The momentum of a plow in its passage through the soil is not an appreciable force. There is no advantage arising from the use of a heavy plow, from its relieving the team in overcoming obstacles. On the contrary, there is considerable disadvantage in the draught of a heavy plow, as every unnecessary pound absorbs a certain proportion of the effective muscular force of the team. If a plow weighing one hundred pounds, which is heavier than many good plows, be sufficiently strong, the addition to its weight of thirty or more pounds will tax the team to haul that unnecessary weight from day to day, to no purpose. A dynamometer (or draft-measurer) is not delicate enough to indicate the difference which there actually is between the draught of light and heavy plows. If a plow cuts a furrow slice one foot wide, then in plowing one acre, if it weigh thirty pounds more than is necessary, it will absorb an amount of the effective force of a team sufficient to move 1,980 lbs., a distance of one eighth of a mile, dragging it along on the ground. These facts lead us to discourage the use of unnecessarily heavy plows, out of regard to the teams, if not to the plowmen.

The Agricultural Department.

This concern, which seems to be a nondescript hybrid between a newspaper office and a seed shop, still manifests its tenacity of life. It still performs its functions as they are understood by the individual at the head of the establishment, and its monthly reports and packages of seeds are persistently issued. The "monthly report" for March is before us, and taken as a specimen of a Government Agricultural paper, which is printed out of the taxes of farmers and others, and sent "free, gratis, for nothing" to the friends of Members of Congress, it is as good as could be expected. The spirit of "hifalutin" still lives and spreads itself in an article on the grasses, where we have quotations from the Bible, Ruskin, and the Highland Agricultural Society of Scotland, strung together by the finest kind of writing. In proof of which see the following specimen:

"What country is more adorned than that which is covered with the grasses; the hill-sides clothed in their green vestment, and the more

level meadows of mingled grass and flowers, giving promise of the abundant hay harvests, whilst the wooded crests rustle their leaves to the passing breezes, and protect the farm stock, with their deep shades, from the mid-day sultriness? And what man fitted for country life but finds one of his highest and purest pleasure when, of a Sabbath day, he walks among his stock grazing on sunny slopes covered with green carpets, and adorned with the flowers of May and the yellow dandelion? His cows, fragrant with the grasses they have eaten, repose beneath the shade of the trees, and his fleecy sheep gather around him, testifying their affection for him who provides these pastures and guards them from danger. Well indeed might the angels rejoice, as, contemplating the Almighty power, they beheld the dark land clothed in living green, when the Creator commanded it to bring forth grass, the food of the nobler and more useful animals that were to follow."

Now that is what we call "pooty tasted." This is not a country newspaper nor a school-girl's composition we quote, but an official document, emanating from a Department of our Government, printed on government paper at government expense—or rather, reader, at your expense. When some future D'Israeli makes up the "Curiosities of American Literature" he must not overlook the publications of the Department of Agriculture. The attempt to issue an agricultural paper at Washington being a failure, its efforts at conducting a government seed business are not the less so. While we frankly admit that the seed shop is a decided benefit to those who have gardens and truck patches around Washington, as the proprietors of these can get seed without cost to themselves, the concern is to other people a nuisance. A gentleman of our acquaintance was informed by the Department that it had sent him a valuable collection of seeds. Being on the lookout for novelties, we requested him to show us the parcel when it arrived. The "valuable package of seeds" came and here is a list of its contents: Double Curled Parsley, Tuscarora Corn, Apple Pie Melon, Flack's Victory Pea, Long Red Mangel-Wurzel, Tuscarora Corn (this being so "valuable" it was duplicated), Improved Long Orange Carrot, Large White Lima Beans, White Turuip Radish, Mountain Sweet Watermelon. Now, with the exception of Flack's Victory Pea—which by the way is the wrong name—there is not a thing which may not be bought at any country store, out of the most meagre assortment of Shaker garden seeds. This is a fair specimen of what the Department does in the seed business. The Department knows that it does not meet the expectations of the agricultural community, and it tries to make capital among agriculturists by this kind of seed distribution. Knowing the influence of the local agricultural societies, the Department makes them the special recipients of these "valuable seeds." We have in mind the experience of a friend, who was Secretary of one of these societies, in one of our best agricultural communities. From his official position, our friend was inundated with these "valuable seeds" by the wheelbarrow load, and finding that he could not get the members of the society to take the old stuff from that Philadelphia Seed store off his hands, he had to take some trouble to get rid of it. A place was hired in a store in a neighboring town and stocked with these "valuable seeds" which were sold for the benefit of the society, while the grain seeds he used to feed his chickens, and very fat chickens he made at Uncle Sam's expense. A system so useless, so stupid, and so injurious to the seed dealers of the country could not be persisted in, by any

one but the present head of the Department. We can scarcely take up an agricultural paper without finding expressions of disapprobation in regard to the mismanagement of its affairs. The *Prairie Farmer*, whose editor has recently passed some time at the Capital, says: "Not fully knowing the facts of the case, and wishing to do no harm from over-zeal, we have waited until now for our say, and after a week spent in Washington, in free intercourse with many who are familiar with the institution, among them many members of Congress (who would demand the removal of the Commissioner, if they thought such a demand would avail anything), and from personal observations, we have been compelled to the conclusion that the Department can and ought to have a more competent Commissioner, and one more acceptable to the agricultural people of the country." The agricultural press throughout the country has expressed the wish of the agricultural people that this thing shall be reformed altogether. Eminent and scientific men and influential members of Congress are with the agricultural community in this matter, and we doubt not that when the weightier national matters have ceased to occupy the attention of the Executive that he will give heed to their remonstrances, and a person who is not suited to the position will be no longer kept as an encumbrance on the working of the Department. Should all these fail it only remains for the people to take the matter in hand and demand of their representatives that the Department shall have no funds to squander, or that it be abolished. Congress has given money enough and the Department has an efficient corps of subordinates, all that is needed is a head.

How to Plant Potatoes.

Potatoes require different management on different soils. If planted as deeply on heavy soils as on those light or sandy soils where potatoes are often made the staple crop, the yield would not be so great, and much more labor would be required to dig them. When potatoes are planted on heavy soils in sod, it is a good way to plow the ground with lapped furrow slices, and to drop the sets in the channels formed by the lapping of one slice on another, which will be equivalent to planting the potatoes 2 or 3 inches deep. The plowing must be performed in a workmanlike manner, with straight furrows, 6 or 7 inches deep. This will require a good plow with a sharp point, a sharp and well-adjusted coulter, and a good plowman. With a reversible mold board plow, one should begin at the side of the field and plow back and forth until it is finished. With a common plow it is best to strike out lands six or eight rods wide, to have few dead furrows, leaving the headland about ten or twelve feet wide.

If it be desirable to have the rows 30 inches apart, which is far enough for potatoes, adjust the plow to cut a furrow slice ten inches wide and five or six inches deep. This size of furrow slice will be of good proportion to turn well. The ground should not be harrowed after plowing. If it be desirable to have the rows two ways, the ground may be marked across the furrows with a light horse-marker, or with a log chain. A skillful workman will drop them in straight rows without a mark, walking across the furrows. When the ground is not in sod, plow with narrow furrow slices, harrow, roll if there be lumps, mark out with a small plow, and drop the sets as directed for sod ground.

Whenever the place for a hill is not deep enough, the man who drops the sets may press each one deeper into the soil with his foot. When the drills are not too deep it is well to always step on the sets as they are dropped.

How to Cover Them.—When the sets are dropped as directed, they may be covered expeditiously with hand hoes. But the covering may be done very much faster and easier with a horse and rude contrivance made in the following manner: Fasten a chain to each end of a piece of plank about four feet long and eight or ten inches wide; hitch a horse one side of the middle of the chain, and drive him between two rows, drawing the plank sidewise after him, with a man standing on it. This will cover two rows at a time very well. Where the ground is moderately mellow, and not stony we sometimes turn a harrow upside down, using two horses to cover three rows at once. The crotch of a tree drawn either end foremost, makes an excellent implement for covering potatoes, as it may be made large enough to cover four rows at once, if the soil is not too hard. But on heavy sod ground just plowed, the plank above described will be found most effective.

Relative Profits of Hog and Cattle Raising.

The constant sale off the farm of animals which were grown upon it is one of the most surely and thoroughly exhausting practices, for farmers thus remove just those elements of fertility most readily exhausted and most expensive to replace. A correspondent, "J. S. B.," of M'Henry County, Ind., writes in regard to the so-called "hogging" system of the West, as follows below. At the East hogs occupy a very different position, being emphatically manure makers, and converting more inert vegetable matter into good manure, than any other kind of stock.

"It appears to me that the comparative advantages of hog-raising and cattle raising are not fully understood, out here in the West. Our farmers are looking to immediate results—to the amount of money put into their pockets, rather than to the condition of their farms, and the improvement of their lands. My observation is, that although hog-raising puts money into the pocket of the farmer for the present, it permanently damages him more than enough to cover all his present profits. Dr. Franklin's maxim, that continual taking out and never putting in will soon find the bottom of the meal tub, is applicable to the land, which must necessarily be run down by continual cropping, without making proper returns. The hog consumes next to none of the rough feed of the farm; must have the grain, the corn in the ear; he eats neither the stalks of the corn, the straw of the wheat, nor hay, but he must have the best of every thing. A farmer in this vicinity, who is a great hog-raiser, when asked by a neighbor how he always had such good hogs, replied that he always fed his hogs with a "corn shovel,"—that is, he gave them plenty of grain. Another who is equally famous for fine horses and cattle, gave as the reason of his success, that he always rubbed his horses off in the morning with locks of hay left in their mangers. Generous feeding in both cases. The cattle and the horses consume the rough material raised upon the farm, converting it into manure to be returned to replenish the exhausted soil, while the hogs, as treated in the West, make little or no manure, and consume a greater and more important and valuable part of the crops

Thus it is that our western farms are fast being depleted, losing all of their virgin richness by our persistent "hogging." The land of the above mentioned hog-breeder, is a fit illustration of this. Upon three farms he owns, there is but one gate and not a single pair of bars. His land is exhausted so it will not bring half a crop of corn. Year after year the same fields have been worn, and now they look white and barren; yet he is said to make money. His neighbor, the cattle breeder, can at any time get double the price for his land, simply because he has not "hogged" his farm. Is not the conclusion just that hog-raising, although it may bring present gain, will result in permanent injury, and that the western farmer through sheer exhaustion of his lands, will be compelled to resort to cattle and sheep raising in imitation of his eastern neighbors, to recuperate the exhausted energies of his naturally fertile soil?"

[Note.—The least exhausting system of farming is, buying animals which have their growth and fattening them for market. The most exhausting is selling grain and hay, without buying fertilizers. "Hogging," as practised in many parts of the West, approaches very nearly to this latter course; and even were the manure all saved and made the most of, the draught upon the phosphates of the soil would be immense.]

Horses at Pasture.

Every horse in the country ought, if possible, to have at least a few weeks run in the pasture. It will do for him what no kind of medicine or nursing can do as well. It will improve his hoofs, his hair and skin, his wind, digestion, and blood, will take out stiffness and lameness, and put on flesh, and infuse new life generally.

Before turning horses out, it is well to accustom them gradually to that kind of food, by cutting a little grass for them each day, or allowing them to "bait" for an hour or so daily in the back-yard. And when let out, they should not have "flush" feed at first, as they will be likely to over-eat, and injure themselves both in their looks and their wind. The best grass for a horse pasture is a mixture of Timothy, Blue grass, and Red Top. Horses relish this feed better when it is moderately short. When they are to be turned out for any length of time, and not to be used much in the meanwhile, they should have on only a light pair of shoes. This will allow the hoofs to come in close contact with the soft earth, and will prevent contraction. Where horses can not enjoy pasturage, they should have fresh cut grass as often as convenient, and should have their stall floors covered with tan bark, or better, have the planks taken up and clay floors laid.

Management of Working Oxen.

It is not so much hard labor that heats oxen and makes them loll in warm weather, as the ill treatment of rough and abusive drivers. Treat them with gentleness when at work; feed them well and regularly three times a day, with cut hay and straw wet with water, sprinkled with oat and Indian corn meal, at least twelve quarts, besides some roots daily; let them have clean water as often as they are fed, and not require them to drink that which is impure, or stagnant; give them at least two hours after feeding to chew the cud and rest, and they will perform a vast amount of hard work, and increase in flesh at the same time, and will usually be found to be more convenient for many

purposes than horses. Let it be reiterated that it is not the hard labor that oxen perform that exhausts their energies. Oxen were made for hard service: and if treated kindly and carefully, they will labor hard every day, and still grow fat. But when fed a stinted allowance of poor hay and meal, worried and abused by a bawling, ill-natured driver, who incessantly applies the lash or goad, and dragged out by carrying on their necks a huge cart tongue, from morning till night, their strength fails, and sensible people are led to conclude that they cannot endure the heat like a horse.

Reclaiming Bog Land....II.

PRACTICAL NOTES BY "HERMON."

If the operations recommended in a previous number have been carried out, the subduing effects of the buckwheat crop, together with the atmospheric influence upon the upturned soil, will have produced a great change in the friability of it, by the time the crop is ready to harvest. A piece of swamp treated in this manner by me some years since, was planted the next spring with early potatoes, and the crop dug in time to sow Timothy and flat turnips—of the former six quarts, of the latter one gill to the acre—put in about the 10th of August. The ground being in fine condition, both grew vigorously, and presented from the road a beautiful and rather uncommon appearance, and elicited numerous inquiries respecting what was sown. The result was, there grew a fine crop of very sweet tender turnips, which, at pulling, appeared to be doing damage to the grass, but the next spring those places all filled in, leaving no vacancies to show where the turnips grew, and a stouter piece of Timothy I never saw.

Another piece of land treated as before, was planted with late potatoes, yielding finely but rotting somewhat; followed the next year with carrots in drills about twenty inches apart, and the mold pressed upon the seed by running a wheelbarrow lengthwise over each row, so that the seed sprouted quickly and uniformly. Before the plants made their appearance, a liberal dressing of ashes was sown broadcast. In the after treatment I followed the *American Agriculturist*, and obtained a yield at the rate of one thousand and fifty bushels per acre. They were pulled with less than half the labor required on upland.

An experiment was tried, viz.: drawing the logs when cut, and heaping them to rot on a knoll, in place of burning them and spreading the ashes over the mucky soil. The seeding stood much better where the ashes were spread, and the yield of hay was fully double.

The tendency of Timothy grass on all peaty lands, so far as I am acquainted, is to run out after the third year, but where the bank of earth scraped from the open ditches contained gravel, the grass has stood well for ten years. This suggested an experiment I am now watching: Immediately after haying in 1863, I had about two acres of this run-out meadow handsomely turned over, and shortly after harrowed smooth; then before the fall rains set in, I covered it evenly, with 850 loads of gravel from an adjacent knoll, plowed it before winter and left it in rough furrows. As soon as the ground dried a little in the spring (April 6th), I sowed with barley and harrowed well. The expense of the job was \$85.00, and as the crop of barley was sold at \$2.20 per bushel in Sept., it more than paid. Now the land is sowed with rye and seeded to Timothy, both of which look very finely. As a rule, however, I prefer sowing

the grass seed alone on such land and doing it in August, when a good crop of hay may be looked for the next season."

Washing Sheep.

It may be for the interests of dealers in wool, and manufacturers, to have sheep washed previous to shearing. But the welfare of the flocks and the interests of the owners of valuable sheep, which are considerations of paramount importance to everything else, are promoted by not washing. The farmers' only reason for washing sheep is, that, if the wool be thoroughly washed, a man can shear a sheep sooner than if it were not washed. Sheep hate wet in every form. They dislike wet pastures, wet yards, leaky sheds, and, more than all else, wet fleeces. When they are washed, the water and the weather are frequently quite cold, and as they often become uncomfortably warm while being driven to the water, and are plunged immediately into it, and kept there until quite chilled through; they are quite liable to contract more or less cold, which will many times superinduce some other disease. This is particularly true if the weather continue wet and cold for several successive days after washing. This is the great argument against the practice of washing sheep in our changeable climate. Every practice that endangers the health of sheep ought, if possible, to be abandoned, and not be made subservient to ordinary pecuniary considerations.

Another thing against washing sheep is, that cleansing of wool in this manner is often of little real advantage, and frequently of none at all, as it often becomes quite as dirty before shearing, as it was before the sheep were washed. This is particularly true when sheep are not kept in clean pastures after they have been washed. Many times it is quite impracticable to confine every flock in pastures where they cannot find some dirty places to roll in. Sometimes shearers cannot be obtained at the desired time, or the weather is too unfavorable to allow the wool to dry sufficiently to be sheared, and sometimes the labors of the field are so urgent that shearing must be deferred for a number of days. All these considerations are in favor of abandoning entirely the practice of washing sheep. Admitting that it costs more per head for shearing unwashed sheep, the expense of washing will exceed the extra cost for shearing without washing. Therefore, these two items will balance each other. Then, when the difference between the prices of unwashed and washed wool, which is not definite, even when the absurd one-third rate is insisted upon by buyers, is contrasted with the injury which may follow washing valuable sheep, it is safe to assume that it is better to shear them unwashed. Moreover, when flocks from various parts of the country are driven to the same washing-place, there is great danger that sound and healthy flocks will come in contact with the contagion of diseased sheep that have been in the pens to be washed. Many an excellent flock of sheep, which has been guarded with vigilance by its proprietor, has been well nigh ruined, simply by being yarded where sheep baying the foot-rot had recently been confined. What is needed at the present time is, an understanding between wool growers that all will shear their sheep without washing; then the practice will soon be abandoned, as neither promotive of the welfare of the sheep nor of the interests of the shepherds nor of manufacturers.



How to Drop Potatoes.

For the purpose of facilitating the hard labor required in carrying and dropping potatoes, we have prepared the accompanying illustration of a man in the act of dropping them. A wide leather strap, or what is better, a strip of webbing, with a hook attached to each end, is thrown over the neck, and the basket of potatoes hung on the hooks. A basket or pail that will hold half a bushel is sufficiently large to contain as many as a laborer will desire to carry at once. The top of the basket should be about even with one's lower ribs. When a basket is carried in this manner, both hands are free to be used in dropping a row on each side, which can be done about as quickly as one row when the basket is carried on one arm according to the usual custom. By this manner of carrying a basket all the severe fatigue of the arm and shoulder is avoided, and a laborer can always walk erect, which is much easier than to support a weight on one side. When potatoes bound from their proper places they may either be put in place with the foot of the man who drops them, or with the hoe when covering.

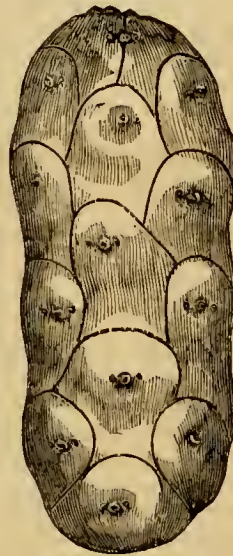
Deep and Shallow Planting.

Some good farmers advocate deep planting by far too indiscriminately, and they refer to the result of well-conducted experiments to prove that it is much better than shallow planting. On the contrary, other men will show by experiments conducted with great care and impartiality, that very shallow planting is best, and the success of their crops appears to depend upon it. The theory and practice of the latter is quite as correct as the former, notwithstanding they are directly opposed to each other. But let those farmers change places, and they will change views with their farms, and still be as opposed to each other as before, yet both be right. When the soil is friable, sandy, or very light, it is best to plant seeds deep, especially in dry weather, unless they are so small that they would not be able to reach the surface. This applies particularly to warm, light, sandy, gravelly loams, which dry out readily after heavy rains. If Indian corn, potatoes, and peas be planted from four to six inches deep, where the soil is pulverized to a good depth, the roots being deep in the ground will absorb moisture while the surface is quite dry. The young plants find but little difficulty in coming up through light porous soils. But where there

is an excess of water in a heavy soil, if seeds be planted deep, it is frequently impossible for the little plants to force their way to the surface. This is especially true of those plants of which the cotyledons are carried up to the surface of the soil, as beans, cucumbers, flax, and many other plants. On many light, mellow soils there is little danger of covering potatoes, peas, corn and other cereals too deeply; while if covered shallow, unless the season be favorable, and not too dry, the results will be less satisfactory. On the contrary, if such seed be covered deeply in heavy soils where a crust often forms soon after a heavy rain, many of them could never force a passage to the surface. For this reason, it is important on heavy soils to cover the seed shallow, and still have it deep enough to germinate.

Planting Large and Small Potatoes.

The writer has planted small potatoes, from half an inch to an inch in diameter, which yielded apparently as well as large ones for only one season. He also planted small tubers of the size mentioned, for five successive years, selecting the smallest each year; and the fifth crop was not worth digging, as the greater proportion consisted of tubers no larger than those planted; many were no larger than marrowfat peas. The conclusion was that small potatoes may be used for seed a single season, with good results; but, if planted for several years in succession, they will degenerate even with good cultivation. On the contrary, he has practiced cutting tubers of the most desirable form and size into small pieces, with one eye on each piece, with two or three pieces in each hill, or if in drills, one piece in a place, about six or eight inches apart; and the result has been invariably a good yield of large tubers, with no signs of degeneracy. When seed was scarce, the tubers were always cut as shown in the



MANNER OF CUTTING.

accompanying illustration: Beginning at the root end, and cutting off a chip with one eye, then, turning the tuber, others were cut off until about half of it was used. These were kept by themselves, and also those of the seed end, and each kind planted separately. The sets near the seed end will produce new potatoes at least six or eight days, some say a fortnight, earlier than the sets from the root end. If the eyes are very close together, it will be better to leave two on a piece as large as the first joint of a man's finger, than to cut the pieces too small.

This is the most economical mode of cutting seed tubers; and the writer has never been able to discover any difference in the size of the new crop, when the seed was cut in this way, or when cut into quarters, or when planted whole. More good potatoes can be raised from a bushel of tubers by cutting them as shown by the illustration and planting in drills about 30 inches apart, and eight inches apart in the drills, than in any other manner. When planted in this

way, a little more labor will be required to hoe them, unless the ground is free from weeds. This manner of cutting seed potatoes is not recommended as the best way of preparing tubers for planting. The design is simply to show how they may be cut economically, with good results. Any one can try the experiment of planting a few whole potatoes, a few others cut into four equal parts directly through the tubers from one end to the other, and an equal number chipped off as shown by the illustration, without any apprehensions that the new potatoes will not be as good as if the sets were larger. The only good objection to cutting seed so small is, the plants do not grow as luxuriantly when small, especially when the weather is cold and wet, as if the sets were larger. The substance in a small piece is soon exhausted, after which the young plant must draw its nourishment from the soil and atmosphere; whereas, if the sets be larger, the substance in them furnishes the best kind of nourishment for promoting the growth of the young plants. Probably the best and safest way is, to plant uncut those tubers as large as hen's eggs of an ordinary size; and to cut larger ones into pieces about the size of eggs.

Renovating Sterile Soils.

In many parts of the country soils are found naturally so sterile, that it is difficult to grow even a small crop of any kind of grain or grass. When there are no beds of muck or peat within convenient hauling distance, and no foreign manure is used, it is a tedious task to render such a soil even moderately productive. Still, it can often be done with no other fertilizing material than the farm affords. Take for example, a shallow, calcareous, or silicious loam, in which there is little or no humus or vegetable mold, and which has never produced much except weeds. Soils of this description can seldom be benefited by underdraining, because the subsoil is usually so porous that the large amount of water falling in the spring and autumn leaches through the soil in a short time. If there is surface water in certain places, of course the first step will be to render it dry by thorough draining. The next operation will be to obtain a little mold, or humus, of which such soils are destitute. If barn-yard manure, mellow earth from the highways, or pond beds can be obtained, a thin layer over the surface will enable a farmer to bring a sterile soil into a good state of productiveness in a few years. Where nothing of the kind is at hand, proceed as follows:

Plow in autumn if possible, not more than six inches deep, and plow again in the spring no deeper than before, as soon as the frost is out and it is sufficiently dry. The surface soil is superior to that which is seven or eight inches below, even where it is very sterile; and it is important to keep the best on the surface. As soon as the ground is sufficiently warm to plant Indian corn, plow again in narrow furrow slices, and sow broadcast, or drill in, three and a half or four bushels of good grain per acre. It is better to drill in two bushels per acre each way, than to sow it broadcast, as it will be covered of a more uniform depth, and will grow more uniformly. Now, sow three or four bushels of gypsum per acre, and the more wood ashes the better, even to one hundred bushels per acre. If the work be well done, and the soil unusually sterile, all that can be expected will be a growth of green corn, from one to two feet high. As soon as the tassels have appeared, which will be in about seventy days, plow it un-

der, sow five to ten bushels of quick lime, and harrow it in; then drill in another four bushels of corn per acre to plow under just before frost. By this means two coats of green manure will be plowed under, which will furnish more humus, or vegetable mold, than any other plants will supply in one season. The spring following, plow with narrow furrow slices, as soon as the soil is dry, but no deeper than usual, sow five or eight bushels of quick lime per acre, harrow it in, and drill in one bushel of spring rye per acre. Then sow eight pounds of Early Red Clover seed and half a bushel, or seven pounds, of Orchard Grass seed per acre. If the ground be at all lumpy, roll it before sowing the grass seed. As soon as the rye has come up, sow two or three bushels of gypsum per acre. The chief object of the rye is to shade the young grass, should there be much hot weather. As soon as the rye begins to head, mow it all off with grass scythes, a foot or more high, letting it remain where it falls. If the rye be allowed to go to seed it will exhaust the fertility of the soil. Keep all stock off the grass that it may become well rooted. Should it attain a large growth by autumn, it may be fed off in part; but in general it is best not to do so.

The next spring sow three or four bushels of gypsum per acre, and all the wood ashes leached or unleached that can be obtained, unless previously applied. If the grass be grazed off, it should not be fed very close to the ground. It is better to mow it, make hay, feed it to sheep or neat cattle, and return the manure as a top-dressing for two years. Then plow the usual depth with a common plow, following with the subsoil plow, and plant Indian corn one season, sow peas the next, and feed out most or all the crops to swine, sheep, or neat cattle, and make as much manure as practicable to return to the soil. The next season, if the soil be adapted to wheat, winter wheat may be sowed after peas, and the ground stocked down in autumn with Timothy and the late kind of Red Clover; the next spring, there will be a sufficient quantity of mold in the soil to commence a system of rotation of crops. The best soil should be kept near the surface. It would be bad management to plow such soil deep with a common plow, though the subsoil plow may in very many instances be used to advantage.



Adams' Patent Weeding Hoe.

In the *Agriculturist* for February we gave illustrations of several unpatented weeding implements, and we now give one which is patented and therefore likely to get into the market. Some of our correspondents were disposed to blame those who patent simple contrivances, but it is to be considered that one who patents an article, usually takes pains to introduce it, to manufacture it cheaply on a large scale, and to inform the public where it may be had. When an unpatented contrivance is published in the papers, but few persons are willing to go to the trouble of having a single implement made, and the thing does not become generally introduced. It is with these views that we notice a simple weeder made by Wm. C. Street, of Norwalk,

Conn., of which the essential parts are shown in the engraving. It consists of a straight bladed hoe, fastened to a shaft, to one end of which a wheel is attached, and at the other end is a handle, not shown in the engraving, for pushing it. The shank of the hoe is adjustable by means of screws to allow it to be set at a proper height. It is used by a pushing motion and will be found very useful in weeding onions, carrots, and similar crops. A stouter pattern is made for use upon garden walks, and carriage roads.



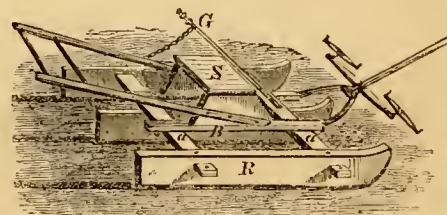
How to Pitch Manure.

As pitching manure is laborious work, it is important to render the labor as easy as possible by the exercise of skill in handling the fork, or shovel. The accompanying illustration of a laborer pitching manure with a long-handled fork, will illustrate the manner of performing easily with skill what is usually done by main strength. To pitch easily, thrust the fork into the manure, and make a fulcrum of one knee for the handle to rest on. Then a thrust downward with the right arm will detach the forkful from the mass of manure and elevate it from one to two feet high, by the expenditure of little muscular force. By using a fork like a lever, as here represented, a man can pitch larger forkfuls, and more of them with far less fatigue, than he can without resting the handle across his knee. When manure is pitched with a short-handled fork, the force required to separate the forkfuls from the mass, as well as for lifting it on the cart, must be applied by the muscles alone. This often renders it fatiguing and back-aching labor. Moreover, when a man pitches with a short-handled fork, he applies his force at a very great disadvantage, as he is required not only to lift the entire forkful with one hand, but to thrust downward with the other one sufficiently hard to balance the force expended in detaching and elevating the forkful of manure. Consequently the arm nearest the manure must expend muscular force sufficient to raise the weight, say, of two forkfuls. This principle is quite as applicable in using the shovel as the fork. By resting the long-handle across one knee when shoveling, keeping the arms stiff, the body erect and straight, a slight thrust of the body and knee will force the shovel into the earth with the expenditure of little force. These suggestions, and the illustration, will enable any one to expend his muscular force to the best possible advantage in using both manure-forks and shovels.

It is better to suffer the worst that may happen at once, than to live in perpetual fear of it. IN CHILDHOOD always be modest, in youth temperate, in manhood just, in old age prudent.

The Best Corn-marker Yet.

Corn, potatoes, sorghum, etc., in straight rows, not only look well and show careful work, but are much more easily hoed and cultivated. A good marker therefore is a very desirable implement. The one figured below is of an excellent form. It consists of three runners, *R*, four feet long, two inches thick, and eight inches wide. The three runners are held together by two hard wood bars, *a, a*, eight feet long, four inches wide, and one inch thick. Mortises are made in all the runners, two inches from the top edges, through which the bars run. They are pinned fast in the middle runner; but the side runners are fastened with loose pins, so as to be shifted and make marks at any desired distance, from two to four feet apart. *B, B*, represent two strips of hard tough wood an inch and a half thick, and three inches wide, bolted firmly to the bars passing through the runners. These strips receive the coupling irons of a light carriage pole. A seat, *S*, is fastened on these strips, bolted to which are stout ash handles connected by two "rounds" near the upper ends. A gauge pole (*G*) is hinged by a staple to the middle runner in front of the seat, so that it may be turned on either side, and a chain attached to it at the proper distance drags in the last made drill. This marker may be drawn by one stout horse if desired; it is easy to make, and has points of superiority to many other forms. The marking may begin at the side of the field or in the middle, following



CORN MARKER.

a row of stakes; and after the first marking, the driver should keep an eye on the gauge chain, to see that it is drawn directly in the last mark. At the same time he should cast his eyes forward to see that his team is moving in the right direction. It is important to keep a steady rein on the team, and not guide them abruptly, to the right and left. A good driver lets the horses move along with a slack rein, instead of driving them with a taut line; and one who is accustomed to hold a slack, and apparently careless rein, will usually mark ground in straight rows without worrying a team.

WEEDS IN THE FENCE-ROWS.—A fire will often run very well in the old weeds and grass of the fence-rows and along the walls, and at any rate the bush-hook, or brush-scythe may be used to advantage in cutting every thing close to the ground, so that the operation of mowing the weeds off may be repeated as often during the summer as the weeds make a good growth. The burning is very desirable to kill the seeds, and if watched, will not damage the fence. With a stout team and plow the fence-strip may be torn up, where the land is not too stony, turning the furrow outward, often better at this season than at any other. Buckwheat sown in such ground is one of the most effectual means of killing weeds. It may be sowed early, cut when ripe, and sowed again, or left to sow itself, the old haulms being raked off. Shrubs, blackberry vines, etc., are eradicated by the same means.

Tarring Seed Corn.

Winnow the grain to remove all the heavy chaff, and steep it in warm rain water about twelve hours. If kept in the steep much longer than this time, there is danger of injuring the germs. Keep the vessel containing it in a warm place, as the kernels will imbibe moisture much sooner if the steep be warm. Then pour it into a basket to drain for fifteen minutes. For half a bushel of seed, use about a teacupful of warm, but not hot gas tar, and stir with a smooth stick, until every kernel is covered with a thin coating of tar. By pouring the seed from one vessel to another a few times, the tarring will be facilitated. As gas tar will spread over a much larger surface than pine tar, there is danger of applying so much as to make it disagreeable to handle, though it will not injure the corn. Now roll it in gypsum, and plant as soon as practicable. When the seed is in the field, it should always be kept covered in a close vessel, instead of a basket, to prevent it drying. The object in tarring is to prevent the seed being pulled by crows, blackbirds, doves, and domestic fowls. The tar appears also to repel wire worms, until the corn is about a foot high. By this time, the influence of the tar becomes inoperative in repelling wire worms.

When seed of any kind is coated with tar before it has been steeped, it will be a long time in absorbing sufficient moisture to make it germinate. But when the seed is steeped previous to tarring, germination is not seriously retarded. Where birds, domestic fowls, or squirrels, do not pull or dig up the corn, nothing is gained by steeping and tarring. We once planted some corn which had been well prepared by steeping and tarring, most of which came up in ten days. Four days after this was planted, we sowed a plot of corn broadcast, in the same field, and the dry, untarred, corn came up well in five days. The soil was warm and moist when the seed was harrowed in, and had just been plowed the second time.

Use and Value of Gas Tar.

Gas or Coal Tar is a product accompanying the making of gas from coal, and can usually be obtained wherever gas is made, at \$1 to \$2 per barrel, or by the gallon. As mechanics and farmers are beginning to learn its value for preserving wood-work of various kinds and for painting iron that is exposed to the influences of the weather, the price has been for some time gradually advancing. We have been accustomed to use it for twenty years past with most satisfactory results. It is an excellent paint for shingle roofs but should become thoroughly dry before water is collected, as it not only colors the water, but makes it taste very disagreeable. It is very useful applied to fence posts to render them durable. Some men make a deep box and dip the ends of the posts in it, so as to smear the lower ends three feet or more in length. But we have found it is quite as well to tar the post about one foot below the surface of the ground and a few inches above it, as to tar the entire end, for posts always decay first, near the surface of the ground. Our way to apply it is, to set the posts and fill the holes within a foot of the surface. Then with a whitewash brush give each post a good coat, the thicker the better, and then fill the hole with earth. The writer has always found it an excellent material for painting the joints of gates, and board and

picket fence, where two surfaces come together, as well as for smearing timber of bridges and buildings, where they are exposed to wet and dry weather, as it excludes water more effectually than the best oil paint. The sills and under sides of plank walks, if smeared with a heavy coat of coal tar, will last more than twice as long as if not tarred. The upper side of timbers and joists on which stable floors rest if tarred, will exclude wet, and keep them in a good state of preservation for many years. In some instances wooden pipe for conducting gas is saturated with gas tar previous to being laid in the ground, and such pipe has been examined after having been in the ground 22 years, and there were no signs of decay. There are many other uses for this material which renders it valuable to the farmer. It is a dangerous substance to apply to fruit trees. The writer once applied a small quantity to a valuable apple tree, where two limbs had been sawed off, and the tree was killed effectually in a few months, by the poisonous influence of the tar.

Culture of White Beans.

Several subscribers of the *Agriculturist* have inquired for information on the culture of field beans. If the soil be light, plow it when apple trees are in blossom; and in about two weeks afterward harrow thoroughly and put in the seed. If the soil be rather heavy, plow it twice, once at the time mentioned, and again two weeks after. Harrow and roll, if there are lumps, and put in the seed as soon as practicable after harrowing. Beans, as well as other seed, will vegetate much sooner when planted in fresh soil, than when it has been plowed several days. If the ground be in sod, and a light open soil, plow with a flat furrow slice, harrow, plant, and roll. But where the soil is heavy, disposed to bake, a little wet, and in sod, defer plowing until the soil is in the best condition to pulverize well. Then plow with lapped furrow slices, but not deep enough to turn up any of the compact subsoil. Harrow thoroughly, and put in the beans the same day the land is plowed, if practicable. By putting off the planting until wet ground has become warm, settled, and dry enough to pulverize well, and planting as soon as the ground is plowed, the beans will vegetate in a short time, get the start of weeds, and thus save much labor in hoeing.

There are several ways of planting beans. One is to plant in hills, about two feet apart each way. Another is in hills with rows only one way. Still another is to put in the seed with a single drill, or scatter the beans along in a shallow furrow a few inches apart. If the soil be deep and mellow, and weeds have been pretty thoroughly exterminated in previous years, they may be sowed broadcast and harrowed in, if it be done as soon as the ground is plowed. But, if there be many weeds, it would not be well to put them in broadcast, as weeds injure their growth. The most expeditious way of planting beans is, to put them in with a two-horse grain drill, adjusting it so that every third tube or tooth will plant a row. By this arrangement the rows will be about two feet, or two feet and a few inches apart, which will allow a horse and cultivator to pass between them. The drill should be adjusted to scatter the beans about two inches apart. A greater crop can be produced in this way than to plant in hills, because the seed is distributed more evenly over the entire ground. There is nothing gained by

planting beans too thickly, as four or five stalks in a hill will yield a maximum product. The quantity of seed per acre will depend entirely on the size of the beans and the distance apart. Usually, 2 to 4 bushels are required per acre.

Tim Bunker's Visit to Titus Oaks, Esq.

MR. EDITOR:—You see I hadn't more than got done with Diah Tubbs, and his pickle patch, when I begun to grow uneasy for something else to talk about. Some folks can set round the fire and talk with the women all day, but I never could do up my visiting in that way. I knew I had got about all out of Uncle Di in one evening that I should get out of him if I pumped him till doomsday. So the next morning, after breakfast, I begun to inquire about the neighboring country and farmers. Says I,

"Uncle Di, your Westchester county is a great country. I have heard of it clear up in Connecticut. You ought to have some smart farmers round here that go in for fancy stock."

"Jest so. We have lots on 'em. Fellers that got rich in the city, and come out here and spend their money and call it high farming. I'll bet you a shad, every potato they raise costs 'em a dollar."

"How do you make that out?"

"Wal, ye see, they take perticular pains to buy the roughest, stoniest place they can find, and next see how much money they can bury up in it. They blow rocks, tear down hills, drain swamps, fill up ponds that is, and dig ponds that ain't, and call 'em lakes; cut down trees that are stannin, and plant trees where there aint none; put the surface sile down to the bottom, and bring up the yaller dirt for the sake of making it black, and raise Hob generally with the land before they plant it. Here is Squire Oaks, jest above me, that has been rip-pin and tearin with his land for a dozen years and more, and I guess every acre he's got has cost him tew hundred dollars, if not more, and I can beat him on pickles, with all his manure and sub-soiling."

"Well, now, 'spose we hitch up and go over and see Squire Oaks' place this morning. I want to learn something to carry back to Hookertown?"

"What do you say, Esther?" inquired Uncle Di, looking up to headquarters.

"I think," said Mrs. Tubbs, "that Sally would like to see one of our country seats. Mr. Oaks has a fine conservatory, and the flowers are very attractive this winter." So it was arranged that we should visit the country seat of Titus Oaks, Esq., in full force.

I expected to find a man, city bred, with gloves on, and stove-pipe hat, and gold-headed cane, ordering men round, right and left. Instead of that, I found a man that might have been taken for a native of Hookertown, any where on Connecticut soil, and driving away at the dirt and stone, as if he wan't afraid of them.

"Good morning," said I, "Squire Oaks. I am glad to find a Justice of the Peace in these parts. I have thought that such an officer must have a good deal to do in this region."

"You were never more mistaken in your life," he replied. "They call me Squire, but I have no more claim to the title than my Alderney bull. The office must have been abolished some time ago around here. Every man does about what is right in his own eyes."

"Excuse me, sir, I do not like to hear a man speak evil of his birth-place."

"Praise the Lord, I was born in New-Eng-

land, where a 'Squire' meant something, and—scoundrels got their dues."

"Now, Squire," said I, "what have you got to show us. Any new notions around?"

"I tried an experiment last year on

CURING CLOVER HAY,

and I would like to show you the result."

He took us out to the barn and showed us a bay, perhaps twelve by thirty feet, from which he was feeding his Alderney herd. It was well filled with as handsome clover as I ever saw. If I was not afraid of having my word doubted, I should say the handsomest. It was cut down in the middle with a hay knife, and you could see just how it was managed. There was about ten inches of clover, and then about two inches of old salt hay, in alternate layers. The clover had all the leaves on, nearly, and was as bright and green as on the day it was put in the barn. To show that the hay was as good as it looked, Squire Oaks pulled out a lock of it, and also a handful of Timothy from the opposite mow, and presented both to an old cow. She smelled of the Timothy first, and then opened her mouth for the clover, without stopping to take a second sniff. The same was done to an Alderney heifer, who might not be supposed to be so well versed in hay lore, with a like result. There was no mistake. It was tip-top clover.

"Now," says I, "Squire, how did you cure it? for this will do to tell in Hookertown."

"It is the easiest thing in the world," says he. "I cut the clover with a mower, when it was just in blossom, and let it lie in the sun till wilted. I then put it in cocks, and let it stand until the next day, when I put it into the barn. There was first a layer of salt hay, rather thin, then a thick layer of clover. It comes out just as you see it. I think one ton of that clover is worth two of hay, as it is usually cured. All the leaves and all the juices are there. The salt hay, somehow, helps cure it. I do not attempt to explain the philosophy of it."

Farmers who have old stacks of this hay, and heaps of refuse straw about the barn, should save them, and try Squire Oaks' experiment. I guess there is more virtue in the dry hay than in the salt. It helps the ventilation, and makes the curing complete.

A NEW MULCH FOR STRAWBERRIES was shown us in the garden. This consisted of sods from a brake swamp, cut an inch or two thick, with a spade, so that they could be laid between the rows. He had been draining a piece of wet land, and had a plenty of these on hand. When fresh cut, they are free from seeds of weeds, and so sour that nothing will grow on them the first season. They are easily handled, keep the ground moist, and the berries clean. After a year's exposure, they may be spaded in, or removed to the manure heap.

TRELLIS FOR GRAPES.—Mr. Oaks has turned his ledges to good account in training grape vines all over them, by means of wires. These ledges, some of them, present a bare surface, of twenty or thirty feet, and as he could not very well remove them, he covers them with a mantle of green in summer, and has the purple clusters in autumn. This is a timely hint for the multitude of improvers in Westchester county and elsewhere, who are troubled with ledges. They were made on purpose for grapes.

HOW NATURE PLANTS A TREE.—He showed us an apple tree planted on Nature's plan—*i. e.*, as near to the surface as you can get it, and a spot where a tree was planted on some gardener's plan—burying the roots in a deep hole. The latter spot was vacant, while the tree was

flourishing, and had made a very broad collar just above the surface of the soil. Titus Oaks, Esq., laid very great stress upon this mode of planting. "Nature," says he, "in growing an apple tree, first runs the seed through a cow's stomach, and deposits it in a thick vegetable paste, upon the surface of the earth, or a little above it. The following spring the seed sprouts and the roots find their way into the earth. Such trees make the hardiest stocks, and are the longest lived."

AN ORCHARD UPON A GRAVEL BED.—This he regarded as one of the triumphs of his art. There was no mistake about the poverty of the soil, for it was made up of sand and gravel, as the adjoining bank showed. No one had ever got a crop from it before. There was just as little mistake about the apple trees. They were very thrifty, well grown trees, and fruitful. The gravel bed had been treated with muck from an adjoining pond. That was the secret.

We left, highly pleased with Titus Oaks, Esq., and his notions. He made us promise that we would not mention his name in connection with his improvements, a promise which we keep by taking his light out from under his bushel, and putting it upon your candlestick.

Hookertown, Conn., } Yours to command,
April 1st, 1865. } TIMOTHY BUNKER ESQ.

Pulverization of Heavy Soils Impracticable if too Wet.

When there is an excess of water in heavy soils it is utterly impracticable to reduce them to fine tilth with plows and harrows. They may be rendered somewhat fine by cutting and tearing them to pieces; but they can not be pulverized any more than one can pulverize a batch of dough. When a heavy soil is filled with water instead of air, the more it is plowed or harrowed the more compact it will be, when the surplus water has dried out. Sandy soils may be plowed and harrowed in some instances without injury, when they are quite wet; but heavy soils must be sufficiently dry to crumble readily when worked, or it will be impossible to reduce them to that degree of fineness, which is essential for the roots of plants to spread through them. If a handful of heavy soil, in which there is not an excess of water, be worked with the hands, it will crumble, but when so wet that it will knead like dough, the more it is worked the harder it will be, when it comes to dry, and the less suitable its condition to promote the growth of plants. When a heavy soil just dry enough to crumble well, is plowed with narrow furrow slices, or spaded finely, it will be about one fourth deeper than it was before it was plowed. On the contrary, if plowed when so wet as to knead and not crumble, it will settle down at once to the same bulk or depth that it had before it was worked.

The first thing to be done then toward a thorough pulverization of heavy soils is, to drain them. The next is to plow in autumn and apply barn-yard manure; then, in order to increase the quantity of vegetable mold, and keep them light and friable, to raise crops of Red Clover or Indian corn to be plowed under when green.

TOBACCO.—Those who will cultivate the weed should, at this season, not only prepare the field with care, much as advised for carrots in another article, but particularly look to the seed beds, directions for which are given on page 107. It is not now too late to make them. Watering with diluted manure water, or gas-liquor, and

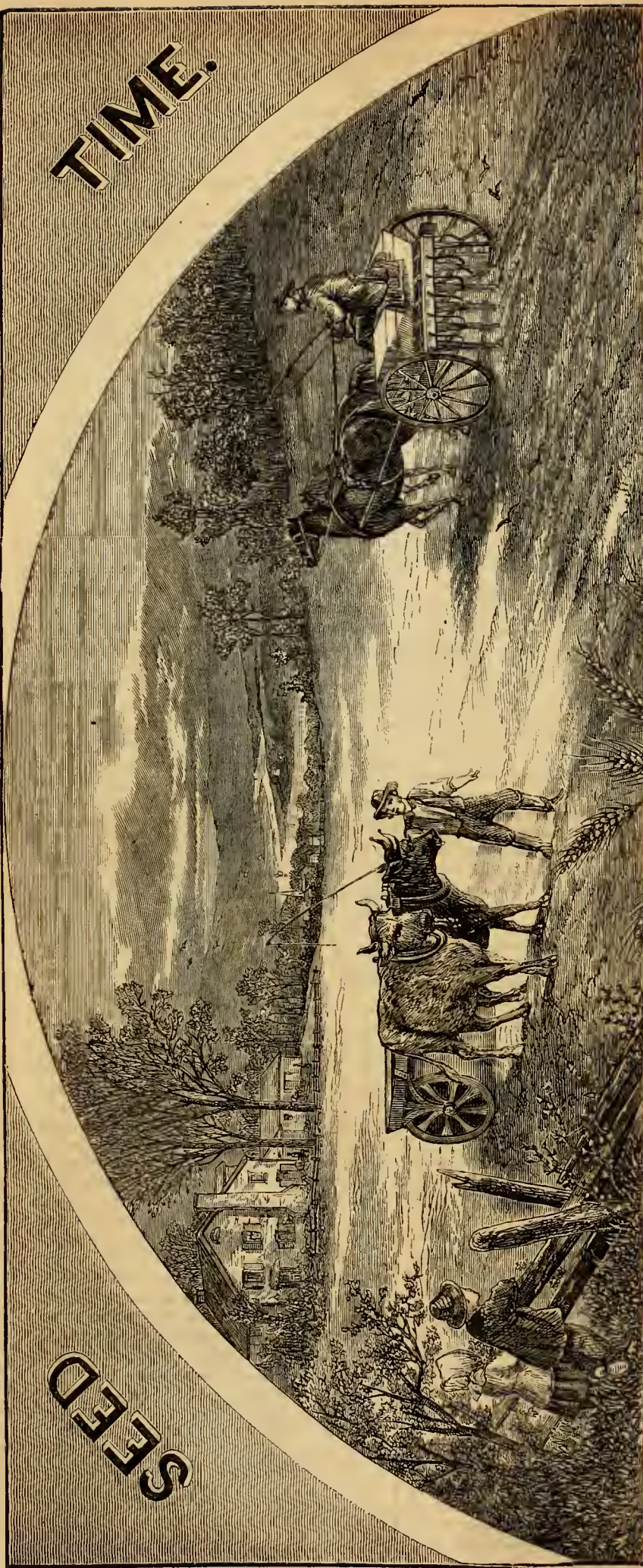
sprinkling with wood and plaster, are very beneficial. As to the profit of tobacco culture in the Northern States, we believe the majority of farmers would do better to put in roots or sorghum.

Field Culture of Carrots on Heavy Soils.

Farmers generally do not know the true value of a crop of roots of any kind, and in many parts of our country the soil is in a state of cultivation quite too poor to produce good crops. The soil for beets, rutabagas, parsnips, and carrots must necessarily be in a good state of fertility, well pulverized, and not excessively moist. This is more particularly true of heavy than of light soils. It is no difficult task to raise carrots on loamy soils, if one has a good supply of manure, but on heavy soils, a deal of good management is essential. It will be almost useless to attempt to grow carrots on a heavy soil where there is an excess of water, or that is in poor condition, or overrun with weeds. It would be equally unwise to attempt to grow roots on a poor, light soil, without a good manuring. On those farms where the soil is for the most part heavy, there are places in almost every field where an acre, or half an acre, can be selected, which will yield a fair crop of roots, with but little labor. The great difficulty in growing roots on many heavy soils is in getting the seed started. If such small seed be covered with heavy soil, unless the weather be very favorable, it will not come up well; because it cannot force its way up through the crust of compact earth. Consequently, if the seed be checked in its growth, for a day or two, just as it is about to appear on the surface, the young plants fail to come up at all. But, when the soil is light and mellow, it is not necessary to guard against any such difficulty.

We have been accustomed to grow roots for all kinds of farm stock, on heavy soils, where it was often difficult to obtain mellow earth sufficient to cover the seed. The practice is to plow the ground in autumn, and apply a good coat of manure, when it can be obtained in the fall, and harrow it in; otherwise, in the spring, when the ground is plowed the second time. The first plowing is done with narrow furrow slices, when we plow for corn. The second, about two weeks after corn-planting. The best kinds for field culture are Long Orange and White Belgian. After harrowing and rolling the ground, where the soil is sufficiently mellow for covering the seed, it is sowed and covered with a seed drill. Sometimes, on very hard soil, we have hauled earth from some other part of the field, which was carried along in baskets, or on wheelbarrows, and sprinkled about half an inch thick over the seed. In some instances, sods from the highway, well decayed and pulverized, were used as covering for the seed. On light, loamy, sandy, and mucky soils, all this is not necessary. When practicable, procure seed free from burrs. We prefer much to soak the carrot seed nearly to sprouting before sowing. This is done in a bag kept moist and warm. Just before sowing, it should be rolled in plaster, and it may be sowed with a good drill—equally well by hand, and very conveniently through a tin horn. With good weather, it will come up so as to show the rows plainly before the weeds get a start. The rows are close enough, if two feet apart, and many good farmers put them thirty inches, for greater convenience in cultivation. These directions apply equally to the other root crops above mentioned.

TIME.



SEED



The Wheaten Loaf.

There is probably no part of the United States where general farming can be profitably conducted, in which the farmers may not raise their own wheat. Much as we may rejoice in our golden harvests of beautiful maize, and in the homely luxuries of corn bread, Johnny cake, and classical "Hasty pudding," or delight in rye, both in the field and upon the table, as associated with ideas of frugality and economic thrift—we must still give to wheat the first place among the cereals, as the exponent in agriculture of fertile soils, good farming, and prosperity, and in housekeeping of good, and even luxurious living. Wheat is indeed the basis of all our most delicate and nutritious articles of farinaceous food, but among the long list, wholesome and palatable as they are, first and last is the Wheaten Loaf.—Bread, tender and white, light and spongy, full of nutriment, and full of flavor, is indeed the staff of life.

We have long had in contemplation to present to our readers the *pictorial history of a loaf of bread*. On the adjoining page, is the first chapter of this history in the three landscape views entitled "Seed Time," representing the operations attending the preparation of the soil and sowing the seed. The deep loam is well manured, plowed, subsoiled, and harrowed; then the grain is sowed by hand, and harrowed in, or drilled in, and rolled. Our artist gives the drilled field especial prominence, that we may direct attention to the thousands of bushels of grain annually wasted in the heavier seeding, when it is sown broadcast, and to the fact that the crop of the country numbers hundreds of thousands of bushels less every year than it would were all the wheat possible sowed in drills. Next to rye, wheat is perhaps the best of grains with which to seed down to grass. So behind the harrow will be noticed a man sowing grass seed, which falling among the still moving earth is only slightly covered. The wheat which is subjected to the whole operation of the harrow being covered much deeper.

Grain for Sheep.

If there is one period more than another at which sheep should have a little grain daily, that time is in the spring, a few weeks previous to being turned to grass. A small quantity is good for them during the entire foddering season. Some farmers reverse this order, by feeding grain every day, as soon as they commence foddering, and then discontinue the grain a short time before grass is large enough for pasturing. As the warm weather comes on, sheep need a little better feed than when the weather was pinching cold. The appetite is not so sharp at this season of the year; but a little grain if not more than five or six ounces for each sheep, will give an appetite and induce them to consume more hay, straw and corn stalks than would be eaten if no grain were fed. If "wet" ewes be daily fed half a pound each of some kind of grain in connection with hay, straw and other feed, it will make their wool grow, fatten their lambs, and keep them in a strong, thrifty condition. Grain will not be thrown away when properly fed to sheep, even if it commands a high price in market. A certain amount of fat is essential to good health in all kinds of animals. It is exceedingly undesirable and most unprofitable to have sheep or any stock grow poor just before being turned to

grass, and this they are apt to do, unless they are fed grain or roots or both, during the warm period in the spring with its consequent lassitude, before grazing time. The farmer who withholds a few bushels of grain from his sheep, because it commands a high price in market, may rest assured that he will lose more in wool, fat and flesh, and in the size of lambs than the grain would be worth. Even after sheep have been turned to grass, it is well to feed a little grain daily until they have become accustomed to green feed. If the hay be all fed out, feed half a pound of grain per head, and let them have constant access to good straw, and to grass for about one hour daily. When managed thus they will not grow poor, nor have the scours.

The New York Flower Markets.

Though New York has not, like Paris, a separate market for the sale of flowers, yet the number of plants sold every spring is enormous. In each of the principal markets there are several dealers in plants, and during the season there are venders at the corners of the streets, besides frequent auctions in the business part of the city. When we see plants offered for sale at any of these places, we are both glad and sorry: glad to see that even in a crowded city like this there is a demand for plants with which to beautify the small space yet uncovered by buildings; sorry to think that nine out of ten who purchase the plants will be sorely disappointed. The majority of those who buy at these flower markets are tenants, who wish to have something to beautify their yards for the present year, without much regard to the future, and they get that which gives them very little satisfaction. This is in part the fault of the purchasers who, having but little experience in such matters, will only purchase plants in flower, and to comply with this prejudice the gardeners force a great variety of plants into premature bloom and send them to the spring sales. We find *Deutzia gracilis*, *Dicentras*, *Iris*, *Pansies*, and numerous other things all in full bloom, in which condition they meet with ready sale. These plants, when set out, soon pass out of flower and spend all the rest of the season in recovering from the effects of the forcing process to which they have been subjected, and the purchaser is, most generally disappointed. To those who live in towns where flowers are sold in the way we have described, we say, if you buy plants in bloom, make up your minds that you see them at their best, and though the plant is often worth the price asked, merely for the present enjoyment it affords, it will in the majority of cases fail to bloom any more until another year.



The Bladder-nut Tree.—(*Staphylea trifolia*.)

Along the edges of woods there is occasionally found, in most parts of the country, a small tree which has some qualities that adapt it to the purposes of ornamentation. It grows only to the height of about 15 feet, but is quite tree-like in its habit and may be considered as a small tree or a large shrub. The trunk is of a grayish color, marked in a characteristic manner with white lines. The leaves are three parted; the shape of the young ones, and a

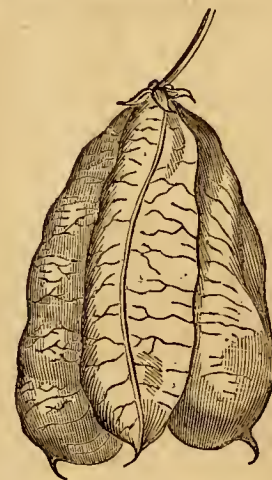


Fig. 2.

flower cluster of the natural size, are shown in the engraving. The flowers are pretty, though not very showy. They are borne in pendent graceful clusters and are of a greenish white color, often tinged with a pale rose color. The most noticeable thing about the tree is the fruit, which is shown of the natural size in fig. 2. It appears like three pea pods grown together. The texture of the pods is thin and bladder-like, whence the popular name, Bladder-nut. The pods bear but few seeds, which are about the size of duck shot, hard and polished. The seeds of a related species in Europe, are strung and worn as beads. The tree is readily transplanted from its native localities and may be propagated from both seeds and cuttings.

LILIAM AURATUM.—This splendid lily from Japan, which only a year or two ago was so great a rarity that the bulbs sold at \$40 each, is now offered by florists at \$5. It will doubtless soon become as abundant as the *Lilium lancifolium*, now so generally known and admired as the Japan Lily. This last, formerly held at a high price, may now be had for 50 cents.

Some Varieties of White Beans.

The knowledge of beans is generally supposed to be so easily acquired that it has passed into a proverb that one who does not "know



Fig. 1.—KIDNEY.



Fig. 3.—DUMPLING.

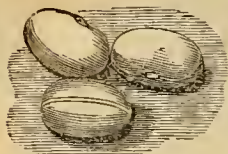


Fig. 2.—MARROW.



Fig. 4.—PEA.

beans" must be of limited capacity. The trouble experienced in procuring reliable specimens of the leading field varieties has convinced us that it takes some labor even to properly "know beans." Beans not only differ in size and productiveness, but there is also a difference in the quality and the rapidity with which they mature, the latter often an important consideration in cold climates. The engraving gives the four kinds sold in the New York market, and shows their natural as well as their relative size. The White Kidney, fig. 1, is larger than the others, being about three fourths of an inch long, and kidney shaped. It is a good variety to use green or dry. Next in size is the White Marrow, also called Dwarf White Cranberry, and White Marrowfat, fig. 2. It is of a pure white, and of a very regular rounded egg-shape. This is a valuable kind for the garden as well as for field culture. Another variety known in this market as the Dumpling, is highly prized for the excellent quality of the beans. As we do not find it described in any of the standard works, it is probably a local name. The Pea-bean, fig. 4, is the smallest of the market varieties and is by many considered the best bean for cooking. The seeds, though white, are destitute of the glossy surface possessed by the above mentioned sorts. In New England a variety called the Blue Pod, is extensively grown, but it is not to be found among our seed dealers. Its chief merit is its earliness, it maturing a week or ten days sooner than those we have figured. In quality it is considered inferior to any of the varieties above mentioned. Colored beans do not find a ready sale in the market.

Training the Tomato.

In cultivating the tomato in large market gardens, the plants are usually pinched before their final transplanting, and they are then left to grow without any support; but in small gardens, not only is greater neatness observed by taking some pains to train the plants, but the fruit is improved both in quantity and quality. There are several methods of training. One which, if not altogether the simplest, is one of the neatest, is described by Mr. G. M. Childs, of Hancock Co., Ill. "As soon as the plants are large enough, transplant to rich, light soil, one in a hill, and at least five feet apart each way. At least once a week, scoop the earth away from around the plant and pour on a quart or more of soap suds. When the plant commences to branch, cut off the outer branch-

es; this will have a tendency to increase the size of the stock and cause it to grow bushy. After the plants are 16 or 18 inches high, they should be provided with frames. I make mine by splitting standards from pine boards, 5½ feet long, and sharpen their lower ends. To these standards are nailed slats made by sawing 4 feet laths into three pieces. The frames are made 16 inches square, nailing the lower slats at 15 inches from the bottom of the standards, the upper ones at the top, with others mid way between the two. Frames made in this way have been in use five years, and with a little repairing will last some years longer. When the branches extend beyond the slats and over the top of the frame, clip them, leaving one leaf above the fruit stems, and continue to do this throughout the season. The plant trained thus and showing its ripe and ripening fruit, forms a most beautiful object, and one tomato grown in this way is worth a dozen as usually cultivated. Last year I had 21 plants, from which I gathered an abundance of fruit for table use and canning, for a family of five persons, besides distributing from five to six bushels among my friends. No one need be afraid of using the knife freely, as there is no danger that the plant will not fruit abundantly; in my experience the difficulty has been to keep it from fruiting too much."

Cultivating Sweet Potatoes.

The many inquiries concerning the culture of the Sweet Potato shows that there is an increasing interest in this crop. There seems to be no doubt that in favorable seasons, with proper culture, a good crop may be grown as far north as Wisconsin. The land should be warm and light, and a plenty of manure supplied. In last month's basket and calendar, directions were given for starting the plants. Those who have no seed potatoes from which to obtain plants may procure them from persons in N. Y. State, Ohio, and elsewhere, who raise them in large quantities. The plants will go a long distance by express without injury. There are two ways of planting: in rows and in hills. The ground being in good condition, mark it off in three feet rows and spread a good dressing of manure along the marks; then form ridges by turning two furrows together over the manure. The ridges should be 10 inches high, a foot wide, and 3 or 4 inches wide at top. Set the plants 16 inches apart in the ridges. In planting in hills the following directions are by J. W. C., whose method of starting the plants was given in last month's basket. The manure, about 12 loads to the acre, is turned over two or three times before using, working in good soil so that at the final turning the manure will be about one third soil. The ground is plowed and harrowed and marked out 2½ feet each way. About two quarts of manure are put at the crossings of the marks, and a half hill formed with the hoe. He prefers to delay finishing the hill until just at the time of setting the plants, as they then have the benefit of freshly stirred earth. The plants are set from May 10th to June 20th, according to the season. After the plants are set, the ground is kept clean by the horse and hand hoe. In setting the plants in hills or on ridges, they should be put in with a dibble or trowel, and if the soil is at all dry, the holes should be filled with water before putting in the plants. Set them as deep as the first leaf and press the soil firmly around the roots.—Mr. R. S. Smith, Ashtabula Co., O., applies well rotted manure and ashes, harrowing-in in autumn, and

lets the land lie until ready to transplant, when he turns up the ridges as before described but without manuring beneath them. His rows are 3½ feet apart, and the plants are set 12 inches distant in the rows. He makes holes an inch in diameter, and 4 inches deep, fills the hole with water and makes a mud around the plant, but never presses the earth against it.—Mr. E. Latham, of Long Island, recommends cutting off the vines when they have reached the length of 2 feet, and says he gets a good crop. This practice is condemned by others, and our experience has been that the most luxuriant vines yield the largest potatoes and the most of them. A bushel of seed will produce from 3,000 to 5,000 sets, and an acre requires 6,000 to 12,000 plants, according to the manner of planting.



Herbaceous Grafting.

In ordinary grafting we use cions of ripe wood, of the previous year's growth, in a dormant condition, which are inserted in a stock of one or several years' growth, and make the union, either when both stock and graft are dormant, or when the growing process in the stock has already commenced. In herbaceous grafting, both stock and graft are not only in the growing state, but they are both of the present season. Ordinary grafting is not successful when practised upon Chestnuts, Hickories, and other hardwood forest trees, and as herbaceous grafting is followed in Europe in propagating these, we give Du Breuil's description of the process, in order that those who wish to experiment with it, may practise it. For the stock, the shoot from a terminal bud is selected, before the wood has become much hardened. This is cut off just below the third or fourth leaf, according to the strength of the shoot. The cut to receive the cion is made as shown in the figure, at the base of the leaf A. If, as is often the case, there are three buds or eyes at the base of the leaf, the cut is made between the central bud and one of the lateral ones. The cion B, is cut from a shoot of the same size as the stock; it is in fact, a bud with a large quantity of wood and bark attached, rather than a cion. It bears a leaf, C, with a good eye or bud at its base. The cut surface of this graft is carefully applied against the cut surface of the stock, tied with a woolen thread, and shaded from the sun by a paper shield. Five days after the operation, the central bud at the base of the leaf A, is rubbed out, and five days after this, the blades of the two leaves below the graft are cut away, leaving only their mid ribs, and at the same time the buds at their axils are removed. If other buds appear at the bases of these leaves, they are to be removed, and at twenty days after the graft is inserted, the blade of the leaf A, is cut away. The graft will commence to grow about the 30th

day, when the tying is loosened, but the paper shelter is continued for a week or two longer.

Notes on Grapes and Grape Culture.

The vine has become so important as to demand a special department, and under this heading we give, from time to time, notes of our own observations, and such correspondence on the subject as we think will interest our readers.

CARE OF VINES THE FIRST SEASON.—J. M. Jordon, nurseryman and vineyardist of St. Louis, Mo., sends the following timely hints: "Keep the vines tied up the first season, as it takes two years to correct one year's neglect. Set strong stakes, 6 feet high, to tie the vines to, and let but one cane grow. Pinch in its laterals, and it will make a growth of 4 to 8 feet, and the second year after planting, will bear half a crop. On bearing spurs, leave three leaves beyond the last bunch of grapes. Two bunches are better than three on each lateral. Never disturb the inferior roots nor grow any other crops in the vineyard. Stir the ground frequently in dry weather.

THE MISSION GRAPE.—A. Taylor, Calaveras Co., Cal. It will be of no use to send the "Mission" or any other Californian grape to the Atlantic States. All those varieties which succeed so finely there, are of European origin, and are entirely unsuited to our climate.

GRAPES FOR COLD CLIMATES.—Several correspondents ask what grapes they can raise in "this cold part of the country." Doctor J. D. Newbro, Ingham Co., Mich., which is about as unfavorable a locality for the grape as any in that State, succeeds well with the Hartford Prolific, Concord and Clinton. He says: "the Clinton is as hardy as an oak, bears well every year, is liked by most people, especially after one or two frosts." The Clinton we think has not met with the attention it deserves. There is no doubt about its great hardiness, and to those who do not care for an over-sweet fruit, it will prove acceptable. The Delaware is perfectly hardy, but it is of rather slow growth when young, and will not generally give fruit so soon as the varieties above named.

NEW VARIETIES.—The attention now given to the production of new seedlings will doubtless, in a few years, result in giving us varieties superior to any we now have, though with the Delaware, Iona, and Allen's Hybrid in mind, it is difficult to conceive what direction the improvements will take. While we record the accessions to the list of grapes, our readers are well aware that we exercise great caution in recommending them. In the last report of the Massachusetts Horticultural Society, the Dana is described as a new seedling, so nearly resembling the Rose Chasselas that it was mistaken for that variety. The report says: "The bunch was medium size, shouldered, rather compact, with a peculiar red stem, the berries of rather large size, nearly round, red, with a rich, heavy bloom, so that when fully ripe they appear almost black; as free from pulp as the Delaware; not so sweet, but more spirited and vinous, and yet not an acid grape." Ripe 20th to 25th of September, and keeps till December. This variety was raised by Francis Dana, who also presented the Novantum, which is a black grape resembling the Isabella, but quite free from pulp. The Miles grape is an early variety which received favorable notice at the last meeting of the American Pomological Society. It was commended by Chas. Downing and others as a good grower, hardy, early, productive and of good flavor.

MILDEW.—Dr. Siedhoff, an experienced grape grower in New Jersey, informs us that he completely prevents mildew by a free use of sulphur, and that he even succeeds in preventing injury to the foreign varieties by this treatment. The sulphur is blown over the vines, three or four times during the season, by means of a bellows which will allow the application of the sulphur to the under side of the leaves. Dr. S. applies the sulphur as soon as the leaves appear; when they are in blossom; when the berries are the size of peas, and as soon as they commence to color. The same remedy is said to drive away the thrips, which in some localities are very destructive.

Little Things in the Garden.

In planting the family garden, all the standard vegetables will suggest themselves as things necessary to be provided for, but much of the comfort afforded by the garden consists of the numerous little things it affords—things which in themselves can hardly be considered as food, but which add to the attraction of the table by rendering other food more palatable. Those who are fond of pickles will in time provide for Cucumbers, Martynias, Peppers, Green Musk Melons, Refugee Beans, and all those things which are used for pickling, not forgetting the spicy Nasturtium. Parsley is valued by most people as a flavoring herb, and it is very handy to dress a dish of cold meat. The seeds are very slow in germinating, and should be sowed early. Marjoram, Savory and Thyme, are the popular flavorings for soups and stuffings, and when cut in flower and carefully dried, and then rubbed up and put into an air-tight box or bottle, may be had in greater perfection than any that can be bought at the stores. The first two are annuals: sow the seeds in drills a foot apart and thin or transplant to six inches in the rows. Thyme is a small shrubby perennial which may be raised from seed or propagated by dividing old plants. There are very few who know what an excellent flavor a pinch of Spearmint gives to soup, or it would be more generally grown. In the older parts of the country it is found naturalized in wet places, but it will do perfectly well in the garden and then we always know where to find it, as once established it will remain for years. Sage is always in demand in the family for culinary or medicinal uses, and can be had in the garden with but little trouble. Seeds sown this spring will give a fair cutting by autumn. It is very readily raised from cuttings of old plants. Slip off the young shoots which start this spring from near the base of the plant, and set them in sandy soil and put over them a frame covered with common muslin; they will thus be kept moist and shady and will strike root readily.

The Preservation of Fruits.

Various plans have been proposed for prolonging the time to which fruits can be kept, but the only one which, as far as we have heard, has been successful on the large scale, is that of Prof. Nyce, of Cleveland, O. After many experiments, he has settled upon a preserving house which seems to combine all the requisites for keeping fruit, viz., a low temperature, a dry atmosphere, and exclusion of oxygen. The house is constructed of double air-tight walls of galvanized iron, three feet apart, and filled in with sawdust, or other non-conducting mate-

rial. The ice is placed in a second story, in a mass five or six feet thick, and the fruit is stored in the room below. A uniform temperature of 34° is kept in the fruit room, and the air is kept dry by the introduction of *chloride of calcium*, which completely absorbs the moisture given off by the fruit. This absorbing material is not, as some have supposed, the article commonly known as chloride of lime, but is quite different in constitution and properties. The chloride of calcium is a waste product of the salt works, and is remarkable for the readiness with which it takes up water. When the fruit room is closed, the fruit absorbs oxygen from the air, and gives off carbonic acid (as always occurs in the ripening of fruits), and in a short time the atmosphere is completely deprived of oxygen, an important agent in hastening decay. We have the best evidence that apples, pears, and grapes are kept in Prof. Nyce's house with complete success. Some grapes were exhibited at the Fruit Growers' Meeting in April, which had been several days on the journey, yet were as perfect in flavor, and their stems were as green as if just removed from the vine. We understand that tomatoes, peaches, and berries of various kinds are preserved in large cans and the fruit is sold out in the stores by the quart. The subject has much interest for both consumers and growers of fruit.

The Striped Bug.

This little beetle, *Galeruca vittata*, is one of the annoying pests of the garden. It attacks cucumbers, melons, and all plants of the squash family during their early growth, often causing a total failure of the crop. We have published many of the "sure preventives" which have been communicated and have several yet unpublished; these range from soaking the seeds in turpentine, to sprinkling Indian meal around the plants. All the applications we have ever made of various powders, varying in potency from black pepper to plaster, seem to have had only a mechanical effect. If the plants are kept covered with any powder, the insects seem to find it disagreeable, and one powder seems just as good as another. Mr. S. H. Marrows, of Androscoggin Co., Me., surrounds his plants by boxes or frames, 8 inches square and 6 inches high, and keeps them there until the plants reach above the tops of the boxes. They are put on when the seeds are planted. Mr. M. attributes the failure of those who have been unsuccessful with this plan, to the fact that they make their boxes too large and put them on too late. With him "it works to a charm." We have successfully used boxes a foot square and covered with some kind of gauze or open fabric, and found it the only effectual method of keeping off the bugs. The correspondent above quoted finds it unnecessary to cover them, and states that few insects get over the barrier.

TAN BARK FOR POTATOES.—Tan Bark is worth hauling three or four miles for covering potatoes, particularly when the previously sprouted sets are planted on heavy soils. After putting the sets in the drills, sprinkle a quart or so of tan on, and around each, and cover with earth. This will keep the soil loose, and the tubers will grow larger and less liable to rot. Sawdust is also good. On light soils sawdust might work more injury than benefit. We recommend a trial of this plan in localities where potatoes are usually apt to rot badly.



Something about Columbines.

Every one knows our common Columbine, which delights to grow on rocky ledges where its delicate foliage, and its slender stems supporting the nodding flowers, present an air of grace equalled by few of our garden flowers. The flower of our native species, *Aquilegia Canadensis* is given in the engraving, and serves to show the general shape of the flowers of all the species. The petals are singularly formed into a long tube which is usually curved, something like the talon of a bird of prey, a peculiarity which suggested the name *Aquilegia*, derived from the Latin *Aquila*, an Eagle. Our native Columbine makes itself quite at home in the garden, and though the orange scarlet color of its flowers is not as delicate as that of some other species, it excels them all in gracefulness. Most of our garden Columbines are varieties of the European *Aquilegia vulgaris*, and they present a great variety in color and marking. Some of them are very double, though to our taste the strongly marked single ones are more pleasing than most of the double kinds. A variety called *Jucunda* is very showy, its petals being of the darkest blue, tipped with pure white. A striped variety, called *Striata*, is curiously variegated with stripes and spots. The Siberian Columbine, *Aquilegia Siberica*, is another species, and has very dark flowers, erect on stems about a foot high. The seeds of many sorts are sold by the seedsmen; they are to be planted in an out-of-the-way bed, and the plants

transferred to the borders in autumn, will where they bloom the following spring. Plants of the leading varieties can be obtained from the florists. The Columbines are among our most reliable and attractive herbaceous perennials, and have not received the attention they deserve.

PEONIES.

An old-fashioned flower, the newer varieties of which are very beautiful. A mass of them, of different colors, on a raised, oval bed, is one of the most splendid sights which the garden affords. They are so hardy, so affluent in leaf and flower, so brilliant and luxuriant, that it is a delight to look upon them. No plant is more easily propagated. Divide the roots with a sharp spade. A single bud, with a piece of root attached, will make a plant. It is best to set them out in the fall, as they start quite early in the spring. Give them a deep, rich soil, with a plenty of room on every side. The different kinds bloom along through May and June. There are two principal sorts, the herbaceous and shrubby. The first includes the more common kinds, which die to the ground in the fall; the second includes the Moutans, or Tree Pæonies, which have woody stalks, often two or

three feet high. Of the herbaceous pæonies, the old double crimson should never be omitted in a collection. In color, nothing can surpass it. *Rosea, blanda, and rubra*, are varieties of the above, with different colors, flowering the last of May. *Tenuifolia*, or Fennel-leaved, is very pretty, though not double, blooming early in May. The Chinese Pæonies are another class, among which are some splendid flowers. The best of them, in our acquaintance, are *P. Whitleyi*, with large, double white flowers; *P. Humelii*, double, lilac red; *P. rosea*, double rose-colored; *P. Reevsii*, semi-double, purple; *P. Pottsii*, semi-double, lilac rose; *P. sulphurea*, pale yellow. Of the Tree Pæonies, the varieties are many. The *Banksia* is a general favorite, with its numerous large, double pink flowers, varying on the same bush to crimson. *P. papaveracea* has large, white, single flowers. Then there are *Alba variegata, Arethusa, Globosa, Mirabilis, Rosea odorata*, and many others, which we cannot now enumerate.

THE BLACK KNOT ON PLUM TREES.—Some agricultural papers, who ought to know better, persist in stating that the cause of this is not known, and others attribute it to insects, diseased sap, and every cause but the right one. It was shown very plainly in the *Agriculturist* for April 1863, that this is a parasitic fungus, and magnified drawings were given showing the plant and its method of reproduction. Its fungoid character was made out many years ago, but we believe that Mr. Austin, in the ar-

ticle above quoted, was the first to figure the plant. From the presence of this parasite the wood becomes diseased, and the trouble goes on from bad to worse. Cut out the knot on its first appearance down to the sound wood and burn the portion removed.

The Jacobean Lily.—*Amaryllis formosissima*.

This is one of our oldest spring bulbs, it having been brought from Guatemala, over two hundred years ago, yet it is seldom seen in cultivation, though wherever it finds a place in the garden, it is always an object of well merited admiration. The bulbs are sold each spring by the florists, and when planted in pots or in a rich border they throw up a stem which bears a single lily-like flower of the richest crimson color. The engraving shows the form of the flower very much reduced in size. The flower is bent to one side; three of its divisions are curved upward while the other three are bent downward, and near their base they are curved inward so as to surround the pistil. The flowers appear in June, after which the leaves increase in size, and the plant should have good culture until the leaves wither. The want of success with this plant which is sometimes complained of, and which is one of the reasons why we do not see it oftener in our gardens, is due to neglect to provide for the next year's bloom-



JACOBEOAN LILY.—*Amaryllis formosissima*.

ing by securing a vigorous growth of leaf. The bulb will bloom in poor soil or even in sand or wet moss, the first year after purchasing it, and will fail to flower the following year for the reason that it has not recovered from the exhausting effects of flowering. Give the bulbs a plenty of well rotted manure, not so much as to secure a strong bloom, but to induce the leaves to

grow with vigor, and prepare the bulb for another effort, and cultivate and water in such a manner as will conduce to this end. Bulbs are sold by the florists for about thirty cents each.



The Common Periwinkle.—(*Vinca minor*).

Scarcely any plant now cultivated in our gardens has been longer known than the Periwinkle. It is the *Vinca Perivinca* of Pliny, which Latin name has been converted into Periwinkle. In this country, the plant is commonly called Myrtle and Running Myrtle, names which are incorrect and should be dropped. The plant has nothing in common with the true Myrtle, except both have smooth, thick, dark green leaves. The figure represents the Small Periwinkle, *Vinca minor*, which is much more common in our gardens than the Greater Periwinkle, *Vinca major*. The two resemble one another in general appearance, but the last named has much larger leaves and a more erect growth. They both produce an abundance of pretty blue flowers. On account of their long, flexible stems, and bright green leaves, they are very useful in making up wreaths. In Italy, the large species is called "flower of the dead," on account of its being used as garlands at funerals. Both species are natives of Europe, and are quite hardy in this country. They are evergreens, trailing on the ground, where the prostrate stems strike root, and form a dense mat, the foliage completely concealing the stems and the ground. The plant is generally put in some out of the way corner, and left to itself, but it is pretty enough to deserve more care than it usually receives. A mound planted with the small Periwinkle, is soon covered with its rich, dark green foliage, and forms a pleasing object. The plant is adapted to trail upon rock work, and over the edge of a rustic basket. Its greatest utility, however, is found in the fact that it flourishes in the shade, and under the drip of other plants, and it is often the most available thing to cover bare spots in those places where it is difficult to make grass grow. There are variegated sorts, of both species, which have their leaves edged and marked with white or yellow. One of the best of these is called by the florists *Vinca elegantissima*. A bed of it upon a lawn or elsewhere, produces a fine effect,

THE HOUSEHOLD.

What is Glycerin?

The above question is asked by a correspondent, and as its answer may interest more than one reader, we give it in the household columns. Glycerin is a remarkable contribution of modern science to the arts, and as its utility for different purposes has been manifested, corresponding improvements have taken place in its manufacture, and it is now produced in great purity and at moderate price. But this is not telling what glycerin is. It is a principle which exists in fats, and all fats are a combination of glycerin and some acid. Lard, after the lard oil has been pressed out, is mainly a compound of stearic acid and glycerin. In the process of manufacturing the finer kinds of candles, this compound is broken up and the stearic acid is used for candles, while the glycerin is purified and put into the market. Glycerin is a thick, colorless liquid, of a syrupy consistence, and when well made has no odor. Its name is from the Greek word, meaning sweet, and indicates one of its prominent characters—its sweetness. It is remarkable for its undrying qualities; when spread out and exposed to the air it remains for a long while unchanged. It mixes readily with water and with alcohol, but not with oils, and has a remarkable solvent power for many substances. It is largely used in medicine as a solvent for various drugs, and is also employed as a substitute for sugar in medicinal preparations. In domestic use it forms a most excellent application to chapped or inflamed surfaces, as it keeps the parts from the air, and is free from the inconvenience which attends the use of oily matters. Properly diluted with water, it forms a popular hair dressing which keeps the hair moist, and is much less objectionable than many of the preparations sold for the purpose. As glycerin does not readily evaporate nor freeze it is used in cities to put into gas meters. It is also largely used in the place of molasses to mix with glue to form the rolls by which ink is applied to type. These are among the more common uses—others, such as in mounting microscopic preparations, are of less general interest. Doubtless many other useful applications will be found for this interesting chemical product.

Mounting Maps and Pictures.

Maps or any drawings on paper are rendered much more durable if they have a mounting or backing of some kind of cloth. The operation is a very simple one. The cloth, some inches larger each way than the paper, is tacked upon an ironing table or some smooth surface. The success of the operation depends mainly upon the care with which the cloth is tacked. It should lay square, and the tacks be put in very closely along the edges, not farther than an inch apart. The selvage will give but little trouble, but the raw edges will need to be doubled over where the tacks are put in, to prevent them from tearing out. The tacks are not driven home, but are left with the heads high enough to allow them to be removed by means of a tack lifter or strong knife. The cloth, which may be any kind of strong cotton fabric, being ready, lay the map or whatever paper is to be mounted, face down, on a clean surface, and give its back a good coat of stiff flour paste, evenly applied. The paste should be as stiff as will work with a brush, and be perfectly free from lumps. In applying the paste, be sure to get the edges well covered, and if any lumps, or hairs from the brush are left upon the surface, remove them carefully by means of a case knife or paper folder. The paper being thoroughly pasted, let two persons take it by the four corners and place it, pasted side down, upon the cloth. With a little care it can be laid quite smoothly. If the paper is very long, let the centre touch the cloth first, and gradually let the whole down on to the cloth. Then take a perfectly clean handkerchief or soft napkin and by a sweeping motion from the center

to the edges, press out any air bubbles that may appear, and see that the edges of the paper are in close contact with the cloth. As it dries, the paper will appear badly wrinkled, and the job will look like a failure, but wait until it is thoroughly dry, and if the tacking has been well done and the paste good, the paper will be perfectly smooth. We have laid considerable stress upon the tacking for this reason: When the paper is pasted, it stretches, and in this condition it is applied to the cloth. As it dries, it contracts with a great deal of power, and the cloth must be thoroughly tacked to resist this force. We have in this way mounted a number of sheets 9 feet long, and 5 feet wide, with perfect success. When all is dry, remove the tacks and cut the cloth down to the size of the paper.

Varnishing Furniture.

The appearance of furniture may be greatly improved by a coat of good varnish, which a skillful housekeeper may lay on quite as well as some manufacturers of furniture. The proper tools and materials are quite as essential as skill in order to varnish neatly. A clean, light and warm room is indispensable, unless it can be done in the open air, in warm weather. When varnish is exposed to sunshine it is apt to blister. If applied to cold or greasy furniture sometimes it "crawls," and settles down in ridges. When furniture does not take varnish well, rub it thoroughly with a cloth dipped in alcohol, or benzine. Then keep it in a warm room until all the wood has been well warmed through. When the varnish is being laid on, let it be kept warm, by standing in a kettle of water nearly boiling hot.

Procure a small varnish brush, not a paint brush, for varnishing chairs, and take only a small quantity of varnish on the brush at once. Spread it evenly and thin, and work it well with the brush. When entirely dry, apply another thin coat. A beginner can do a much better job by laying on two thin coats than only one heavy coat.

There is great difference in varnish that is sold for a given kind. Unless one has tested its drying quality, it will be well to try it on a piece of cheap furniture, to ascertain whether it will dry well. Varnish that will stick to every thing that touches it, is a vexatious nuisance. Let such varnish or paint be rubbed thoroughly with good benzine, and afterwards two coats of good varnish applied.

Walls that have been papered, may be varnished after a thin coat of glue-water has been applied to keep the varnish from striking into the paper. When varnish is laid directly on the paper, most of it will be absorbed, and there will be little gloss.

Suggestions About Carpets.

Our correspondent "T. G.," speaks of carpets as follows: "Carpets are a nuisance as they are ordinarily managed. They are tacked down at spring cleaning and serve as filters through which all the fine dirt passes and remains as a subsoil of impalpable powder. At every sweeping some of the surface dirt goes down through the carpet, and a portion of that which was below is worked up through it and diffused through the room, and finally settles on the furniture and in the air passages of the occupants of the room. Let any housekeeper—even the most scrupulously neat, take up her carpets after they have been down for the winter and see what a stratum of dirt she has been living over. It is a peculiar Americanism to have every room carpeted all over. The carpet is considered as a mark of respectability, and it will require a courageous disregard for Mrs. Grundy to receive her in an uncarpeted room. Yet I believe that the reform will come at length, and instead of putting a carpet over the floor to cover unsightly carpenters' work, we shall have neatly inlaid floors of colored wood, which can be kept perfectly clean and look well. If a warm place is needed for the feet in winter, several large rugs may be provided. In one of the most cosy, best furnished rooms, I

have lately seen, the carpet did not reach within two or three feet of the sides of the room. A carpet like this can be frequently taken up and shaken, and much of the dust which annoys the house-keeper be avoided. Who will inaugurate an economical and healthful reform and abolish the slavery to carpets?"

Our Bachelor's Wish Realized.

Our bachelor's desire, expressed in April, that some one would found a school of cookery, is at length realized, and he expresses himself as follows: "Blessed be Blot, (pronounce that *Blou*, if you please,) for he has opened a Cooking Academy, and some sixty of the ladies of New York attend his lectures. Now I find by accurate computation, that there are to be at least one hundred and twenty people made happy—60 ladies will gratify 60 lords—by presenting them with something eatable. The thing will spread, these ladies will each show their friends, and from this time we have hope for the American stomach. For this select sixty and their disciples there will be no more beef-steaks Biddified in the frying pan, and that which goes on to the fire as mutton, will not be leather, when it comes to the table. No more "one hundred creeds and only one sauce," for Mr. Blot is great on sauces. There is a popular erroneous idea in regard to French cookery, that ought to be dispelled. The general notion is, that French dishes are of course complicated, elaborate, and highly seasoned; never was a greater mistake. The French excel simply in this: they study the best way to cook each thing, and do not cook every thing in one way. No more plain, healthful, and eatable cooking can be found than that of the French. They bring thought and experience to the subject, and the result is palatable and economical food. The daily papers give accounts of Mr. Blot's lectures, and I wish him much success in his enterprise."

Valuable Plain Recipes.

Since the Bachelor's onslaught upon Recipes, in the February No., he has been receiving especial attention from the ladies, as was expected, and as he deserved. The following from "Nymphaea," will interest the readers as well as the offender. "I, too, pity your Bachelor editor of the Household Department. I always do pity the bachelors a little (on paper,) and to show the sincerity of my commiseration I have written out some recipes so carefully that I doubt whether even he can find much in them to grumble at. (I am not certain, though, that he will consider *that* any charity, for I am privately of the opinion that he likes to grumble.) First of all I would like to find fault with the millers. I think they are about as blameworthy as the bakers. For my part, I find it almost impossible to get hold of any good *Corn Meal*. This article should be about half way between the ordinary fine meal and that called "Horse feed," so coarse that when pressed between the thumb and finger, it will not retain the impression. Only the coarsest part of the bran should be removed. This article retains its sweetness longer, makes lighter bread, and is in every way more wholesome. When I can not have my corn ground to order, I get the best 'feed' and run it through a large iron coffee mill, or grind up whole corn and mix this coarse meal in equal quantities with the fine meal. This is the kind used in the following recipes.

Unleavened Rye and Indian Bread. Take 2 parts coarse corn meal, scald thoroughly with boiling water; add 1 part rye meal or rye flour, and more water if necessary to moisten it. Stir thoroughly together. It should be made as stiff as it can be managed with a large iron spoon. Make it into a loaf three or four inches deep and set it upon a stove or range hot enough to cook it slowly upon the bottom. In an hour or more it will rise some and crack the upper surface slightly. Then bake in a slow oven three or four hours. I usually put it in about 7 P. M., let it acquire a rich brown crust by 10 o'clock, then cover up the fire so that

it will keep all night and in the morning I take out a nice warm breakfast loaf. It usually improves by keeping three or four days, when it is delicious sliced and toasted. Many prefer to have this bread sweetened with molasses stirred in with rye flour. Well boiled white beans make a very wholesome addition. Even without these improvements the bread is far better than the Boston brown bread of the shops. No one who tries this recipe thoroughly will ever again put in yeast, which always sours and spoils corn meal.

Boiled Indian Pudding.—(Good enough for a bachelor.) Scald half the meal and add the other half, with cool water enough to reduce the whole to quite a thick batter. Don't put in too much salt. Add fruit, dried or fresh, whortleberries, or currants, or cherries, or best of all, dried pears. Put into a bag with room to swell, drop into hot water and boil 2 or 3 hours. It is well to put some bits of crockery under it to prevent its sticking to the pot. Then turn it out and eat with cream, or maple molasses, or a dressing made of the thickened liquor in which it was boiled, sweetened, and seasoned with a dash of cinnamon. If no fruit was put into the pudding it can be eaten with a fruit syrup.

Scalded Meal Johnny Cake.—Scald half the meal and add the other half with cold water sufficient to make a batter, the required consistency of which will vary with different kinds of meal. "Bake before the fire on the middle piece of the head of a particular kind of flour barrel." Or if that can not be obtained *ladies* may try it on shallow tins in a quick oven.

Wheat and Indian Cake.—Scald one part Indian meal as above, add one part wheat meal (Graham flour) with water sufficient to make a thick batter. Drop by the spoonful on a large pan, or into muffin rings, and bake in a quick oven. When taken out, cover close for 20 or 30 minutes. This makes a most wholesome and palatable bread, much lighter than the Johnny cake, and much better when cold. It is also very nice when rye is substituted for wheat meal.

Apple and Pie Plant.—Stewed dried apples, especially sweet apples, are greatly improved by the addition of $\frac{1}{2}$ or $\frac{1}{4}$ of the quantity of pie-plant, either fresh, dried or canned. (*Mem.* Be sure to put up a few cans of pie-plant in its season.)

Rye and Indian Apple Pudding.—Take the crusts of your rye and Indian loaf and steep them slowly in apple sauce until thoroughly softened. This makes a delicious side dish to eat with beans, or it may serve as a dessert to a hearty farmer's dinner.

Bags for Keeping Hams.—T. Raymond of Fairfield County, Ct., writes: "In the March number of the *Agriculturist* I find three ways for 'keeping smoked meats in Summer;' let me add a fourth. Take old muslin or any kind of fabric, make a bag sufficiently large to admit the ham easily, wet it thoroughly in pork or other strong brine, wring and dry it; repeat this once or twice, then when it is dry, drop the ham, (which must have a cord attached to hang it by) into the bag, tie the mouth closely around the cord, and hang in a dry place. If the meat does not come out all right, do not charge it to the flies." An additional precaution practised by some is to wrap the meat in brown paper before inclosing in the bag.

DOUBLE HEELING A STOCKING.—Knit the first stitch, slip off the next without knitting, knitting every alternate stitch on the right side of heel, and every stitch when knitting on the wrong side. This makes the heel very thick.

FAMILY JARS.—"Jars of jelly, jars of jam, jars of potted beef and ham, jars of early gooseberry, nice jars of mince-meat, jars of spice, jars of orange marmalade, jars of pickles, all home-made, jars of cordial, home-made wine, jars of honey superfine—would the only jars were these, that were found in families."

Hints on Cooking, etc.

Cooking without Milk.—A California subscriber "Aunt Lina," who lives where milk is scarce, contributes the following to the *Agriculturist*. "TEA CAKES.—Stir to a cream $1\frac{1}{2}$ teacupfuls of sugar, $\frac{1}{2}$ teacupful butter, half a nutmeg. Then add 1 teacupful of water, 2 teacupfuls of cream of tartar, 1 teaspoonful of soda, to 1 quart of flour, which should be put through a sieve. Add flour till stiff enough to roll thin; cut into cakes, bake in buttered pans, in a quick oven. This is economical, at least in California, where eggs are from 75 cents to \$1 per dozen, and milk scarce.

"PUMPKIN AND SQUASH PIES, can be prepared also without milk by using water and corn starch, say for 3 pies, 2 teacupfuls of pumpkin, 2 eggs, 2 table-spoonfuls of corn starch, allspice, and sugar to taste.

"CUSTARD PIES, 4 eggs, 4 table-spoonfuls corn starch, 2 teacups water, sugar and nutmeg to taste: this will make 2 pies. Mix the starch with a small quantity of the water. Custards may be made in the same way. I use Oswego corn starch. Rutabagas cost less per lb. than pumpkins or squashes, with us, and make good pies, also carrots and parsnips, by using the same as pumpkin, with the addition of a little flour, molasses and ginger."

Graham Biscuit.—"Lizzie" writes that these are recommended by a bachelor, and, therefore, must be good. Wet up Graham flour with cold water, adding a little salt, knead as stiff as possible, make into small biscuits, and bake in a very hot oven.

Poor Man's Pudding.—Three teacupfuls flour, one teacupful milk, one of chopped raisins, one of suet, one of molasses, one teaspoonful saleratus, nutmeg. Put in a bag and boil an hour and a half. Serve with sauce to taste.

Steam Pudding.—Two cups flour, one of milk, one-half cup each of molasses, chopped raisins and suet, one egg, one teaspoonful saleratus, one-half teacupful soda. Steam one hour.

Mock Sponge Cake.—Two cups flour, one of sugar, one of milk, one egg, one teaspoonful saleratus, two teaspoonfuls cream of tartar.

Apple Jonathan.—Fill a baking dish $\frac{3}{4}$ full of sliced tart apples, sweeten to taste; mix wheat meal with water and milk (a little cream will make it more tender) into a batter, pour over the fruit until the dish is full. Bake until the crust is of a handsome brown color.

Potato Cake.—Contributed by Miss Louisa J. Wilson. Take a dozen of cold boiled potatoes and mash them, add a small piece of dough, one egg, and a little salt. Work it well with flour, cut in squares, let it stand to rise, and bake half an hour in moderate oven.

Breakfast Cake.—Contributed by Mrs. A. H. Bryant. Take 1 quart sifted flour, 1 table-spoonful of butter, 3 teacupfuls of baking powder (which is soda and cream of tartar properly combined), mix these thoroughly into the flour with a table-spoonful of sugar, then add 2 well beaten eggs, and sweet milk sufficient to form a thin batter. Bake in a moderately hot oven; and with a cup of coffee or cocoa and a boiled egg you will find you have made a good breakfast.

Nice Breakfast Dish.—Slice a few cold biscuit, or some dry light bread, fry them slightly, in a little butter, or nice gravy. Beat 3 or 4 eggs, with half a teacupful of new milk, and a pinch of salt. When the bread is hot, pour the eggs over it, and cover for a few minutes, stir slightly, so that all the eggs may be cooked. This is a nice dish, besides saving the dry bread.

Substitute for Cream, for puddings, cold rice, etc. Boil $\frac{1}{4}$ of a pint of sweet milk, new milk is best. Beat the *yolk* of 1 egg, and a level teacupful of flour, with sugar enough to make the cream very sweet. When the milk boils, stir this into it, and let it begin to simmer, stirring it, let it cool and flavor to taste. For any pudding in which eggs are used, this is almost as good as rich cream (which many prefer to any other dressing), and much better than thin cream.

Rusks.—One pint milk, one cup yeast, one cup sugar, one cup lard, one egg. Add the egg and sugar after raising once.

Pop-Corn Pudding.—Soak 2 quarts of pop-corn, broken fine, in 3 pints of milk over night; in the morning add 3 beaten eggs and a little salt and nutmeg. Bake the same as a custard.

BOYS & GIRLS' COLUMNS.

The Good News.

"Richmond is Ours!"—"Lee has Surrendered!"—"Peace is Near!" These welcome words still ring in the ears and gladden the hearts of all men, women, and children. April will henceforth be more than ever a historic month in the Republic. It saw the fall of Sumter, it now hails the fall of the Confederacy. The "boys" will come home again, and many a household will be made happy. These war-worn veterans will everywhere be honored; under God they have saved the country from Rebellion and anarchy. What stories they will have to tell of camp life, of weary marches, fierce battles, and glorious victories. Tens of thousands of our young readers will share the joy which our heroes will bring home. "Father is away at the war," has often been noticed in the letters sent to the *Agriculturist*, and we rejoice in the happiness in store for those who will ere long receive their loved ones. Some, alas! will not return. They sleep in southern soil, martyrs to their country's cause. A terrible price has been paid for Union and Liberty, but the blessings bequeathed to their country by those who have fallen, are beyond price. All honor to those who have suffered more than death in the loss of their heart's treasures. None love their country better than those who have given most for it, and they too rejoice to know that the sacrifice has not been in vain. Shall these be forgotten? If there be a soldier's widow or orphan in your neighborhood, see to it that they ever have special regard. We shall not deserve the blessings of peace, if we forget to care for those by whose anguish it was won. And let none neglect to praise the Ruler of Nations, for these days of joy. We can never forget the scene when news of the fall of Richmond was received in New-York, and thousands were gathered in Wall Street, the great commercial heart of the nation. After singing patriotic songs, listening to stirring speeches and cheering for hours, the whole assembly reverently removed their hats, and joined in singing again and again "Praise God from whom all blessings flow." It was a fitting key note for the songs of the nation.

Something about the Hair.

How many hairs on your head? The number varies with different persons; the average is stated on good authority to be 293 hairs to every quarter of a square inch; from this each can calculate somewhere near the sum of his own. Flaxen hairs are finest, brown and red next, and black the coarsest. A space containing 147 black would be occupied by 162 brown, or 182 flaxen hairs. Each hair springs from a root imbedded in the skin. The outside is composed of horny scales overlapping each other like shingles on a roof, though not with the same regularity, and these scales form a tube enclosing a marrowy pith. The hair of different races of men, varies in structure as well as in color; thus that of the negro may be *felted*, that is, formed into a solid compact mass like cloth. This property is owing to the prominence of the scales composing it. Straight hair is nearly round, curly hair is more flattened, the most so in the negro, whose hairs are nearly flat ribbons. The different colors depend on minute particles of coloring matter within the hair; age, sickness, severe mental exercise, or sudden fright may destroy the coloring matter, and cause the hair to turn gray. In animals having "whiskers," as the cat, tiger, rat, etc., the hairs are supplied with nerves, which render them very delicate "feelers," by which they are aided in stealing on their prey. In passing through narrow spaces, these give notice if the opening be not large enough to admit the animal's body. In some forms of disease the human hair becomes extremely sensitive at the roots, and liable to bleed. Frequent cutting causes it to grow coarser, but not more thickly, and those who desire to retain soft silky beards should not shave at all. Oils, pomades, and such preparations clog the pores of the scalp and prevent the healthy growth of the hair; washing the scalp with water and thoroughly drying with a towel, will keep it in excellent condition. Human hair is an important article of trade, tons of it being sold every year. In large districts of Europe the peasant girls are shorn of their locks annually, receiving from two to twenty dollars each for the crop. Most of this is used by those who can not grow enough of their own, some of it for making jewelry and other ornaments.

Be Acquainted with your Neighbors.

Thousands of carpenters, tailors, masons, splinters and weavers, diggers, and other mechanics are at work in the country, with whom only a few persons are well acquainted, yet they are next door neighbors to most of our young readers. This is the more strange because many of them have very mischievous habits. We have known a company of them enter an orchard, attack the best trees, bore them full of holes and entirely destroy them. Others dig around the choicest vegetables and so mutilate the roots that they are made worthless. Fruit, vegetables and flowers of every kind suffer from their operations; whole fields of wheat are stolen, and extensive forests are ruined by these marauders. Of course, insects are the neighbors we are writing about. Every one of them is a most interesting object of study, and if our young readers will take pains enough they may find almost all trades represented among these tiny creatures. One kind of wasp is a mason, that builds a very complete mud cell for its young, lays its eggs, and then packs it with spiders which it has stung enough to benumb but not kill them; so that they remain torpid until the following year, when the young wasps hatch out and find an abundant supply of ready prepared fresh spiders' meat,—just the food they like. Another species of wasp is a paper maker; so is the hornet. A kind of bee with its tiny shears cuts out circular bits of leaves as true as though they were marked with a pair of compasses, and uses them in constructing its nest. Thousands of worms and caterpillars spin curious bed clothing in which they tuck themselves snugly and sleep through the coldest winters. The commonest insect, if watched day by day, will do many things that will surprise and interest the observer. Some repulsive looking bugs, that girls and boys would either kill outright or run away from, are real friends in the garden, where they feed upon other insects that would destroy plants. Begin with some one common insect, watch it through all its changes from crawling caterpillar to butterfly; notice what it eats, study its habits, and if possible at the same time read some book describing what others have observed about it, and you may not only find great pleasure, but perhaps be able to tell the world something new.

Selfishness Properly Rewarded.

It is related of an English Judge that being about to hold his court at a distant point, his wife desired to accompany him. He gave permission, provided she would carry no band-boxes in the carriage, as he greatly disliked them. The day after starting, happening to place his foot under the opposite seat, it struck against one of the forbidden articles stowed there. Without a word the judge seized the offending bandbox and threw it out of the window. The coachman seeing it fall, stopped, and the footman started to pick it up. "Drive on!" furiously shouted the judge, and the box was left by the roadside. When at their destination, the judge proceeded to array himself in his robes of office, and when nearly ready called out, impatiently, "Now then where's my wig?" "Your lordship threw it out of the window," was the reply. Probably he was a little less hasty, if not less selfish after this occurrence.

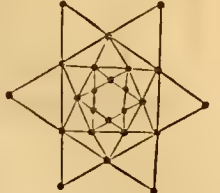
ADVICE FOR BOYS.—"You are made to be kind, generous and magnanimous," says Horace Mann. "If there is a boy in school who has a club-foot, don't let him know you ever saw it. If there is a boy with ragged clothes, don't talk about rags in his hearing. If there is a lame boy assign him some part of the game which does not require much running. If there is a dull one, help him to get his lesson."

MY MOTHER.—A Sunday-school teacher, speaking one day to his children upon the depravity of the human heart, asked them if they knew any one who was always good. One of the class, prompted by simple and child-like affection, instantly replied, "Yes, sir,—my mother."

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the April number, page 125. No. 135. *Illustrated Rebus.*—*Play in Deel in g eyes a jew well*; or, Plain dealing is a jewel....No. 136. *French Riddle.*—The translation is, I am captain of twenty four soldiers. Without me Paris would be taken. *Answer*, the letter A; without which Paris would be pris (taken)....No. 137. *Latin Sentences.*—1, The horse is in the stable, but he does not eat. 2, Hasten mother, the sow is eating apples. 3, Ie fights battles with the fist....No. 138. *Illustrated Rebus.*—Fig. 1, *Paine in six lances*, or *Paine in silence*, which signifies, I love in silence. Fig. 2, Little and often fills the purse....No. 139. *Charade.*—The word co-nun-drum. No. 140. *Conundrum.*—The *Israelite*....No. 141. *Word Puzzle.*—Fox beheaded leaves ox....No. 142. *Illustrated Rebus.*—He who swims in sin will sink in sorrow....No. 143. *Geographical Names.*—1, Liverpool; 2, Kingston; 3, Warsaw; 4, Mississippi....No. 144 and 145.—No answers received; try again....No. 146. *Planting Problem.*—The accompanying figure gives the method of placing the trees. The following sent correct answers up to April 10th. Samuel M. Henderson, 124, 127, 128, 133, 134; George H. Ensing, 128, 130; "P. J. E.," 124, 127 (the sap runs up); C. J. Darrah, 125, 131; Wm. Dale, 125, 131; M. E. Dale, 124, 127; Charles L. Spooner, 124, 126, 127, 128, 131, 132, 133; Wm. R. Butler, 124, 127, 128, 133, 134 John J. Collins, 124, 127, 128; Fleming Ratcliff, 124, 127, 128; "Harry," 132; "P. B. P. & Co.," 124, 127, 128, Cordelia Baker, 126, 127; George Streunell, 124, 127, J. I. Getty, 119, 131; Bernard McGinity, 127, 128, 133, "L. G. H.," 124, 127, 128, 129, 130, 131; Royal S. Owen, 127; D. Griffith, 117, 119, 125, 126, 128; L. F. Beard, 121, Wm. F. Harvey, 124, 126, 127, 128, 133, 134; "Boy Farmer," 124; "Wilkie," 136; E. Prevost, 136, 138; Annette B. P. Taylor, 127; "Little Boy," 121, 137; Isaac C. Martindale, 135, 137, 138, 141, 142, 143, 146; Herbert Walker, 124, 128, 130; W. S. Scott, 139, 141; Wm. Nicholson, 141; Albert Whitehead, 135, 142, 143; "J. D. R.," 136, 141; Hasty, 141, 143; Luman Sloan, 121; Capt. S. Whiting, 27 C. B. Watson; 136; Henry Wheeler, 139, 141.

He who swims in sin, will sink in sorrow....No. 143. *Geographical Names.*—1, Liverpool; 2, Kingston; 3, Warsaw; 4, Mississippi....No. 144 and 145.—No answers received; try again....No. 146. *Planting Problem.*—The accompanying figure gives the method of placing the trees. The following sent correct answers up to April 10th. Samuel M. Henderson, 124, 127, 128, 133, 134; George H. Ensing, 128, 130; "P. J. E.," 124, 127 (the sap runs up); C. J. Darrah, 125, 131; Wm. Dale, 125, 131; M. E. Dale, 124, 127; Charles L. Spooner, 124, 126, 127, 128, 131, 132, 133; Wm. R. Butler, 124, 127, 128, 133, 134 John J. Collins, 124, 127, 128; Fleming Ratcliff, 124, 127, 128; "Harry," 132; "P. B. P. & Co.," 124, 127, 128, Cordelia Baker, 126, 127; George Streunell, 124, 127, J. I. Getty, 119, 131; Bernard McGinity, 127, 128, 133, "L. G. H.," 124, 127, 128, 129, 130, 131; Royal S. Owen, 127; D. Griffith, 117, 119, 125, 126, 128; L. F. Beard, 121, Wm. F. Harvey, 124, 126, 127, 128, 133, 134; "Boy Farmer," 124; "Wilkie," 136; E. Prevost, 136, 138; Annette B. P. Taylor, 127; "Little Boy," 121, 137; Isaac C. Martindale, 135, 137, 138, 141, 142, 143, 146; Herbert Walker, 124, 128, 130; W. S. Scott, 139, 141; Wm. Nicholson, 141; Albert Whitehead, 135, 142, 143; "J. D. R.," 136, 141; Hasty, 141, 143; Luman Sloan, 121; Capt. S. Whiting, 27 C. B. Watson; 136; Henry Wheeler, 139, 141.



New Puzzles to be Answered.

No. 147. *Problem.*—Proposed by A. S. Weeks. Draw a figure like the illustration, each division to be square, and the side of the smaller part to be just half the side of the larger portion. How can this figure be cut into 3 pieces, which can be placed to form an exact square?



No. 148. *Curious Sentences.*—Construct a question and answer which together will contain thirty words, more than half of which shall be the same word repeated, and half the remainder, another word repeated.

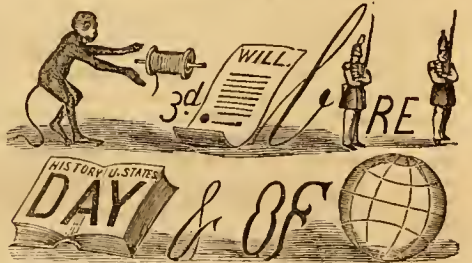


No. 149. *Illustrated Rebus.*—Good advice for all.

No. 150. *Word Puzzles.*—1, Behead every thing, and leave nothing. 2, Behead a weapon, and leave a fruit. 3, Behead a perfume, and leave a coin. 4, Behead a seed, and leave a grain.

No. 151. *Anagrams.*—1, A dry toil. 2, To gain rules. 3, I call my gin tea. 4, Lo! I read it.

No. 152. *French Riddle.*—Je suis la chose du monde la plus sainte; ôtez mon cœur, et je suis le plus amère.



No. 153. *Illustrated Rebus.*—Suited to the times.

No. 154. *Mathematical Problem.*—Contributed by "H. N. B." A tin pail with sloping sides measures 14 inches in diameter across the top, 10 inches across the bottom, and is 12 inches deep (perpendicularly). If 2 gallons of water be poured into this pail, what will be the depth of the water?

No. 155. *Mathematical Problem.*—At the beginning of winter a man's stock of animals and his hay were of equal value. When two sevenths of the winter were gone, three-eighths of the hay were consumed. What portion of his stock should have been exchanged for hay at the commencement of winter, so that the increased hay would last the diminished stock the whole winter.



THE YOUNG PERFORMERS. — Engraved for the American Agriculturist.

About Keeping the Balance.

The lad in the picture is trying an experiment in Natural Philosophy, though perhaps he is only thinking of playing. He is showing his younger brother and sisters now he can make things stand up, as he saw a man do at an exhibition. His brother has just had a show from the falling umbrella, not hard enough to hurt him much, but it makes him scratch his head as though he had a new idea about science. The little sister has been training her doll to do the same thing, but she could only make it sit up and hold the sun-shade, and now she is trying the experiment for herself.—It is easy to learn to balance things on the hand, or on the chin as this boy is doing. The one thing necessary is to keep the center of weight, usually called the center of gravity, directly over the base or part on which the balanced article rests. The umbrella is held upright more easily when open, because the wide-spread top is partly supported by the air. It is more difficult to learn to balance one's self, yet by practice, men are finally able to walk on very narrow places, such as the edge of a thin board or rope. Some of our young readers may remember the foolish performances of Blondin, who perilled his life by crossing Niagara on a rope. He carried with him a long heavy pole, which he moved from side to side as it became necessary to keep the center of gravity directly above his feet.

The hardest task of all is for a child or man to keep the character rightly balanced. Selfishness, pride, vanity, anger, or any other passion, if not kept in proper bounds, will keep a man from being upright. If a boy learns to

walk fearlessly and safely upon a narrow footing, it may possibly be of service to him a very few times in life; but almost every day there will come temptations to wrong-doing, the path will be very narrow, and unless one learns and practices walking straight ahead with a firm step, he will meet with many ruinous falls.

New York City at Night.

New York never sleeps. It is less noisy, and in most parts less busy at night than by daylight, but at no hour of the twenty-four is there the quiet hush which in the country tells that man and beast are resting. All through the many miles of streets gas lamps are blinking, like eyes weary with watching, but which must not close, and there is light enough for those who will or who must work while others sleep. These lights, seen from some point where the eye can take in one or more long rows of them, are a fine display of fireworks. They appear very beautiful to a person sailing past the city on the Hudson, or the East River; in line after line of them seem to be marching and wheeling, like some vast army with torches, out on a night expedition. Viewed from a high like Trinity Church steeple, New York at night seems to be mapped out with boundaries and divisions of fire, or as a poetic friend says, like the Queen of America blazing with jewels.—Until near midnight, the streets having places of amusement are very lively. Carriages roll to and fro, or stop to leave or take up their gay occupants. Often at the opening or near the close of some special entertainment, hundreds of coaches extend for several

blocks up and down the adjoining streets, the drivers, joking, laughing, shouting and quarrelling. Thousands of old and young seek pleasure at the numberless places opened for their gratification and their money. From eight to eleven o'clock, gaiety is at its height. Beginning at Baraam's Museum, the great attraction in the lower part of the city, and walking up Broadway two miles, scarcely a block, but has some place for pleasure seeking. Most of these are drinking saloons, some of them of the vilest kind. It is sad to see the throngs of young men here bartering away their characters and future prospects, for a few brief moments of hilarity.

Toward midnight the pleasure seekers in the streets decrease, although hundreds yet linger around the saloons, many of which do not close until one or two o'clock in the morning. But these are not the only ones astir at the late hours of night. Bright lights stream from the upper windows where printers are busy preparing the morning papers; gangs of sweepers are at work in the streets; policemen and private watchmen are pacing back and forth to look out for fires, thieves, and disturbers of the peace; cars on the street railroads are running, and thus all night long there is moving life in the streets. Some are willing and many are compelled to turn night into day to get a living, but few can do so without shortening their lives. Night was made for rest, but "man made the town," and night and many other wise arrangements of Providence are set aside, and will be, while so many prefer the excitements of city life to the healthful quiet of the country.

Making a Tall Man Short.

This very laughable performance was recently described in that entertaining Monthly, the Northern Magazine, from which the accompanying illustration is taken. The man or boy to be dwarfed leaves the room with two assistants. The trick requires two light poles about six feet long, two pillows, a sheet, and a pair of boots. The dwarf (to be) first thrusts each arm into one of the boots, then one of the poles is laid on each of his shoulders and also on the shoulders of an assistant. A pillow is placed across the poles close behind the neck of the dwarf, who throws his head back upon it, and brings each arm with the boots on, up over the poles, and resting on them, as shown in the engraving. Then a pillow is placed on the poles between the two performers and near the chin of the dwarf; this is to form the body. Finally a sheet properly folded is thrown over the pillow to hide it and all but the feet of the boots, and brought well up under the chin of the dwarf, as shown below. The two then keep step and walk in before the company. The third one may remain outside to convey the impression that he is one of the bearers of the dwarf, with his head underneath the pillow. The effect will be better if the dwarf-



ing is done on some very tall person, and if the parties are dressed alike. In a similar way a boy or short man may be apparently stretched out, by having long poles, fastening the boots where the feet should come, and properly building a body of pillows between them and the head resting on the pillow as before. Properly managed the illusion will be very complete and amusing.

A FARMER last summer required a number of reapers. Several presented themselves and all were engaged with one exception. The poor man thus omitted said: "Master, won't you hire me?" "No," said the farmer. "Why not?" "Because you are too little." "Too little!" exclaimed the astonished Irishman; "does yer honor reap your crop at the top?" "What could the farmer do but laugh, and send the little man to join his comrades in the field? He proved to be one of the best workmen.

(Business notices \$1 25 per agate line of space.)

Do not Waste Your Money buying any of the numerous worthless articles called Gold Pens which have flooded the market for the last few years, when at lower prices you can get pens which are acknowledged to be the **BEST IN THE WORLD.**

Avoid the shameless Upstarts whose lack of brains compels them to attempt Imitation, even to the advertisement. If you want the full value of your money, see in another column: "The Pen is Mightier than the Sword."

GEO. P. BISSELL & CO.

Hartford, Conn.

Bankers and Dealers in GOVERNMENT SECURITIES.

U. S. 5-20 and other Bonds bought and sold on the most favorable terms. 7 3-10 Notes ready for delivery, and a discount allowed. Purchasers are assured that we will furnish Government Bonds on as favorable terms as they can get them from New York.

CONNECTICUT STATE BONDS, HARTFORD CITY BONDS, and a large assortment of first class securities on hand for sale at all times.

The highest possible premium paid for Gold and Silver and U. S. Coupons, also for Coupons not yet due. We are also Agents for the Government for the sale of Revenue Stamps of all kinds. Interest allowed on deposits from the date of deposit till date of withdrawal.

The long and successful Banking experience of the Senior partner of our house (extending over a period of nearly twenty years), and our rigid adherence to the principles of sound Banking, enable us to give the greatest facilities to our customers, and warrant us in saying that it is our aim to have our House rank second to no Banking establishment in the country for soundness and stability.

Business sent us by mail will receive the same prompt attention that is given to those who come in person.

GEO. P. BISSELL & CO.

Refer to KETCHUM SON & CO., New-York.
HARTFORD BANK, Hartford, Conn.

THE NINTH NATIONAL BANK

OF THE CITY OF NEW YORK.

CAPITAL, \$1,000,000, PAID IN,

FISCAL AGENT OF THE UNITED STATES,

AND SPECIAL AGENT FOR JAY COOKE, SUBSCRIPTION AGENT,

Will Deliver 7-30 Notes, Free of charge, by Express, in all parts of the country, and receive in payment Checks on New York, Philadelphia, and Boston, Current Bills, and all five per cent. Interest Notes, with interest to date of subscription. Orders sent by mail will be promptly filled.

This Bank receives the accounts of Banks and Bankers on favorable terms; also of individuals keeping New York accounts.

J. T. HILL, Cashier. J. U. ORVIS, President.

Fourteenth Annual Report

OF THE

MANHATTAN

LIFE INSURANCE COMPANY,

Nos. 156 and 158 Broadway,

NEW YORK,

JANUARY 1, 1865.

Net Assets, January 1, 1864.....	\$1,478,968 59
Receipts during the year.....	973,534 02
	\$2,452,502 61
Disbursements.....	461,277 38
	\$1,991,225 23
Assets.....	\$1,991,225 23

Life policies are issued, payable in annual, or in one, five, or ten annual installments; also non-forfeiture endowment policies, payable in ten annual payments, which are paid at death, or on arriving at any particular age. Life insurance as an investment has no superior, as it has saved millions of dollars to the insured, and thousands of families from ruin. Dividends are paid to policy holders, thus enabling them to continue their policies, if otherwise unable to do so.

HENRY STOKES, President.

C. Y. WEMPLE, Secretary.

J. S. HALSEY, Assistant Secretary.

S. N. STEBBINS, Actuary.

ABRAM DU BOIS, M. D., Medical Examiner.

U. S. 7-30 LOAN.

By authority of the Secretary of the Treasury, the undersigned has assumed the General Subscription Agency for the sale of the United States Treasury Notes, bearing seven and three-tenths per cent. interest, per annum, known as the

SEVEN-THIRTY LOAN.

These Notes are issued under date of June 15th, 1865, and are payable three years from that time, in currency, or are convertible at the option of the holder into

U. S. 5-20 Six per cent.

GOLD-BEARING BONDS.

These bonds are worth a premium which increases the actual profit on the 7-30 loan, and its exemption from State and municipal taxation adds from one to three per cent. more, according to the rate levied on other property. The interest is payable in currency semi-annually by coupons attached to each note, which may be cut off and sold to any bank or banker.

The interest amounts to

One cent per day on a - - \$50 note.	
Two cents " " " \$100 "	
Ten " " " \$500 "	
20 " " " \$1000 "	
\$1 " " " \$5000 "	

Notes of all the denominations named will be promptly furnished upon receipt of subscriptions, and the notes forwarded at once. The interest to 15th June next will be paid in advance. This is

THE ONLY LOAN IN MARKET

now offered by the Government, and it is confidently expected that its superior advantages will make it the

GREAT POPULAR LOAN OF THE PEOPLE.

Less than \$300,000,000 of the Loan authorized by the last Congress are now on the market. This amount, at the rate at which it is being absorbed, will all be subscribed for within four months, when the notes will undoubtedly command a premium, as has uniformly been the case on closing the subscriptions to other Loans.

In order that citizens of every town and section of the country may be afforded facilities for taking the loan, the National Banks, State Banks, and Private Bankers throughout the country have generally agreed to receive subscriptions at par. Subscribers will select their own agents, in whom they have confidence, and who only are to be responsible for the delivery of the notes for which they receive orders.

JAY COOKE,

SUBSCRIPTION AGENT, Philadelphia.

WANTED.—EVERYBODY SEEKING PROFITABLE employment, to introduce Popular Biographies and Standard Historical Work, written by the well-known and popular author, J. T. Headley. Just the books for the times. Sold only by Agents. To energetic men and women, a rare chance is offered to make from \$50 to \$150 per month.

For terms and territory, address

E. B. TREAT, Publisher, 124 Grand St., Three doors East of Broadway, New-York.

"Signs of Character," and How to Read Them.—Physiognomy, Phrenology, Psychology, Ethnology, with Portraits and Biography, given in the ILLUSTRATED PHRENOLOGICAL JOURNAL. Only 20 cents a number, or \$2 a year. The Pictorial Double Numbers for Jan., Feb., March and April sent by return post, for \$1.00. Please address MESSRS. FOWLER & WELLS, 389 Broadway, New York.

Miniature Farming—"Our Farm of Two Acres."—By HARRIET MARTINEAU. 48 pp. 16 mo. Price 20 cents. Very entertaining and full of valuable suggestions. Mailed post free on receipt of price. BUNCE & HUNTINGTON, Publishers, 540 Broadway New-York.



How to make the above with many more Fireside Tricks and Parlor Games, see **FIVESIDE AMUSEMENTS** in the

NORTHERN MAGAZINE.

The best and cheapest Illustrated magazine in the world. **ONLY \$1.25 FOR ONE YEAR.**

Amusement and instruction combined. Equally interesting to the grandfathers and to the grandchild. Address **FRANK BELLEW,** 39 Park Row, New York.

N. B.—We will cheerfully give any one a year's subscription gratis, who will show us as good a magazine at double the price.

THE HORTICULTURIST, 1865.

Monthly, Two Dollars and Fifty Cents per annum. Two specimen copies sent, post paid, for Twenty-five Cents.

Woodward's Country Homes, 12mo. cloth. 122 Engravings. \$1.50, post paid.

Woodward's Graperies and Horticultural Buildings,

12mo. cloth. 60 Engravings. \$1.50, post paid.

GEO. E. & F. W. WOODWARD, Publishers, 37 Park Row, New-York.

I.

THE LINCOLN CHART,

containing a truthful

LIFE SIZE LIKENESS

with a highly finished pictorial border, showing the chief scenes of the eventful

LIFE AND DEATH

of

THE MAN WE MOURN.

II.

Another new Chart called

THE LIFE AND DEATH

of

ABRAHAM LINCOLN,

wherein will be preserved in elegant form, the most glorious and tremendous events of his Life and Death. Also Two Lithographic Prints—one showing his Assassination—the other the Catafalque and Funeral.—Also an excellent Crayon Lithograph Likeness.—Charts mailed for 40 cents each; the two for 75 cents.—Prints 20 cents each; the two for 35 cents. Crayon Likeness 25 cents. These works with others will be ready about May 1st.

Generous Terms to Agents.

Orders filled in the order received. Address

H. H. LLOYD & CO., 21 John-st., N. Y.

DOTY'S CRB CLOTHES WASHERS.

About Four Thousand of these Great Clothes and Labor Savers have been sold within the past and present years, all with the privilege of returning and having the PURCHASE MONEY REFUNDED, if, after three weeks' fair trial, according to the directions, the Washer proves unsatisfactory, yet NOT ONE IN FIVE HUNDRED has ever been returned.

The Proprietors continue to GUARANTEE SATISFACTION, therefore there is no reason why every Family should not have one. Send \$10.50 to DOTY BROTHERS, JANEVILLE, Wis., and get a Machine that is warranted to save from \$10 to \$100 worth of clothing yearly, besides making Washing three times as easy. (See Editorial Illustration and description in March Agriculturist.) Circulars free, on application. Agencies established at New York, Philadelphia, Chicago, St. Louis, Buffalo, and other large cities.

GREAT

ADVERTISING MEDIUM.

THE DOLLAR WEEKLY MIRROR AND JOURNAL OF AGRICULTURE published at Manchester, New Hampshire, has a larger circulation than any other paper north of Boston. One quarter of the paper is devoted to Agriculture, wholly, and is edited by Hon. CHANDLER E. POTTER. The rest is devoted to news, Politics and Education, and is edited by JOHN B. CLARKE, the proprietor. It is not only a great family and farming paper, but being published in a city only second in cotton and wool-manufacturing interests in the United States, it has a wide circulation in all other manufacturing cities and villages in the United States. Subscriptions \$1.50 a year in advance.

Only a small space is devoted to advertising. Terms: Ten cents a line for each insertion. One column, 22½ inches long, one time, twenty-five dollars.

Refers to New York Times, Tribune, Wilke's Spirit and the Agriculturist; to Gov. Fenton of New York, and General Bruce, State Canal Commissioner.

Address **JOHN B. CLARKE,** Manchester, New Hampshire

Commercial Notes—Prices Current.

NEW-YORK, April 20.

The condensed and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the notes of our own reporter.

TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 24 days this month, 197,000 9,200 173,000 3,100 94,000 286,000 22 days last month, 119,000 15,500 216,000 7,500 27,500 314,000

Comparison with same period at this time last year. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 24 days 1885, 197,000 9,200 173,000 3,100 94,000 286,000 27 days 1884, 209,000 156,000 235,000 7,500 136,000 353,000

SALES. Flour, Wheat, Corn, Rye, Barley. 24 days 1885, 194,000 528,000 318,000 46,000 27 days 1884, 379,000 784,000 836,000 46,500 410,500

Exports from New-York, January 1 to April 19. Flour, Wheat, Corn, Rye, Oats. 1865, 376,575 169,585 138,287 141 24,302 1864, 604,756 4,095,375 90,684 405 12,645 1863, 705,603 3,860,161 2,251,870 127,270 100,707

Influenced by the recent decisive successes of the national arms in Virginia and elsewhere, gold receded from 157, at the date of our last, to 143 1/4, rallying since only to 146 1/2 @ 147. With the fall in gold, prices of all kinds of produce and merchandise declined materially, especially those of flour, grain, provisions, wool, and cotton. At the reduced figures, a light business has been transacted, buyers having been quite reluctant to purchase freely, as they have been anticipating further concessions from holders. The receipts of produce have been moderate, but receivers have been eager sellers. The available supplies of the leading articles here are not heavy, but are in excess of the pressing wants of purchasers. Within the past week there has been a partial suspension of all commercial operations, in honor of the memory of our lamented President; and the markets have been generally very dull and heavy, particularly for flour and grain, holders of which have been anxious to realize, apprehending still more serious depression on the resumption of canal and river navigation, and the impending capitulation of all the organized forces of the rebels, which will virtually close the war for the restoration of the Union and the vindication of the national authority. The canals of this State will be opened for the season by about the 15th of May, and will greatly facilitate the transportation of supplies of all kinds of produce to markets on the sea-board.

CURRENT WHOLESALE PRICES.

Table with columns for item, March 18, and April 20. Items include Flour, Super to Extra State, Snper to Extra Southern, Extra Western, Extra Genesee, Superfine Western, Rye Flour, Corn Meal, Wheat, All kinds of White, All kinds of Red, Corn - Yellow, Mixed, Oats - Western, State, Rye, Barley, Cotton - Middlings, Hops - Crop of 1864, Feathers - Live Geese, Seed - Clover, Timothy, Flax, Sugar - Brown, Molasses, Coffee - Rio, Tobacco - Kentucky, Seed Leaf, Wool - Domestic Fleeces, Domestic, pulled, California, unwashed, Tallow, Oil - Castor, Pork - Mess, Prime, Beef - Plain mess, Lard, Butter - Western, State, Cheese, Beans - Canada, Eggs - Fresh, Poultry - Fowls, Turkeys, Potatoes - Mercers, Peach Blows, Apples.

New-York Live Stock Markets.—BEEF CATTLE.—The average supply of animals for the month past is much lighter than during the previous one. The receipts average 4,071 head weekly. The cattle have come in very irregularly, on account of the damage done to railroads by the destructive freshets. The scarcity of cattle caused prices again to reach the high figures of last winter, but they have now receded by the regularity of arrivals, and at the last market were about

as follows: First quality, 22c. @ 24c. per lb., dressed weight; good, 19c. @ 21c.; fair, 17c. @ 19c.; and poor to common, 14c. @ 16c.

Milk Cows.—The weekly average of cows for the past month is 163. The demand is light, and prices have declined considerably. Rates range from \$75 @ \$80 each for good milkers, and down to \$40 for poor.

Veal Calves are coming in much more freely this month than last. The average weekly receipts are 1,907, compared with 610, the average weekly arrivals for the previous four weeks. Prices range from 10c. to 13 1/2 c., per lb., live weight, according to quality.

Sheep come in much less freely than last month. The number of shorn sheep are increasing each week. Prices (for unshorn) are about 1c. per lb., live weight, below last month. Good sheep sell at 12 1/2 c. @ 13c., per lb.; fair, at 11 1/2 c. @ 12c.; and common, 10c. @ 11c.

Live Hogs are still in small supply, the average weekly receipts being only 3,764, hardly enough to supply the regular city demand. Prices range from 11 1/2 c. to 13c., per lb., live weight, for fair to good.

The N. Y. Tribune, Herald, and Day-Book.—A few have protested against our advertising these papers, some objecting to one and approving another. We suppose the Tribune and Herald too well known to need our special endorsement, or reprobation. The Tribune, while professedly a newspaper, tries also to lead public opinion, to bring others to adopt the views which its editors believe to be right. The Herald, professedly guided by no high moral principle, floats upon the ever-changing current of popular impulses, and is mainly a news-paper. As for the "Day-Book," we remember too well its articles abusing and misrepresenting the North—which greatly aided to stir up bitterness and rebellion at the South—to willingly give it any space even in our advertising columns. The advertisement recently admitted was inserted by an assistant, who did not fully know the character of the paper.

Advertisements.

Advertisements, to be sure of insertion, must be received BEFORE the 10th of the preceding month.

N. B.—No Advertisement of Patent Medicines or secret remedies desired. Parties unknown to the Editors personally or by reputation, are requested to furnish good references. We desire to be sure that advertisers will do what they promise to do. By living up to these requirements, we aim to make the advertising pages valuable not only to the readers, but to the advertisers themselves.

TERMS—(cash before insertion):

One Dollar per line, (14 lines in an inch), for each insertion. One half column (74 lines), \$65 each insertion. One whole column (148 lines), \$120 each insertion. Business Notices, One Dollar and a Quarter per line.

Educational Agency.—Supplies educated, skillful Teachers for all branches, to schools and families. Circulars for stamp. Address J. A. NASH, 5 Beekman-st., New-York.

Flax Seed, Clover Seed, &c.

Consignments of Seeds and general merchandise solicited, and Highest Prices Guaranteed, by F. A. WHITING & CO., Commission Merchants, 104 Water-st., New York. Sole Agents for Government White Lead and Color Works, Linseed Oil and all other Oils, "Lined Oil Substitute," Paints, Putty, Varnishes, &c., &c., at Manufacturers' lowest rates.

EVERGREENS, Arbor Vitae, Hemlock, &c., Catalogue ready. J. W. ADAMS, Portland, Me.

New Strawberries.

GREAT AGRICULTURIST.

The largest Strawberry in the World, fine flavored, and wonderfully productive. I have a large stock of very fine plants, at the following rates: 2 plants, \$1.20; 6 plants, \$3.00; 12 plants, \$5; 100 plants, \$25; 1000 plants, \$300. I have several thousand second size plants, of the GREAT AGRICULTURIST, at the following rates: 6 plants, \$1.00; 12 plants, \$2.00; 100 plants, \$10; 1000 plants, \$75. I shall plant the second size plants.

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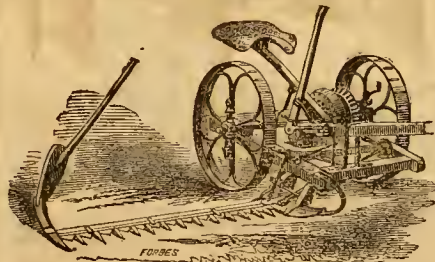
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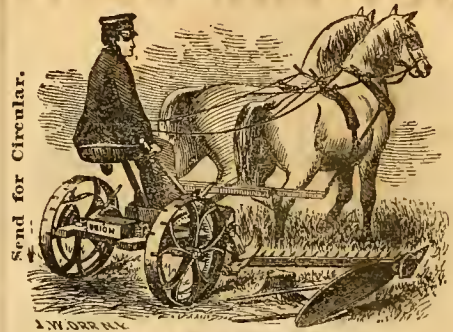
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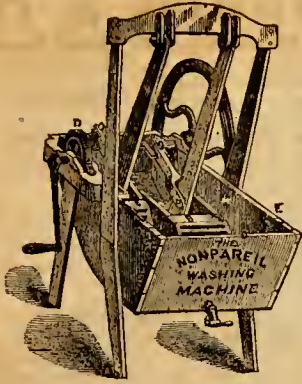
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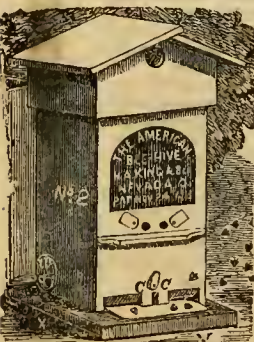
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VOLUME XXIV—No. 6.

NEW-YORK, JUNE, 1865.

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Contents for June, 1865.

Ants—How to Exterminate.....	191
Ashes, Coal for Walks and Roads.....	185
Bees—Apary in June.....	172
Boys and Girls' Columns—How to Keep Good Natured —Feb. 14th—Woman's Day—Problems and Puzzles —Left at Home Alone—"A Good Boy Wanted" —About Sleep—The First Locomotive—Puffing Billy —Indian Tradition—Rocks in Connecticut—Wall Street and Fly Market.....	4 Illustrations. 191-192
Bridges—Rustic.....	Illustrated. 185
Broom Corn—How to Plant.....	182
Buckwheat—Cultivation of.....	183
Butter—How to Make and Keep.....	190
Cabbage Culture—Notes on.....	186
Castration of Calves and Colts.....	178
Cheese Making from Few Cows.....	189
Clover, Red—Management for Seed.....	182
Colts—Halter-breaking Young.....	181
Corn—Manuring When Growing.....	178
Corn—Thinning in the Hills.....	178
Current Worms—How to Kill.....	187
Dandelion and its Uses.....	Illustrated. 189
Evergreens—Pruning and Shaping.....	186
Farm Work in June.....	169
Fault-finding with Children.....	190
Flower Garden and Lawns in June.....	171
Financial Wonder.....	194
Flowers— <i>Convolvulus minor</i>	Illustrated. 188
Food for Children—Liebig's.....	189
Fruit Garden in June.....	171
Garden—Kitchen in June.....	170
Grapes—Cold Grapery in June.....	171
Grass Land—Top-dressing.....	178
Grass Seed—Sowing with or without Grain.....	182
Green and Hot-Houses in June.....	171
Hay Fork and Stacker—Horse Power.....	Illustrated. 177
Hay—Pitching into Windows with Horse Fork.....	178
Hedge—How to Make Close.....	183
Horses—Breeding for Heavy Work.....	183
Horses, Pulling—Halter for.....	Illustrated. 181
Horses—Sires for Heavy Draught.....	Illustrated. 184
Houses—Small Convenient & Cheap.....	4 Illustrations. 177
Insects Destroyed by Benzine.....	188
Labels for Trees—Zinc.....	186
Layers—How to Propagate from.....	187
Lightning Rods—How to Put up.....	190
Live Stock Market Report.....	172
Manure—Management of Barn Yard.....	182
Notes and Suggestions for June.....	169
Orchard and Nursery in June.....	170
Peat—Preparation for Fuel.....	183
Perfumes—Method of Preparing.....	190
Plants with Ornamental Foliage.....	188
Plow—Lifting Subsoil.....	Illustrated. 181
Premiums for Obtaining Subscribers.....	172
Rope—Hitching Horse to.....	Illustrated. 177
Scuffle Hoes, Hoeing and Carrols.....	179
Shading and Mulching.....	186
Sheep—Art of Shearing.....	180
Shears—How to Grind.....	Illustrated. 180
Sheep—How to Hold for Shearing.....	180
Sheep Shears—How to Hold.....	Illustrated. 180

Strawberry Premium.....	194
Strawberry Show at <i>Agriculturist</i> Office.....	172
Strawberries—Method of Preserving.....	191
Strawberries Sent to Subscribers.....	194
Subsolling Wet Ground.....	181
Tanning for Skius.....	191
Tastes—A Frequent Mistake.....	187
Tim Bunker on the Pickle Fever.....	176
Tree, Remarkable—The Sand Box.....	Illustrated. 188
Trees for Prairies—White Maple.....	Illustrated. 185
Varnish for Furniture.....	191
Vegetables—Sowing for Succession.....	187
Water—Pure Needed for Stock.....	179
Well Curb and Friction Brake.....	Illustrated. 180
Wool—Fleece Folding Table.....	Illustrated. 181

INDEX TO "BASKET," OR SHORTER ARTICLES.

Barley, Sprout Manure.....	174
Bees, Burying.....	174
Birds and Strawberries.....	173
Bones, Dissolving.....	174
Bones, Use for.....	174
Borer Remedies.....	173
Buckwheat, Wild.....	172
Catalogues Received.....	174
Cattle Gnawing Bones.....	174
Chipmucks, Repelling.....	174
Coal Ashes, Use.....	174
Cornell University.....	175
Cows, Gestation.....	174
Donations Acknowledged.....	173
Downing's Landscapes.....	173
Elecampane, Killing.....	173
Farm Laborers.....	175
Fountain, Regulating.....	174
Flowers for Shade.....	174
Galvanized Iron.....	175
Hair Crimpers, Irius'.....	173
Humbog Doctors.....	173
Kerosene Burner, Good.....	173
Lice on Hogs.....	174
Live Stock Markets.....	173
Plants, Mixing.....	174
Plants Named.....	173
Pruning Apple Trees.....	173
Purchasers, Word to.....	173
Report, Fruit Growers'.....	174
Sap Spouts.....	173
Scratches and Grease.....	174
Sheep Shearings.....	174
Sheep Show.....	173
Shingles, Fire Proof.....	175
Strawberry Preserves.....	173
Striped Bug Preventives.....	173
Strawberries, First.....	173
Tobacco Culture.....	173
Toroips for Hogs.....	174
Trees, Trimming.....	174
Vegetables of America.....	174
Waspish Item.....	173

Notes and Suggestions for the Month.

June is the month of most rapid growth and the Maize fields, which have looked yellow and poor during May, under the hot suns of this month unfold their leaves like armies with banners, and so other crops, if they are in open and well-worked soils, push forward into leaf, and blossom, and fruit. We have work enough to finish planting, to keep down the weeds, and to work the surface, so that the air may always have free access to the roots of the crops. The grass has made a great growth in many localities during the past month, and where mowing ground has been well prepared for irrigation, the second heavy crop of hay is by this time ready for the scythe. The forwardness of the season has enabled farmers to get well ahead with much of their work, and there is less excuse than usual for lack of thoroughness of culture. The powerful rains which may have hindered farm work somewhat, are very likely to be followed by dry weather in June, for which deep tillage and frequently working the soil are the only remedies.

Barns and Sheds.—Sweep thoroughly and put in order for hay and other crops. Where a small quantity of hay or straw remains in the bottom of the mow, pitch it up aloft, where it may be used in the former part of the foddering season. Remove manure wherever it is in contact with wood-work, and see that driving storms do not wet the frame timbers. Clean and paint eaves troughs, and remove limbs of trees within a yard of the sides or roofs of buildings.

Barn-yard.—Turn all water from the roofs of buildings or other sources away from the barn-yard. If the ground be wet, make a good under-

drain entirely around, and excavate the middle, puddling it with clay protected by cobble stones, so as to retain all the liquid manure.

Barley.—Send a careful man and pull all dock, winter cress, wild mustard, etc., from the growing grain. If land is in good heart where winter wheat has failed, barley may be sowed even in June, and will yield a fair crop.

Beans.—Where a hill of Indian corn has failed, plant three hills of early beans. If rows be far apart, a row of beans is often planted between them at the last dressing with a horse hoe.

Beets.—Mash lumps in the soil with a wooden mallet, a few hours after a shower—this will be almost equal to a hoeing—pull up all weeds near the young plants. Good crops may be raised even when planted in June, if the soil and cultivation be good.

Butter.—Give cows an abundance of sweet grass and clean water, and access to salt; see that boys and dogs do not worry them; milk regularly with clean hands; keep milk in clean and sweet vessels, and in a cool, pure apartment; churn often; work the butter well with anything but the bare hands; use only the purest and best salt; pack in clean jars or tubs; keep cool, and the butter will be equal to prime "Orange County."

Cabbages.—Put out the plants in good season; apply a heavy dressing of horse manure, well worked into the soil; hoe mornings while the dew is on, working over the earth a few inches deep; and we will almost guarantee large, hard heads. Insects may make the result doubtful.

Carrots.—Pull all weeds near the young plants when the soil is wet. Carrots require clean cultivation. Where the seed failed to come up, put in turnips or onions. See "How to Raise Carrots" in May number.

Cheese.—Read article on Cheese, page 189.

Corn.—Keep cultivators and horse hoes in operation until the corn becomes large enough to shade the ground. Hot and dry weather is the best time to subdue grass and weeds. Read article on cultivating corn on page 178.

Clover Seed.—Read the article on the management of Clover Seed on page 182.

Cattle.—See that all cattle have access to pure water. Where they drink at a pond, large poles or sticks of timber should keep them from going into the water to stand, as they usually dung immediately after drinking. Do not feed too many animals on the same ground. One good cow, well fed, will yield more milk than two cows on short pasture.

Calves.—Keep calves in clean and dry yards or pens, and mow a little grass daily for them. June is one of the best months to commence improvements in neat cattle. Where calves are allowed to suck, put a little wheat flour in one end of a small trough and salt in the other end, where calves can reach it. They soon eat meal.

Cellars.—Clean house and barn cellars; wash the windows; whitewash the walls, and sprinkle quicklime where there is dampness or impurity.

Dairy.—Look out for improvements in selecting cows for the dairy as well as making butter and cheese. Make a horse or sheep do the churning.

Flax.—See that water does not stand at all on any part of the field. Pull large weeds while the plants are small. Review the article on Flax Culture in the April number.

Grain Fields.—Keep fences in good repair around them, and confine turkeys and all other fowls that persist in going on the grass, as they will break down and destroy more than they are worth.

Grass Seed.—Fields may be plowed and sowed with grass seed this month, without any kind of grain. Still it is better to sow two or three pecks of rye per acre, to partially shade the young grass.

Haying.—Commence haying in good time. Where there is much grass to cut, some of it must be mowed before it is really fit; otherwise a good proportion will become too ripe. Grass will make the best hay if cut when the stalks are full grown and the heads are in full bloom. When there are weeds among the grass, cut it before their seeds are formed. Grass is much less liable to be injured by hot and dry weather if cut when quite green.

Hoove.—Watch all animals that feed on red clover, and prevent this dangerous disease which comes from over-feeding. "See Basket."

Implements.—During rainy and leisure days examine mowers and reapers to see if they are in running order. Take them apart; remove gum and dirt from the journals and boxes; oil afresh, and screw up all nuts and tighten loose rivets. The efficiency of tools and implements depends almost altogether on their condition.

Manure.—Prepare compost for winter grain and top-dressing for grass land. Collect barnyard manure into covered quarters, or protect as much as practicable from alternate rain and sunshine. Barnyard manure should be forked over to facilitate rotting; and where it is so deep as to fire-fang, water or liquid from some part of the yard, pumped upon it.

Millet.—Where the soil is moderately fertile, sow millet at any time previous to the 25th of the month in our latitude. From 8 to 12 quarts per acre is sufficient unless the seed be large. Millet grows rapidly in mellow soil and bears drought well.

Oats.—Mow off Canada thistles, and any other weeds that appear above the oats. This so checks their growth that they injure the crop but little.

Oxen.—Feed workers a few quarts of meal every day, whether they labor or not, as it will give them strength, make them endure the heat better and increase their market value more than the worth of the meal. Never allow ill-natured drivers to worry and beat oxen while at work. Provide such teamsters with a soft leather lash and limber stock, with which they cannot strike a hard blow.

Pastures.—Do not feed off permanent pastures too closely the former part of the season, unless there is a large proportion of Kentucky blue grass, which is better to be kept short. If grass gets the start of stock, and begins to head out, it will make much better pasture to mow off all the seed stems, as animals will not relish them; and when seed is allowed to form, a large portion of the vital energies of the plant, which are exhausted in producing the seed and stems, would make excellent grass.

Potatoes.—Cultivate thoroughly and hoe well before the tops begin to fall over, and sprinkle a handful of wood ashes around the stems of every hill. Never allow careless laborers to strike their hoes into the ground near the hills, as roots that would bear tubers, may be cut off. Potatoes do not need root pruning. If weeds close to the hills are too large to be covered with earth, pull them.

Poultry.—To gratify the secretiveness of hens, make nests where they can not be seen by other fowls, when they are laying or sitting. If nests be too deep, eggs will rest on each other, which should never occur. See "Basket."

Peas.—Sow a part of an acre the last of the month

for seed. If sowed soon enough to mature before early frost, they will be free from bugs.

Poultry.—Feed well; let them out of the yard before sunset daily; supply them with a box of sharp gravel, where there is none in the soil. Whole grain should be soaked at least twenty hours for them; and if ground, it will go much farther.

Ruta-Bagas.—Do not fail to raise a few square rods of them for stock next winter. Pulverize the soil thoroughly, manure it well, and sow the seed in drills two feet apart, as soon as the ground is dry enough to work after a good shower. Then a crust of earth will not prevent them from coming up.

Roofs.—Examine roofs of out-buildings when it rains. Leaky places will usually be found where a shingle has been split directly over a joint of the next course below. In such a case another shingle may be driven beneath the split one.

Rye.—Spring rye, two bushels per acre, may be sowed during this month, to be cut for horse-feed before early frosts.

Rotation of Crops.—Raise crops that are best adapted to the soil, rather than attempt to adapt the soil to the crops. Every farmer should adopt some kind of a rotation, if he has not already done so, as this is one of the fundamental principles of scientific agriculture. See "Basket."

Sheep.—Let sheep have access to salt in a water-tight tub, or trough. When salted only occasionally, they consume too much for their health. Protect from cold storms for some weeks after shearing. Apply a little piec tar to their noses to repel the fly. Separate bucks from ewes, or fetter their forelegs, about five or six inches apart, that they may be impotent to harm. Designate the age and character of each sheep by significant marks on the rumps or shoulders. A figure (1, 2 or 3, etc.) on the shoulder may signify a ewe and her age, and one on the rump, a wether and its age.

Swine.—Pigs designed for pork next fall should be separated from the sows as soon as they will eat readily. Keep them in moderately close quarters; as, when running about in large enclosures, they will expend a great deal of material, without adding proportionately to their growth. There is nothing better than milk, oat and barley meal and wheat flour unbolted, to make pigs grow. It is sometimes more economical to feed wheat flour than oat meal to pigs. Where pigs are chiefly valuable as manure makers, see that they have enough muck, sods, weeds, etc., to work over.

Sorghum.—When the plants are young they are very tender. They need dressing and hoeing with care. Careless men and boys will often retard their growth by cutting off the roots, and burying the leaves. If the ends of the leaves be covered with earth the growth will be checked.

Weeds.—Wage an unceasing warfare against weeds and bushes this month. Mow them close to the ground; cut them with hoes, or pull them. It injures Canada thistles, ox-eye daisies, and other perennials materially to cut them close to the ground just before they blossom. We tell workmen in our employ that a sharp, steel hoe is poisonous to weeds, when it cuts them off below the surface of the ground.

Wagons.—Keep them well protected from rains and sunshine, as the continued influence of these injures vehicles more than the ordinary use. Rain will hurt them but little if they are kept in the shade. A liberal coat of linseed oil on the wheels will often save dollars for resetting the tire.

Wool.—Keep the floor clean while shearing; tie it up neatly; arrange the fleeces to show advantageously; and, keep it in a clean apartment where mice or rats will not carry chaff and straw among it.

Work.—Keep in advance rather than behind your work. Perform every operation in good time and in a thorough manner.

Wood.—Split and pile whatever firewood is exposed to the weather, so that it may dry out before it becomes water-soaked.

Wheat.—Cut off all heads of rye, cockle, chess, and pull gromwell (incorrectly called pigeon-weed), from the growing crop.

Work in the Orchard and Nursery.

It seldom happens that the nurseryman is more crowded than he has been the present season. The sales were unusually large, and the time for filling orders was, by the forwardness of the season, rendered very brief. The benefit of providing all possible appliances for facilitating work, on the part of the nurseryman, and the early sending in of orders, on that of the purchaser, were never more strikingly manifest than they were this spring, and those who have suffered from past neglect of either precaution, should profit by the lesson.

Birds.—Encourage the visits of insect-eating birds, and destroy sap-suckers and birds of prey.

Back Knot.—The only remedy is the knife. If it occurs on large limbs, cut it out when it first appears, down to perfectly sound wood, and cover the wound with grafting wax. If the trouble is too deep for this, or is upon small limbs, off with the limb and burn it at once, to keep the spores from propagating. The knot is a minute fungus, and all the talk about diseased sap and curculios, as the cause, is fancy, opposed to established fact.

Budded Stocks.—These will need looking to, not only to remove the suckers which spring from the stock, but to see that the rapidly growing shoot is properly secured against breaking by wind, or from its own weight. The portion of the stock left above the bud is usually sufficient to tie the shoot to, but where it is not, place a stake for tying.

Evergreens.—In ordinary seasons, these may be removed this month, but at the present time they will probably be too far advanced. If the attempt is made, the precautions given last month should be followed. Keep the grass away from around the newly planted ones. Trim and shape trees and hedges as recommended on page 186.

Grafts.—Those inserted this spring will need attention, to replace the covering, if removed, and support or check very rampant growing shoots. Rub off any buds that shoot up near the graft.

Insects.—These are now making havoc with the foliage. If a caterpillar's tent is observed, do not rest until it and its builders are destroyed. Pulling the nest off with the hand, and trampling under foot, is quite as effective as the use of the many contrivances recommended. A swab, wet with some disagreeable liquid, may often be used to advantage. See article elsewhere on the use of benzine, and on the use of white hellebore upon the currant worm. Moths, which are about looking for a place to lay their eggs, may be killed in great numbers by setting a lighted lamp in a large pan of water at night. Jar the plum trees daily, and catch the curculios on a sheet and kill them.

Layers.—The new growth of shrubs may be treated as directed on page 187.

Labels.—Trees when sent from the nursery frequently have the labels secured so firmly that whenever the limb increases slightly in size, a troublesome stricture is made by the wire cutting into the bark. It is well to look at once to the labels of newly set and all other trees, and see that no trouble can arise from this cause.

Manure.—A top-dressing of manure, spread over the roots of fruit trees, will help the growth of the wood and the development of the fruit.

Mulch.—Newly planted trees, especially, need it. Sufficient is said on page 186.

Pinching.—The shape of a tree is easily modified by a little care when it is young. By removing those young shoots not needed, and stopping the growth of those disposed to grow too long, by pinching off the end, the form of the tree is quite under control, and much pruning is avoided.

Seedlings.—Young seedlings of forest trees, and evergreens especially, need shading by some of the methods mentioned on page 186. The little evergreens will be benefited by sifting a layer of sand, or light earth, over them, to cover the stems up as far as the seed-leaves.

Thinning.—Do not allow any fruit tree to be injured by over-bearing. It will pay besides, in the increased size and beauty of the remaining fruit.

Weeds.—Nothing looks worse than neglected nursery rows. Use the plow and cultivator so rigged that no injury can be done to the stock by the horse or whiffletrees.

Kitchen Garden.—Everything, weeds included, is now growing as if for the fun of the thing. The very early start, in this neighborhood about two weeks, rather disarranges our calculations in preparing the calendar, and could we have known that the season would have got so far ahead of time, our May directions would have been rather more in accordance with it. Even in this forward season, it is not too late to sow okra, melons, and those things which grow all the better if they have a warm soil from the start. An article on sowing for succession, on page 187, may afford some useful hints.

Asparagus.—The cutting ought not to be continued much after the first of June, the present year. It is a mistake to exhaust the roots by excessive cropping. Keep the bed free of weeds until the tops shade it.

Beans.—Sow for a succession for stringing and shelling. The main crop for dry beans may be put in. Limas may still be planted.

Cabbages, Cauliflower, and Broccoli.—Set out as directed on page 186. Forward the growing crop by frequent hoeing and liquid manure. Destroy caterpillars when young.

Carrots may still be sown. Hoe between the rows as soon as the plants can be seen, and when sufficiently large, thin to from 3 to 6 inches in the row. See article on page 179.

Celery.—The earliest crop may be set in trenches 2 feet deep and one foot wide, with the soil at the bottom well enriched. Water in dry weather.

Corn.—Plant every two weeks for a succession.

Capsicums, or Peppers.—Set in a warm, rich spot.

Cucumbers.—Plant the main crop for pickles the middle or last of the month, putting in plenty of seed to guard against loss from insects. Surround the young plants by frames, as recommended last month, page 155. Hoe until the vines are too large.

Egg Plants.—These need the best of soil and culture, in cold climates, to forward them so that the fruit will perfect in season. Hoe the earth towards the plant. Set at least two feet apart.

Endive.—Sow in the same manner as lettuce, and thin or set out the plants so that they will be a foot apart each way.

Lettuce.—Transplant to good soil, and sow seed frequently in a cool place to keep up a succession.

Melons.—Treat as directed above for cucumbers.

Onions.—Thin to 3 or 4 inches, and keep all weeds from the bed. Watering with hot water and with gas liquor, as well as heavy mulching with sawdust, and sprinkling with salt and ashes, have each been claimed as a "sure cure" for the maggot. If the potato, or other early sorts, show a wilting of their leaves, it is an indication that they are ready to pull.

Parsnips.—As soon as the plants are large enough to see the rows, the soil should be stirred, and when large enough to handle, weeded and thinned.

Peas.—Sow for the late crop in deeply worked soil. Set brush before the vines fall over. Save the earliest and best of the early sorts for seed.

Potatoes.—Hoe and give a dressing of plaster.

Radishes.—Sow at intervals for succession.

Rhubarb.—Keep the beds clean, and cut off the flower stalks as soon as they show themselves. Dry or preserve a supply for winter.

Ruta-Baga.—Sow in well manured ground, the latter part of June. Bone dust is good for them.

Salsify.—Treat the same as carrots.

Spinach.—Sow for succession. The New-Zealand is best for summer use.

Squashes.—Plant in manured soil, as last month.

Sweet Potatoes.—Prepare the ground and set the plants according to the methods given last month on pages 144 and 154.

Tomatoes.—Transplant and pinch in the rampant branches. See method of training described last month on page 154.

Watering.—Do not water unless the plants are suffering, except it can be continued until rain comes. The proper use of the hoe will help plants through a drouth in a wonderful manner. In watering with liquid manure, have it weak enough and apply frequently.

Weeds.—These are blessings if hoed up, but they punish the lazy and careless by condemning them to eat poorly grown vegetables. Hoe if the ground is weedy; hoe if the soil bakes after a shower, and if neither of these reasons present themselves—hoe for the sake of the hoeing.

Flower Garden and Lawn.—Vegetation in this as in all other departments is advanced beyond ordinary seasons, and the work must be pushed accordingly. Grass has grown at a prodigious rate, and the cutting should be more frequent, in order to secure a close and velvety turf.

Annuals.—Sow the tender ones and transplant those large enough. The bloom of many kinds may be much prolonged by cutting off the flowers as soon as they have passed their prime, and allowing no seed to be produced.

Bulbs.—Continue the foliage of the spring blooming kinds in a growing state as long as possible by good cultivation, and when it withers take up the bulbs, dry them and put them away in papers in a dry place, free from mice, until fall planting.

Carnations.—Propagate by layers, as noted on page 187, and by cuttings. Keep flowering plants well tied up. Sow seeds.

Climbers.—See that those which do not cling of themselves, are properly tied, to prevent being thrown down by winds, but avoid all stiffness in training them. Sow seeds of annual ones. Be careful to have the supports of all climbers strong enough for the weight of foliage, and to resist winds.

Dahlias.—Plant in rich soil. It is not well for them to flower early, as they should be kept growing all summer, in order to secure a fine show of flowers in fall. Water in dry weather.

Geraniums.—Set out and keep them in good shape by cutting.

Gladiolus.—These are often thrown down by the weight of the flower cluster. Stake the tall growers.

Grass, whether upon the lawn or in edging, needs frequent clipping, and all margins neat trimming. Root out all coarse weeds.

Gravel.—Hoe, rake and roll when weeds appear.

Hoe and Rake.—Use these implements, not only to kill weeds, but to loosen the soil, and thus obviate the necessity for much watering. If the soil is disposed to bake on the surface after a rain, loosen it up with the rake.

Layering.—This may be done on shrubs and herbaceous plants at any time, when there are suitable shoots. The layer should be put in good rich soil. See remarks on page 187.

Potted Plants.—These need shelter from the winds and burning sun, as noted on page 186. Pots not plunged must have regular waterings, or the roots will get dry and the plants suffer.

Phloxes.—Multiply the finer herbaceous sorts by making cuttings of the stems before flowering.

Roses.—Shorten stems of perennials after flowering several inches, and new shoots will start for late bearing. Kill insects as heretofore directed.

Transplanting.—In dry weather it is necessary to fill the holes with water before setting the plants, and to shade for a few days, but uncover at night.

Green and Hot-Houses.—Everything that is to be put out of doors, will probably be out by this time. The house should be put in complete order and the plants that are left inside receive the best attention.

Azaleas.—The new growth should be forwarded by syringing and very weak liquid manure. Shape the plants by pinching, and shade from hot sun.

Camellias.—Remove to a partial shade. See page 186. Syringe frequently. Look out for and destroy mealy bug. Inarch when the wood hardens.

Cuttings.—Provide for a stock of geraniums and such things by making cuttings.

Chinese Primroses.—Sow seeds, divide roots, and put established plants in a shady frame.

Potting.—When shrubs make a sickly growth, remove the plant from the pot and wash all the earth from the roots, and repot with fresh soil. Secure a good stock of sods and stack them up to decompose for potting soil.

Seedlings.—Pot off any that are large enough.

Water.—Keep the air of the house properly moist by using the syringe. Small pots dry out quickly.

Fruit Garden.—From present prospects there will be an abundance of fruit of most kinds, to repay the labor of the cultivator.

Currants.—By removing superfluous growth as it starts, much pruning will be saved. Take off useless suckers. If, as is often the case, green fruit will bring more than ripe, it is best to market it early. See article on the currant worm on page 187. Keep the soil around the bushes well hoed.

Gooseberries.—These do better where they are partially shaded. A free application of sulphur, or water as hot as the hand can bear, to which wood ashes have been added, in the proportion of a quart to a pailful, may be tried, if mildew appears.

Grapes.—If vines set this year show fruit, remove it, however reluctant you may be to do so. All the energies of the vine are needed to form wood and roots for next year. Seedlings, young vines from cuttings, and layers are to be kept tied up, and the growth of the laterals kept pinched back to one leaf. Vines fruiting for the first time, ought not to be allowed to overbear. One bunch to the shoot is better than more. Fill up the trench over layers, made as directed last month. Insects will need killing, and use sulphur freely upon all vines where mildew appears. A bellows is made for the purpose, like a common kitchen bellows, with a hole for the introduction of the sulphur, and without a valve. The nozzle is of tin, and quite wide, and the end is curved to facilitate the application to the under side of the leaves. By means of this implement, and any one can contrive to make a substitute, a properly trained vine can be completely dusted in a very short time.

Pears.—The shaping of the tree, as well as its preparation for future fruitfulness, is secured by proper summer pinching. Sufficient directions were given in January, on page 17. The slug usually appears this month. A dusting of dry air-slaked lime will kill them, or the powdered white hellebore may be tried.

Strawberries.—Plantations set this spring should be kept clean of weeds. The treatment will depend upon whether fruit or an increase in the number of plants is most desired. If the greatest amount of fruit be the object, the runners should not be allowed to grow, but if more plants are required, give the runners good soil to strike in. If the mulch is not already on, put on straw, tan, corn stalks, or other material, to keep the fruit clean. Have all boxes, crates, etc., plainly marked, and in filling the boxes, do not put all the best berries on top. Those who are near enough to do so, should exhibit at our Strawberry Show.

Cold Grapery.—Open the house early in the morning, shut up early, and endeavor to keep the temperature at about 85° or 90° at mid-day, allowing the change from the night temperature to this to be very gradual. Avoid sudden changes. While the vines are in flower, the syringing overhead should be discontinued. The distribution of the pollen is aided, and more thorough fertilization secured by giving the bunches a shake every morning by means of the finger. After the berries are set, give a good syringing to remove the remains of the flowers. Water freely. The number of bunches to be left upon the vine will depend

upon its strength, but one is sufficient upon each spur. The end of the shoot is stopped by pinching it off at the third or fourth leaf beyond the bunch. The fruit is to be thinned when it is about the size of peas, removing half or more according to the variety. Tie up the branches.

The Apiary for June.—Prepared by M.

Quincy, by request.—When surplus honey is desirable, the boxes should be added to all good colonies early in this month. At this season, when the flowers of the white clover appear, there can be no harm if the boxes are on a few days before they are really needed. Do not neglect to stick some nice pieces of clean, white comb in the top, as an encouragement for the bees to begin. As fast as filled, they should be replaced with empty ones. As long as honey is collected plentifully, full boxes taken out may be set by the side of the hive for the bees to leave; but it will not do when it begins to be scarce. They must not stand in the sun. Most of the swarms may also be expected this month. Small apiaries swarm more, in proportion to the number of hives, than large ones. Many persons hesitate about putting on the boxes before swarming, fearing that it will delay, if not altogether prevent it. There are cases when it may have that effect, but when it does, it is not very disastrous. A strong stock that casts no swarm, will store much more honey than a swarming hive. The honey, put in market and sold, will often bring sufficient money to buy two or three stocks. I advise putting on the boxes; if they swarm, it is well—there may be some honey also; if they do not, it is probably better. But do not expect both, to any great extent. Stocks that do not swarm, and remain weak till this time, should be examined. They may be so from diseased brood, loss, or barrenness of queen. If queenless, supply a laying queen. If barren, remove, and supply another a few days afterwards. When diseased, drive out to begin anew, or put into a hive partly filled with combs of last year, such a one as we suggested should be saved last fall for the new swarms. But it would be well first, to keep the bees, at least forty-eight hours after driving out, in an empty box or hive, to digest the honey taken with them, before putting them among the pure combs. Bees should on no account be driven out of a hive within less than eight or ten days after the first swarm, or before the young queen hatches. Unless some emergency demands it, twenty days should intervene.

After Swarms are those which issue with young queens. Two or more are required to make a colony as large as a first swarm. When they issue near together, unite them, till a good swarm is hived. When two or more after-swarms are united, they are not always as quiet as others. The queen of each swarm is a stranger to some of the bees, and is imprisoned by their clustering around her. In a short time, the bees not having access to their own queen, become very much dissatisfied, and, after looking throughout the new hive, leave for some other new swarm, or perhaps return to the old stock, attracting all the bees, except the few that are holding the queens. Five or six, or a dozen, may go at once, flying about considerably; and a steady stream, at that rate, will soon take out all the bees, and a careless observer will not know when nor where they are gone, and may not miss them until evening. The hive to which they are attracted may be generally known by the bees stopping about the entrance, and buzzing a moment before they enter. When this state of things occurs, and while there is yet enough for a good swarm left, the hive should be closed with wire cloth, if possible, or something that will admit sufficient air, as a swarm of bees is easily smothered in hot weather. It is a good way to turn the hive on its side, after fastening in the bees; carry to a cool cellar for a day, when they will usually become reconciled. Should they have destroyed their last queen, it will be manifested by uneasy movements, when another may be provided. Such swarms, when they go to work, are liable to lose

their queen, on account of her being unable to fly, from injuries received while imprisoned by the bees. If the first combs that they build are for drones, it proves they have no queen. They will accept another at once. When two large first swarms get together, and you have the movable comb hive, it is about as well, and much the least trouble, to live them together, and when the hive is nearly full, if you want two colonies instead of one, and the extra surplus honey, you may divide. Secure straight combs, by elevating one end of the hive at least 30 degrees. Have it level the other way, and make the other edge of the guide bar, at the top, smooth.

General Premium List.

LAST CALL.

This paper completes half of Volume 24, and we republish, for the last time, the General Premiums offered for obtaining subscribers this year. A large number, in different parts of the country, have already secured one, often more than one, of the premiums. We invite the immediate filling up of partly completed lists, and the calling for the premiums, that we may as far as possible finish the distribution of the articles by July 1st.

NOTE the good kind and desirableness of the premium articles offered; they will each repay the effort required to get them. A great number of persons can readily make up a new premium club this month. Every now and then some one sends in a large club, stating that it was gathered in a few hours by calling upon acquaintances, showing a copy of the paper, and explaining its character and value.

Table of Premiums and Terms, For Volume 24.

Open to all—No Competition.

Names of Premium Articles.	Price of Premiums.	Names at \$1.00 each.	Names at \$1.50 each.
1—Good Books* See terms below.....		14	60
2—Case of Drawing Instruments.....	\$8 00	17	70
3—Best Family Clothes-Wringer.....	\$10 00	19	80
4—Doty's Washing Machine.....	\$12 00	21	90
5—Sewing Machine. (Wheeler & Wilson).....	\$35 00	70	350
6—Four Octave Melodeon (best).....	\$67 00	80	400
7—Five Octave Melodeon (best).....	\$112 00	140	600
8—Brown's Baby Tender.....	\$30 00	37	180
9—Brown's Baby Tender.....	\$42 00	52	236
10—Woodruff's Mercurial Barometer. (2).....	\$10 00	17	70
11—Woodruff's Mercurial Barometer. (1).....	\$15 00	21	90
12—The Aquarius.....	\$12 00	18	80
13—Ladies' Rosewood Writing Desk.....	\$12 00	18	80
14—Gentleman's do do do.....	\$14 00	21	90
15—Any back Volume Agriculturist.....	\$1 50	20	100
16—Any Two do do do.....	\$3 00	25	125
17—Any Three do do do.....	\$4 50	30	150
18—Any Four do do do.....	\$6 00	36	180
19—Any Five do do do.....	\$7 50	45	225

No charge is made for packing or boxing any of the articles in this Premium List. The Books, also Premiums 2, 15, 16, 17, 18 and 19, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufactory.

See full description of the Premiums, on pages 2 and 3 of January Agriculturist.

The Books offered are worth far more than their mere money value. (See terms below.)

The Case of Drawing Instruments is a neat and valuable affair that will be found very convenient in many ways, especially in cultivating in children a habit of sketching and making plans.

The Clothes-Wringer, Washing-Machine, and Sewing-Machine should be in every family where they are not already.

The Melodeons offered are the best, and are ornamental as well as desirable in a majority of families.

The Baby-Tender is of course wanted wherever there is a baby.

A good Barometer is as highly useful to every farmer as to Sea Captains.

The Aquarius is good in every Garden, and to wash Windows, Carriages, etc., and as an ever ready hand-fire engine.

The Writing Desks keep the stationery and writing materials always together, and those offered are ornamental also.

The Complete Volumes of the Agriculturist, bound or unbound, are the best and most useful works on matters pertaining to the Farm, Garden, and Household.

We wish every one of our readers could get each of the above articles. Many can get one with only the cost of a little time. TRY IT this month. The readers thus secured will in the end thank those who persuade them to subscribe.—It is hardly possible for any one to fail to receive Hints, Suggestions, and practi-

cal directions worth more than a York Shilling a month, while the engravings alone are worth this amount.

When any list is completed, notify us which of the articles is desired, and it will be promptly forwarded.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designed for a premium list be so marked WHEN sent in.

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

Premium 1.—Good Books.—Any person sending 25 or more subscribers, may select Books from the list on page 199, to the amount of 10 cents for each subscriber sent at \$1.00; to the amount of 60 cents for each name at \$1.50. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use. Many Farmers' Clubs have done so.

Fourth Annual Strawberry Show.

The success of former Exhibitions has induced the Proprietor of the *Agriculturist* to hold another Show of Strawberries the coming season, under the auspices and direction of the Fruit-Growers' Meeting. At a recent meeting, a Committee, consisting of R. G. Pardee, Wm. S. Carpenter, C. Taber, T. Cavanaugh, and G. W. Huntsman, was appointed, to make arrangements for the Exhibition. The Committee, in order to accommodate early and late varieties, decided to hold Exhibitions on June 8th, and on June 15th, the two days forming one Exhibition. The fruit must all be on the tables by one o'clock on the days above mentioned. The Secretary of the Fruit-Growers' Meeting will be in attendance to take charge of the fruit. At one o'clock the doors will be closed to allow the Judges to make their examination, after which they will be thrown open to the public. The Judges will report after the second Exhibition, and will make the awards to the best fruit shown on both occasions. The following gentlemen have been selected as Judges: S. B. Parsons, Chas. Downing, B. C. Townsend, S. B. Conover, J. W. Degraw.

SCHEDULE OF PRIZES.

- 1.—Best Strawberry, new or old, size, beauty and excellence considered. \$5
- 2.—Best 12 approved varieties—(1 pint each). 5
- 3.—Second do do do. 5
- 4.—Largest and best collection of Strawberries. 5
- 5.—Best show of Strawberries in bearing (on plants). 5
- 6.—Best market variety—(two quarts). 5
- 7.—Heaviest three berries of one variety. 2
- 8.—Best pint White Strawberries. 2
- 9.—Best pint Alpines. 1
- 10.—Best new seedling, fruited at least two years, but never offered for sale or exhibition, a bearing plant to be shown. 5
- 11.—Best collection of the newer imported varieties. 2
- 12.—Best show of Strawberries grown on a city or village lot (25x100 feet). 2
- 13.—For the best pint of Agriculturist, Russell's Profit, Brooklyn Scarlet, Monitor, Col. Ellsworth, Triomphe de Gand, Wilson, Hovey, Buffalo, Burr's New Pine, or Hooker, \$1 each. 11

C. TABER, Sec. of Com.

New-York Live Stock Markets.

BEEF CATTLE have come in pretty uniformly during the past few weeks, the average weekly receipts being 4,316 head—an increase of about 250 over the average for the previous month. The impression that drovers during the past winter have sought to make universal, namely, that there were no cattle in the West for the spring trade, and that prices of beef must be enormously high, has failed to be confirmed. The supply of bullocks is ample, and the quality has run better thus far this spring than during the winter, and present appearances indicate a still heavier decline in prices. Cattle which were reported last month at 22@23c. per lb. dressed weight, now sell at 18@19c.; good sell at 16@17c.; fair at 15@16c., and common at 13@14c.

MILK COWS have averaged 108 during the last four weeks. The light demand has prevented owners bringing in as freely as last month. Rates range at \$40@57 for poor to good milkers.

VEAL CALVES.—The receipts are much heavier than reported last month, averaging 2,549 weekly. Good veals sell at 9@11c. per lb., live weight.

SHEEP have come in pretty freely, the supply averaging 8,448 weekly. The numbers of sheared sheep equalled the woolled. Prices of good sheep range at 10½@11½c. per lb. for unshorn, and 9@10c. per lb. for shorn.

LIVE HOGS have arrived in comparatively large supplies, the weekly average being 6,822, compared with 3,764, the average last month. Sales for good light hogs range at 10@10½c. per lb., live weight.



Containing a great variety of items, including many good hints and suggestions which we throw into small type and condensed form, for want of space elsewhere.

Five Dollar Clubs.—This is a convenient season to make up Clubs of four subscribers which are sent for \$5.—A present of Strawberry plants is offered elsewhere in this paper. See page 194.

The Last offer of Premiums, for this year, is printed on page 172. It is worth looking into.

Our Strawberry Plants.—All queries in regard to these, are answered in two items elsewhere. Some premium plants are offered. See page 194.

Sheep Show at Canandaigua, N. Y.—The "N. Y. State Sheep Breeders' Association" held its first exhibition, on the grounds of the Ontario Agricultural Society, on the 9th, 10th and 11th of May. These grounds contain an amphitheatre capable of seating 12,000 persons, and were well adapted to the purpose for which they were used. The show of sheep was very large and fine, as regards Merinos; mutton sheep, however, were not well represented. There were near 600 sheep of all kinds, the most valuable collection of sheep ever brought together in this country, or, probably, in any other. The attendance was not large, chiefly consisting of farmers, and those much interested in sheep raising. We have no room now for the list of premiums. The shearing in competition for Mr. Moore's prizes excited much interest. There were 26 sheep sheared. The lightest fleece was one of 7 lbs., ½ oz., taken from a 33-lb. yearling ewe lamb, 11 months, 1 day old. The heaviest was from 221-lb., 2-year old buck, the fleece being 11 months, 26 days old, and weighing 29 lbs., 2½ oz. One 135-lb., 2-year old buck sheared 24 lbs., and one 118½-lb., 3-year old buck sheared 22 lbs. The heaviest ewe's fleece was 14 lbs., 8 oz., from a 77-lb. 3-year old ewe. The lightest bucks' fleece 10 lbs., 13 oz., from a 61-lb., 2-year old buck. The weight of fleeces after cleansing will be given when reported.

Sap Spots.—C. Sweet, Saratoga Co., N. Y., used, last year, pieces of hoop-iron, bent into a groove form, instead of tubular spiles, and recommends them to the sugar-boilers of the "Agriculturist family."

Tobacco.—(Omitted under "Work for the Month.")—Have the ground thoroughly enriched and mellow; set out plants from the 1st to the 20th of the month. Lift the most forward plants, after thoroughly watering the seed-bed. Move to the field in baskets, keeping the earth as much as possible on the roots. Set rather low but do not cover the plant with much, if any more soil, than it had originally, putting the plants 2½ feet apart in rows 3 feet apart. Tobacco plants may be transplanted as soon as they are large enough, say, when the leaves are 3 inches long; and the planting may be continued until the 10th of July. Select if possible a rainy day after the ground is well soaked. Should the sun come out hot, cover the plants with a handful of fresh cut grass, and remove it toward night.

Acknowledgement.—We have received and handed to the U. S. CHRISTIAN COMMISSION from Jas. Rice, Fort Ann, N. Y., \$27; Mrs. Elizabeth Peabody, Scio, \$10; A Friend, do., 50c.; Sarah Carmalo, Susquehanna Co., Pa., \$5.45; Mrs. Miles Joy, Ridgeway, do., \$3; H. C. Sigler, Oceola, Iowa, \$16.06; A. R. Durlin, Westminster, Md., \$3.50; District No. 2, Adams, Wis., \$4.55; S. Harrison, Camp Creek, N. Y., \$1.75; J. Harrison, do., 50c.—For the U. S. SANITARY COMMISSION: From John Gilman, Rosemount, Minn., \$4; A Lady in Yorkville, N. Y., \$4; J. L. Russell, Erie, Pa., \$9; Thos. A. Haggerty, Warren Co., N. J., \$2.80; E. W. Slaters, Orville, Cal., 50c.; H. P. Byram, Sag Harbor, \$3.12.

A Word to Purchasers of Seeds; Nursery Stock, etc.—A number of complaints of failures of different dealers to respond to orders, have been sent to this office. These have been forwarded to the dealers, and the trouble doubtless rectified as far as it can be. It is not altogether fair, because no return is received from an order, enclosing money, to set the dealer down at once as a humbug and a swindler. It should be considered, that there has been an unprecedented demand this spring for all kinds of horticultural and agricultural stock—so great that there has been unavoidable delay in filling orders. Moreover, in any large establishment, where the business is done by correspondence, many letters will be received, to which there is no pos-

sible clue. We get letters without signature, as well as those from which the Post Office or State has been omitted. One of the difficulties arises from the growing custom of giving names to estates, and the use of these in correspondence, instead of the proper P. O. address. One may call his place Cloverhook, Hardscrabble, or any other fancy or eccentric name, and have it well known to a whole neighborhood, while people a thousand miles away may be quite ignorant of the location, to which also the P. O. Directory will give no clue. We believe, that the seedsmen, nurserymen, and others who advertise with us, do the right thing, and when we have good evidence that they will not, their advertisements will not be admitted. Before charging them with dishonesty, it is well to recollect, that there is a chance for mistakes on both sides, and it is only fair to give them an opportunity to rectify and explain.

A Splendid Book.—The new edition of "Downing's Landscape Gardening and Rural Architecture," which has just been issued, is one of the most attractive books of the season, and will be highly ornamental as well as useful book on every table where it finds a place. It is on extra paper, is superbly bound, and contains over one hundred steel, lithograph and wood engravings, many of them full page. It is large octavo, contains 576 pages besides the tinted sheets of engravings. Price \$6.50. Sent by mail at the same price.

Time to Trim Apple Trees.—S. A. Morrison and others. If the limbs are small, they may be removed at any time, but large wounds heal best in July. The place may be covered with grafting wax melted and put on with a brush, or grafting clay. There is no better wash for the trunks than soft soap, thinned with water to work with a brush. Lime is objectionable.

The First Strawberries.—The earliest fruit shown at this office was a pot of the "Agriculturist" from Messrs. L. Pullen & Son, Hightstown, N. J. The plant was a runner of last fall, potted and grown in the green-house, and though so young a plant it made a goodly show of fruit on May 15th.

Birds and Strawberries.—Several have complained that though their strawberry beds bear good crops, the birds get all the fruit. Where birds are so numerous as to be very troublesome, we know of no other way then to cover the bed with a net. One subscriber asks, if a stuffed cat skin would not scare the birds away. A similar proposition was made at the Farmers' Club a short time ago, and it was suggested that the skin should contain a live cat, which would stuff itself with birds. If any one has a ready means of keeping the birds away, they should communicate it.

Protection against Striped Bugs.—Dr. J. D. Newbro, Ingham Co., Mich., uses tarred roofing paper to make boxes or frames to keep the striped bug from cucumber, squash, and similar vines. The frames are made slightly tapering, so as to pack together when not in use. They are made 10 or 12 inches in diameter, and 12 or 15 inches high. They are prevented from blowing over by means of three stakes driven inside, and the paper tacked to the stakes. The doctor thinks that the odor of the tar, with which the paper is covered, helps repel the insects.

The Striped Bug again.—A. Quinby, Westchester Co., N. Y., has had no trouble with them for the last ten years. He dusts the plants with dry earth, while the dew is on them, and if the plants are dry, he wets them and applies the dust. He says that the bugs will not feed on leaves, that are covered with grit. E. Humphrey states, that he has grown cucumbers for several years upon sod ground manured with hen manure, and has never seen a bug on the vines.

Plants Named.—As the season of flowers is at hand, we get specimens of wild flowers for names. If the specimens are sent in good condition, we are very willing to name them, but we have no time to give to making out badly dried specimens, or those which are put in a letter in a green state, and "all of a heap." We should be glad if those who take interest enough in flowers to wish to know what they are, could be induced to study botany and look them out themselves. At all events, we ask our friends to either press the specimens before sending, which may be done in some books of little value, or between folds of soft paper with a weight upon it, or send them fresh in some kind of box that will not get crushed in the mail. Mr. R. Allen, York Co., Me.: *Coptis trifolia*, very nicely dried specimens. This is called Gold-Thread, on account of the bright yellow color of its roots, or rather underground stems. It is a very pure bitter and is used in medicine and domestic practice... J. H. Parsons. Some kind of *Smilax*, which cannot be

told without the leaves... E. G. Topping, Whiteside Co., Ill. Probably White Cedar, but specimens too small... J. C. Martindale, Phila. Co., Pa. The grass is *Crypsis schœnades*, the Rush-like *Crypsis*, a European species which has become naturalized in some parts of Penn. The other is a species of *Muscari*, or Grape-Hyacinth, but too old to say which one... R. R. Alleghany. The Dutchman's breeches, *Dicentra cucullaria*... Elias Jones. *Stellaria media*, the common Chickweed. It will flower whenever not actually frozen. It is most troublesome in wet soils, and drainage is the best remedy... Emily C. Day. *Hepatica triloba*, or Liver-leaf. The young leaf not recognized... J. M. Shaw. Bastard Pennyroyal, sometimes called Blue-curls, *Trichostema dichotomum*... J. E. Fuller. Dittany, *Cunila Maritima*. It may be liked by some as a substitute for tea, but it smells too much like medicine to suit us.

The Borer.—F. D. Loy, Lyon Co., Kansas. The only sure remedy for the apple tree borer, is purely mechanical. Probe the holes with a wire or whalebone, and crush the maggot; then wrap the lower part of the trunk for a foot or more with tarred paper, first removing the earth, so that the lower edge of the paper will be near the roots, and draw the earth back again.

Another Borer Remedy.—A subscriber finds, that an occasional application of urine around the trunks of peach trees, is offensive to the borer, and conducive to the health of the tree.

Again and Again we are obliged in self-defence to repeat that we know nothing about and wish to know nothing about any quack doctors in New York or any other city. We have repeated so often the statement that no one who advertises his cures is, in our opinion, worthy of confidence, that it ought by this time to be generally understood by our readers. Notwithstanding the frequent expression of this opinion we are still very often appealed to by parties who wish to know if such or such an one is not an exception to this rule. These questions are generally asked about persons of whom we have never before heard, and the supposition is that they advertise only in the country papers. Sometimes these inquirers say, that they saw the advertisement of the so-called doctor in some particular paper, and think that it would not be admitted there if the advertiser was a quack. The fact is that the general, as well as the religious and agricultural papers (except our own), exercise but very little censorship over what appears in their advertising columns, and the most outrageous and obscene things appear under the head of "medical advertisements" in the best of them. As a general rule, the longer a man's advertisement, the worse quack he is. Physicians of proper standing if they advertise at all, at most state their address and the fact that they give their attention to particular diseases. Beware of the man who does more than this. We hope that our friends will not put themselves to the trouble of making inquiries about advertising "doctors," for the only answer we can make is: "We know nothing of the persons."

Killing Elecampane.—"P. F." says, that the roots will be destroyed by fall-plowing the land.

Strawberry Preserves—Note.—Since the page (191) containing "Mrs. F.'s way of preserving strawberries," went to press, Mr. F. informs us that the bottles containing the selected fruit, are to be kept in hot water until the fruit is thoroughly heated through, so as to expel the air completely, before the flavoring syrup from the other berries is added.

New Kerosene Burner.—The new kerosene burner without chimney, with which a challenge is made in our advertising columns, combines some advantages we have never before seen so fully attained. The light is clear, free from smoke, and although not equal to a chimney burner, will answer well for ordinary use. A great point gained is, it is not easily blown out; it may be carried up and down stairs rapidly without being extinguished.

Ivin's Hair Crimpers.—Several inquirers. Ladies who have used these, report that they like them much. They are in the form of a hair pin, are easily applied, require no heat, and therefore do not injure the hair as some other appliances used to crimp the hair, and give it the wavy appearance admired by some.

A Waspish Item.—A correspondent asks, why wasps cannot sting a person while he continues to hold his breath. Let the inquirer when he finds a Yellow-jacket's nest, hold his breath good and tight, and break up the nest, and if he does not get stung, we shall conclude it was—because he held his breath.

Gestation of Cows.—Two neighbors have gone to law about the damage arising from a bull running at large, contrary to the laws of the State of Iowa. The animal ran with four cows of the plaintiff. One of them calved within 40 weeks, the others were expected to, at furthest, within 45 weeks. To decide the length of time a cow may go with calf, is of interest to all parties concerned. The period of gestation varies, more or less, in all animals. The average period in the cow is considered 40 weeks. The late Earl Spencer kept a record of 764 cows; they averaged between 284 and 285 days. Blane says he kept an account of 160 cases, which varied from 241 to 308 days. Tessier says he found it to vary from 240 to 331 days, in 570 cases. Bergen considers the average period 280 days. Youatt makes the average 270; (this is probably an error). Manvie records a case of a cow going 16 months; the calf died. There is a case recorded in 1831, in the Veterinary School of Utrecht, of a cow carrying her calf 15 months, less 2 days; the calf lived. The shortest period of gestation that we find recorded, where the calf lived, was 220 days. The authorities cited are reliable.

Scratches and Grease are scarcely known in well ventilated stables, where cleanliness and care are exercised in managing horses' feet. J. B. Cheeseman sends his method of treatment, which is as follows: "Cleanse the heels with soap suds, and, when dry, apply hot tallow with a swab. One application is sufficient. Fish brine, or a coating of common white lead paint, are equally efficacious." We approve of your application of warm water and soap, and rubbing the parts dry, after which the white oxide of zinc ointment, or a little glycerine, will be found excellent applications for these diseases. They can be obtained of any good apothecary, are easily applied, and free from danger; which is not the case with the remedies you mention.

Lice on Hogs.—"E. J. D." Mercer Co., O.—The Swine Louse (*Hamatopius Suis*) is readily destroyed by a strong decoction of quassa wood; tobacco water is also used, but requires especial caution in its application. A little benzine, dissolved in alcohol, applied with a shaving brush, or piece of sponge, is said to be a certain cure, but, like tobacco water, requires care in its use. The pen should be kept clean, occasionally whitewashed, and the bedding changed frequently.

Wintering Hogs on Turnips.—S. M. Thurston, Dakota Co., Wis., writes: "I have wintered my hogs on raw ruta-bagas for two winters, and think them better than potatoes." Sow ruta-bagas on good deep soil in June, the earlier the better.

The Sheep Shearings.—There are a number of shearing festivals appointed in various parts of the country. They are of local interest, and we hope will be well managed and well attended. In rapid and close shearing, humane care for the comfort of the sheep, rather, we might say, care not to torture the poor animals, is not given sufficient weight in deciding the merit of the shearers. Should occurrences of particular interest transpire, we hope to receive reports.

Meat Bones—Don't Burn Them.—Make soup from them, then sledge them up fine, and feed them to the hens, or hogs, saving the manure of these animals. Or throw them broken fine into a heap with horse manure, perhaps making a regular compost, afterwards of the manure. Thus you save, and utilize on the farm or garden all the nitrogen (as ammonia). When they are burnt, even if the ashes be saved, all this is lost.

Solution of Bones by Acid.—"Verdant Farmer" asks how to dissolve in oil of vitriol. It is rather a difficult thing to dissolve bones well. It is best not to do it in a hurry. Sledge up (down?) the bones as small as you can conveniently, put them into a half-hogshead tub (made of an oil cask), filling it half full; wet them with water, so as to moisten the whole mass, and leave it a day or two, stirring to make all moist. Then take of oil of vitriol, about half the weight of the bones, dilute it by pouring it carefully into an equal quantity of water, or more—(it will become very hot, and may spatter), and pour this upon the bones. Stir thoroughly and often—daily, for a week, mashing and breaking the lumps. Add more water, if necessary, to be able to stir the mass, and finally dry off by addition of bone dust, saw dust, coal ashes, dry leached ashes, plaster, or muck. If big pieces of undecomposed bone be found, rake them out. This drying operation is best done on an earth floor.

Why do Cattle Gnaw Old Bones?—"H. H." Westchester Co., N. Y., asks: "What is the cause of cattle wanting to be chewing pieces of old bones, as is the case with mine? I give them salt, but

they refuse it, and if they can find an old bone they would chew it all day if I would let them. Can you tell the cause?" You have sold corn, hay, milk, veal, young cattle, cows, etc., off your place, until the bone-material phosphate of lime is so nearly exhausted that the animals have got the "bone disease." Feed them a little bone meal daily, for some time, and sow bone dust on your pastures, and mowing land. It will greatly increase your crops besides. This advice is good for thousands besides you.

Barley Sprouts as Manure.—"J. S.," Tamaqua Co., Pa., has used the barley sprouts of the breweries, with very good results on potatoes and other vegetables, (two handfuls to the hill of potatoes), and asks, if it can be regarded as a substitute for stable manure? No, not by itself. Composted with swamp muck, and adding lime, ashes, plaster etc., to the soil, in moderate quantities, it may substitute stable manure.

Anthracite Coal Ashes.—"New Subscriber" writes: "An English writer states that the ashes of English (bituminous) coal are good to mix with animal manures, to absorb or retain, till needed by vegetation—those good qualities of the manure which might be lost; or as I understand it, that they might have the same effect, in some degree, as plaster," and asks: "Are the ashes of anthracite coal of any value for the same purpose?"—Yes—but not of uniform value. Screened free from clinkers, they make a good addition to dung composts, or may be used alone on grass in autumn.

Wintering Bees, Buried and Exposed.—Bidwell Bros., Ramsey Co., Min., send us the following communication, which has special interest for bee-keepers. We print it, hoping to receive from our correspondents a statement of their method of burying their bees. They write:—"On the 26th of October last we selected ten stocks of bees to winter out of doors, and weighed each. On March 25th (nearly five months) we weighed them again, and found the following result:

Oct. 26.	March 25.	Loss.	Oct. 26.	March 25.	Loss.
75 lbs.	55½ lbs.	19½ lbs.	74 lbs.	41½ lbs.	32½ lbs.
81½ "	53½ "	27½ "	77½ "	49½ "	28 "
73½ "	47 "	26½ "	79½ "	53½ "	26 "
73½ "	45½ "	25½ "	77½ "	51 "	26½ "
73½ "	47½ "	26 "	70 "	46½ "	23½ "

Whole number of pounds of honey consumed,....265
Average consumption in each hive.....26½
The thermometer ranged from 68 above to 33 below zero.
We buried in the ground eighteen miscellaneous stocks, October 26th, and re-weighed them the 27th of March, with the following result. There were eight hives in the bottom tier, six in the middle, and four in the top tier.

Oct. 26.	March 27.	Loss.	
92½ lbs.	78½ lbs.	13½ lbs.	top tier.
92½ "	79½ "	13½ "	top tier.
92 "	79½ "	12½ "	top tier.
91½ "	79½ "	11½ "	top tier.
90½ "	80½ "	9½ "	middle tier.
87½ "	78½ "	8½ "	middle tier.
72½ "	65½ "	7 "	middle tier.
87 "	80 "	7 "	middle tier.
82 "	75½ "	6½ "	middle tier.
87 "	78½ "	8½ "	middle tier.
93 "	85½ "	7½ "	bottom tier.
90 "	83 "	7 "	bottom tier.
90½ "	83½ "	7 "	bottom tier.
78 "	72½ "	5½ "	bottom tier.
69½ "	65½ "	4 "	bottom tier.
63½ "	60½ "	3 "	bottom tier.
67 "	64½ "	2½ "	bottom tier.
56½ "	54½ "	2 "	bottom tier.

Total amount of honey consumed,.... 136½ lbs.
Average,.....7 5-9 lbs.
"We might remark that the greatest stocks out of doors, and the strongest in the ground, consumed proportionately the most honey. Those at the bottom of the pit less than those at the top. The dirt was four feet through at the bottom, and only one at the top. The stocks that wintered in the open air lost about half of their numbers, while those buried increased some, and came out bright. We shall bury all our bees next winter."

To Stop Chipmunks Pulling Corn.—S. M. T. says his neighbors "soak their corn in a decoction of tobacco, and it has invariably put a stop to the depredations of the Chipmunks." Still, he asks for a better remedy. Why is not this good enough?

Mixing of Plants.—G. Paul, St. Louis, Co., Mo., and others. According to the laws of plant life, as we now understand them, admixture of different kinds of nearly related plants, can only take place through the seed. That the fruit which encloses the seed may be changed by cross impregnation is quite probable, but it is not proven. Carrots and beets may be raised for seed in close proximity to ruta-bagas, or any other turnips, without the slightest chance of any change from this cause, although the turnips or the other vegetables may deteriorate, for the reason that the plants were not well grown. As to the question of potatoes mixing in the hill, we have many assertions that they will do so, but no proof, and we should require evidence, such as would

convict a man of murder, before we could be convinced of the truth of the statement. That potatoes may vary, and that a colored variety may produce tubers partly white, or a white variety yield those having colored markings, we can readily admit, but instead of attributing it to any influence of mingling sorts, we should rather ascribe it to the breaking out of some latent peculiarity. We have seen one branch of a grape vine produce leaves mottled, and margined with white, and so with other plants, and see no reason why, under favoring circumstances, potatoes, which are merely branches peculiarly developed, should not sport as well.

Self-Regulating Fountain.—S. D. Newbro, of Ingham County, Michigan, writes that he employs for securing a small but regular discharge of cider into the sawdust leach box, in the process of making vinegar in the quick way, an apparatus similar to the one here figured, in which R is a reservoir, T a trough connected with R by a pipe, the pipe entering first a box below, from which the flow into the trough is regulated by a valve attached to the float F. When the float rises to a certain height, the valve closes, but re-opens again when the cider is drawn down. The spigot, S, is inserted at any convenient place in the trough. Mr. N. suggests the value of this contrivance for maintaining a regular flow of sap into the evaporating pans in maple sugar making, and also its application as a fountain of fresh water for poultry,—for which purposes it is available, if the valve close tightly.



West Jersey Fruit Growers' Association.—The second annual Report of this Society is at hand. It is a modest little pamphlet, but much more valuable than some of greater pretension, as it records the experience of its members with certain varieties of fruits, in a concise and definite manner. Any one living in Burlington Co., and wishing to know what fruits succeed there, can find in this little report just the information he needs. We have looked over its contents with interest, and commend the example of the West Jersey Association to other Horticultural Societies.

Catalogues, etc., Received.—John Vanderbilt, 23 Fulton street, has issued a new illustrated catalogue, full of engravings of everything in the way of agricultural and horticultural implements, from a threshing machine to a garden rake, with descriptions in both English and Spanish....The Report of the State Board of Agriculture of California is at hand. Though it treats mainly of local matters, it abundantly shows that the people of that State fully appreciate their wonderful natural facilities for making California a leading agricultural State, and mean to improve them.

The Vegetables of America.—A new edition of this work, by Fearing Burr, Jr., has been published by J. E. Tilton & Co., of Boston, and is a most elegant specimen of book-making. The letter-press, engravings, and paper are of a character not often seen in books of this class. With regard to the matter, it is a most useful compendium of the cultivated vegetables, giving descriptions of varieties, with interesting notes concerning their origin and history. Although it was not within the intention of the author to write a hand-book of practical gardening, he has given brief directions for the cultivation of the different varieties of vegetables. Both author and publishers can congratulate themselves upon having produced a work that is both useful and elegant.

Trimming Fruit Trees. If "Young Farmer" had read the calendar carefully, he would have learned that fruit trees may be "trimmed" at any convenient season with the knife, but that limbs large enough to require the saw are best removed in summer or later.

Spring Budding the Peach.—Several correspondents state that they have been more successful in budding the peach in spring than at any other time. The twigs containing buds should be cut before vegetation starts, and preserved in the same manner as cions.

Flowers for Shady Situations.—The Pansy and the Forget-Me-Not, the Primroses and Nemophilas, all do well. For these last, we wish to speak a special kind word. The *N. maculata* is one of the largest, white, and blotched with violet. *N. insignis*, is sky blue, small, but a great bloomer. *N. discoidalis*, is a rich maroon, bordered with white. They are all Californian annuals of the easiest culture, and if they have a partial shade, will bloom freely.

Supply of Farm Labor.—We again take occasion to direct attention to the advertisement of the American Emigrant Company. It contains a well timed proposition for supplying farmers in all sections of the country with labor, in a feasible and practical manner. The object of the company is to disperse all through the interior of the country the laboring people who are constantly arriving at New York, and in order to accomplish this, it sends under the care of a conductor, companies of newly arrived immigrants, varying from 20 to 50 in number, to designated localities. These companies are composed of men and women of such description and qualification as are required, and previously ordered by persons living in the neighborhoods to which they are sent. The immigrants so sent out are delivered at any specified point to a person appointed to receive them on behalf of those who have ordered them, and will have contracts made with them either to work for a specified term (if that be desirable), or at all events for a sufficient length of time to repay all the cost attending their transportation. Thus every section of the country can be supplied promptly and certainly with labor just as cheap as it is to be had at the sea-coast. The company has established a widely ramified system of agencies in Europe and is exporting large numbers of German, Swiss, Swedish, and Danish laborers as well as British, and is thus prepared to furnish help of almost any nationality that may be desired. It is also engaged now in the work of establishing agencies through the various States of the West to facilitate the dissemination of workmen in the interior. It is of the greatest practical importance that some such plan should succeed, and as we know the company is one of character and capacity, we have satisfaction in commending its operations to the farmers of our great land.

Fire-Proof Shingles.—A writer in the Boston Cultivator says he had always noticed that the staves of an old soap barrel, or pork tub, made very poor kindling-wood, and so he argued that potash and salt would tend to keep his roof from kindling. Being a blacksmith, this was a matter of some importance. So, in preparing his shingles, he took half a bushel of lime, half a bushel of refuse salt, and five pounds of potash, and water enough to slake the lime and dissolve the alkali and salt. He mixed these up in an old trough, or box. Then he set a bundle of shingles into the mixture, nearly up to the bands, leaving them soaking for full two hours. Then he turned over the bunch, and put in the other side, for the same length of time. As exposure to rain and sunshine will, in time, take out the strength of this mixture, it should be applied, fresh, once in 3 or 4 years.

The Cornell University.—Hon. Ezra Cornell, of Ithaca, has offered to the State of New York, to endow an institution of learning, to be called by his name, with \$500,000, and 200 acres of land on certain conditions, the principal of which is, that the grant of land made by the United States, for the benefit of agricultural and technical education, be given to this University. This very munificent proposition has been accepted by the Legislature, subject to the condition that the People's College to which the U. S. fund was originally, but conditionally given, complied with conditions then imposed within thirty days, a result which has not been attained. Mr. Cornell is widely known for his business ability, for his liberality, and as an ardent friend of agriculture and education. The trustees named in the bill, are men who will carry out his views, and accomplish the objects of the endowment, which are as stated in the bill, "the cultivation of the arts and sciences and of literature, and the instruction in agriculture, the mechanic arts and military tactics, and in all knowledge."

Wild Buckwheat.—In January the question was asked, if the wild buckwheat was poisonous. N. Engle, of Wabasha Co., Minn., says, it is not, but if ground, "is worth about as much as the same weight of oats as food for cattle. Mine fatten on it." On the other hand, J. R. Comstock, Clayton Co., Iowa, says, that he once fed four horses on oats, which were mixed with wild buckwheat in the proportion of about one-third of the whole. One horse was killed, another made sick, and the other two did not eat up their feed. These two accounts differ so widely, that we must conclude, that they either do not refer to the same thing, or that, while cattle may eat it, horses are injured by it.

Galvanized Iron.—L. A. Leland, St. Joseph Co., Mich. The term "galvanized" is a technical term, applied to iron that has been coated by a film of zinc. Treated in this way, wire, and other articles made of iron, are in no respect altered, save that the thin covering of zinc effectually prevents them from rusting. The suggestion of using galvanized iron wire for a clothes line, was first made in the *Agriculturist* long ago, and has been copied by various papers without credit.

Erecting Gravel Wall Houses.

The delay in fulfilling a promise which we made some months since has caused no little inquiry among our readers in regard to the details of building gravel-wall houses. As we then said, we have no personal experience in building concrete walls, and so we have applied to an old friend and staunch farmer who has. He sends us the following minute instructions, which come in good time for those whose plans are formed and who can give their own personal supervision to the work during the dry weather between June and October. Mr. Edwin Hoyt, of Fairfield Co., Conn., writes:

THE PLAN.—The first thing is the plan of the house. This should have been well studied, and every thing definitely decided upon. Plain working drawings must be made of cellar, ground and chamber floors, with elevations of the sides. Every door, chimney, and window should be positively located before any of the wall is laid, for it is essential in making the "curbing" that the bolts, cleats, etc., are so arranged as not to interfere with the window and door frames. It will be found, moreover, a great convenience if the windows in one story correspond in size and position exactly with those in the other, especially where stone window caps are used, so that the curbing, which must be cut to let the caps project, will not need to be altered.

It will be observed that the system of building which Mr. Hoyt uses, and considers superior to every other, is that of laying the concrete between curbing boards in place, that is, where it is to remain—the curbing being lifted, as soon as one course hardens, and set for an other.

THE CURBING.—This consists of an inside and an outside board for each side of the house—that is four pairs, for common square houses. Each board is 20 inches wide—and the full length of the wall, of 1½ inch stuff, and is composed of strips, 5 inches wide, fastened together so as to break joints.

Care should be taken that joints do not break, in contiguous strips, at or near the same place, and that no more than two strips should break joints at the same section of the curb-boards. Cleats should be put wherever joints break, and nailed with wrought nails, well clinched, putting two nails in each strip.

It will be no disadvantage to make the boards very stiff, and it may even be necessary to put cleats thicker than specified. They should be from five to six feet apart, just as it happens. Care should be taken not to have a cleat come where a window, or chimney comes. The ends of each curb should be perfectly square, and the outer curbs exactly 1½ inches longer than the length of the wall. The cleat, at one end of each, should extend one inch beyond the end, and at the other, it should be flush with the end. These end cleats are 10 inches wide, to give requisite stiffness. When the curbing is put up all around, the projecting cleats will form "gains," into which the plain ends of the other boards will fit, forming tight square corners. The inside curbing should be arranged as follows:—Two of the curb-boards should be 1½ inches shorter than the inner face of the wall, and the other two should be 3 inches shorter (that is if the curbs are of 1½ inch stuff), and the end cleats should be about 6 inches from the ends. The cleats next to the end ones, on the outside boards, must come opposite these, and all the other cleats opposite. The outside and inside curbs must correspond in pairs—and be so marked. If the inside curbing be made accurately of the length prescrib-

ed, when put together, two opposite corners will be short, just the thickness of the curb-boards. This square space must be filled by a stick, 1½ inches square and two feet long, which, when the curbing comes to be moved, may be drawn or driven out, to enable the boards to be slipped.

Having the curbing cleated and nailed together, bore holes ½ inch in diameter through the cleats, exactly 5 inches from the bottom. The holes are for the rods which connect the inside and outside curbing, and are of ½-inch, or ¾-inch iron. They should each have an eye of 1½ inches inside diameter, turned on one end, and a thread for a nut cut on the other. The nut should have a "tail" to it, to turn by hand. Bore a ¾-hole into the upper end of each cleat, to receive a spike-nail. A 2×2 stud is cut in pieces, 8 inches longer than the width of the wall. Through these pieces spikes should be driven, so that when placed on the tops of the curbs, and nails inserted in the holes before mentioned, the curbs will be *exactly* the right distance apart.

If the rods, and cleats at the top, are four feet, or more apart, there should be clamps between, to keep the boards in place. For this purpose, take 3×3 inch studs, and saw into pieces of suitable length, and into each end frame side pieces, just as for a "bolster" to a lumber wagon. They must be one inch further apart than the width of the wall and curbing. Oak boards, one inch in thickness, will be sufficient, if they have a good shoulder on the outside. The side pieces should be long enough to pass two of the 5 five-inch strips, and well on to the third. The clamps will, when put on, have a play of one inch. This is to receive an inch piece, say 15 inches long and 5 wide, made necessary by the fact that when the curbing is filled, the pressure is so great, that the clamp cannot be lifted up, when you wish to remove the boards; but by taking a hammer and driving out the inch piece, it at once relieves the clamp. It is best to have enough of these rods, cleats, etc., that the wall may be kept in its place. The corners of the outside boards should be held by two iron clasps, one at the top and one at the bottom, say two to three inches from either edge. They should be made of ox-shoe iron, (and heavier would be better,) and should be made *exactly* at right angles. One end should be fastened to the board with a staple, the other end should be made with a hole, so as to receive an iron pin. If these iron clasps are made an exact right angle, and the curbing boards made square at the ends, when the corners are brought together, they will fit snug, and cannot get away. If the corners are snug, rest assured, the curbing boards are level or plumb. If the joint at the corner is not a fit, then some thing is out of true somewhere.

THE CELLAR walls should be built of stone. Do not build any "gravel wall" below the surface of the ground. It is better to have a good foundation and water table. There are many cheap houses of this material, with brick foundations; but it is *best* to build well. Do not spoil the house to save a few dollars.

It is not necessary to use cement in building the walls. Use good lime, and not too much. (I used 16 of sand to 1 of lime.) With good gravel and care, the material will give satisfaction.

Having the curbing ready, set the floor joists and fill up between them with concrete. The outside boards may be used for this purpose, but will require some care to keep them in place, and this must be done by outside braces. The inside must be built up as one would lay a wall—Having leveled up to top of the floor timber, set

the window and door frames. These should be nailed to studs, which should be nailed to the floor timbers, and placed plumb. When plumb, the top should be stayed to the floor joist, by a good stiff stay at each side of the frame. Where the space, from window to window, or door, is too long, place in a stud with a straight edge, exactly flush with the inside of the wall. These sticks are of great use to keep the wall plumb and to nail the mop-board, pictures, etc., to. It will not do any injury to put in straight edges, as many as you choose, on the inside of the wall, but none outside. The window and door frames should be set in $\frac{1}{2}$ inches from the front face of the wall, and a beveled strip should be sawed out and nailed on, so as to come out flush with the outside, and give a beveled corner, instead of a square one to the concrete. This, also, is a guide for the outside curbing, which can be tacked to the frame.

Having the windows and doors set, make moulds for the chimney flues; they may be 14 inches wide and 4 inches thick. Take two-inch strips for the sides, and nail on inch boards. Let the strips be $2\frac{1}{2}$ feet long, and bore a hole at the top of each, through which an old broom handle may be run, to draw up the mould by. The moulds should be about 22 or 23 inches long. They are drawn up each time before the curbing is loosened for the next course.

The first course will be 20 inches high, or the whole width of the curbing boards. The mortar should be made thin, so as to pour from a pail, and all the stones possible worked in. It is better to lay the stones in, in some order. After the first course, the boards should be raised but 15 inches, letting the rods rest on the top of the last course. The inside board can be tacked to the window studs, pieces in the wall, etc., as above stated. When the boards are raised, turn up the nuts, having a stick in one hand just the length your wall is thick, place this in between the boards and turn up the nuts. Five inches of the board must remain lapping on the last course. A good plumb and level should always be at hand. Three or four courses per week will be all that it is advisable to lay. Never loosen up the curbing when there is appearance of rain. If you wish to use stone window sills, leave a place, and put them in afterward. The caps should be put in when you come to them. The curbing board can be cut out, so as to let them project out, far enough to receive the stucco. After you have passed the window, nail the pieces in again.

Make the staging strong, and fill the first story from the outside. It will be necessary to have a scaffold on the outside to raise and adjust the boards. The scaffold poles will require to be well stayed. Drive stakes into the ground to fasten the stays to. This scaffold can be used by the carpenters, to cornice, &c. Also for the masons, to put on the stucco.

THE STUCCO should be put on by some person who understands the business. This is one of the most important things, for the good looks of the house. It is not necessary to 'fur' out for the wall. Plaster directly upon the 'gravel wall.' Pains should be taken to "anchor" the timbers the same as in brick houses. Do not hurry too fast, and work only in fair weather. A wall, twenty-five or six feet high, can be built in two months. Use care in moving the curbing boards, and be exact with each course. Those studs, or straight edges, put into the inside of the wall, should be "anchored." This can be done by nailing on pieces of boards, to run back into the wall, 8 or 10 inches; make the ending in the wall the largest. A person with ingenuity will take my ideas, and go on with little trouble.

Tim Bunker on the Pickle Fever in Hookertown.

MR. EDITOR:—"I knew it would be so," said Mrs. Bunker, raising the gold-bowed spectacles from her eyes, as I came home from holding court one night, "I knew it would be so. That paper is just like a whispering gallery, Timothy. Every thing you do and say in Hookertown is echoed from one end of the land to the other. Since you have been gone, three letters have come about pickles, and Seth Twiggs and Jake Frink have been in, and I guess Mr. Spooner has a touch of the fever, for he preached Sunday about the 'Lodge in a Garden of Cucumbers.'"

I had not more than got done supper when Seth Twiggs made his appearance in a cloud of very blue smoke, and he had n't got the first question fairly out before Jake Frink and Kier from the White Oaks, knocked at the door, and Dea. Smith and Jeremiah Sparrowgrass followed. Think's I to myself, I guess I shall have a meetin' to-night, whether the minister does or not. It was lecture night, and I suppose the deacon stopt in on his way. I am afraid he didn't hear the bell, for he didn't start when it had done tolling.

"Now," said Seth Twiggs, bringing his pipe down on his knee with an emphasis that would have smashed it if it had been worth anything, "Du ye really think three hundred dollars can be made on an acre of good Hookertown meadow, in pickles?"

"Is it clean cash?" asked Jake Frink with a dubious look. "Them fellers as deals in pickles is apt to be kind of sharp."

"Du ye think there is any chance for us up in White Oaks, 'Squire, to go into pickle business?" inquired Kier Frink, the hopeful son of Jake.

"Fellow-citizens," says I, "don't all talk at once, and I'll try and answer your questions. "I've got three letters come in to-day's mail, on the pickle business, and I haven't had time to digest them yet. The policy of going into the cucumber trade depends altogether upon the facility of a market. You might grow cucumbers well enough in Iowa, but if you had to send them to New-York to market, it would n't pay very well even at two dollars a hundred. A man must be within a short distance of a pickle factory if he purposes to deliver his crop from his own market wagon, or within easy reach of the factory by rail or steamer. Steam-boat carriage is better and cheaper than railroad. Twenty-five cents freight on a barrel, probably, would not interfere with reasonable profits. The pay of the pickle men is as good as that of any other class of manufacturers. There are few in the business; their profits are supposed to be large. It is ready pay and clean cash, if you make that bargain with them. Pay as you go is the rule in pretty much all kinds of business now. That is one of the advantages of the war. A good many other folks besides the rebels have found out just where they stand."

"Where can we get seed?" asked Dea. Smith.

"That is one of the most important things in the business. I do not know of any one who makes a business of growing the seed to sell, but almost every farmer who has a pickle patch grows his own seed, and thinks it a little better than any thing else. If a man is going into the pickle business, it will pay him to visit Westchester County. He can hardly go amiss of farmers who have pickle patches in Yonkers, East Chester, West Chester, West Farms, and

other towns. He can inquire for Noadiah Tubbs, who will tell him all about it. If he does not want to be at that trouble, he should send to the nearest good seed store. I have raised fine cucumbers from just such seed."

"Do you salt the cucumbers before you sell them?" inquired Sparrowgrass, with a refreshing greenness.

"No, Sir. That is the manufacturer's business. He wants fresh picked cucumbers to make pickles out of. Of course you do not want tight oak barrels, like whiskey casks, to pack your cucumbers in. The farmer generally buys up a lot of cheap flour barrels, when he is in town, at the baker's or grocer's, or at the hotel, and these, with a little coopering, will answer his purpose for a single season. They are sent to the purchaser or consignee, by rail or boat, full of cucumbers, and sent back empty by the same conveyance. The owner's name or initials should be put upon them."

"What sort of a bargain does the farmer make with the pickle man?" asked Seth Twiggs.

"That is just as he can light upon chances. If he is near the factory, he agrees to deliver at so much per thousand. If he sends by other conveyance, he agrees to deliver them at the nearest depot, or landing, or to pay the freight clear through, as the case may be. The terms will vary according to circumstances. Some prefer to send their crop to a commission merchant and run the risk of the markets."

"How about sorting?" asked Kier Frink.

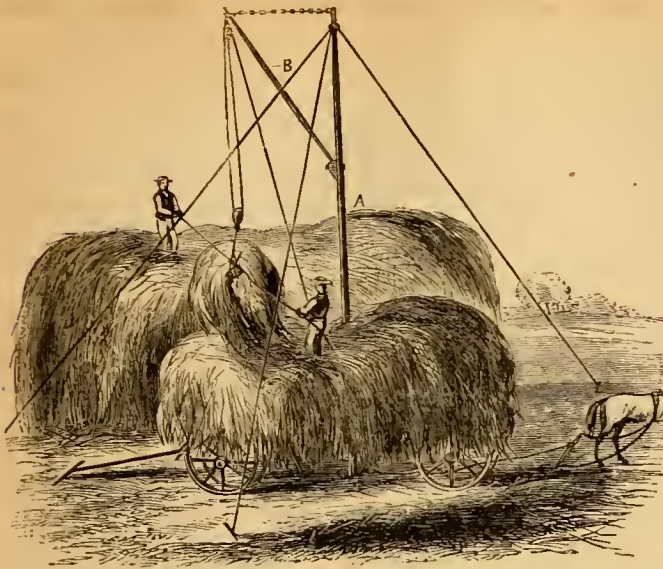
"They commonly have a shed or hovel for this purpose where all the cucumbers are brought as fast as picked, and are assorted into three sizes, the largest for eating, and the two smaller for pickles. The 'nubbins' and 'yellow boys' will have to be thrown away or the pickle man will do it for you. If picked regularly, however, there will not be many unmerchantable."

One of my correspondents wants to know if night soil is good manure for this crop. He says: "I have got 261 one-horse loads of night soil, about three-fourths of it is composted with muck, the other fourth is almost the pure article. Shall I plow in the former and put half a shovel full of the latter into the hill. My land is a clay loam—is that right?"

The trouble with the pure article is that it is quite too strong, and would be likely to rot the seed unless great pains were taken to mix it with the soil at the time of planting. I should prefer the compost in the hill, and either compost the rest or spread it, and plow it in. Such a quantity of night soil ought to put four acres in good condition. As to the preparation of land, look at Diah Tubbs' views in back numbers of the *Agriculturist*. A sandy loam is considered the best for all kinds of vines, but heavy crops are grown on clay lands. With night soil good pickles can be raised on any well drained laud.

He also wants to know who are reliable men engaged in this business. In Wilson's Business Directory he will find a list of pickle dealers, the most of whom have factories either in the city or out of town. Provost & Wells have a factory at West Mt. Vernon, and Broadmeadow & Stout at Dobbs' Ferry. The business is in very few hands, and judging from the large advance made upon the raw article, must yield a fair profit. Probably there is room for the enlargement of the business and for new men to make a living. Every man must judge for himself whom to deal with, and whether the pickle business will pay.

Hookertown, Cont., } Yours to command,
May 10th, 1863. } TIMOTHY BUNKER Esq.



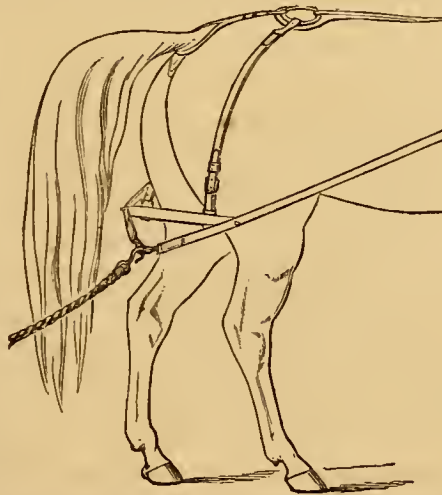
Horse-Fork Hay-Stacker.

H. M. Deming, Kansas, sends to the *Agriculturist* a sketch and description of a Hay-Stacker, which, he writes, he has used with much satisfaction. He describes it thus: "Set a stiff pole, (A,) 25 or 30 feet long, firmly in the ground, and about 8 feet from the top, bolt on a block, which has a socket made with a two-inch auger. Fit to the socket one end of another light pole, (B,) about 11 feet long, and shave the upper end so that it will go into a link of a chain extending from the top of the main pole to the small one. Pins may be inserted in the main pole, on which a man can ascend to the top to adjust the length of the chain. The tops of the poles should be about 5 to 8 feet apart. The upper end of the small pole should receive the end link of the chain, and a pulley can be hung on the hook. The main pole should bear a very little towards the stack, so that the forkful of hay will swing clear over the stack as it rises. Guy ropes extend from the top of the pole to stakes driven firmly in the ground to keep it upright. These should be attached so as not to interfere with the swinging of the crane." It will be perceived that the draw-ropes, to which the horse is attached, passes from the upper pulley beneath the lower one, thence over the upper one, then through a block fastened at the base of the large pole. By this arrangement, the horse is required to travel about twice as fast as the fork rises. The more common way of using a fork is to dispense with the pulley at the fork, and hitch one end of the rope to the bail, and the horse to the other end, by simply passing the rope over a single pulley at the top of the small pole. In this case, the fork rises as fast as the horse moves. When only one pulley is used, the work is done much faster than with two, and it will not require so much force to haul the fork back to the load. But, if a horse will not draw steadily, or is disposed to start suddenly, it is better to have a pulley at the bail of the fork. The manner of pitching hay, with such an apparatus, is to hold on to the forkful until it rises clear from the load, when a side thrust swings it over the stack. Then the stacker pushes it where he wants it, as nearly as practicable, and gives the pitcher a signal to drop it. But this cannot be done with long-handled forks, which must be balanced by a cord at the end of the handle. Sometimes a man, or boy, on the stack, hauls the forkful from the load over the stack, by a cord.

To Hitch a Horse to the End of a Rope.

The usual way of hitching a horse to the end of a rope when pitching hay with a horse hay-fork is, to use a whiffletree. But as the horse is required to back up at every forkful, he is liable to step on the whiffletree, or outside of the traces, unless much care is exercised in drawing the whiffletree back as fast as the horse moves. The accompanying illustration represents the manner of hitching a horse to a rope, so that he can not get his feet out of the traces, even if he is backed rapidly, or turned around carelessly.

The end of the rope is fastened in a ring which holds a hook for securing the cockeyes of the traces. A wooden stretcher two feet long, and an inch-and-a-half in diameter, shaved or turned round, having a small iron gudgeon driven into each end, and extending half an inch beyond the wood, is put between the traces, so that it rests against the hams of the horse, when he is not drawing. A hole about one fourth of an inch in diameter is punched or bored through each trace, for receiving the gudgeons of the stretcher, which is suspended by two straps fastened near its ends, and rein snaps are sewed to the other end of the straps, which are hooked into a ring in the back strap of the harness, as shown by the illustration. If chain traces be



used, the gudgeons may enter the links. If the traces are to be released, they drop from the stretcher, when the straps may be unhooked. Another great advantage of hitching a horse in this manner is, a boy may be put on him when pitching; and instead of backing the horse at every forkful, he can turn him directly around, and let him walk or trot back to the starting place, much sooner than he could be backed. This arrangement renders it easier for the man who pitches, as he is not required to draw back so much rope and the fork besides. If the horse, in turning, goes around over the rope, he will soon untwist and spoil it. When he comes around in the opposite direction, he twists it once at every round, making it harder and harder. It is better to twist than to untwist it, as the twist can be easily taken out.

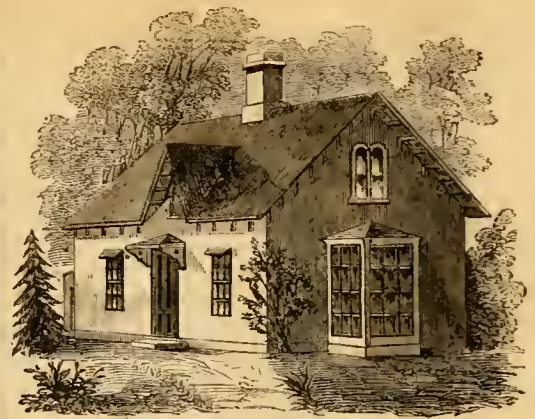


Fig. 1.—ELEVATION.

Small, Convenient, Cheap Houses.
BY NARRAGANSETT.

The cottage plan presented herewith, is designed for a family of two or three persons, who desire to live in a very snug, but at the same time, respectable way. The main part covers 18 ft.x25 ft., with an addition of one story in the

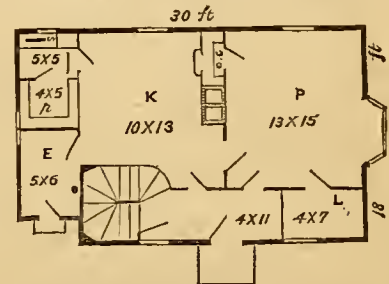


Fig. 2.—PLAN OF FIRST STORY.

rear, of 5 ft.x16 ft. Many conveniences will be found compressed within this space.—The principal rooms upon the ground floor (fig. 2,) are a parlor (P) and kitchen, (K,) connecting with each other and with the front entry. The kitchen has, adjoining it, a sink room, (S,) pantry, (P,) and back entry (E). From the front entry is a way to the cellar. At the turn in the cellar stairway there should be a broad landing, making it much more easy of descent. A china closet (c, c) opens into the parlor and connects with the kitchen by a slide. The parlor is provided with a bay window, which gives it character and adds much to the pleasantness of the apartment. From the side of the parlor a little room, or closet, opens, which, by persons of some literary taste, will be highly appreciated. We dignify it with the name of library. Furnished with shelves and a little desk, with books and writing materials, it will be found a great convenience—a most desirable appendage to the parlor. The window in the library, and the corresponding one in the hall, should be nar-

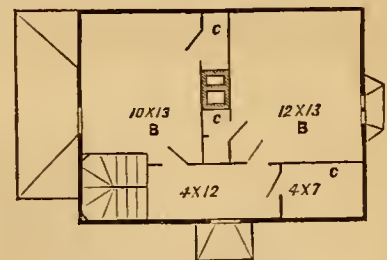


Fig. 3.—PLAN OF SECOND STORY.

row, not more than two feet wide.—The upper floor (fig. 3), comprises two bedrooms with a closet from each, and a large store closet for clothing, etc., opening from the chamber entry.

This plan is designed for a situation upon the north side of a road running east and west, and for placing the end of the house to the road, bringing the kitchen upon the east side of the house and the parlor to the east and south. The bay window would also give a western view. The plan would answer well also, with slight modifications, for a situation upon the east side of a road running north and south. In that case the entrance should be toward the road, the kitchen and parlor retaining their positions to the east and south, and a transposition should be made of the back entrance and pantry as in fig. 4, bringing the entry more to the rear. The hood over the main entrance may be supported by brackets, from three-inch plank, seen distinctly in the engraving, fig. 1. The posts of the house should be fourteen feet, the roof projecting at least twenty inches, with a sharp pitch.

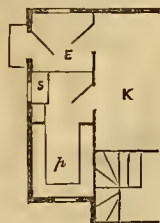


Fig. 4.

Thinning Corn in the Hills.

Thinning should always be done as soon as practicable after the corn has come up. This is usually done at the first hoeing, but should be delayed till danger from the grub, or cut-worm, is over. Unless careful laborers are employed, many hills will be neglected. Superfluous stalks may be removed at any convenient time, even in lowery weather, when the soil is too wet to be worked with cultivators or hoes. The best manner of doing this is to cut them off close to the ground, with a sharp knife, and drop them near the standing corn. The stalks should be removed from the middle of the hill, that the remaining plants may stand as far from each other as possible; the farther they stand apart the larger the ears will grow. When the stalks are pulled up, they will often loosen and break the roots of those that are left, but, if cut off as directed, the roots soon die. If care be not exercised in dropping only a proper number of kernels in a hill, much labor will be required to thin out a large field. Still it is better to do so than to allow five or six stalks to grow where there should be only three, or at most four. There will be more and better grain on four stalks than on a larger number.

Top-Dressing Grass Land.

The practice of burying organic manure deep in the soil is fast passing away. The air cannot readily reach it to decompose and render it available for the food of plants, and if it did, the great mass of the roots of grasses would not penetrate to find it. They prefer the first few inches of soil near the surface, where they get the benefit of the rain and air, and the well prepared food which abounds there. The plow and the spade should indeed be thrust down deep, but the fresh manure should not be deposited below the deep-turned furrow slice, but nearer the surface, to enrich the soil only as the rains carry it down, or as it becomes thoroughly incorporated with the soil. The letters of our subscribers continually testify to the benefits of top-dressing meadows and pastures. One declares that though the farmers in his section suffered from drouth last season, yet those fields which had been dressed early in the previous autumn with muck, or muck and manure composted, or even strawy manure, suffered little and bore handsome crops. It is a grow-

ing practice of many good farmers to apply manure over their meadows immediately after haying. They hold that it protects the newly-exposed roots from the scorching sun, and brings up the aftermath vigorous and abundant. The loss of volatile matter which probably takes place is not so bad as the effect of a parching heat on the exposed green roots.

When the land is rolling, the knolls should receive heavier dressings than the low and level land. If carted out and spread after mowing or in autumn, it acts as a mulch, protecting the roots of the grasses, and preventing their being thrown out by the frost. This work can generally be done cheaper in autumn than spring, and with less injury to the land from the trampling of teams. For lawns, fall dressing is always preferable to spring, because the manure gets washed down close to the ground and out of sight during the winter, and so does not interfere with the close cutting in summer.

Manuring Corn after it is Up.

Circumstances sometimes render it impossible to thoroughly prepare corn ground before planting, and it is often advantageous to manure it after it is up. This must be done at the time of the first hoeing. Along the seaboard where the Moss-bunkers or Menhaden are taken in such great numbers, they are much used. A shallow furrow is made with a small plow, on each side of every row, a few inches from the hills, turning the earth away from the row; then one fish is placed in the furrow on each side of every hill. Should the furrows be too shallow in some places, the earth is worked out a little with the foot or hand-hoe, so that the fish may be placed below the surface of the soil. Then the earth is turned toward the hills, and the corn hoed. If the fish should be displaced, the workmen bury them again close to the hill. By the time of the second hoeing, they will be pretty thoroughly decomposed. Where there is not an excess of water in the soil, this kind of manure produces a very luxuriant and rapid growth, as well as good yield. A similar method is sometimes practised with barn-yard manure, the earth being turned from the rows as previously directed, a small shovelful of manure is placed on each side of every hill and covered. The manner of distributing this kind of manure is, to drive a loaded wagon astride of one row, so that two hands can each apply the manure to two or three rows on each side. When turning a wagon around over the young corn, if a wheel is liable to run directly on a hill, place short pieces of plank or rails on each side of it, which will lift the wagon over without injuring the corn. Lime, gypsum, ashes, guano, hen manure, or any other similar materials may often be very profitably applied, at the first hoeing. They should always be sprinkled over an area of several inches in diameter, all around the hill, and covered and mingled with the earth in hoeing. Guano, or strong hen manure, if applied in this manner, will never work injury to the young plants, unless they come in direct contact with them, or an inordinate quantity be used.

To Pitch Hay into a Window with a Horse-Fork.

To be able to use the horse-fork in pitching hay into a window, set a pole, in front, as high as the top of the window, and distant the width of a load of hay—say 14 feet. Fasten a pulley at the top of the pole, and one at the bottom of

it. Nail on two braces, or stay-pieces, from the top to the side of the building, to keep the post erect and firm. Now let the rope pass around the pulley, at the bottom of the post, thence over the pulley at the top, thence under a pulley at the bail of the fork, thence in at the window and over a pulley at the opposite end of the loft, thence back to the bail of the fork, where it is made fast. The fork, with its load, will rise as high as the window, and then move off horizontally, to the other side, or end of the loft; or its load may be dropped at pleasure. It will make no difference where the inside pulley is, if it be only placed higher than the window, and several feet directly back from it, so that the rope will not draw into one corner. When the window is in the end of a barn, let the pulley in the barn be attached as far back as it can be conveniently, and considerably higher than the top of the window. Windows should be not less than 4½ feet square, in order to admit a forkful freely. Let these directions be followed out to the letter, and any one can put up this arrangement correctly, even if he has never seen it done before. We once put up a horse-fork rigging, with which hay was carried horizontally 20 feet, and then after rising 10 feet over a beam, was carried onward 40 feet further.

Castration of Calves and Colts.

Every farmer who raises domestic animals ought to understand what effect castration of a young male animal is likely to have on the proper development of certain good points, as well as what the effect will be on other points if he is not castrated. By performing this operation at a certain period, or by delaying it for a few months, or a year or more, results can be secured in developing a good form and symmetry in some animals, which never could be effected by any other means. Take for example a bull calf having a large head and neck, and deeper and heavier forward than behind, in short, bull-shaped: if altered when only a few weeks old, as he grows he will retain in a measure the same form, looking like a so-called stag. On the contrary, if castrated when only a few days old, his hind-quarters will be much better developed; and his head, neck, and shoulders will be in much better proportion to the other parts of his body, as an ox's should be. On the contrary, if a bull calf be very broad and heavy behind, and have a cow's head and neck, castration should be deferred for several months, in case he is to be raised for the yoke. It is a well-established rule, that the earlier a calf is castrated, the better will be the beef; while the longer he is allowed to go, the coarser it will be, and often the worse his form.

Farmers do not generally pay sufficient regard to the fact that the time of gelding the colt makes a great difference in the shape of the mature horse. The usual time is when the colts are a year old, without reference to their points. There are at least some views, in which all good horsemen agree, as to the effects on the development of certain points of the colt, as well as on his disposition. In some special cases the castration of colts should be deferred until they are three years old; while others should be gelded at that particular period in their growth, which will favor the more perfect development of certain points of form and symmetry. This occurs sometimes at the age of a few months, a year, two years, or more. It is quite difficult to lay down practical directions on this point. To be able to decide when a

colt should be castrated, requires observation on the subject for many years.

Gelding renders colts heavier behind, and narrower and lighter forward. When a colt is so fearless and willful that there are fears of his becoming vicious, immediate castration will check the farther development of such disposition. When a colt is very narrow across the breast, and has a small neck and head, unless he manifest a very refractory disposition, it may be well to defer gelding until he is even three years old, in order to improve his form and style. Colts usually make faster travellers for short distances, if gelded when not more than a year old, than if it be deferred; but their powers of endurance are less. Stallions that have been kept for service for several years, and then altered, are rendered much slower in gait; and those that were difficult to manage, are usually rendered much more tractable. Entire horses are usually fearless, and not apt to be shy at rustling sounds or strange objects; but colts that are gelded very young, if their dams shy at unfamiliar objects, will be liable to lack courage, and be always ready to sheer off at the sight of black stumps and such things, or to run away whenever any part of the harness or carriage becomes deranged, which tendency can rarely be counteracted, except by the most careful and patient training. Colts should never be castrated when poor or sickly, nor in stormy weather, unless they are kept in a comfortable stable until they are entirely healed, as danger of inflammation arises from being exposed to cold storms and chilling winds. Many times when the wound appears nearly healed, a colt will swell up and die, in spite of all efforts to save him. Farmers cannot be too careful in keeping horses, after castration, in warm stables.

Scuffle Hoes, Hoeing, and Carrots.

A Rhode Island correspondent is enthusiastic on Scuffle Hoes, and inspired by the article on page 51 (February), sends to the *American Agriculturist* a long and interesting letter on the subject, from which we condense the following:

"I have several Scuffle Hoes in running order—all handled with old rake-stales. The narrowest, which I use but little, is 7 inches long. In early spring and after rains, we run them 9 inches, and for general use, in good hoeing weather, we use four 14 inch hoes. In my work, which is more gardening than farming, they saved more money last year than a mowing machine would upon 50 tons of hay. But any one with a garden needs a set of Scuffle Hoes. I use them upon gravel walks and roads, plantations of trees and shrubs, and all sorts of garden crops. In field root crops, such as carrots, beets, turnips, onions, and parsnips, they are invaluable, as also to cut up weeds among young corn and potatoes. Among carrots and mangolds last year, I had no 'thumb and finger work,' except thinning mangolds. Soil sandy, with plenty of gravel, pebbles and cobble stone even after a pretty close picking. With this hoe one can loosen the surface, cut up weeds, and give a uniform crumbly appearance to the soil—far better looking to my eye than if worked with a rake, and more lasting, and leave no foot track upon the ground, the pressure of the foot being, as every observant gardener knows, all that many weeds need to plant them again. The power is applied to the object resisting the edge of the hoe—a root of grass, or bit of manure, corn stalk, or cobble stone—directly from

the shoulder. My handles are about seven feet long. In light hoeing where the ground has been properly plowed and harrowed, I grasp the end of the handle (which should be a little enlarged) in the hollow of my right hand, and do the cutting almost entirely from me. The edge toward me, in the short and quick succession of from 3 to 6-inch thrusts, necessary to complete a stroke, is chiefly useful in breaking the surface and jerking the weed-roots to the sun and air. If the edge is hung properly to cut with a motion from the body, it will be necessary to stoop to bring the near edge to bear upon the ground for the drawing cuts. These tools can be used either walking backward or forward. In the garden, I often walk backward; in the field forward, making a succession of short thrusts. In dressing a walk, or a plantation of shrubs and trees, beaten down hard by rains, it will be found convenient to shorten the hold upon the hoe handle, letting the end play under the arm—a change which often gives ease and rest—as also does changing hands entirely.

The early clearing of carrots and other small plants is apt to be troublesome. I always endeavor to plow early—generally, in the field, to plow twice—which gives me a chance to kill one or two crops of weeds. The single form of Share's Couler Harrow is a most admirable tool for working the surface and killing weeds upon a large scale. The surface should be rich, too, and the seed put in as late as will do, and immediately after a working of the ground. If the seed-barrow is run crosswise of the harrow marks, or if the ground is bushed, the barrow will leave a mark easily seen before and after the plants are up. I start the Scuffle Hoe when carrots are about half up. The hoe can be run in a careless manner through between the rows, leaving a strip three or four inches wide containing the drill mark—in reality leaving all the real work yet to be done. I know of no time when weeds can be destroyed so easily as when they are still in the seed leaf—or better yet, like threads of silk, before they get to the surface. I think there is, easily enough, a difference of \$10 per acre of carrots, between an early attack upon weeds and a late one. I plant some 18, 20, or 22 inches apart, and at the first hoeing take my position between the outside and second drill, reaching over a little and hoeing the outside of the outside drill, running my hoe quite shoal, with short, quick strokes, and cutting as close to the drill as possible. If the row is a long one, I have no doubt but the position and work will be tiresome, but turning at the end gives an entirely new position—and the workman can change hands if he likes—walking back in the same alley, but close to the second row, and hoeing the inside of the first—thus going round each row and leaving no tracks but the 'wake' of the hoe. If the ground is in fair condition, what with the close work and the little roll of light earth moved by the side of the hoe, the ground up to the drill will look as if it had been entirely worked. The hoe turned up corner-wise will pick a weed out of the drill or knock the soil from a tuft of grass or weeds very deftly. By this process the space between the drill-marks which is of very little importance will be worked doubly in parts—allowing all the attention to be concentrated upon the drill and the side of the hoe.

The dextrous use of an ordinary hoe is a matter of early training and use, which the mass of our laborers never get. It is quite as difficult to learn as the use of a scythe. The use of the Scuffle hoe can be far more readily learned, and

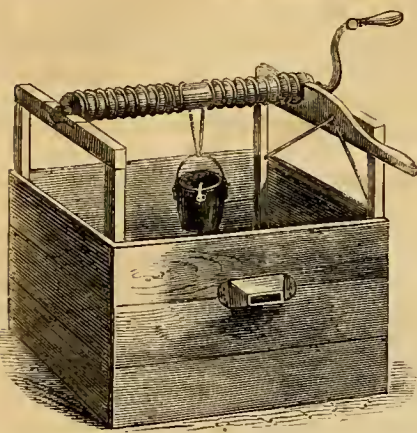
if it become rightly understood and appreciated, all the tribes of wheel hoes and hand cultivators will be sold for old iron."

Pure Water—Health of Stock.

Our correspondent, "N. S. T.," Essex Co., Mass., in the following communication, directs the attention of the readers of the *Agriculturist* to an important subject. Foul water is the fruitful source of unthrift and disease in animals, besides, it is almost constantly operating, and in time will produce effects not perceptible at first.

"That farmer who has provided for his barnyard a never failing supply of good water, and an arrangement by which it is brought into the troughs or tubs without pumping or drawing, has a convenience, the value of which is not likely to be over-estimated; but it is a matter of no small importance that it be given to the stock fresh and pure. Because animals drink from a filthy trough or a muddy and stagnant pool with apparent relish, it does not follow that their sense of taste is of a low order and can not appreciate good feeding. Necessity too often compels them to drink anywhere, and whatever they can find. Long continued habit deadens or perverts the taste. But animals with unvitiated taste left free to choose for themselves, will find the purest water as quickly as the sweetest grass; especially is this true of the horse. Some are naturally very fastidious about both food and drink, and they often suffer from thirst rather than drink from a vessel or at a well they dislike. Some men entrusted with the care of stock, seeing a horse tasting and sipping, or playing, as they imagine, say he is not dry, or is whimsical, and bring him back to his stall, there to remain till thirst compels him to drink. Thus a real cruelty is ignorantly practised against a dumb beast, when a few moments' attention would discover and remove the trouble. Fresh, pure water means more than simply water free from sticks, dirt, or substances which are readily detected by the eye. Water exposed in shallow vessels to the atmosphere during warm weather, quickly loses its fresh and sweet taste. Should it remain in a stable twenty four hours, it becomes undrinkable from having absorbed the impurities of the air. Ammonia, carbonic acid, and all the gases escaping in the stable are absorbed rapidly and in large quantities by water. During hot weather these gases are always largely present, even in well regulated barns, and a tub of water exposed to the air in the stable yard, or cellar, soon becomes charged with them, and is unfit for any animal to drink. Besides being of a disagreeable taste, it becomes slightly aperient.

"A cover that fits closely to the trough or tub is of some service in keeping out dust and dirt, and preventing contact with impure air, but it is impossible to keep water in shallow vessels about a barnyard and have it absolutely pure. The safest plan of ensuring purity is to draw from the fountain head as often as wanted and when the animals have drunk, throw the remainder away. It is a common practice in summer to keep water in the trough to prevent its drying and falling into pieces. The more shallow a trough is made the less liable it is to dry up; but it is better to lose one occasionally than always give impure water to the stock. Scrupulous cleanliness in the care of all the arrangements for furnishing water commends itself to every thinking man who is the owner and lover of animals, in proportion as the ill effects of neglecting them are understood."



A Good Well Curb and Friction Brake.

A great deal of time and labor are saved in the aggregate by having a convenient way of drawing water. In deep wells, iron-bound oaken buckets are used, and will continue to furnish the most economical and agreeable way of getting the water, and it is very important to be able to let the bucket down into such a well rapidly and safely. A correspondent in West Edmeston, Otsego Co., N. Y., furnished a description and drawing of Brown's Friction Brake. It is a lever, made of hard wood, 2½ feet long, 1½ inches thick, and 6 inches wide, shaped as seen in the engraving. One end is shaved down for a handle, and near the other a circular section is cut out, which is the place that bears against the windlass. It is hung on a strong pin, braced by iron rods, and in such a way that the broad end shall fall quickly away from the windlass when the hand is taken off.

The well curb is made 2 feet wide, 3 long, and 3 high, boarded up two feet. The posts are 2 inches square, and the end ones framed together by strong cross-pieces, on which the windlass, or roller rests, having its bearing about 8 inches from the back ends. The crank, gudgeons ratchet, etc., do not differ from those of ordinary well curbs. The bucket is suspended by two ropes, the effect of which is to cause it to come up with the same side to the front every time. If on this front edge of the bucket a little iron horn, or spur, be placed, and a bail of stout wire be fixed upon the curb, so as to catch in the spur when it comes up, the bucket may be emptied easily into the spout without the necessity of handling it at all. (Our artist has represented the bucket too small, and the horn too large in proportion.)

A very convenient kind of bucket is that made with a cast-iron bottom, in which there is a valve, which opens and allows the bucket to fill instantly, as soon as it reaches the water.

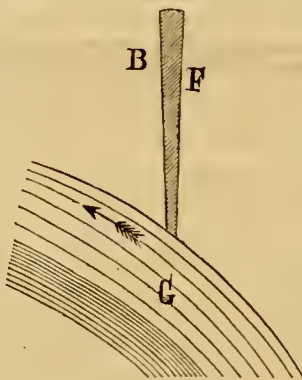
The Art of Shearing Sheep.

It is essential to good shearing to cut the wool but once, to shear smoothly and very close, to keep the fleeces whole, and to avoid cutting the sheep. When a shearer does not shear smoothly, but cuts a portion of the wool two or three times, there is not only a loss in the weight of the fleece, or if the clippings be included in the fleece, a loss in its value to the manufacturer, but much time is consumed in making the sheep look smooth. When the fleeces are torn to pieces by unskillful handling or the floundering of the sheep, it is impossible to do them up neatly and show the wool to advantage. The chief difficulty in shearing sheep

arises from their struggling. To prevent this, some tie their legs; but this practice is quite objectionable, and no good shearer will adopt it. Sheep will kick and flounder but little if they be managed gently and carefully. Every shearer should have a mattress of straw, at least five feet square, and so thick that his knees will not feel the floor while shearing a sheep. The object of the mattress is also to make it easier for the sheep. Laid on a hard floor sheep will make desperate efforts to gain their natural position, and if jammed down violently on the floor, or boxed, or held uncomfortably beneath the knees, as they often are by unskillful shearers, instead of keeping quiet they flounder and kick worse and worse. Placed on a mattress, their position is comparatively easy; and if handled gently, the fleeces will be torn but little. The sheep pen should be well littered with straw to prevent carrying much dirt on the shearing floor; and sheep always shear better if they are full and round than when empty. Even expert shearers are very liable to cut the skin of poor thin sheep. No man can shear a sheep well, unless he have good shears and keep them in good cutting order. See remarks on shears under another head.

Grinding Shears—Sheep-Shears.

The accompanying illustration represents a transverse section of a grindstone, *G*, and one of the blades of a pair of shears with the edge resting on the periphery of the grindstone at the proper angle for grinding sheep-shears, or tailor's shears. The "basil," or angle at which the



ANGLE FOR GRINDING.

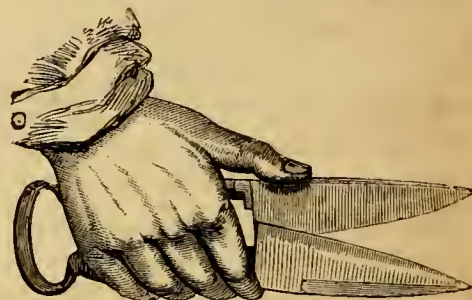
cutting edge is ground, varies in shears for different purposes. When shears are designed for cutting tin, sheet iron, copper, or any other metal, grind the basil at a more obtuse angle than is here represented, in fact, nearly at a right angle to the face (*F*). When the basil is ground too beveling, the edge of the shears is so thin that the steel will crumble off, or bend over, and thus effectually prevent the shears holding a good keen cutting edge.

The correct way to grind shears is to hold the blades directly across the face of the grindstone, with the face of the blade (*F*), turned from the operator, while the stone (*G*) revolves toward him. Thus the steel is swept clear from the cutting edge; and the operator can always see at a glance when the blade is ground just enough. On the contrary, when the stone revolves in the reverse direction, a thin curl of steel will gather on the cutting edge, unless the shears are tempered highly, and are too hard to retain a good edge. This will be likely to deceive the operator who will probably grind away even after the blade has been ground enough. This is equally true in grinding edge tools of every description. The grindstone should run very true, in order to grind shears well, and the cutting edge should be afterward whetted on an oil-stone of very fine grit. Shears should never be ground on the face. Always hold the blade to be ground firmly and at the

angle represented. When the blades are ground on a stone of coarse grit, and are not held firmly, but allowed to rock back and forth, it will be impossible to grind them so that they will cut well. It requires much more skill to put sheep shears in order, than to use them, and without sharp shears, no man can shear a sheep in a workmanlike manner. Another important consideration in sharpening sheep-shears is, to grind the points of the blades pointed, but a little rounded and smooth, so that they will enter the wool readily, but will not prick the sheep, or scratch the skin as they are thrust forward.

How to Hold a Sheep for Shearing.

Throw the right arm over the sheep, and grasping the brisket with the hand, raise it from the floor; remove all litter from the feet; then with the left hand take hold of one hind leg above the gambrel joint, and place the sheep



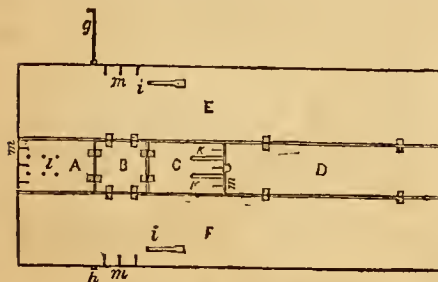
HOW TO HOLD SHEEP-SHEARS.

carefully on the mattress, in a sitting posture, resting against the shearer. Raise the forelegs putting them under the left arm, and shear the brisket downward, dividing the wool in the middle, as it is sheared. Then elevate the head and shear the under jaw, and a narrow strip along the underside of the neck to the brisket. Now, stand in front of the sheep, and begin at its foretop, and continue to shear from right to left, until the neck is sheared. Then, step behind the sheep, letting it lean against your knees, and shear the forelegs. Now, drop on one knee before the sheep, and let its body rest against your other leg until you have sheared one side, and one hind leg. Then change your position by resting on the other knee, while the position of the sheep is reversed, and shear the other side. Some shearers prefer to shear directly around the body of the sheep, and finish at the tail. Both ways have their advocates among good shearers, and beginners may adopt the one that suits them best.

The shears should always be placed flat against the side of the sheep, so that the points and heels of the blade will cut equally close to the skin. Never push the wool back, or take hold of it with the other hand while shearing, as you can not shear so evenly, and will be more liable to cut the sheep. The shearer may often use one hand to advantage in crowding or drawing the skin in such a manner as to make a smooth surface where the shears are about to cut. Every shearer should have two pairs of shears; one to cut the hard, gritty locks and another for shearing the clean wool. Some shearers can shear more advantageously and easier by having a table about 18 inches high covered with a mattress. Beginners should imitate the manipulations of expert shearers, and observe closely how they hold their sheep, their shears, etc. The correct way to hold a pair of shears is, to place the thumb lengthwise on the back of one of the blades, as in the engraving.

Fleece-folding Table.

A lot of wool well folded and neatly tied up, all the fleeces being of about the same size and shape, has a great advantage in market over that which is carelessly and irregularly done up. To secure this uniformity and neatness, folding tables, or wool-boxes, are used, and are, in fact, indispensable. We present below a plan for one forwarded to the *American Agriculturist*, by "J. C. V.," of Orleans Co., N. Y., "in the hope that it may be of use to some of its readers," as it doubtless will be. He thus describes it: "It is made of 3 boards, 6 feet long, the middle one 8 inches wide, and the others 12 inches. The middle board is sawed into 4 pieces, 12, 8, 12, and 40 inches long respectively, which are connected together, and with the sides, by 6 pairs of hinges as shown in the engraving. When used, the twine, in 6 pieces, is

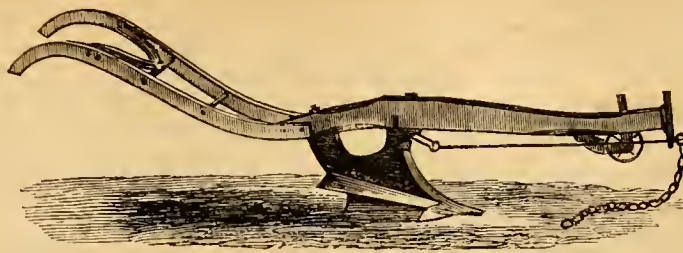


FLEECE-FOLDING TABLE.

drawn between the notches (*m*) in the sides and end pieces (*A*, *C*, *E*, and *F*); then the fleece is laid on the table, the shoulders being placed on the centre piece (*B*). The sides of the fleece are then folded in, and the side pieces (*E*, and *F*) raised and made fast in a perpendicular position by the hook (*g*) and staple (*h*). Next commence at the tail end and roll up the fleece without slipping it; then raise up the piece *C*, which will be held upright by the steel springs (*i*, *i*), on the sides, then raise the piece *A*. [It strikes us that this should be held in a perpendicular position by springs or pins, but this is not specified by our correspondent.] Now take two small round levers, and putting them into the holes in *A*, press them down into the slots in *C*, and fasten them down by putting a pin through holes in the edges at convenient places. The fleece may now be tied; then unhook the sides and the box falls down, leaving the fleece as hard as a cheese and as white as a snowball. One man will easily do up the wool as fast as three or four will shear."

The Subsoil Plow.

The accompanying figure represents an implement called the "Lifting Sub-soil Plow." The standard consists of a flat piece of iron an inch or more in thickness, with two heads on the upper part, by which it is bolted to the underside of the beam. The point or share is made either with a wing on both sides, like a spear placed flat on the ground, or with the wing only on one side. On one or on each side of the standard there is an adjustable flange about three inches wide, over which the soil rises and drops back crumbled into the bottom of the furrow. The share and these flanges form an inclined plane. If it be desirable to elevate the soil much or only a little, the rear ends of the flanges may be adjusted to the desired height by means of bolts passing through the standard. The higher the rear ends of the flanges, the hard-



SUBSOIL PLOW.

er a plow will draw, and the more thoroughly it will pulverize the soil. A draft rod and dial clevis attached to the beam, enable the plowman to so adjust it as to run directly in the furrow made by the common plow, thus breaking up the compact subsoil, and leaving it in the furrow. When a farmer has but one team, he plows one furrow round the field or land, and then hitching to the subsoil plow goes round again in the same track. In order to pulverize the subsoil very thoroughly, it is necessary to cut narrow furrow slices, and to use the subsoil plow when the ground is cross-plowed as well as at the first plowing. Subsoiling thus for two or three years, the ground will be pretty well pulverized to the full depth the subsoil plow reaches. When the plow cuts wide furrow slices the subsoil plow may be run twice in the furrow. When this is not done, and especially if the field be subsoiled only one way, the subsoil will not be more than one third or one half broken up. A span of horses, or yoke of oxen will draw a two-horse subsoil plow ten to fourteen inches deeper than the first cut through a pretty compact subsoil. When run deeper the draft increases very rapidly, and the pulverization is not so complete. Two or three spans of horses or yokes of oxen are usually required if the subsoil plow be put down 18 or 20 inches deep, as is not unfrequently done in preparing ground for orchards, vineyards, hop-yards, etc.

Subsoiling Wet Ground.

When any kind of subsoil is not dry enough to crumble readily, running the subsoil plow through it will have little good effect, because it is pressed by the passage of the plow into a smaller compass, and as it does not crumble, it settles back very much to its former bed, occupies less space, and, when the surface water is dried out, it becomes more compact than it was before the plow disturbed it. If the land be thoroughly underdrained, before the subsoil is broken up, it will be crumbled and lightened up. Months must pass before the lumps will wash down so as to materially fill the interstices, and the subsoil will not become so compact in several years as it was before subsoiling. It is, therefore, of little or no use to subsoil wet, heavy soils, before they have been well underdrained. For this reason, many farmers, on soil which is exceedingly wet, with the subsoil compact and retentive, have experimented with and condemned the subsoil plow. We have known subsoiling to be done when the water would be driven along in the furrows before the plow, by the turning over of the furrow slice. The consequence was that the more the subsoil was worked, the harder and more compact it became, as soon as the water had dried away, and the more difficult it was for roots of plants to spread in it. As a natural consequence, such poor results had a tendency to bring subsoiling into disrepute. If the wet and heavy soils be well

underdrained, and subsoiled when just dry enough to crumble, good results will invariably follow, if the work be thoroughly done. This process on many farms would add several acres of ground available for increase of crops as certainly and with less cost than buying

additional land. Better grow 80 bushels of corn on one acre, than to plant and cultivate one and a half acres for the same crop.

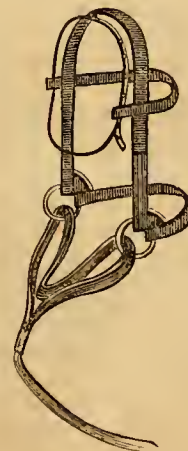
Halter-breaking Young Colts.

Young colts, when their dams are used in a harness, are frequently troublesome about following, especially when traveling on the highway, where they are liable to meet other horses. It is common to see a young colt run directly away from its dam, when on the road, and becoming bewildered, no little trouble is required to bring it back. To avoid all annoyance from this source, make a soft halter suitable for the colt's head, and hitch it to a strong fence, or some other place, where it can not run around a post and wind the rope up. It may pull for several hours, but will soon learn to stand. As soon as accustomed to the halter, the colt may be taught to lead, by placing the dam a few rods distant from where it is hitched, and leading it toward her. It will be impossible to lead a colt away from its dam, until it has become well accustomed to the halter. By spending a little time with a colt, treating it with the greatest gentleness, it may be taught to travel by the side of its dam, wherever she goes.

Tie the colt's halter to the backband of the dam's harness, so that it can just reach her udder. This length of halter will prevent the colt running forward of the mare when she is traveling. In a few days it will become so gentle, that any one can put on the halter and handle it. When colts are not accustomed to the halter until they are two or more years old, they are frequently very difficult to manage. But if taught to lead when quite young, they can often be changed from one place to another, with little difficulty, and will be much more manageable.

Halter for Horses that Pull at the Post.

A correspondent responds to an inquiry for a way to manage horses that pull at the halter,



by sending the accompanying drawing of a halter which he has been in the habit of making and using for many years. The construction as may be seen from the engraving, is very simple. It is held upon the head by a throat-latch like a bridle, and the end of the leading strap passes through the ring on each side, and is sewed strongly to the strap about 14 to 18 inches from the end. When the horse pulls, this loop in the strap tightens powerfully, drawing the muzzle piece, and pressing the rings against the jaw on each side in a way, doubtless very uncomfortable

able, but not so as to injure the horse at all; besides the draft chiefly comes upon the muzzle and not upon the head or neck, as is the case with common halters.

Stocking Down to Grass, with or without Grain.

The notion is prevalent that it is essential to the life and growth of young grass to raise a crop of some kind of grain, while the tender spears are becoming sufficiently rooted to endure the dry and hot weather. But the shading of the ground is not essential to the growth of clover or grass, unless the seed be sowed very late in the spring, or during the summer, and where the soil is not rich and mellow. On moderately fertile and mellow soils, though no crop of grain be allowed to grow, clover or grass seed of any kind will ordinarily succeed much better than otherwise. If the soil be quite poor and likely to parch during drouths, a small quantity of rye per acre will afford the young grass the benefit of some shade. Grass needs no shade even in dry weather after it has itself become large enough to shade the ground, but is benefited by the sun and air quite as much as other plants. Another consideration, not to be overlooked, is, that any crop occupying the ground, with the young grass, withdraws both nutriment and moisture from the soil, which might essentially benefit the more important but feebler crop.

There is probably no better grain than rye to sow where a field is to be stocked down to clover or grass. Wheat is second to rye in this respect, and is superior to oats and barley, which are quite objectionable when the usual quantity is sown per acre, on account of the large leaves and thick bottom growth which is liable to choke the young grass, while rye shoots upward rapidly, and does not grow thickly at the bottom. Were oats and barley sowed thinner on the ground than usual for a full crop of grain, grass might grow quite as well as with a crop of rye. Another point in favor of rye is, it usually keeps erect better than either oats or barley. On light soils where there is so much humus or vegetable mold as to cause a large growth of straw, if the grain lodges as it often does, almost every spear of grass will be killed. As spring rye is often a good crop to grow in a four or five years' rotation, many farmers will find it profitable to arrange their rotation so as to raise spring in preference to winter rye when land is to be stocked down.

For good farmers, the following directions will be of little or no value, and may appear quite untimely, but many need the exhortation. As most of our grass is cut with horse-mowers, it is quite important that the surface should be smooth, free from knolls, hollows, dead furrows, ridges, and clods. And even if it be mowed by hand, the surface ought to be smooth, so that the grass may be cut close to the ground. Where there are knolls and hollows, the most expeditious way is to level the knolls with a team and dirt-scraper, either after or previous to plowing. When there are ridges formed by back-furrowing repeatedly in one place, turn back furrows into the hollows, and finish off lands with dead furrows where the ridges are. By measuring the distance from ridges to furrows, even where they are not uniform, the dead furrows may be made in the desired place. After the ground has been sufficiently harrowed, if there be loose sods and lumps of earth, throw them into the lowest places, with manure forks,

and make the surface as smooth as practicable. Then roll, and sow grass seed. This will form not only a smooth surface to work on when harvesting the grain, but will be smooth for the mower, horse-rake, and loaded wagon or cart, when cutting and gathering the crops. A few hours spent in this manner will not only improve the appearance of the surface of a field, but be a source of much profit when harvesting the grain. Sometimes driving storms occur just before grain is fit to harvest, which prostrates a large proportion of it. Then especially, if the surface of the ground be smooth, the grain can be cut much more advantageously than if it be covered with bogs, lumps, and sods.

Management of Barn-Yard Manure.

It is very often the case that manure is allowed to accumulate and remain undisturbed in the yard during the summer, after which it is hauled to the field and applied for winter grain. Treated thus, it rots but little, but if forked over, it would decay very rapidly. In some instances, corn stalks, straw, and stable manure are mingled together, by being spread evenly over the entire yard, and are pressed firmly together by the constant tread of animals. Mr. Isaac Peck, an excellent farmer, of Fairfield Co., Conn., recently related to us his manner of preparing barn-yard manure for winter grain. His yard is constructed so that no liquids flow from it, except sometimes during very heavy rains, and this is conducted upon a field, and not to the brook or river. His corn stalks are fed out in the yard, where the large butts become mingled with refuse straw and stable manure. During days in summer when laborers cannot work to advantage on the farm, they commence on one side of the yard and fork the manure over, turning it clear to the ground. If there is too much straw or corn stalks in one place, they are scattered over a larger surface, so as to mix different kinds as thoroughly as possible. By forking it over in this manner, the coarse portions will be fined, and sufficiently decayed by autumn to make it possible to spread it evenly, and it will be in a far better condition to benefit wheat, or any other winter grain. Mr. Peck usually applies most of his barn-yard manure to his winter grain, and by this system he is able to raise good crops of wheat where the soil was formerly considered poorly adapted to that kind of grain. We do not commend our friend's way of treating corn stalks—that is, feeding them out whole on the ground in the yard; but thousands of very good farmers will do so, though they lose about half the value of the fodder. In regard to working over the manure in the yard, however, his practice is excellent. If he had muck at hand, and could put over a good layer of it, or of sods, every time the manure was worked over, it would greatly increase the value of his manure crop.

Management of Red Clover for Seed.

When the chief object is to raise a crop of seed, whether the clover is grazed or mowed off, it ought always be done in the month of June, in our latitude, and previous to the full bloom. It is not practicable to raise a good burden of hay and a crop of seed on the same ground in one season; nor can one expect a full yield of seed if the clover be grazed too long. If the large, or late kind of red clover be allowed to stand until it is in full bloom before it is cut, there will be only a small crop of seed. The

most successful way of managing this kind of red clover is, to pasture it until about the 15th or 20th of June; in New-England, or New-York, never later than the 20th of the month. It has been our practice to feed it down close just before shutting the animals off altogether, and if there was more clover than they could graze off close to the ground in a few days, the remainder was mowed, and usually left where it grew. The object in mowing off all the stalks that the stock leave, is to have all the clover start the second time as evenly as possible, grow uniformly, and all plants come to maturity at the same time, which is very essential. The seed on the portions of the field where the first growth has not been cut off, will come to maturity several weeks before the greater part of the crop is fit to cut. Consequently, most of it will shell off and be lost before the remainder can be secured. Many farmers, in their first attempts to raise the seed of the large kind of red clover, obtain only a small crop, simply because the first growth was allowed to advance too far.

In growing a crop of seed of the early, or small kind of red clover, the usual practice is to make hay of the first growth, though it is sometimes grazed off. Those who raise the largest crops of seed, cut the first time before it is in full bloom. They find this essential and aim to cut when about two-thirds of the heads are in blossom. The stalks and leaves will be very green at this stage; but every day it is allowed to stand after this, tends to diminish the quantity of seed of the succeeding crop. Consequently, when a farmer thinks best to allow the first crop of clover to come nearer maturity, for the purpose of having a greater burden of hay, he must remember that he will lose more in the yield of seed than he will gain in the quality and quantity of hay afforded by the first growth of the clover. If there be any weeds among clover, they should all be cut close to the ground, so that the clover will get the start of them and effectually suppress their growth.

Planting Broom Corn.

We have received a series of articles on the cultivation of Broom corn, and making brooms, from Abram Stokes, an experienced broom-maker, of Ulster Co., N. Y.; and we give his mode of preparing the soil and planting the seed. He says: "Select a dry, rich, deep loam, nearly free from sand, gravel and stones, and plow it deep—the deeper the better. A red clover, or timothy sod is best; because it will usually be free from weeds. Pulverize the surface as deep as practicable with a cultivator; or it may be plowed the second time, by using a plow with a sharp point, sharp coulter, and gauge wheel to regulate the depth. In this way it can be pulverized more thoroughly than with a cultivator. Before plowing the second time, however, the ground should be allowed to settle after a heavy rain has fallen; or the sods may be pressed down with a roller. Plow the second time the same way as the first, running the plow as deep as practicable, without turning up portions of the sod. Harrow it thoroughly; and mark the ground one way with a small plow for planting in drills. It is better to have the rows run north and south, as the sun will shine on each side more uniformly.

I prefer the tall Broom corn, as it has been well tested and approved. The dwarf may succeed as well on some kinds of soil, where it will not grow too slender, which is a fault of this

kind of corn. If brush be too slender, the brooms bend too easily, and wear out too soon. When brush grows in the form of a panicle of oats, it is worthless. Such brush, however, is seldom produced except on a thin soil of gravel, or sand, with a clayey subsoil six or eight inches beneath the surface.

My manner of planting the seed is, to carry it in a small pail, and drop about one hundred kernels per rod [or about two inches apart]. After dropping a few rows, cover it with a harrow having 30 or 40 teeth, by driving the team one on each side of the drill. If the harrow be not drawn the second time over the ground, it will not displace any of the seed. When planted in this manner, the seed comes up well, grows more uniformly, and makes better brush than if planted in hills, as the stalks are more evenly distributed over the ground. In about twelve days, the young plants will be about three inches high. Now is the time to get the start of weeds by working among it with a horse and plow. For this purpose, the rear end of the mold board should be broken off just back of the share to prevent rolling the earth too far away from the young plants. [Some farmers, and ourselves among the number here named, prefer a horse hoe for this purpose.—Ed.] By turning the earth from the drills, the weeds will be subdued. In about ten days, it should be plowed again, going twice in a row. Then the plants should be thinned so that there will be about seventy per lineal rod. All weeds growing among the plants should be removed, so as to allow the sun to shine on the Broom corn. In about ten days more, it should be plowed again with a large plow having a short, crooked mold board, going four times between all the rows. Turn two furrows from the rows, and then turn them toward the plants, working the soil between the stems as much as practicable with the plow. In ten days longer, plow it again, going four times between the rows, as just stated, always turning the soil toward the corn the last time through. I always perform most of the work with the plow, and do as little with the hand-hoe as possible."

Cultivation of Buckwheat.

When buckwheat is sowed in the spring, or first part of summer, the hot weather which occurs when it is in blossom, prevents perfect fructification. Consequently there will be numerous clusters of kernels that will be blasted. For this reason the seed should be sowed, so that the hottest weather will have passed, by the time the buckwheat is in full bloom. Cool weather or at least cool nights are quite as essential to a good crop of buckwheat, as hot days and nights are for Indian corn. The point to be aimed at in every locality is, to defer sowing as long as possible and allow it sufficient time to mature before an early frost will destroy the crop. This period occurs at different times in different localities. In the latitude of Central and Western New York, the proper time for seeding is about the first of July. We have known buckwheat sowed as late as the 16th of July, which produced a bountiful crop; but in that latitude there is a great risk on account of the frost, if it is not sowed by the tenth of July. Our most successful farmers in this latitude, calculate to have their buckwheat put in as soon as the fourth of July; and in some seasons, even when sowed at that time, frost appears so early in the fall as to almost destroy the entire crop. In some localities it may be sowed the latter part of July, and escape frost.

If the soil where it is sowed be well pulverized so that it will vegetate immediately, and if the grain is put in by the fourth of July or even by the tenth, a bountiful crop may be expected. When the ground is plowed but once for a crop of buckwheat where the soil is heavy, it is often so dry and hard, and broaks up in such large lumps and clods, that many farmers in waiting for rain to moisten the soil previous to plowing, are compelled to defer seeding until it is too late. But if the soil be plowed in the spring, it will not become dry and hard by the time it is to be plowed the second time, but will be moist and mellow; and the grain will vegetate soon.

Every intelligent farmer who is located on a heavy soil, that is apt to plow up lumpy, understands the importance of plowing it when it is just moist enough to turn up mellow. Buckwheat can not be expected to vegetate in time, and flourish luxuriantly, and yield a remunerating crop when the soil is a mass of dry lumps.

The Preparation of Peat for Fuel.

It is really wonderful, the manner in which a want, when it occurs, is supplied. As our forests disappeared before an increasing population, and wood for fuel became less readily obtainable, the immense coal measures were opened, and a better and cheaper fuel than wood was supplied. When whales became so scarce that illuminating oils were very costly, the wonderful petroleum deposits were found and made to give up their liquid treasures. Recently, from a combination of causes, coal has borne so high a price as to induce the search for some cheaper substitute, and attention has been directed to the heretofore almost neglected deposits of peat. Almost every State has its extensive peat bogs, or meadows, as they are called, containing vast amounts of a material closely analogous to coal in its composition, and like that capable of serving as a valuable fuel. These peat deposits have, thus far, been almost untouched, save that a comparatively small proportion of the whole has been used for agricultural purposes. When simply cut into squares and dried, peat makes a tolerable fuel, but when properly manipulated and condensed, it furnishes a product not unlike the best kinds of coal in appearance, and which is not inferior to it for domestic or manufacturing purposes. We learn from an interesting pamphlet by Mr. T. H. Leavitt, of Boston, that a company of Boston capitalists are engaged in developing this new source of fuel, and in supplying machinery to parties wishing to engage in manufacturing the peat in other places. It is said that the attempts at compacting the peat by pressure alone, have proved failures. The process of this company, as described to us by one of its members, involves the removal of all the fibres and kneading the remainder into a homogeneous mass, which readily becomes solid and dense upon drying. The different operations are performed by very simple machinery. The specimens we have seen were certainly very fine, and it is claimed that the prepared product can be produced at \$4 or \$5 per ton. The address of the association is the American Peat Company, Boston. We have no further knowledge of the company than what is here stated, and only call attention to the matter as one of great general interest. It has been found preferable to coal for generating steam in locomotive boilers, and, from its great freedom from mineral matter, it is preferred by steel and iron manufacturers to all other fuel. We shall be glad if the attempts now

making to utilize peat shall result in giving us cheaper fuel and in unfolding a new source of wealth to agriculturist and land owners.

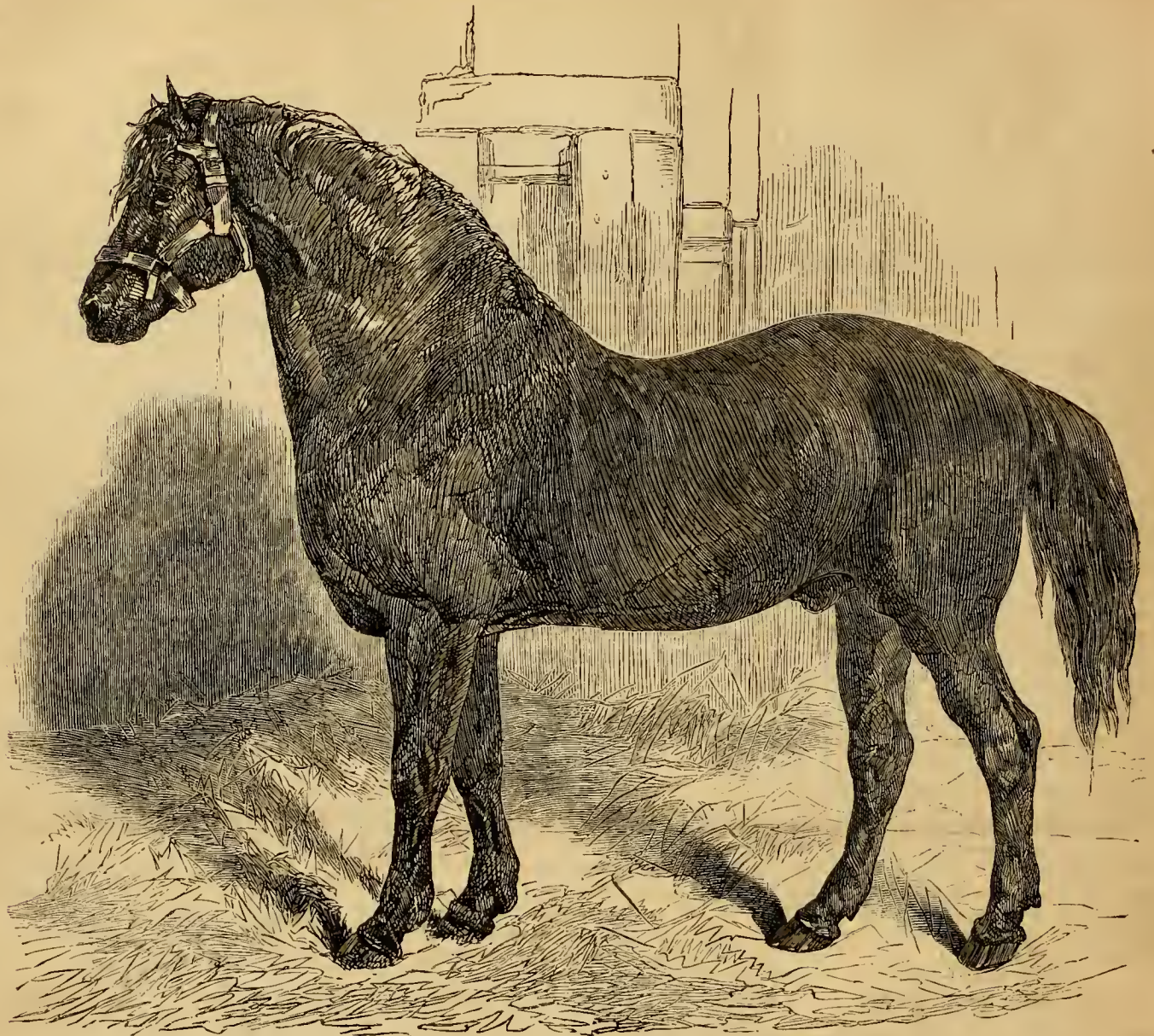
How to Make a Close Hedge.

The following communication from Joseph Coffin, of Jefferson Co., Iowa, gives his method of securing a tight hedge. The plan is not a new one, but we do not recollect having published it before. "I have read a great many chapters on hedging, and have seen a great many hedges, but I have yet to see the first fence made on the plan recommended by most writers on the subject. An Osage hedge of this kind shows better on paper than around a field of grain needing protection. The reason is this: where the hedge is cut off so frequently and closely, the sprouts are so weak and small, that as soon as the growth becomes sufficiently high to be of any use against large stock, the under twigs die out and leave holes between the plants. There is one mode by which the Osage can be made into a reliable, substantial fence, which is this. Set your plants two feet apart, and let them alone, except to keep the grass and large weeds from the roots, until they are five or six years old, or until they are two, or two and-a-half inches in diameter. Then, before the sap starts in the spring, take a sharp ax and commencing at one end, cut the plants, (or bushes they will be now) three-fourths or four-fifths off, and lay each bush down on the last one cut. The cutting must all be done on one side leaving the bark uninjured on the under side. Do not be afraid to cut them near enough off to allow them to bend down easily, as an inch of bark will keep an ordinary sized bush alive. The lower end of the body should be about four inches from the ground. Sprouts will start up from the roots and from the body, and run up through the tops, and make a fence that no rabbit can pass through. The future trimming can be done to the fancy, or the whole let grow up for a wind breaker.

"I think that when the hedge has become of sufficient size, it would be a good plan to set a sod of timothy or blue grass around it to prevent the growth becoming too massive and cumbersome. A strip of six or eight feet on each side would be sufficient, and would be much more neat and profitable than the weeds which would grow unless a great deal of extra care were taken to keep them in subjection. The great scarcity of timber in this prairie country leads me to urge the adoption of this plan, as I know by experience and observation that this is the only one so far introduced into this section of country that is reliable."

Breeding Horses for Heavy Work.

The influence of Agricultural Societies, with very few exceptions, and too much that of the agricultural press, has been thrown in favor of breeding a class of light active nags for the road and light work. And now the country is overstocked with these smart little Morgans and Black-Hawks, and other trotting stock, the popularity of which has, in our opinion, been a serious detriment to our horse-raising interests. The object with many breeders has been to secure style and speed, almost regardless of size and strength. The heavy work of the farm being done by oxen, and our farms in many of the horse-raising districts being small, the farmers themselves have not felt the need of heavier draft animals. However, it would be much



SIRE FOR HEAVY DRAUGHT HORSES. — Engraved for the American Agriculturist.

better for us as farmers if we used heavier horses, and there is in our cities an insatiable market for large and powerful animals as dray and truck horses, and for Express companies. Those possessing style and fine action bring enormous prices as gentlemen's coach horses. We present above the portrait of a Draught Stallion from one of Weir's drawings. It exhibits many of those points which the sire of large-sized horses for heavy draft should possess. We do not undervalue blood (that is, the blood of the English thorough-bred race-horse,) on the side of the sire; but there are many reasons why thorough-breds can not be generally used for crossing on large mares, and why the cross would be undesirable. Horses by blood-sires are very apt to inherit their temper, often none of the mildest, and a fractious great horse is a dangerous and unsafe piece of property. Probably the best class of sires for heavy stock, that would be available in this country, would spring from crossing thorough-bred stallions on large handsome Norman, or other large-sized mares. Such horses would be of large size, and in form and style combine the good points of the two races, and communicate probably many of their own excellences to their progeny. In selecting a mare, bear in mind that the

qualities she chiefly imparts to the foal are size, constitution, form of body, and symmetry; while spirit and bottom, intelligence and action come more from the sire. The aim should be to obtain a mare of large size, having a large, roomy body, rather short legs, broad and deep in the chest, heavy behind, broad across the hips, wide in the pelvis, and carrying her hind feet well apart. The back should be short, the limbs clean and strong, the hoofs pointing forward, round, and solid, rather than long or flat. She should have a small head, large nostrils, and a full quiet eye, a neck sufficiently long to allow her to graze on level ground without spreading her forefeet, and more than all, possess high spirits, and a tractable disposition. In selecting mares, every one should be scrupulously rejected that has blemishes, or bad points, and especially constitutional defects, for such things are almost sure to be transmitted to the offspring. These things are to be avoided with as much care in the selection of a stallion as a mare. A celebrated stallion in Central New York, which had several spavins, got excellent colts; but before they were four years old, most of them were badly spavined; and some of them had spavins on both hind legs.

The important points we should seek in a

stallion for the purpose we are considering, are: size, good form, muscle, bottom, vigorous health, quickness, and spirit. We can not expect to raise large horses from undersized stallions. Every other good point may be developed in the most desirable manner; but if size be wanting, he should not be used for raising horses for heavy work. The body of the stallion should be of as good proportions as the mare's; his back should be short; and his body round as a barrel, well ribbed back, and filled out in the flank, and not like the body of a greyhound. His head should be small and bony; his neck strong and of good length; his breast very broad from one shoulder point to the other; the withers high; the legs short, but very strong, having the hocks and knees low, and the legs below hard and smooth; the leg bones large and flat. Such a horse will not be liable to strain himself at a heavy draught; he will be an easy traveler, and his hind legs will not swing and twist out and in as he moves. The stallion should be solid and compact; kindly tempered, and plucky; and if possible, choice should be made of one which is known to impart with great uniformity his good points to his colts. It is neither necessary nor desirable to use a stallion as large as the mare.



The White Maple.—*Acer dasycarpum*.

This tree is attracting much attention at the West as one of those possessing qualities which adapt it to planting on the prairies. It is sometimes confounded with the Red Maple, from which it is very distinct. The White or Silver Maple is found nearly all over the country, but attains its perfection in the Middle States, where it forms a stately tree. Its branches spread widely and form a broad head, but not a very dense shade. The young twigs are yellowish green, marked with brownish dots, but the older wood is gray. The leaves, of the shape shown in our figure, but considerably larger, are downy when young, but become smooth when old. The upper surface of the leaves is dark green, while the lower side is silvery white, the two surfaces affording a remarkable contrast of color, and a character which serves to distinguish the species from the Red Maple, the leaves of which sometimes resemble those of the White. The flowers, which are small, greenish yellow, and woolly, appear early in spring, before the leaves, and are soon followed by the conspicuous two winged fruit, which though hairy when young, becomes quite smooth when ripe. The shape of the fruit, which is nearly two inches in length, is shown in the engraving. It consists of two one-seeded capsules or "keys," joined at the base, and furnished with a broad wing which is beautifully veined. The wood is neither very strong nor durable, but it makes tolerable fuel and excellent charcoal. The spreading habit of the tree and its often pendulous branches, give it an aspect quite different from that of any other maple, and it is fine for ornamental purposes. Although its shade is not dense, this is more than compensated for by its greater freedom from insects than any other of our native species. It is not very particular as to soils, though it reaches its greatest development in rather moist and rich ones. The ease with which this maple is raised and

the rapidity of its growth, especially adapt it to form timber belts on the prairies. The books recommend gathering the seed in the fall, which is about as possible as to make snow balls in August. The seed ripens very early and should be sown as soon as ripe. The time of maturity of the seed varies with locality and season, but it is usually toward the end of May or the first of June. Insects, birds and squirrels are very destructive to the seeds, and it is well to gather them before they fall. They are then to be planted at once in moist, well prepared soil. They are sown in drills

an inch deep and the young plants kept clear of weeds, and carefully cultivated for two years.

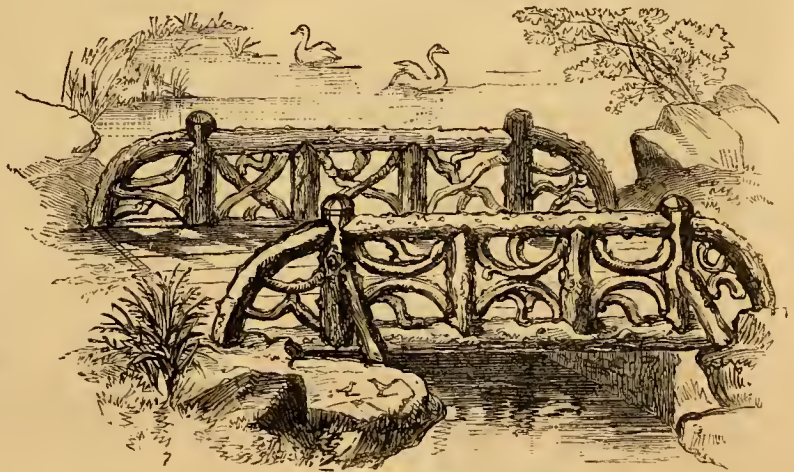
Coal Ashes for Walks and Roads.

In February last attention was called, in a brief item, to the use of coal ashes as a serviceable material for making walks in places where gravel was not readily obtainable. A correspondent, "C. S.," at Montreal, Canada, has since written an account of his experience, as follows: "In the spring of 1863, I laid out a new vegetable garden, and having filled the walks 4 inches deep with chips from a stone-yard, I put on a 2-inch coating of coal ashes. After these had been carefully raked over, we let them be, and found that although they were not rolled, they very quickly packed solid. The walks were equal in every respect to those made with gravel, and they were more free from weeds and grass. They cost only the cartage, as people in the city are glad to be rid of the ashes. The cost was 12½ cents a load against 75 cents for gravel. Four years ago I laid out a carriage road of gravel, having 10 inches of stone underneath. We intended to cover this over with sand to keep the gravel from going down through, but when about one third of the drive had been thus coated, the supply of sand

gave out. One half of the remainder was covered with brick dust, etc., the other with coal ashes. The whole was then coated over with gravel. The part on which coal ashes were placed, hardened first, and has, with much less labor, always been by far the finest piece. That covered with brick dust has been fullest of grass and weeds and has been the most troublesome, while that laid with coal ashes has been the cleanest, hardest, dryest, and in every way much the best. If I ever lay any more gravel roads, or walks I shall certainly put a coat of ashes between the stone bottom and the gravel. Last spring I laid as an experiment a small walk, solely with coal ashes and with no stone in the bottom. I put in about 4 inches and the walk was good. It has been tried but one season."

Rustic Bridges.

It often happens that a brook which traverses the farm or runs through the grounds has to be crossed by a path, and it affords the proprietor an opportunity to introduce an ornamental structure in the shape of a rustic bridge, which, if the location is well chosen, will add much to the attractions of the place. To facilitate the crossing of small streams, we find on slovenly places a plank, or even a rail, made to serve as a bridge, but where the proprietor is more regardful of neatness and comfort there is usually a bridge of carpenter work. A bridge of rustic work is in much better taste than one carefully planed and painted, and can be made plain or quite elaborate according to the fancy of the builder. The best material for this, as for other rustic work, is Red Cedar, as the wood is not only of pleasing color and durable, but with a proper care in selecting, pieces may be found having a natural curve which adapts them to the use. In a bridge the work should be strong, and those parts in contact with moisture may be preserved by a coating of coal tar. The design may be graceful or express solidity, according to the size and situation of the structure. As an example showing strength and solidity,



RUSTIC BRIDGE IN THE CENTRAL PARK.

we give an engraving, from a sketch by one of our artists, of one of the small bridges at the Central Park. This bridge is in that part of the Park called the Ramble, and being subjected to constant use, is built in the most substantial manner. It was designed by Mr. Vaux, one of the architects of the Park. The Park contains many fine specimens of rustic work, in the way of seats, shades, summer-houses, etc., which afford examples worthy of study by those who would undertake the construction of anything similar. No stranger

should visit New-York without seeing the natural and architectural beauties of the Park.

Pruning and Shaping Evergreens.

Once it was thought that evergreens must not be pruned at all; they would become diseased, or bleed to death. But at length it was noticed that when accident pruned them, they generally endured the operation, and were often improved by it. And so, in one way and another, we have learned that conifers may be cut and shaped as well as any other trees.

In transplanting an evergreen, if the roots have been mutilated in taking them up, we do not hesitate to prune the branches, just like those of deciduous trees. If large branches need taking off, apply shellac varnish to the wounds. Sometimes a conifer loses a side branch. It is harder to fill up such a gap than it would be in a deciduous tree. But by drawing the adjacent limbs around and tying them together over the gap, they will soon conceal it. Sometimes a tree, like the Norway Spruce and Silver Fir, loses its leader. If let alone, perhaps two or three new leaders will start out, but by cutting back all save one, this will soon shoot up straight, and in a few years the whole tree will be denser and more symmetrical than before the injury. Indeed, some of our most skillful nurserymen now practice taking out the leaders of their Norways several times during their growth, in order to make them lusher and richly feathered to the ground. If any evergreen inclines to grow spindling and meagre, it should be cut back again and again until it comes to its senses, and grows as it ought.

It is surprising to how small a space an evergreen can be confined by pruning. We have seen the lordly pine, which naturally aspires to the height of a hundred feet, kept down for half a life time below six feet. The training was begun when it was only a foot high, and by two annual prunings it was wrought into a globe of wavy foliage, shaped like a small hay-cock, and looked bright and silvery, and as contented as a Lilac bush near by. The Norway, the native Black Spruce, and the Balsam Fir may be trained in the same way, or cut into pyramids, or other shapes. Much more tractable still are the various Arbor Vitæ, and the Hemlock. The Junipers require less pruning than any other evergreen, but even they are improved by a little shearing when growing in clay soils.

Evergreen hedges should be pruned like other hedges when growing. But when they have attained their destined height, the main pruning should be given in early summer, just after the first growth has been made. This treatment allows a slight after-growth in the summer, and the plants are kept in good condition. When a hedge loses much of its inner foliage, it is well, for a few years, to cut directly into the plants, taking out every alternate branch, making indeed the surface more ragged for a while, but giving the hedge finally new vigor and beauty.

ZINC TREE LABELS.—We have already published one formula for ink for writing upon zinc labels, and now give the method communicated by "Horticola" to the Gardener's Monthly. It is very simple, and worthy of trial. Sheet zinc is cut into strips of convenient size, and the pieces scoured with fine sand and water, or a mixture of one part of muriatic acid and three of water. When made bright, the pieces are put into rain water, and left there until wanted. The writing is done with a solution of one part

of blue vitriol (sulphate of copper) in ten parts of water, the liquid being applied with a quill pen. When the writing is dry, the label may be fastened to the tree. For this purpose, the writer prefers strings of leather to any others. After a few days, the writing will be found to be covered by a white powder, which is to be removed by the moistened finger, and the letters will appear indelibly fixed.

Shading and Mulching.

In our climate, the gardener has not only to contend with the severity of winter, but with the intense heat of summer, and is obliged to protect his plants against the injurious effects of both extremes. Recently set plants often require shading, as do some established ones, and many seedlings. Not only does the foliage suffer from the effects of the heat, but the roots are also deprived of their proper moisture by the drying out of the surface soil to an extent that renders it necessary to protect them by some sort of covering placed upon the earth over the roots—an operation which is called *mulching*. These things are so obvious, and the methods of shading and mulching so simple, that those who have had only little experience in cultivating do not need to be told of their necessity, nor how to do them. It is not for such that this article is written, but for the hundreds who will try their hand at gardening for the first time in their lives. Indeed, we have seen in the gardens of those who make some pretensions to skill, plants languishing after removal, which a newspaper shade would have made happy, and trees and shrubs struggling to survive the month of August, which a few forkfuls of otherwise useless rubbish would have wonderfully helped. Some plants stand removal without injury, while others have to be handled with great care, and to be nursed for some time after the operation to enable them to survive it. One of the commonest ways of shading small plants in the garden, is to turn empty flower-pots over them. A large leaf, or a handful of recently cut grass, are frequently used, but these soon wilt and fall down upon the plant, and are not as efficient nor much more readily obtainable than paper. Old newspapers, torn into pieces of convenient size, arched over the plant, and the edges held in place by covering them with earth, make very efficient shades. Shingles are very handy for the purpose, and plants in rows may be sheltered by means of boards. If the plant is quite large, it may be protected by a sort of extempore umbrella of paper. Take a stick of convenient length, and a sufficiently large piece of newspaper; place the center of the paper over one end of the stick, and tie it down, an inch or two over the end of the stick, the paper capping the end of the stick in the same manner that a paper or leather cap is put over the cork of a bottle by an apothecary. This secures the paper to the stick, and leaves a broad, free margin, which may be spread out all around like an umbrella, or sun-shade, and the folds, or gathers, made by tying in this way, will give it stiffness to retain its position. The operation is a very simple one, though not so easy to describe without an illustration. The sun-shade thus prepared, is fixed where it is needed, by thrusting the lower end of the handle into the ground. Potted plants from the house, or green-house, especially the broad-leaved evergreens, like Camellias, must be placed where they will be shaded during the heat of the day. If no pro-

per place is available, a lath work must be built to cover them. This is made of strips of slats, one or two inches wide, with spaces between them as wide as the slats. Plants placed under this are not exposed to the full heat of the sun, yet have plenty of light and air. Similar screens are useful to protect plants which grow naturally in shady woods, or other cool localities, and to cover seed beds of evergreen and other trees. Many of the trees which are hardiest when old, cannot be raised from the seed unless the young plants are sheltered, and much of the failure in raising tree seedlings comes from a neglect of this. Twigs of evergreens, or even of deciduous trees, with the leaves on, if stuck quite thickly over the seed bed, will give the young trees the needed shading. The other method of protection, mulching, is still more simple. It consists merely in covering the soil over the roots, and may be done with litter of any kind. Damaged hay, straw, bog or salt hay, chips, sawdust, tan, freshly cut grass, or any similar thing, will answer. In mulching strawberry plants, straw is generally employed, but corn stalks, laid lengthwise of the rows, will serve a very good purpose. Those who have never tried it have no idea of the great benefit of some such simple protection not only to newly set trees and other plants, but to those which suffer from drouth. One of the best pear-growers near this city, attributes much of his success to the thorough mulching of his trees. The mulch will do but little good if put in a little heap around the trunk of the tree—as people often do, and then say that the mulching is of no use. It should be spread with a liberal hand over, and even beyond, the space occupied by the roots.

Notes on Cabbage Culture.

The transplanting of cabbages for the main crop will begin towards the latter part of the present month, and continue into the next. For successful culture, it is best to select ground which has not before been used for this crop, or which has not had cabbages grown upon it for three or four years. Liberal manuring and deep plowing are required. In an article in April, it was stated that hog manure answered well for this crop. This is against the generally accepted practice, and was given as a bit of our own experience. We should have added that the manure was much diluted, by allowing the hogs to compost it with an abundance of muck, which was thrown into their pens for the purpose. We have never made use of concentrated hog manure, and there may be a reason for attributing the "club foot" to its use in this form. We have before us two communications upon cabbage culture, the writers of which relate precisely opposite results from the use of hog manure. Mr. J. W. Wilson, of Kankakee Co., Ill., informs us of complete success in raising fine cabbages, in a yard which had been used as a log yard for several years; while a lady, in Belleville, N. J., writes that she has tried hog manure for two years, and has not been able to raise a single head, while the same lot of plants, on the same soil, dressed with stable manure, gave a good crop.—The distances at which the plants are to be set will depend upon the variety of cabbage. For the ordinary sorts, rows two feet apart, with the plants at 18 or 20 inches, in the row, will answer, while for the very large kinds, such as Stone-mason, and Marblehead Drumhead, from 2½ to 4 feet is recommended. If a large number of plants

are to be set, the labor may be divided with advantage; let one hand make the holes, another take up and drop the plants, and one or two others cover them. Before taking up the plants, give the seed bed a good watering, then mix up some soil with water, to the consistence of a batter, and draw the roots through it in a manner to completely coat them. If the plants are put in convenient sized bunches, and the roots thus covered are pressed close together, they will remain fresh for a long time. It is the custom of some to set out their plants just before or during a shower, and of others to provide some kind of shade for the newly-set plants, but we have set out the plants whenever it was found most convenient, without regard to sun or shower. By preparing the roots as above mentioned, filling the holes with water, and allowing it to soak away, and then filling in around the plant with moist soil, taken from just below the surface, there is no need of losing a plant. In removing the plants from the seed bed, all the unhealthy looking ones should be rejected, as well as those, which will sometimes be found, in which the bud or growing point, has been destroyed by insects; such will never head. The cut-worm is the great enemy to the cultivator, and to guard against it requires some trouble. A piece of paper wrapped around the stem, so as to reach just below the surface of the earth, is an effectual safe-guard. One of our correspondents uses a maple leaf for the same purpose, and finds it perfectly successful. The crop can hardly be hoed too often, and in the garden rapid development may be much aided by the use of liquid manure. The same treatment is to be followed in setting out Cauliflower, Broccoli, etc.

Sow for a Succession.

In the monthly calendar it is often recommended to sow certain things for a succession. Some observation has shown us that the majority of farmers make but one job of planting the garden, and content themselves with the products as they come along in the course of the season. A little care and forethought would prolong the season at both ends. At this time it is too late to think about forwarding plants, but it is well to consider if more enjoyment may not be had out of the garden, by continuing the sowing of seeds much later than most people are accustomed to do. An enumeration of some of the things which may be sown late will also be advantageous to those who, for some reason, were prevented from "making garden," at the usual time, as well as to those whose crops have failed from the use of poor seed, or other cause. Bush beans may be sown at any time during the summer, or even into August, and give a supply of late string beans, and a plenty for salting. The Refugee is considered one of the best for late planting. Lima beans, sown this month, will give fair returns, unless there are early frosts. For beets, June is the best month to sow for the winter crop, but the early, or turnip varieties, may be put in as late as the middle of July. The main crop of all the cabbage tribe is to be set out this month, and if one has neglected to sow seed to provide the plants, he can readily purchase them. The early varieties of cabbage may be sown as late as the middle of June, and form heads; Brussels Sprouts, Early Cauliflower, and Broccoli, may also be sown, with a fair prospect of a crop, and Kale and Kohl Rabi will do as late as July. Carrots

may be sown in the garden until the latter part of July. Sweet Corn may be had until frost comes, by planting at intervals of two weeks until July. Cucumbers may be planted until August; the pickle crop is put in the last of this month. Other materials for pickles, such as Nasturtiums, Martynias, and Melons for mangoes, may be sown at once. Okra is a sub-tropical plant, and does quite well if the seed is put in in June. By making a succession of sowings, peas may be had all summer. If the weather is dry, soak the peas before planting, and water the rows. Salsify is best when sown quite early, but even now it will give a good crop. Spinach and Swiss Chard may be sown, which will give greens all summer, and "Herbs" of all kinds may be put in. Salads may be had all the season, by sowing Endive now, Lettuce after the summer heat is over, and Corn Salad from July until September.

About Tastes—A Frequent Mistake.

Several years ago, a party of travelers in the Rocky Mountains, foot-sore, weary, and hungry, came upon a wild grape vine, loaded with clusters. They stopped and feasted, and all declared the grapes to be the best they had ever tasted. Late in the fall, on their return eastward, they brought home several packages of cuttings for the propagation of this new and superior grape. But when it came into bearing, all were disappointed; the fruit was tough, lacking in flavor, and every way inferior to the ordinary grapes of Eastern gardens. Whence came their disappointment? Simply from the fact that they ate the Western grapes when they were tired and hungry, and had not seen any fruit for many days, and had nothing better at hand as a standard of comparison.

Not long since, we heard of a Fifth Avenue merchant, who, after spending his boyhood and youth in New England, came to New-York and acquired great wealth. But before the prime of life, his appetite and health began to fail, and he thought his food would taste better and that he should regain his health, if only his food could be cooked as it was in the old country farm-house. So possessed with this idea was he, that he threw out of his kitchen his patent coal-cooking stoves and improved ranges, and tore down one or two partitions in order to build in his mansion an old-fashioned brick oven, to be heated with fine maple wood. This was done as commanded, but alas! did not bring back his youthful relish. Late hours, irregularity in meals, close confinement and a burden of care, had begotten dyspepsia, and "things didn't taste now as they used to, when he was a boy!"

Probably if he spent his whole life on the farm, this youthful relish would have been partially lost; but simplicity in diet, exercise in the open air, and regular hours for eating and sleeping, will do much toward preserving it.

Propagation by Layers.

Many plants which do not readily start from cuttings are propagated with ease by layering. The cutting has to throw out roots from the limited stock of nourishment contained within itself, while the layer, retaining more or less perfect connection with the parent root, is supplied with nutriment from that source. The readiness with which different plants strike root varies greatly, some will throw out roots if a branch merely comes in contact with the soil,

as is the case with the Verbena, while others require considerable care to induce them to form roots. The grape vine, currant, and many others, will root if simply buried in well prepared soil, but the Rose, Weigela, Carnation, and many other shrubs and herbaceous plants need to have the buried portion wounded before it will strike root. Layers from last summer's growth are made early in spring, and that of the present season as soon as it becomes partly ripened and firm. The soil to receive the layer should be well prepared, and an opening made to receive the branch, which should be buried three or four inches deep, and pegged there by means of wooden pins. The extreme end of the shoot should be turned up out of the ground, and kept in that position by tying it to a stake, and the leaves can be removed from the buried portion. With those things which do not strike root readily, it is necessary to cut a notch just below a bud, upon the buried portion, or a tongue, by placing the knife just below a bud and cutting a slit upwards, an inch or two in length, and about half through the stem; a sliver of wood, or small pebble, is placed in the slit, to keep the wound from uniting. After the stem is cut, it must be handled with care, else there is danger of breaking it off in placing it in the ground. It is usually recommended to make the slit on the lower side of the stem, but it answers just as well to make it on the upper side, and there is less risk of breaking. In the present month, Carnations are to be layered, and choice Pansies may also be propagated in this way. In layering the Carnation, select the strongest shoots which proceed from the base of the plant, remove a few of the lower leaves, and shorten the top ones by cutting them off evenly with a knife. Then slit the stem at a joint, as above directed, and lay down the slit portion of the stem in a cavity, one or two inches deep, peg it in place, and cover with fine earth, keeping the head of the layer upright. Convenient hooked pegs may be cut from the stems of Asparagus, or the common Brake.

The Currant Worm—Save the Bushes.

For several years past the currant bushes have been nearly destroyed by numerous small worms which divest them of their foliage. As the eggs from which these worms spring are deposited on the underside of the leaves, the first indication of their ravages will be observed by many small holes eaten through, and the minute worms may be seen making the holes larger.

The writer has been accustomed to sprinkle powdered white hellebore on the bushes, which is an infallible remedy, as it destroys the worms in a few minutes, and will not injure the currant bushes in the least. White hellebore can be obtained at most drug stores, in a powdered state, at a few cents per ounce. To sprinkle it on bushes, put about two tablespoonfuls into a pepper or flour box, and sprinkle it lightly all over the outside leaves. Then turn up the bushes and scatter a small quantity in the middle of them. Let it be spread as thinly as practicable, as a quantity so small that it can not be perceived with the naked eye, will check the ravages. In the spring of 1864 our gooseberry bushes were stripped of every leaf, and all the branches were literally covered with full-sized worms. We sprinkled them lightly with white hellebore; and in less than two hours every worm fell to the ground dead. Great care must be exercised in handling the hellebore, as a small quantity will produce violent sneezing.



A Brilliant Annual.—*Convolvulus minor*.

Every one admires the climbing sorts of Convolvulus, of which the old-fashioned Morning Glory is the type, but their beauty lasts for only a few hours in the morning, and they need a support to run upon. The *Convolvulus minor* does not climb, but spreads upon the ground and forms a mass of brilliant bloom, and unless the sun is very scorching, the flowers remain open during the greater part of the day. The engraving gives the shape and average size of the flower, though in this last respect there is considerable variation. The colors vary from blue to violet purple which, contrasting with the white centre, gives a most lively effect. Nothing can be more showy than a bed filled with this plant, and even single specimens add much to the brilliant aspect of the flower garden. The seeds should have been sown in May, but it may be done early in June and secure a late bloom. Sow the seeds where the plants are to grow and let them stand about two feet apart as their trailing branches spread in every direction. The seeds are sold at five and ten cents a paper according to the rarity, there being several varieties differing in color and marking.

Plants with Ornamental Foliage.

Under the rather absurd name of "foliage plants" a great number of plants are cultivated for the show made by their leaves, rather than for their flowers. These are not of necessity plants with variegated leaves, but a number which have foliage of striking effect or unusual luxuriance are used. Many new species have been introduced, and there are a number of old ones which should not be neglected. One of the commonest "foliage plants," as well as one of the most striking, is the Castor Oil plant.

When well grown it is stately, has a tropical aspect and an expression of health and vigor which is pleasing to see. There are about a dozen varieties sold by seedsmen, which are distinguished by difference in the color of stem and fruit, and the shape of the leaves. A single plant of any of these produces a fine effect. The old Curled Mallow, *Malva crispa*, is a favorite of ours and were it not so common and so easily raised from seed it would be much sought after. The Cannas we have before noticed—they grow readily from seed and the roots may be kept from year to year. Nor would we forget the ornamental varieties of Kale, noticed and figured in December last, the leaves of which present not only beauty of form but a pleasing variety of color. We notice in the recent French Catalogues a number of these fine

leaved plants which have not yet been introduced here to any extent. Among these are *Aralia papyrifera*, *Bambusa aurea*, *Montagnea heracleifolia*, and *Weigandia Caucasana*. Of the last named we saw a specimen last season at Ellwanger & Barry's in Rochester, and were much pleased with it. Some of the grasses, such as the Pampas Grass (*Gynerium argenteum*), *Arun-do Donax*, and even our common Reed-grass (*Phragmites communis*), are very ornamental. All these plants admit of a tasteful arrangement, and a group of them is always showy and pleasing, and produces a fine effect in mid-summer—a time at which we have but few flowers.

Benzine to Destroy Insect Parasites.

The European journals mention the successful use of benzine to destroy the parasites which infest dogs, and we have no doubt that it will be found equally efficacious in removing those which trouble other animals. It has also been employed to kill the minute insect which causes the disease in the human body called *scabies*—commonly known as itch. When used upon dogs, it has been found to answer better when very much diluted than when pure. The preparation recommended is, benzine 5 parts, soap 10 parts, and water 85 parts, which is about equivalent to benzine 1 oz., soap 2 oz., and water 1 pint. It is proper to state that we have not tried this preparation. It is given on very good authority, and we cannot see that any harm can result from its use upon animals, especially as the pure benzine is used with safety in treating human patients afflicted by parasites. We propose to try the dilute preparation upon plants, when insects make their appearance, and hope others will make experiments with it, and report the results. It will be well to proceed cautiously with it at first, and try it upon some

plant of no great value. It should be borne in mind that benzine is very volatile, and that the vapors of it are very inflammable, and care should be taken to guard against accidents. A very small quantity, even the vapor, will kill insects. We had, a short time ago, neglected woolens which were badly infested with moths, and as the material was past saving, we wished to destroy the crop of moths and prevent their spreading. The articles were put into a trunk, and about an ounce of benzine was sprinkled over them, and the trunk closed tightly. Upon examination the next day, not a living moth could be found, so thorough was the work.

The Sand-box Tree.—*Hura crepitans*.

A few days ago we received from Dr. White, Surgeon to the Panama R. R. Co., at Panama, a parcel containing a number of seed vessels or fruits of the Sand-box Tree. One of these is figured below of nearly the natural size, with the stem removed to better show the open-work around the place where it is inserted. The tree which bears this fruit is a native of tropical America. The texture of the wood is so weak that it is said that very large limbs will break from a sudden gust of wind. The juice of the tree possesses poisonous properties and will blister the skin. The tree is chiefly interesting for its remarkable fruit, which when its leathery covering is removed, presents the appearance shown in the figure, and looks more like an ornament carved out of some olive colored wood than it does like a natural production. The white lines which radiate so regularly from the hole left by the stem, form a pleasing contrast with the darker color of the rest; they have between them open spaces, which communicate with the interior. The whole thing is so pleasing in color, and symmetrical in form that it makes a very pretty ornament to put upon the mantle piece. We say *put* upon the mantle piece, but not to keep there, for when it gets thoroughly dry the whole



thing goes off with a bang, and scatters its fragments all over the room. This fruit consists of numerous one-seeded woody pods, joined together around a stem; the backs of these pods form the ridges, while the line upon the ridges shows where the two halves of the pods join. When the explosion takes place, these pods not only separate from one another, but their halves split apart, making twice as many pieces as there are ridges, and the scattering of these and the large seeds, together with the noise of the explosion is quite startling. The name, Sand-box, was probably given the fruit from some resemblance to the vessels formerly used for holding sand to sprinkle over writing; the people in Central America call them "Monkeys' Dinner Bells." This is one of the many expedients nature uses for scattering the seeds of plants.



The Dandelion and its Uses.

Most persons look upon the Dandelion as a weed to be exterminated rather than as a plant to be cultivated. Though not a native of this country, it has kept pace with civilization, and is to be found almost everywhere. Every meadow and grass plot is studded with its bright yellow blossoms in spring, and those who look upon it as a troublesome weed will have to content themselves with trying to crowd it out by better plants, for unless they can bribe the winds to not blow about the seeds, they have a hopeless task in attempting to exterminate it. The Dandelion is so common a plant that we are accustomed to overlook its beauty, yet our engraving shows that its leaves are not inelegant, while its flowers are quite as pretty as many we cultivate for ornament. Nor is the globular head of ripened fruits the least interesting part of the plant. Each little one-seeded fruit has a delicate little long handled parasol made up of hairs attached to it; a contrivance well adapted to aid in its distribution by the winds. The leaves vary greatly according to the situation in which the plant grows, but they are all marked with strong tooth-like notches which suggested one of the French names of the plant, *Dent de lion* (lion's tooth), from which is derived our word Dandelion. The leaves of the Dandelion are much used as greens, and when blanched they form a salad not unlike endive. The root is employed medicinally, and is one of the many articles used as substitutes for, or to mix with coffee. The plant is botani-

cally related to both chicory and endive, and is used in a similar way. Those who value it for greens will find it much better to cultivate the plants than to depend upon those which grow spontaneously, as they are superior, and are always at hand. When the root is required, it should always be taken up in the fall, as then it contains most of the milky juice upon which its properties depend. The seed is sown in May or June, in well prepared ground, in drills 12 or 15 inches apart. Thin to 3 or 4 inches and keep the plants well cultivated through the season, and they will be fit for use in the following spring. According to Burr, if the Dandelion is cultivated for its root, the sowing is made in October, the plants thinned the following June, and kept free from weeds during summer, and the roots harvested the next October by plowing them out. The roots are prepared for market by washing, slicing and drying them.

THE HOUSEHOLD.

Liebig's Food for Children.

It is stated that the distinguished chemist, Liebig, finding that one of his grandchildren must be raised upon other food than his mother's milk, and knowing that cow's milk was not a sufficient substitute, devised a compound which, under the name of "Liebig's Soup," is now considerably employed in Germany. It is prepared as follows: "Half an ounce of wheaten flour and an equal quantity of malt flour, seven grains and a quarter of bicarbonate of potash, and one ounce of water, are to be well

mixed; five ounces of cow's milk are then to be added, and the whole put on a gentle fire; when the mixture begins to thicken it is removed from the fire, stirred during five minutes, heated and stirred again till it becomes quite fluid, and finally made to boil. After the separation of the bran by a sieve, it is ready for use. By boiling it for a few minutes it loses all taste of the flour." The malt flour can be prepared by pounding or grinding malt obtained from the brewers. The bicarbonate of potash is added to give the necessary alkaline quality; it may be had at the druggists, and should be the bicarbonate in transparent crystals, and not the ordinary carbonate in dull white grains.

Cheese Making from a Few Cows.

It is probable that the great majority of the readers of the *Agriculturist* keep less than half a dozen good milch cows,—enough for good cheese-making. "A Farmer's Wife," of Guernsey Co., Ohio, sends us the following account of her simple method, which we commend to our readers:—"Cheese making is more profitable than butter making in the hot summer months, for those who have not a good place to set milk or cream. We seldom keep more than four cows; and from that number we make a cheese daily, weighing from 8 to 10 pounds. The morning's milk is strained into a kettle with the night's milk, and warmed. Then, after having the rennet soaked a day or week previous, pour in as much as will curdle it in 15 or 20 minutes, but not sooner, as too much makes the cheese dry, and apt to crack. A little experience here, however, is all that is necessary, as it would be impossible to tell the exact amount of rennet to the quantity of milk, owing to the great difference in the quality of rennet. Stir it together, and, when curdled, let it stand five or ten minutes. Then cut the curd in slices with a knife, about one inch thick, and cut crosswise in the same manner. Place the kettle again on the fire; put the hand in down to the bottom, stirring it gently, so as that the whole shall be heated evenly, considerably more than milk warm. This will separate the whey from the curd. Remove the kettle from the fire, and let it stand a minute. Dip, or pour off the whey on the top, and pour the curd into a large butter-bowl. Salt to suit the taste. Then cut fine with a knife, and put it in a crock, and set it in a cool place. If you have not such a place, put in salt enough for the next curd, which will preserve it until the next morning. Then make another curd in the same way, and mix well together, and put to press. I prefer this method, for two reasons. First, while making cheese, the family can be provided with milk and butter. Secondly, the cheese needs some attention after putting to press, which can better be attended to in the morning. I use the lever press in preference to the screw, because the weight is constantly pressing, whereas the screw presses strongest at first. The weight should be light at first and gradually increased; and, if desirable, the cheese may be taken out the same evening and turned, after washing the cloth (which should be of linen), and put back to press until morning, when it may be taken out and rubbed well with butter, and placed on an airy shelf and turned and rubbed daily. I prefer letting it remain until morning before turning, as the cloth will then come off readily, leaving the cheese perfectly smooth. It should then be put back to remain until next morning. Cheese made after the above directions, and pressed in this way, will seldom crack, or be injured by the cheese-fly; but if any should crack, rub them well with flour.

"Cheese, but little inferior to the best quality, may be made from the milk of two or three cows, by straining the night's milk altogether into a vessel sufficiently large to hold it, as but little cream will rise when a large quantity of milk is contained in a deep vessel. Whatever does rise should be removed, as it will run off in the whey. Add the morning's milk, and proceed as above. A very simple, but rude press may be constructed by any farmer's wife in five minutes, which will

subserve a good purpose. Place the cheese on a piece of a broad board, a little inclined, and use a fence rail for a lever, placing one end under a building, or any other structure of sufficient weight, and on the other end lean a couple of rails, or hang a pail of stones. Cheese should be pressed only hard enough to remove the whey. A little practice will make perfect. While pressing, the cheese should always be kept shaded from the sun. I think we are inexcusable if we have not our tables bountifully supplied with this most wholesome, palatable, and nutritious article of food."

Pure Butter.

The fresh sweet pastures of June, furnishing that abundance of succulent feed which new milch cows need to give rich milk in abundance, make this month pre-eminently the butter month. We present herewith the views of a good butter maker expressed in a communication by "H. A. II.," which has lain for some time on our table: "I am very particular about thoroughly scalding and sunning my pans in hot weather; do not fill them more than half full, and skim after the milk thickens sufficiently so that the cream will come off smooth without taking any milk with it, which, I think, is apt to make curdles in the butter, and that injures the looks of it. Churning should be done every day, if sufficient cream be obtained. If not, the cream in the pot should be thoroughly stirred whenever any is added, and I add a little salt, which certainly is not a bad idea. I design, when I churn, to have the cream the right temperature, neither too warm nor too cold, so as to avoid putting in any warm or cold water, and as soon as it is gathered I take it out and wash it in cold water until it is thoroughly freed from buttermilk; salt it to my taste, and set it in a cool place until the next morning, when I work it over again until it presents a firm and uniform appearance. Last summer I worked my butter three times before packing. At the last working I add a small quantity more of salt. After packing it smoothly I sprinkle a tablespoonful of loaf sugar and a little salt over the top between every layer, and apply on the top of that a cloth pressed down closely to keep the air from it during the time that must intervene before the packing of the next layer. After the jar or firkin is well filled, I put the cloth on the top and apply another thicker one, and fill up with salt packed tightly, and even with the top of the jar; then lay on another cloth to fit the top. I also put another one over the jar and have it come over the edge and paste it tight to the jar, then put on a board and weight. Or another way: Instead of putting in salt I take melted butter and turn in on the thin cloth even full, and lastly, apply salt sprinkled over the top before putting on the last cloth and weight. Then again, I have had butter keep well after packing thoroughly as I have stated, to fill up the top of the jar with strong brine, which should stand two inches deep on the top without being filled up with butter, and it is necessary to put a little saltpetre in the brine. Any one, whether he has a very good place to keep butter or not, if he attend to the strict observance of these rules, can have good butter and keep it for months, and that through the hottest weather."

Fault-finding with Children.

Mrs. H. B. Stowe, in the Atlantic Monthly, has done a good service for both parents and children in exposing this common mistake. The following extract conveys the pith of her views on the subject: "Children are more hurt by indiscriminate, thoughtless fault-finding than by any other one thing. Often a child has all the sensitiveness and all the susceptibility of a grown person, added to the faults of childhood. Nothing about him is right as yet; he is immature and faulty at all points, and everybody feels at perfect liberty to criticise him to right and left, above and below, till he takes refuge in callous hardness or irritable moroseness.

"A bright, noisy boy rushes in from school, eager to tell his mother something he has on his heart, and Number One cries out—'Oh, you've left the door open! I do wish you wouldn't always leave the door open! And do look at the mud on your shoes! How many times must I tell you to wipe your feet?'—'Now there you've thrown your cap on the sofa again. When will you learn to hang it up?'—'Don't put your slate there; that isn't the place for it.'—'How dirty your hands are! What have you been doing?'—'Don't sit in that chair; you break the springs bouncing.'—'Mercy! how your hair looks! Do go up-stairs and comb it.'—'There, if you haven't torn the braid all off your coat! Dear me, what a boy!'—'Don't speak so loud; your voice goes through my head.'—'I want to know, Jim, if it was you that broke up that barrel that I have been saving for brown flour.'—'I believe it was you, Jim, that backed the side of my razor.'—'Jim's been writing at my desk, and blotted three sheets of the best paper.'—Now the question is, if any of the grown people of the family had to run the gauntlet of a string of criticisms on themselves equally true as those that salute unlucky Jim, would they be any better natured about it than he is? No; but they are grown up people; they have rights that others are bound to respect. Everybody can not tell them exactly what he thinks about everything they do. If every one did, would there not be terrible reactions?"

Something about Perfumes.

People will persist in using perfumes, and if they would only use the delicate ones of flowers it would not be so objectionable, but when it comes to musk, which suggests skunk, and bergamot, that savors of barber shops, we think perfumes had better be dispensed with. It is the common belief that all perfumes are distilled from the plants and flowers the names of which they bear, but this is not the case. Though many are obtained from woods, barks and seeds by the operation of distillation, the oils of orange, lemon, and bergamot are obtained by expressing the rinds of those fruits. In separating the delicate odors of flowers a quite different process is generally resorted to, founded upon the fact that the fragrance of the flower continues to be exhaled as long as it remains alive, and upon the property possessed by pure fats of absorbing this odorous exhalation. This process is largely carried on in the South of France, and is called "*Enfleurage*." Square wooden trays are forced by setting panes of glass in wooden frames which are about two inches high, so that when two of these are placed one over the other, there will be a space of four inches between the two glasses. The fresh butter, lard, suet, or whatever grease is used, and which must be as pure as possible, is spread over the glass bottom of one of these trays, the flowers placed in it, and a similarly prepared tray covered over it. The flowers remain here for a day or two, when they are removed and replaced by fresh ones. The same grease remains in the tray as long as the season of blossoming of the particular plant lasts, it being worked over with a knife, so as to present a fresh surface every time fresh flowers are put in. In this way large quantities of grease are prepared strongly flavored with the perfume of Orange flowers, Jasmine, Tuberoses, Violets, etc., which is used for perfuming pomades, or to impart its fragrance to alcohol, and thus form the various liquid scents or essences. The perfumed fat being infused in alcohol for several weeks, imparts all its odor to that liquid, while none of the fat is dissolved by it. Many of the perfumes sold under fanciful names are combinations made by mixing the various extracts. Some of these are made to imitate the perfumes of flowers, such as Sweet Pea, while others like "Jockey Club," "West End," etc., are agreeable compounds not made to imitate any natural odor. Some of the names are exceedingly imaginative; "Night-blooming Cereus" for instance, is a mere fancy name to a compound perfume, which bears no resemblance in odor to the flower after which it is called. Indeed there are probably not

flowers enough of the *Cereus* produced in the country in a year to make a dozen bottles of the perfume which bears this name. Those who have an abundance of fragrant flowers can make the experiment of extracting their odors by spreading the grease upon dinner plates, filling one with flowers and inverting another one over it.

About Lightning Rods.

From the letters we receive asking information about lightning rods it is evident that there is sufficient interest felt in the matter to warrant us in devoting considerable space to it. No one who has a house or barn can afford to neglect the protection which a properly constructed lightning rod will give. There are numerous kinds of patent lightning conductors, each claimed by the inventor to be superior to all others. We cannot decide upon the merits of these rival inventions, but can do our readers much better service by pointing out the essentials of a good lightning rod. The following was prepared some years ago by Prof. Henry, the distinguished physicist, who has given especial study to electricity, and it appears to be perfectly plain and to cover the whole ground.

"1st. The rod should consist of round iron, of not less than three fourths of an inch in diameter. A larger size is preferable to a smaller one.

"2d. It should be, through its whole length, in perfect metallic continuity; as many pieces should be joined together by welding, as practicable, and when other joinings are unavoidable, they should be made by screwing the parts firmly together by a coupling ferule, care being taken to make the upper connection of the latter with the rod water-tight, by cement, solder, or paint.

"3d. To secure it from rust, the rod should be covered with a coating of black paint.

"4th. It should be terminated above, with a single point, the cone of which should not be too acute, and to preserve it from the weather as well as to prevent melting, it should be encased with platinum, formed by soldering a plate of this metal, not less than a twentieth of an inch in thickness, into the form of a hollow cone.

"5th. The shorter and more direct the rod is in its course to the earth, the better. Acute angles made by bending the rod and projecting points from it along its course should be avoided.

"6th. It should be fastened to the house by iron eyes, and may be insulated by cylinders of glass. We do not think the latter, however, of much importance, since they soon become wet by water, and in case of a heavy discharge are burst asunder.

"7th. The rod should be connected with the earth in the most perfect manner possible, and in cities nothing is better for this purpose than to unite it in good metallic contact with the gas mains or large water pipes in the streets; and such a connection is absolutely necessary if the gas or water pipes are in use within the house. This connection can be made by soldering to the end of the rod a strip of copper, which, after being wrapped several times around the pipe, is permanently attached to it. Where a connection with the ground cannot be formed in this way, the rod should terminate, if possible, in a well always containing water, and where this arrangement is not practicable, it should terminate in a plate of iron or some other metal buried in the moist ground. It should, before it descends to the earth, be bent so as to pass off nearly perpendicular to the side of the house, and be buried in a trench surrounded with powdered charcoal.

"8th. The rod should be placed, in preference, on the west side of the house, in this latitude, and especially on the chimney from which a current of heated air ascends during the summer season.

"9th. In case of a small house, a single rod may suffice, provided its point be sufficiently high above the roof, the rule being observed, that its elevation should be at least half of the distance to which its protection is expected to extend. It is safer, however, particularly in modern houses in which a

large amount of iron enters into the construction, to make the distance between two rods less than this rule would indicate, rather than more. Indeed we see no objection to an indefinite multiplication of rods to a house, provided they are all properly connected with the ground and with each other. A building entirely inclosed, as it were, in a case of iron rods so connected with the earth, would be safe from the direct action of the lightning.

10th. When a house is covered by a metallic roof, the latter should be united, in good metallic connection, with the lightning rods; and in this case the perpendicular pipes conveying the water from the gutters at the eaves may be made to act the part of rods by soldering strips of copper to the metal roof and pipes above, connecting them with the earth by plates of metal united by similar strips of copper to their lower ends, or better with the gas or water-pipes of the city. In this case, however, the chimneys would be unprotected, and copper lightning rods soldered to the roof, and rising a few feet above the chimneys, would suffice to receive the discharge. We say soldered to the roof, because if the contact was not very perfect, a greater intensity of action would take place at this point, and the metal might be burnt through by the discharge, particularly if it were thin.

11th. As a general rule, large masses of metal within the building, particularly those which have a perpendicular elevation, ought to be connected with the rod."

Extermination of Red Ants.

"N. H.," of Albany, N. Y., inquires for a remedy for expelling red ants when they have gained possession of a dwelling. If they can find convenient refuge in the walls of a house, it will require a long time to exterminate them. If the house be new, and the door and window casing and base boards fit closely, fill with putty all the holes and cracks where they come in. Then, keep all kinds of food in close vessels, so that they will have difficulty to find anything to eat. Procure two pieces of thin boards, say two feet long, eight inches wide, and fasten two edges together with hinges, so that they will close like the covers of a book. Spread a little molasses on the under board, and as often as a few ants are seen on it, press the upper board down and crush them. In a few days they can all be destroyed. Another way is to put some molasses into a milk pan, and place a piece of board against the side of it, so that they can ascend to the top of the pan. They are sure to tumble into the molasses; and can not get out alone. Perhaps the best way is one we have previously published in the *Agriculturist*. Procure a large sponge, sprinkle a little sugar through it, and place it near the haunts of ants. When a quantity of them have collected in the interstices they can be killed in hot water, the sponge dried, baited and set again. In this way whole armies of the ants can be readily destroyed.

Tanning Fur Skins.

Mr. Byron Vaughn, Dupage Co., Ill., sends the following method of preparing skins with the fur on to the *American Agriculturist*: The skins cleaned of flesh are put in a liquid prepared thus: Upon 1 lb. of hard wood ashes, pour 4 gallons hot soft water, let stand for a few hours and strain out the liquor, then add 3 pounds of common salt, one fourth pound of alum, and one pound of sulphuric acid (oil of vitriol). The mixture is to be made in a wooden tub or similar vessel, and care should be exercised in handling the acid, that none come in contact with the person or clothing. The skins are placed in the liquid and allowed to remain there from one to two hours, when they are rinsed and hung out to dry. Mr. V. recommends the process as cheap and satisfactory. He does not state if the skins need any oiling or other after-treatment.

Furniture Varnish.—A correspondent says, when black walnut or mahogany-colored fur-

niture becomes discolored or damaged, any one may, at a very small cost, "shine it up," like new. Provide a few cents worth of burnt amber and Indian red. For mahogany color, mix Indian red with copal varnish till the right color is secured; thin with benzine, and add a little boiled linseed oil if it dries faster than desirable. For black walnut color, mix both pigments in such proportion as are necessary.

Mrs. F.'s Way of Preserving Strawberries.

Mrs. F.'s strawberry preserves are the best in the world. So F. thinks, and we don't dispute him. She has all the strawberries she needs, and many more go to waste for want of hands to pick them. So large, firm, handsome berries, such as Wilson's, or Triomphe de Gands, are selected, cleaned without bruising, and with these her glass jars are filled. Then an abundance of the highest flavored berries, as, for instance, Brooklyn Scarlet, Burr's New Pine, Boston Pine, etc., are taken, picked over with great care, and washed. They are mixed with sugar, in judicious quantity, say half a pound to a pound for each pound of fruit; then they are put on the fire and cooked as is usual for preserving strawberries. Then they are poured out upon a cloth in a colander, and all the juice drained and squeezed out. While yet boiling hot, it is poured into the jars of fruit, previously placed in hot water. The jars are then sealed at once. The amount of sugar can be varied to suit the taste. The fruit will keep with more of its natural flavor, and with less danger of fermentation without any sugar. It can be sweetened as used on the table.

BOYS & GIRLS' COLUMNS.

How to Keep Good Natured.

Uncle William writes to the *American Agriculturist*: "How that wagon wheel creaks. It seems to be grumbling and moaning with pain, just as I felt like doing when I had the rheumatism. Every boy knows that it needs grease or oil, to make it run easy. If it do not have this, it will tire everybody with the disagreeable sound, and soon be worn out. It is just like some people I have met, who needed oiling with good nature. They were honest, industrious, well meaning, and naturally affectionate, but oh! how peevish. There was my neighbor Squire Savage. How I used, when a boy, to dread to pass his place. 'What are you staring at, hey?' he would call out if I turned to look toward his house. 'Stop your noisy yelp,' he shouted one day as I was singing on my way to school. Suppose I did annoy him a little by my childish ways, he would have felt pleasant, and I certainly should, had he given me a kind word which would have cost him very little. There was Peter Braze, one of my school fellows, 'Peter Pickles' the boys nicknamed him. He was always snorting at something or somebody. If he granted a favor, he would do it with such a snap that you did not like to ask him a second time. But I need not speak of my cross acquaintances, most of you have seen such persons, and know that they are not favorites. But how can a person keep good natured? 1st, by making up his mind that he will act pleasantly whether he feels so or not. It may be hard work to do this at times, but it can be made a habit, and appearing pleasant will induce pleasant feelings. 2d, Good health has much to do with good nature. Preserve this by good habits and temperance in all things. 3d, Keep a quiet conscience by trying to do right.—Be careful not to mistake ptiacy for good nature. A ptiant man agrees with everybody, has little will of his own, is ready to follow every body's suggestions; he does not know how to say 'No.' A good natured man may be very decided in his opinions and yet offend none justly by his expression of them; he can make 'No' pleasanter by his way of saying it, than the 'Yes' of a surly person. Try the oil of good nature for a month and see how easily it will make the wheels of life run."

February 14th—Woman's Day.

In England and in many places in this country, February 14th, called Valentine's day, is celebrated by sending anonymous letters, called valentines. The old Dutch settlers of New York had a different and curious custom. Previous to that day every school girl provided herself with a piece of cord of convenient size for a whip. With this she was privileged to attack any boy she might meet on the 14th. (called by them "Wroven Dagh" or Woman's

Day.) and give him a sound lashing. It was not fair to have any knots tied in the cord, and of course no boy was permitted to strike back, or offer any resistance; he could only use his legs and run away as fast as possible. As the whole matter was fairly understood, it made great sport. When the boys applied for a similar privilege on the following day, they were told that it would defeat the purpose of the custom, which was intended to teach them a lesson of manliness, never to raise their hands to strike a woman. Probably it was also thought that as the boys were wont to have things their own way most of the time, it was only fair to let the girls have full rule at least one day in the year. The custom may also have made the boys quite careful in their treatment of the opposite sex, at least for some time previous to the 14th, fearful of the threat "I'll pay you off on Woman's Day."

A LITTLE GIRL was told "to spell ferment," and give its meaning, with a sentence in which it was used. The following was literally her answer: "F-e-r-m-e-n-t, a verb, signifying to work. I love to ferment in the garden!"

Answers to Problems and Puzzles.

The answer to No. 121, *Mathematical Problem*, in February No., page 55, was accidentally omitted. 1278 is the correct number. The following are answers to the puzzles, etc., in the May number, page 159: No. 147. *Problem*.—The dotted lines show where the figure is to be cut,



to make the required pieces; a little study will show how to arrange them to form a square....No. 148. *Curious Sentence*.—Who saw a saw saw a saw? I saw a saw saw a saw, but never saw a saw saw a saw as I saw

that saw saw a saw....No. 149.—*Illustrated Rebus*.—*Flies in when ewe can butt face it if ewe must; or, Fly sin when you can, but face it if you must....*No. 150.—1, Whole, hole; 2, spear, pear; 3, scent, cent; 4, acorn, corn....No. 151. *Anagrams*.—1, Idolatry; 2, Regulations; 3, Enigmatically; 4, Editorial....No. 152. *French Riddle*.—Translation. I am of all things in the world, the most holy; remove my heart and I am the most bitter. *Answer*.—"Bible," remove the middle b, and bile remains....No. 153. *Illustrated Rebus*.—April 3d will long be regarded a great day in the history of the United States, and of the world....No. 154. *Mathematical Problem*.—5,002 inches....No. 155. *Mathematical Problem*.—5-37ths. The following sent correct answers up to May 10th. Minne and Alice Mulligan, 137, 141, 143; B. F. Scriven, 146; E. A. Long, 141, 146; N. Safford, 146; T. S. McD., 137; S. C. M., 137, 141; "W. F. B.," 139, 141; D. W. B. Kuntz, 137; E. Provost, 153; I. W. Beckwith, 124, 125, 126, 127, 128, 133, 134; Eddie Sheldon, 150, 153; Lucy R. Weeks, 149, 153; Robt. G. Weeks, 149, 150, 153; Fidelia R. Lord, 150, 153.

New Puzzles to be Answered.

No. 156. *Curious Sentence*.—Write a correct sentence with the word "that" used seven times in succession.



No. 157. *Illustrated Rebus*.—A timely warning to all.

No. 158. *Curious Latin Sentences*.—1, Quis crudus pro lectum, album et spiravit. 2, Mens tuis ego et labor via. 3, Bonae mali sunt desiderabiles. What is the correct translation?



No. 159. *Illustrated Rebus*.—Worth studying by boys.

No. 160. *Conundrums*.—1, Why is necessity like many a pettifogger? 2, Why was Lincoln's war policy the reverse of Scipio's? 3, What general has been most promoted by the close of the war? 4, What country in Europe contains the most geese?



LEFT ALONE AT HOME. — Engraved for the American Agriculturist.

Whose portraits are these? "Not mine," says Minnie who has been sitting by her mother's side sewing patchwork until father brought the *Agriculturist* from the Post Office, which she is now looking over. "Not mine," says Fanny, who has just come in from a romp with her dog "Dandy." "No indeed, I wouldn't do such a thing as to go to mamma's closet and take the preserves." One little girl looking at this picture says nothing, but blushes while she thinks about the lumps of sugar she has sometimes slyly taken. And there is a boy who remembers how he loved peaches more than honesty one day last summer, and helped himself from his neighbor's tree. The sugar and the peaches tasted good then, but the thoughts of them now are bitter, and will be for a long time unless the sin is confessed and forgiven. When a small splinter is thrust into the flesh the wound will remain painful until the splinter is taken out, then it will quickly heal. Just so with concealed guilt; confession will best remove it and bring peace of mind. The children in the picture will very soon be found out; the daubs and stains on their faces and clothes will tell the story, and if they should fail to, the little one peeping from behind the closet door will hardly keep the secret. Then, when deserved punishment comes, the recollection of the sweets will do little to soften the pain. In small or great actions *wrong-doing never pays*.

"A Good Boy Wanted."

A gentleman in this city lately inserted an advertisement with the above heading in one of the daily papers. Upon entering his office the next morning, there stood a crowd of forty or fifty boys waiting to see him. All were strangers, and of course it was rather difficult to select the best one of the company. But there were a few signs by which it could be decided at once that many of these lads were not wanted, from which our young friends may take a hint. Several of the boys had uncombed hair and unwashed hands and faces. If they could not keep their own persons neat they would not be likely to do their work nicely; so these were passed over without further notice. One boy looked bright and smart, but he kept crowding his way to the front of all others, and thrusting himself into notice. It was readily seen that he was too "smart," he would probably prove pert and saucy. Then

came a boy with a book peeping out of his breast pocket—a cheap trashy novel—he was not wanted; his mind would be following the hero of the wonderful story, through impossible adventures, while his work suffered. One boy fell to quarrelling with his neighbor; another had to be reprimanded for meddling with articles in the office; a third chewed tobacco; neither of these was wanted. From the few remaining after dismissing the above classes, the boy was selected who could bring the best testimonials of honesty, intelligence and industry; so you may see a good name is worth much, and a good character will be sure sooner or later to bring a good reputation and its rewards.

About Sleep.

Every act of the body or mind wears the organs or parts used. The arms of the mechanic, the legs of the traveler, the brain of the student would soon be destroyed, if the worn-out particles were not replaced by new ones derived from the food. During waking hours, waste or loss in the body goes on faster than it can be repaired; but after twelve to sixteen hours of activity, the faculties begin to work heavily, and at last refuse to obey the will. The eyes close in spite of the strongest efforts to keep them open; the ears will not carry sounds to the brain, the limbs refuse to move, and the person sleeps. It is possible by great mental effort, or excitement, or by taking stimulants, to prevent sleep for hours or even days, but finally it can not be resisted. Soldiers have slept on the ground with a battle fiercely raging around them. It is related that during Napoleon's retreat from Moscow, wearied soldiers would often fall asleep in the ranks while marching, and in some instances continue to walk unconsciously for a long distance. During the bombardment of Fort St. Philip, on the Mississippi River, guns of very heavy caliber were used, which made a tremendous and deafening report at each discharge; but the artillerymen who were working them, when exhausted and replaced by others, lay down on the decks of the boats containing the guns and slept soundly through all the firing. During sleep only the necessary functions of the body, as breathing, circulation of the blood, etc., are carried on, and as these do not consume all the power supplied to the body by the food, a stock is laid up

for use upon waking. Children require more sleep than older persons, because much of their food is appropriated in adding to their growth, and also because of their greater activity. Young persons need from ten to twelve hours sleep in the twenty-four; adults from six to eight hours, depending upon the constitution and habits of the individual. Although too much sleep is hurtful, it is less so than too little; in the latter case there is rapid exhaustion of the vital power, and a person grows old fast.

The first Locomotive, 'Puffing Billy.'

In the year 1812, in England, there was great scarcity of food for man and beast. William Hedley, the superintendent of an extensive coal mine at Wylam, Newcastle-upon-Tyne, was greatly perplexed how to provide fodder for the horses employed to draw the coal over a railroad from the mine to the dock where it was shipped. For a long time he feared the colliery must be closed, and himself thrown out of employment. One night as he lay thinking of his dark prospects, there suddenly occurred to him a plan by which the wheels of a locomotive could be made to move forward, instead of slipping upon the track. This difficulty had long puzzled the best engineers, and caused the failure of locomotives previously built by them. The next morning he commenced a model, which with the help of a clockmaker was completed within twenty four hours; and at length he had the happiness of inventing and building the first locomotive engine moving by the friction of the wheels upon the road. It was extremely slow in all its movements, but it served his purpose, and above all consumed neither hay nor oats, but was fed with the coal abounding at the mine. The original Wylam locomotive remained at work forty nine years, and is now a valued relic in the Patent Museum, South Kensington, England. At Wylam, this engine was called "Puffing Billy," from the great noise it made. This puffing and snorting came near stopping the career of the engine, and involving its inventor in a lawsuit, as the people along the road declared it a nuisance, and endeavored to stop it. But "Puffing Billy" was too good a friend to the Newcastle folks; to be put down, and the suit was dropped.

Indian Tradition—Rocks in Connecticut.

It is said that ages ago an evil spirit set up a claim to the territory including the present State of Connecticut. The Indians referred the matter to their squaws, who proposed that they should quit the disputed ground provided the spirit would pay them for the improvements they had made. To this the spirit returned no answer, and war was declared. At first the spirit, though single handed, being very powerful, gained the advantage; but the Indians united, and pined their warriors so that they might be constantly re-enforced, and pressed him so sorely night and day, that he was obliged to retreat. He arrived one evening in the neighborhood of Throg's Neck, (now in Westchester Co., N. Y.) on L. I. Sound, where a line of rocks project out from the Island. It happened to be low tide, and the tops of the rocks appearing above the water, the spirit stepped from one to the other until he reached the Island. These rocks are to this day called the "Stepping Stones." He then went to Coram, in the middle of the Island. Determined to have revenge, he then collected all the loose rocks he could find on the Island in heaps at Cold Spring, and threw them over into different parts of Connecticut, where they yet remain. The Indians who last inhabited Long Island, not only undertook to show the spot where the spirit stood, but insisted that they could yet discern the prints of his feet.

Wall Street and Fly Market.

While New York City was in possession of the early Dutch settlers, they built a line of palisades extending from near the corner of Pine and Water-street on the East River side, over to the Hudson or North River. A fortification known as the "Half Moon," built of stone, was erected at the beginning on the East River. Adjacent to this was the "Waal" where the ships rode at anchor in the river, and the street adjoining, where goods were landed or shipped, was named "Waal-street," which very soon became Wall-street, now famous the world over as the great money center of America.

Many residents in New York yet remember the "Fly" market standing at the foot of Maiden Lane. Some suppose the name to be derived from the abundance of flies drawn thereby by the meat and fish; indeed it is related that when a New Yorker and a Philadelphian were each claiming that their markets were best supplied, the latter quoted this name "Fly" market, in proof that meat could not be kept well in New York, because of these insects. The name was originally "Vly" market, the word being an abbreviation of Valey (valley), and in use with the Dutch to denote a marsh—formerly extended from the East River up as far as Pearl-street.

(Business notices \$1 25 per agate line of space.)



How to make the above with many more Fireside Tricks and Parlor Games, see FIRESIDE AMUSEMENTS in the

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As sung at Fort Sumter. Price 30 cents. For sale at the Music Stores, and at 427 Broome-st., New York. Sent by mail.

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In cases of 2, 4, 6 and 12 dozen. Warranted pure. Price \$3.50 per dozen. Orders must be accompanied by Cash. For sale by T. HARDY & CO., 36 Dey-st., N. Y.

Help for Mothers.

Dr. Brown's BABY TENDER relieves the mother, pleases and benefits the child. Is giving universal satisfaction. See full description and Mr. Judd's endorsement in *Agriculturist*, Dec. No., 1864. Send for Circular to J. T. ELLIS, 339 Broadway, New York City.

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Agents wanted to sell Good Books. Send stamp for Particulars, to MESSRS. FOWLER & WELLS 359 Broadway, New York.

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By authority of the Secretary of the Treasury, the undersigned has assumed the General Subscription Agency for the sale of the United States Treasury Notes, bearing seven and three-tenths per cent. interest, per annum, known as the:

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These Notes are issued under date of June 15th, 1865, and are payable three years from that time, in currency, or are convertible at the option of the holder into

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These bonds are worth a premium which increases the actual profit on the 7-30 loan, and its exemption from State and municipal taxation adds from one to three per cent. more, according to the rate levied on other property. The interest is payable in currency semi-annually by coupons attached to each note, which may be cut off and sold to any bank or banker.

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Two cents " " " \$100 "	
Ten " " " \$500 "	
20 " " " \$1000 "	
\$1 " " " \$5000 "	

Notes of all the denominations named will be promptly furnished upon receipt of subscriptions, and the notes forwarded at once. The interest to 15th June next will be paid in advance. This is

THE ONLY LOAN IN MARKET

now offered by the Government, and it is confidently expected that its superior advantages will make it the

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Less than \$300,000,000 of the Loan authorized by the last Congress are now on the market. This amount, at the rate at which it is being absorbed, will all be subscribed for within four months, when the notes will undoubtedly command a premium, as has uniformly been the case on closing the subscriptions to other Loans.

In order that citizens of every town and section of the country may be afforded facilities for taking the loan, the National Banks, State Banks, and Private Bankers throughout the country have generally agreed to receive subscriptions at par. Subscribers will select their own agents, in whom they have confidence, and who on y are to be responsible for the delivery of the notes for which they receive orders.

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Fourteenth Annual Report

OF THE

MANHATTAN

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Nos. 156 and 158 Broadway,

NEW YORK,

JANUARY 1, 1865.

Net Assets, January 1, 1864.....\$1,478,968 53
Receipts during the year..... 973,534 02

\$2,452,502 61

Disbursements..... 461,277 35

\$1,991,225 23

Assets.....\$1,991,225 23

Life policies are issued, payable in annual, or in one, five, or ten annual installments, also non-forfeiture endowment policies, payable in ten annual payments, which are paid at death, or on arriving at any particular age. Life insurance as an investment has no superior, as it has saved millions of dollars to the insured, and thousands of families from ruin. Dividends are paid to policy holders, thus enabling them to continue their policies, if otherwise unable to do so.

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- M. Simpson, D. D., Bishop M. E. Church, Philadelphia.
- Rev. J. M. Sherwood, Ed. Presbyterian Quarterly Review.
- J. M. Ray, State Bank, Indianapolis, Ind.
- Prof. H. M. Seely, Middlebury, Vt.
- Hon. J. B. McKean, Saratoga Springs, N. Y.

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BASHFULNESS.—HOW TO OVERCOME IT. See PHRENOLOGICAL JOURNAL, Jan. No. 20, 1865. FOWLER & WELLS, 359 Broadway, New-York.

GOOD STRAWBERRY PREMIUM.

We have none of the Agriculturist Strawberry Plants for sale, and shall not sell a plant this year at least, in accordance with our agreement with Mr. Knox, who purchased all our surplus stock last autumn. We have, however, the original stock plants, which will produce a fine lot of new plants by the last of August. We reserved the right to offer a part of these as premiums to those who procure subscribers for the Agriculturist. As we have found a safe method of sending them by mail in wooden boxes (see below), we can send these plants about the first of September, with little danger of loss, and at that time they can be planted and get well established this year. We have heard of only three or four cases of loss in all the large number sent out last year prior to September 15th, and our new method of packing will add greatly to the security. We, therefore, offer:

I.—To any one who will now, or any time before to August 1st, send us four subscribers, at the regular rates (\$5), we will forward, post-paid, Ten of the Agriculturist Strawberry Plants, of first class, about Sept. 1.

II.—To any one sending ten subscribers now, or before August 1st, we will send Twenty Plants as above.

III.—And so on, for a larger number of names we will send at the rate of 20 Plants for ten subscribers.

This will be a fine opportunity to secure a stock of plants, and the premium will be a valuable one, as there will not be plants enough for sale in the country to reduce the price much below the rates so far, for first class plants.

The reason for making the offer larger than previously given, will readily be seen, viz., by having more time for multiplying plants it will be easier for us now to provide ten next autumn than it will be to send one plant last year. Those who got one plant last fall, or the past spring, will, with fair cultivation, have several dozens of their own raising by next autumn, so that they will really have a larger stock than those who get ten plants then.

About the "Agriculturist Strawberry" Plants sent out This Year—Boxes for Mailing Plants—Mr. Knox.

I. The Publisher expended nearly a Thousand Dollars, last autumn, in trying to get up boxes, but owing to his absence by sickness, the effort failed then. But from the many favorable reports received from all parts of the country, we conclude that this year's plan of sending plants in wooden boxes is a complete success—and we confidently commend them to all dealers as worthy of adoption, not only for sending strawberry plants, but for all others small enough to put into any kind of mailable box, and also for cuttings, and even for seeds. We see no objection to using boxes which measure a foot or more long, and 3 to 5 inches in diameter, as the law allows any weight up to 4 pounds, at eight cents per pound. By having them made where wood is abundant, they can be got up cheaply, and different sizes of empty boxes might be "nested" to save transportation. A turned box, 6 to 7 inches long, and 3 to 9 inches inside diameter, will suffice for a dozen or more strawberry plants of the ordinary size. We first bed the plants in damp moss, then wrap the whole in oil-cloth, and slip the parcel into the box; put on the cover, and paste on the wrapper, previously marked, addressed and stamped. When sending off a large number we let the P. M. put on the post-mark while the wrappers are lying out flat, which is more convenient than to post-mark them when wrapped on round boxes. Enough are thus prepared every morning for the day's work.—II. The warm season came on much earlier than usual, so that the plants were in full leaves and in bloom, 2 to 3 weeks sooner than we calculated upon. This rendered more doubtful the perfect safety and freshness of those sent out after May 1st, and we were obliged to suspend sending after May 17th, as the fruit was all set, and the weather very warm. Applications received after that will be reserved to Sept. 1st, when a double number of new plants will be forwarded to such delayed applicants. We are sure they will go very safely up to the 10th of September, but do not deem it expedient to send plants by mail at a later date.—III. A word for Mr. Knox, of Pittsburgh. He bought all our plants not reserved for subscribers. They were forwarded to him in boxes and barrels, by express; but unfortunately, at just the best time for transporting them, the terrible freshets in Pennsylvania interrupted all transportation for a considerable time. The boxes of plants sent to him first were from 8 to 12 days on the way, while they were packed only for a day or two. Before rapid transportation was restored, the weather had become unusually warm for the season. He, however, did the best he possibly could, selecting the best and freshest only, as he had an unexpectedly large stock. He will

undoubtedly make good any losses, as we rank him among the most honest and reliable dealers in the country.

Commercial Notes—Prices Current.

NEW-YORK, May 18.

The condensed and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the daily notes of our own reporter.

Table with 3 main sections: 1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS, SALES, and 2. Comparison with same period at this time last year. RECEIPTS, SALES. 3. Exports from New-York, January 1 to May 18.

CURRENT WHOLESALE PRICES. Table with columns for April 20 and May 18, listing various commodities like Flour, Wheat, Corn, Rye, Oats, etc.

Gold has receded from 147 to 126½, and has since ranged in the vicinity of 130, or below. Prices of most kinds of domestic produce have declined materially, in sympathy with the gold, and the tendency is steadily downward, especially as holders are eager to realize, while the demand from the regular trade is quite moderate, and speculative buyers less active than usual at this season of the year. The resumption of canal and river navigation promises early and considerable additions to the available supplies in market; and purchasers expect that these will seriously depress prices, in view of the decline in gold, the restricted home inquiry, and the unusually limited export movements particularly in breadstuffs, which have been the least freely dealt in during the past month. The executive orders for the reduction of the national forces tend to lessen very decidedly the government consumption of breadstuffs, provisions, and forage for horses; and the partial loss of such excellent customers as the U. S. Quartermasters and Commissaries of subsistence will be seriously felt by the produce trade for some time to come. Toward the close, the markets are all depressed, and the tendency of prices is unmistakably in favor of buyers, who purchase very sparingly in anticipation of a further material reduction in values.

The Financial Wonder.

"Five Choctaws, Alexander, and Ninety-four Iron."—These brief words, sent over the wires on May 9th, by Messrs. Fisk & Hatch of this City, were of startling significance. They indicated the largest subscription ever before made at one time to a Government Loan by a single firm, at least in this country. As many may have already learned, the General Subscrip-

tion Agent of the 7-30 U. S. Loan, Jay Cooke, has devised a set of words for different sums, which saves a great deal of telegraphic expense. Thus, "Lath" stands for the \$50 U. S. 7-30 Bonds; "Iron" for \$100s, "Brick" for \$500s; "Stone" for \$1,000s; "Marble" for \$5,000s; "William" for \$20,000s; "Alexander" for \$50,000s; "Mary" for \$90,000s; "Emily" for \$100,000s; "Choctaw" for \$1,000,000; and other names for several intermediate sums. So when Messrs. Fisk & Hatch telegraphed for "Five Choctaws, Alexander, and Ninety-four Iron, Seventy-Threes," they ordered \$5,059,400! (This subscription they made on the day they changed to their new and larger rooms at No. 5 Nassau-street, near Wall-street, as noted in an advertisement elsewhere). So large a subscription took every one by surprise, but on the same day thousands of others from all parts of the country sent in smaller sums, and the result was, that over 15 Million Dollars were subscribed on that day. This was talked of all through the city and country, as well it might be, for we well remember how hard it was four years ago to get a government loan of only \$2,000,000 all told. Yet the subscriptions were not to stop here. The next day May 10th, the people took \$17,000,000, the next day nearly \$14,000,000, and the next day over \$42,000,000 while for the week the subscriptions run up to over One Hundred and Ten Millions of Dollars! Nothing like this has ever been known before, in any nation in the world. And what is more, many other hundreds of millions have been but recently subscribed, and are being subscribed. It shows the unbounded confidence of the people in the stability of our government. In fact the people are The Government, and they are merely lending money to themselves.

Advertisements.

Advertisements, to be sure of insertion, must be received BEFORE the 10th of the preceding month.

N. B.—No Advertisement of Patent Medicines or secret remedies desired. Parties unknown to the Editors personally or by reputation, are requested to furnish good references. We desire to be sure that advertisers will do what they promise to do. By bringing up these requirements, we aim to make the advertising pages valuable not only to the readers, but to the advertisers themselves.

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One Dollar per line, (11 lines in an inch), for each insertion. One half column (74 lines), \$45 each insertion. One whole column (148 lines), \$120 each insertion. Business Notices, One Dollar and a Quarter per line.

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Wheeler & Wilson's Sewing Machines.

Woman's Greatest Boon.—We would advise a man to forego a thresher and thresh wheat with a flail rather than to see the wife wear her health, vigor and life away in the everlasting "stitch, stitch, stitch," when a sewing machine can be obtained. The Wheeler & Wilson is an invaluable aid in every household. We have had several different kinds on trial, and after six years' service the Wheeler & Wilson has taken the precedence as the best, where all kinds of sewing are to be done in a family.—American Agriculturist, Jan. 1865.

JONES' BUST OF LINCOLN.

The undersigned is prepared to supply Public Libraries, Societies or individuals, with life-size copies in plaster, of Jones' celebrated bust of our lamented Chief Magistrate. This has been pronounced by connoisseurs one of the finest works of art recently produced, and by his family and Private Secretary, Mr. John G. Nicolay, "the historic bust" of the late Mr. Lincoln. Sample copy may be seen at No. 64 Wall-st., where orders by mail should be addressed. Price, boxed and delivered to Express Company, \$25. J. BURRELL CHADWICK, No. 64 Wall-st., New-York.

BURLESQUE JEFF DAVIS!

The most gloriously funny thing, just as full of humor as it can be, with numerous comic illustrations, in July No. of MERRYMAN'S MONTHLY. A splendid number with improvements and new features. Prize Puzzle every month with for 15 cents, 3 specimens 30 cents. No free copies. HANEY & CO., 109 Nassau-st., New York. We will send it from July to end of the year (six months), for 60 cents, two subscribers \$1, club of four, and one to get up free, \$2.

Stammering

Cured by Bates' Patent Appliances. For descriptive pamphlet, address H. C. L. MEARS, 277 West 33rd-st., N. Y.

Pure Bred Poultry and Eggs for Setting, for sale. Address E. A. WENDELL, Box 114 P. O., Albany, N. Y. Every Farmer should have one of Halsted's Horse Hay Forks.

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Patent Wine and Cider Mill, with Press combined, can make four barrels per day. Greatly improved this year.
 Price complete, at Peekskill, or New-York.....\$22 50
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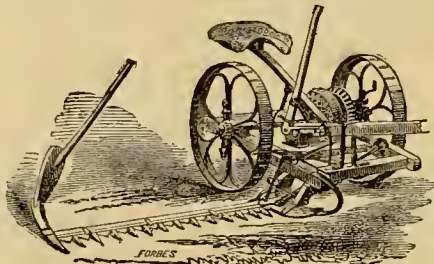
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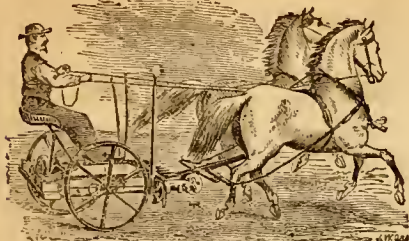
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In Tracts to suit Purchasers, AT LOW PRICES.

THE ILLINOIS CENTRAL RAILROAD COMPANY HAVE FOR SALE,
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The rapid development of Illinois, its steady increase in population and wealth, and its capacity to produce cheap food, are matters for wonder and admiration. The United States Commissioner of Agriculture estimates the amounts of the principal crops of 1864, for the whole country, as follows: Indian corn, 530,581,403 bushels; wheat, 160,695,823 bushels; oats, 176,690,064 bushels; of which the farms of Illinois yielded 138,356,135 bushels of Indian corn; 33,371,173 bushels of wheat; and 24,273,751 bushels of oats—in reality more than one-fourth of the corn, more than one-fifth of the wheat, and almost one-seventh of the oats produced in all the United States.

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Pre-eminently the first in the list of grain-exporting States, Illinois is also the great cattle State of the Union. Its fertile prairies are well adapted by nature to the raising of cattle, sheep, horses and mules; and in the important interest of pork packing, it is far in advance of every other State. The seeding of these prairie lands to tame grasses for pasturage or hay, offers to farmers with capital the most profitable results. The hay crop of Illinois in 1864 is estimated at 2,166,725 tons, which is more than half a million tons larger than the crop of any other State, excepting only New York.

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Cash Payment.....	\$18 00	\$100 00	Payment in two years.....	\$6 00
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is adapted to every variety of surface, and to cutting every kind of grass.

This Machine is capable of cutting three-fourths to one acre of the heaviest grass per hour, and can be drawn as easily by one horse as ordinary two-horse Mowers by two horses.

The height of cut can be varied by the driver while the Machine is in motion, and without leaving his seat. It is simple, durable, and not likely to get out of order.

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Gently rolling Prairie, interspersed with groves of timber. One of the finest agricultural districts in the West, is now just opened out to the convenience of Railroad facilities and market. Its geographical location, adaptation to FARMING, GARDENING and DAIRYING, is unsurpassed in the West. This beautiful and desirable section of country is located 30 to 40 miles southeast of the City of Chicago, Illinois, comprising the Middle and Southern portion of the Co. of Lake, Indiana.

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The price of improved farms range from \$20 to \$30 per acre. Unimproved lands from \$10 to \$15 per acre. We now have ten (10) improved Farms for sale—varying in size from 150 to 1,300 acres each—we have also 5000 acres of unimproved lands, which will be sold in quantities to suit purchasers.

For further particulars, Address (enclosing stamp)

CLARK & CLEVELAND, Real Estate Agents,
Crown Point, Lake Co., Indiana.

SUPERIOR FARM LAND!—20,000 Acres at low prices and accommodating terms.—Franklinville Tract.—Gloucester County, New Jersey, 25 miles south of Philadelphia, on Railroad running from Philadelphia and Camden to Cape May. In lots to suit purchasers. Circulars with reports of Solon Robinson, Hon. Wm. Parry, and others, with full information, sent free by addressing JOHN H. COFFIN & CO., Franklinville, Gloucester Co., New-Jersey. Also improved Farms from 20 Acres upward.

800 ACRES of choice Illinois land, 500 is excellent timber, 300 rolling Prairie adjoining, within six miles of three different Railroads in Marion Co., Ill., from 10 to 15 dollars per acre. Enquire of J. O. CHANU, Esq., Salem, or L. E. MINER, Toulon, Illinois.

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Strong Plants of this superb variety will be ready from 15th June to 15th July.

Price \$1 per 100; \$7.50 per 1,000; \$50 per 10,000, carefully packed to ship to any part of the United States. Plain printed directions for the culture and winter preservation of Celery accompanying each package, instructive alike to the Amateur or Gardener, containing as it does our experience of 18 years as Market Gardeners.

HENDERSON & FLEMING, 67 Nassau st., New York.

To my Customers!

As in the light of the overwhelming business of the past busy season, I was unable to find time to respond to all letters of inquiry received, I would now give general notice to my patrons that if any of them failed to receive the seed ordered, (which occasionally happens from the breaking of packages, miscarriage, indistinctness of address, dishonesty of officials, and like causes), if they will notify me of the fact, I will refund their money or place it to their credit for next season, as they may elect, as I insure all seed ordered to reach them.

JAMES J. H. GREGORY Marblehead, Mass.

PARSONS & CO.,

at Flushing, near New York.

Call attention to the planting of **EVERGREENS** for which this month is the time.

No class of trees will so enliven the lawn or pleasure grounds during the winter season.

They offer nearly 200 varieties of fine size and form with good roots. Among them are

- NORWAY SPRUCE.
- SCOTCH FIR.
- AUSTRIAN PINE.
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- CUPRESSUS LAWSONIANA.
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- PYRAMIDAL JUNIPER.
- BHOUTAN PINE.
- DWARF PINE.
- ERECT YEW.
- AMERICAN ARBOR VITÆ.
- SIBERIAN do do

Also of small size the following more rare varieties.

- DWARF NORWAY SPRUCE.
- WEeping do do
- ORIENTAL SPRUCE.
- CONICAL do
- CEPHALOTAXUS.
- CUNNINGHAMIA.
- CHAMAECYPARIS VARIEGATA.
- JUNIPERUS ORLONIA PENDULA, do SQUAMATA.
- PICEA NORDMANIANA. do CEPHALONICA. do PICTA. do FIRMA. do OBANDIS. do NOBILIS.
- PINUS UNCINATA. do STROBUS COMPACTA. do MONTICOLA.
- PODOCARPUS.
- RETINOSPORA PISIFERRA.
- TAXUS ADPRESSA. do ELEGANTISSIMA. do AUREA. do ERICOIDES.
- THUJA AUREA. do PENDULA. do HOVEYI. do OCCIDENTALIS COMPACTA. do PLICATA.
- THUJOPSIS BOREALIS.
- TORREYA TAXIFOLIA.

ALSO

CAMELLIAS, in excellent health. STOVE PLANTS in variety. RHODODENDRONS, both seedling and worked plants, and in great variety of color.

For varieties and prices they refer to their Catalogues for which address them at

Flushing, near New-York.

Turnip Seed by Mail.

J. M. THORBURN & CO., 15 John-st., N. Y.,

offer

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EARLY WHITE DUTCH,.....	per oz., 10 cts.; per lb., \$1
GERMAN TELLOW,.....	" 20 " " 2
RED TOP STRAP LEAF,.....	" 10 " " 1
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" " NORFOLK,.....	" 10 " " 75c.
LONG WHITE FRENCH,.....	" 10 " " 1
" " TANKARD,.....	" 10 " " 1
YELLOW STONE,.....	" 10 " " 1
GOLDEN BALL, extra fine,.....	" 10 " " 1
YELLOW ABEROEN,.....	" 10 " " 1
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IMPROVED RUTA-BAGA,.....	" 10 " " 1
SEIRVING'S do,.....	" 10 " " 1
LAINO'S do,.....	" 10 " " 1

TRADE PRICE LIST of the Above for Dealers; just published.

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Pure **LONG ORANGE CARROT SEED** can be sown in this latitude up to the first of July.

15 cts. per oz.; \$1.50 per lb.
J. M. THORBURN & CO., 15 John-st., New-York.

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New Sweet German (best late keeping winter, true,) and all other best early and late Turnips, by mail or Express. Priced catalogues to any address. B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

AGRICULTURIST STRAWBERRY, 25 cts. each. Osage Plants, 1000, \$15 and \$12. GRAPES, largest, best, cheapest stock we know, Iona, Adirondac, Israella, Delaware, Concord, Hartford, Norton's Virginia, Creveling, Diana, Rogers' Hybrids, &c., &c. Catawba, 1 and 2 year, per 1000, \$70 to \$90. Roses, 600 varieties, many very new and choice. Lilies, Gladiolus, Dahlias, Tiger Flowers, Tuberoses, 100 \$2 to \$5. GREEN-HOUSE AND BENDING PLANTS, an immense stock; 74 fine hedges our choice, packed, \$10. GARDEN PLANTS.—Sweet Potato, Nanshemond, 5000 packed, \$15. Cabbage, Tomato, Peppers, Egg Plants, &c., &c. Good Agents wanted by the month. Address F. K. PHENIX, Bloomington Nursery, McLean Co., Ill.

NANSEMOND SWEET POTATO PLANTS.—Of best quality, during May and June. Put up to carry safely long distances. Prices, 500, \$2; 1,000, \$3; 5,000, \$13; 10,000, \$25. This variety is hardy, prolific, and profitably grown at the North. Send for our circular of instructions, and experience of those growing them. Address, MURRAY & CO., Foster's Crossings, Warren Co., O.

We Have in course of Propagation 235,000 CONCORD VINES.

- 25,000 DELAWARE, 8,000 HARTFORD PROLIFIC,
- 5,000 ROGERS' HYBRIDS, 3,000 DIANA,
- 3,000 IONA, 2,000 ADIRONDAC,
- 2,000 ALLEN'S HYBRID, 1,000 ISRAELLA,

and numerous other valuable varieties, both old and new. We thank our customers for the liberal patronage they have bestowed, and assure them and all interested in vine and grape culture that no care or expense will be spared the present season to bring our vines to the HIGHEST STANDARD. Our Prices will merit the attention of Dealers and Planters. Responsible Agents are wanted in every town to form clubs, or to spend the season in canvassing. Large commission will be given to such as can furnish reliable references; none others need apply.

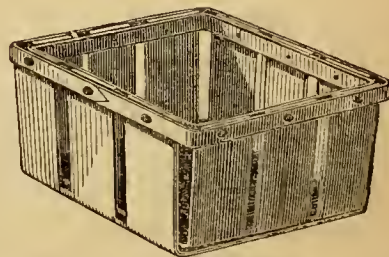
Address with Stamp, W.M. PERRY & SON, Bridgeport, Conn.

Grape Vines Wanted,

Desirable next fall.
10,000 Delaware.
10,000 Concord.
3,000 Iona.
1 year old, 1st and 2nd class. Address with prices, C. W. WARD, Box 419, New York City P. O.

Important to Fruit Growers.

THE GREAT RESULT at LENGTH ATTAINED.
Best and Cheapest Fruit Basket in the World.



This new Basket, made of Veneer, for Strawberries, &c., is the most simple, useful, ingenious and cheap article of the kind now in use. It seems to have overcome all the objections known to Fruit Growers or Fruit Dealers, as all alike are at once impressed with its manifold utility. The fact is now well known to every one that a fruit box should never be used. This new Basket is thoroughly ventilated, remarkably attractive in appearance when filled with fruit—and can be packed in one-quarter less space than the round basket or box.—It is not only very strong, made, but is sold at a much less price than anything of the kind now in market.

Substantial Crates, to hold from 12 to 90 quart baskets, and so arranged that the berries can not spill out, even if the Crates are overturned.

AMERICAN BASKET COMPANY,
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FRUIT BOXES.

The Best and Cheapest one manufactured at ANSONIA, CONN., by JOHN H. DOOLITTLE. They can be shipped to any part of the country in pieces and put together by any person at the rate of 1500 per day, without any tools whatever. Price \$10 per 1000, for the parts, for quart size. Samples at AGRICULTURIST OFFICE. SEND FOR CIRCULAR.

THE VENEER FRUIT BASKET.

BEECHER'S PATENT May 31st, 1864. All Fruit Growers and Dealers who have small fruits that they wish to put into market economically, and in the best condition, and most salable manner, should use the celebrated VENEER FRUIT BASKET. For cut and description of Basket, see February and March numbers of American Agriculturist. Circulars of Basket and Crates sent on application to A. BEECHER & SONS, Westville, Conn. Baskets and Crates for sale by W. H. CARPENTER, 90 Vesey-st., New-York, and other dealers.

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Ammoniated Pacific Guano. A real guano, containing from seventy to eighty per cent of Phosphate of Lime: to which has been added by a chemical process, a large percentage of actual Ammonia, so fixed that it can not evaporate, making it equal, if not superior, to any other fertilizer. Price \$50 per net ton. A liberal discount to the Trade.

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S. B. CONOVER, Commission Dealer,

260, 261 & 262 West Washington Market, FOOT OF FULTON-ST. Particular attention paid to selling all kinds of Fruit and other Farm Produce.

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The undersigned will purchase to order, on favorable terms, at a moderate commission, any articles of necessity or luxury, of small or large value, such as supplies for families, goods for merchants, farmers, mechanics, &c.

SWIFT & DEZENDORF,

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WITHIN AND BEYOND THE UNION LINES: BY JUNIUS HENRI BROWNE.

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The fairness, thoroughness, and judicious arrangement of Vol. 1, of this work has gained for it both among its subscribers and the Newspaper Press of all parties, a degree of favor nowhere accorded to any other history of the Rebellion.

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Get the Latest, Cheapest, and Best. Address H. A. KING & BRO., Nevada, Ohio.

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\$10 Made from \$2.50.

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By ALBERT D. RICHARDSON, Tribune Correspondent.

The above work will appear in the best style of typography, containing two engravings on steel, and eight on wood, from the pencils of our first artists.

It will embrace Mr. RICHARDSON'S UNPARALLELLED EXPERIENCE FOR FOUR YEARS.

I. Travelling through the South in the SECRET SERVICE OF THE TRIBUNE at the outbreak of the War.

II. With our armies and fleets both East and West, during the first two years of the Rebellion.

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It will abound in STIRRING EVENTS NEVER BEFORE GIVEN TO THE PUBLIC, and contain especially minute details of the escape, which have not yet appeared, including a description of

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in the person of a Young Lady, who piloted Mr. Richardson and his comrades by night, out of a Rebel ambush.

In view of the author's rich material, his well-known trustworthiness, and graphic descriptive powers, the publishers feel justified in predicting a work of unusual interest, containing more of the

Fact, incident and Romance of the War, than any other which has yet appeared.

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The Prairie Farmer.

Commencement of New Volume, July 1st.

The commencement of a new volume affords a good opportunity to subscribe for the most popular and valuable Agricultural, Horticultural, and Home Paper in the West. The FARMER is published WEEKLY, in Semi-Annual Volumes at TWO DOLLARS per year, or ONE DOLLAR for six months.

The condition, prospects, and extent of the growing crops, is recorded weekly, giving the best idea that can be obtained on these points as it comes from the Farmers themselves.

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Buy the Lightest--Halsted's.

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the Agriculturist at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to July 1st.]

Table listing various books for farmers and others, including titles like 'Allen's Rural Architecture', 'American Farm Book', 'American Diseases of Domestic Animals', etc., with corresponding prices.

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PRICES REDUCED.

A uniform standard of Weights, and a correct system of weighing, are subjects claiming the attention of every individual in the community.

A correct Scale is a just arbitrator between buyer and seller, and it is of the utmost importance that an instrument so universally called upon to decide questions of great value in the daily and hourly transactions of business, should be of such reliability and exactness as to secure the confidence of all those who may be affected by the results indicated.

The invention of these Scales, and the improvements that have been from time to time adopted, are the result of many years' close observation and practical experience; and we have now brought them to such a degree of accuracy that they may safely be relied upon in every transaction by weight. Their construction is upon the most correct mathematical principles; all defects so commonly met with in compound balances have been overcome by practical skill and faithful workmanship; and hence their operation is delicate, and in every case unerringly correct.

The reputation which these Scales have acquired has been of steady growth from the commencement to the present time, and is based upon the principal adopted by us, and never deviated from, of allowing none but perfect weighing machines to go forth from our establishment.

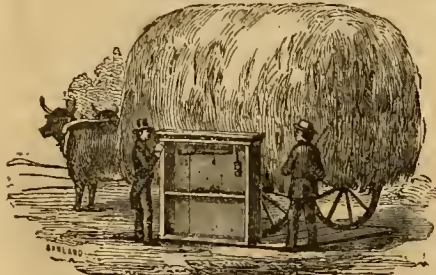
By a strict adherence to this principle, the confidence of the public in the accuracy of these weighing-machines has steadily increased, and with it the demand.

We have received many awards of premiums of Gold and Silver Medals, from nearly all the Scientific Associations and Institutes in the United States, also numerous first premiums from State and County Agricultural Societies at their annual fairs; but the most satisfactory testimonials which we have received are from the thousands of business men—including the Managers of Railroads, the Officers of Government, and other Public Works, Merchants, Manufacturers, the Forwarders of merchandise, and others—who have, during the last thirty years, subjected these scales daily to severe usage, and to the most rigorous tests.

Nearly all the Railroads in the United States are supplied with Scales of our manufacture. Fairbanks' Scales are also almost exclusively in use on all the principal Railroads of Great Britain.

From over one hundred different modifications of our Scales we have selected the following illustrations of a few of the leading sizes and kinds, which will serve to show that they are adapted to a great variety of uses, to suit the requirements of every branch of business.

HAY AND CATTLE SCALES,

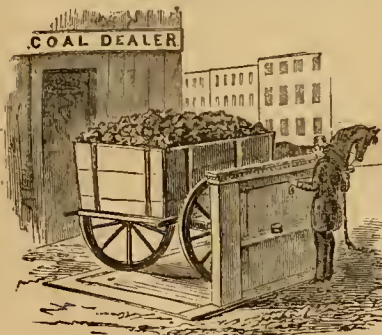


For weighing loaded Wagons, Carts, Live Stock, Produce, &c. Constructed of Iron, with steel bearings, and not liable to derangement or damage by exposure to the weather.

More than ten thousand of these convenient and durable Scales have been put up by us in all parts of the United States and the British Provinces. They are of five sizes, viz: two, three, four, six and ten tons, and will be set by experienced workmen in any part of the United States or the Canadas.

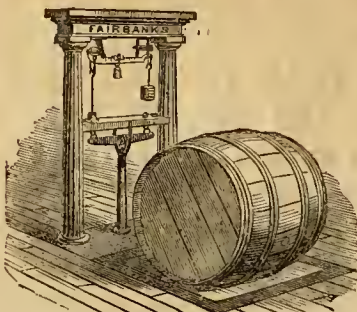
They are made with a shallow pit, or with no pit at all, according to location, as the purchaser may prefer.

COAL DEALERS' SCALES,



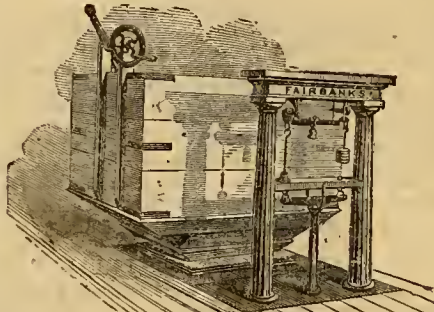
Similar in their construction to the Hay Scale. Used extensively by coal dealers and miners, also in Iron Houses and Foundries. Capacity—Two, Three, Four tons. This Scale may be set in the barn-floor or elsewhere, and used for weighing Hay, Grain, Live Stock, &c. It may be either stationary or so arranged as to be easily removed from place to place when required. Coal dealers and others who are about purchasing Scales will do well to examine the evidences upon which we base our claim for superiority.

RAILROAD DEPOT AND WAREHOUSE SCALES,



WITH TWO IRON PILLARS AND SLIDING POISE BEAM. These Scales are placed in the floor of the building, and are constructed wholly of iron, with cast-steel bearings, and not liable to wear or lose their adjustment by use. The beam is sustained upon iron pillars, with a neat architectural finish. They are in general used by Railroad corporations; also in stores and warehouses.

HOPPER SCALES FOR GRAIN.



Indicating Bushels, used in Mills, Storehouses and Wharves, for receiving and delivering wheat and other grain. This modification is adapted to secure and combine entire accuracy with the most rapid operation in weighing, and is found practically an invaluable improvement.

We make four sizes of this variety of Scales. Sixty and one hundred bushels. Scales are set dormant in the Wharf or Storehouse, and are capable of weighing grain as fast as it can be handled by the most approved steam machinery. These Scales are in general use in Grain Warehouses and Mills throughout the country.

The Thirty and Forty Bushels Hopper Scales are portable, and may be easily removed from place to place, and are frequently used on board Ships, Barges, Canal Boats, &c. We furnish, to order, Hopper Scales capable of weighing Three, Four and Five Hundred Bushels at a draft.

DORMANT SCALES FOR STORES AND WAREHOUSES.

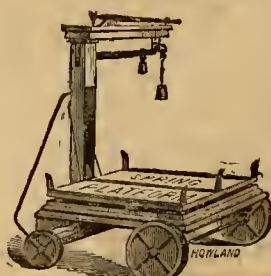


Set in the floor, and weighing from one-half pound to five thousand pounds. Used frequently in small railroad depots and stations; also in stores, warehouses, &c. A very desirable, substantial and perfect Scale. We have five different sizes of Dormant Scales.

- No. 1—Platform 4 feet square 5,000 lbs.
- No. 4—Platform 3½ by 3½ feet 3,500 lbs.
- No. 5—Platform 2½ by 3 feet 2,500 lbs.
- No. 7 2,000 lbs.
- No. 9 1,500 lbs.

These modifications are fitted with drop levers by which the platform is raised, with its load, to be weighed and then lowered, so that the outer edge rests upon and forms a part of the floor. They are found exceedingly convenient, inasmuch as the space which they occupy in the floor can be appropriated, when the Scale is not used for weighing, to the ordinary business of the store.

ROLLING-MILL SCALES.



These are very heavy and durable, and are designed for use in Foundries, Rolling Mills, Iron Manufactories, &c.

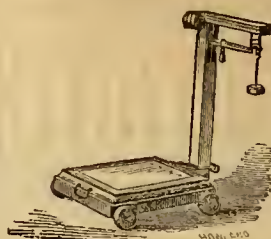
1st size, fitted with Drop Lever, and Vibratory Axle and Jack or Iron Plate, as the purchaser may choose. Capacity four thousand pounds.

2d size, similar to the first. Capacity twenty-five hundred pounds.

By a new and important arrangement, these Scales are fitted with patent India Rubber Spring Platforms, so as to secure great durability, when used in Foundries, Iron Houses, and wherever very heavy weighing is required.

They are in use in many of the principal Iron Houses and Manufactories throughout the country, and we have yet to hear of the first instance of dissatisfaction.

PORTABLE PLATFORM SCALES.

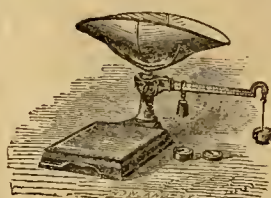


Variety sizes of these Scales are made, with and without wheels, and adapted to every branch of business, and are in daily use in thousands of stores and manufactories in all parts of the world. Some of the principal sizes are as follows:

- Capacity.
- No. 2 8,000 pounds
- No. 7 2,000 pounds
- No. 8 1,600 pounds
- No. 9 1,400 pounds
- No. 10 1,200 pounds
- No. 10½ 900 pounds
- No. 11 600 pounds
- No. 11½ 400 pounds

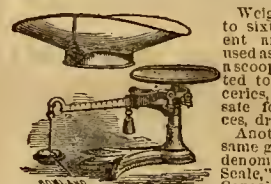
They are convenient, accurate, and not liable to derangement.

UNION, OR FAMILY SCALE.



We have recently constructed an improved Scale, combining the advantages of a Counter and a Platform Scale. We denominate it the "Family Scale," it being peculiarly adapted to household purposes. It weighs with the utmost accuracy from one half-ounce to two hundred and forty pounds. The Scale is provided with a scoop or pan for weighing flour, sugar, or other house stores in the kitchen, and also with a platform for heavier articles, as boxes, casks, &c., as well as for taking the weight of individual members of the family and their friends, from the portly grandfather down to the little "heir" in the cradle. It is an indispensable article in every family. It is equally convenient for Grocers and all Retailers.

GROCERS' SCALES.



Weighting from one half-ounce to sixty-two pounds. Convenient and extremely accurate; used as a Platform Scale, or with a scoop as a Counter Scale. Adapted to family uses, Groceries, &c., and is particularly safe for weighing valuable spices, drugs, &c.

Another size, made on the same general plan as the above, denominated the "Counter Scale," is a well-known article. Capacity one-half ounce to thirty-six pounds. Economical for all Retail Stores and Shops, giving just weight, but requiring no excess for down weight.

Also, the "Druggists' Scale," similar to the "Counter," indicating drachms, ounces and pounds. Capacity eight pounds. These scales are also adjusted to Troy weights. They operate with great delicacy, and are reliable for weighing valuable metals, costly drugs, silks, &c.

EVEN BALANCE.



No. 1—Weighing from half an ounce to ten pounds.
No. 1—With brass scale beam—weighing from one-fourth of an ounce to ten pounds.
No. 2—Weight from half an ounce to six pounds.
No. 3—Weighing from half an ounce to four pounds.

These four last Scales may be made to weigh two or three times as much, by using common weights.

IMPROVED LETTER BALANCE.



Adopted by the United States Post-Office Department. Arranged so that it may be used for other weighing than letters. Fairbanks' Scales are manufactured only by

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Contents for July, 1865.

Agricultural Bureau—A Word to President Johnson.....	232
Bees—Aplary in July.....	204
Boys and Girls' Department—Making Garden Work Easy—Interesting Traditions of the Earliest Times—A Child's Question—Problems and Puzzles—"The Boys are coming Home again"—Friends among the Birds—A Calculating Hen... 3 Ill.	223-224
Celery—How to Raise.....	3 Illustrations. 218
Cheese—Coloring without Annatto.....	221
Citron—How Prepared.....	2 Illustrations. 221
Clay Lands—Crushing Clods.....	214
Clover Hay—How to Cure.....	214
Cold Grapery in July.....	204
Cooking without a Fire.....	222
Currants—How to Preserve.....	222
Drinks for Summer.....	221
Exhibition Tables at <i>Agriculturist</i> Office.....	206
Farm Work in July.....	201
Flower Garden and Lawn in July.....	203
Flower—Touch-me-not or Jewel Weed.....	Illust. 217
Fox—The Red (<i>Vulpes fulvus</i>).....	Illustrated. 209
Fruit Garden in July.....	203
Garden—Kitchen in July.....	203
Gardening—Useful Implements for.....	Illustrated. 219
Grape Mildew and its Cure.....	2 Illustrations. 217
Green and Hot-Houses in July.....	203
Hay Cured without Drying.....	211
Hay—Drawing with a Rope.....	Illustrated. 212
Hay Fork Attachment—Halsted's.....	2 Illustrations. 212
Hay Rigging for Wagon.....	Illustrated. 212
Hearth Rug—Home-made.....	222
Hoed Crops—How to Cultivate.....	210
Hoove in Cattle and Sheep—Prevention.....	211
Horse Power Defined.....	210
Horses—Use of Cheek Rein.....	211
Manure—Liquid, and Pump for Raising.....	2 Ill. 213
Map of Fortifications around Petersburg.....	208
Map of Vicinity of Petersburg and Richmond.....	207
Market Report and Commercial Notes.....	226
Mowing Machine Knives—How to Sharpen.....	211
Notes and Suggestions for July.....	201
Orchard and Nursery in July.....	202
Orchard Grass—Further Notes on.....	214
Pear Tree Blight—Causes and Cure.....	220
Pear Trees—Double Working.....	218
Plow Beams—Proper Length for.....	210
Poultry Book—New.....	215
Poultry—Hints on Showing; Exhibition at Museum.....	206
Poultry—Various New Breeds.....	2 Illustrations. 215-216
Recipes—Bread—Steamed Corn Bread—Butter Crackers—Lime Water for Sour Dough—Floating Island—Poor Man's Jumbles—Tea Crackers—Omelet—Beet Hash.....	223
Rake for Gathering Scatterings.....	Illustrated. 213
Rake Teeth—Best Form for.....	Illustrated. 210
Rhododendrons at Parson's & Co.'s.....	220
Rose—Sport of.....	Illustrated. 220
Rural Embellishments.....	Illustrated. 217
Shackles Improved for Bulls and Bucks.....	Illustrated. 213
Soap and Soap Making.....	222
Sparrows—European in America.....	Illustrated. 209
Strawberry—Agriculturist Plants for Premiums.....	232
Strawberry Exhibition at <i>Agriculturist</i> Office.....	232
Strawberry Time in New York.....	222
Strawberries—Notes on.....	219
Summer Fallows—Suggestions About.....	211
Turnips—Raising on Heavy Soils, etc.....	209
Vinegar Making.....	Illustrated. 221
Virginia Battle Fields.....	2 Illustrations. 207-208
Washington Monument—Is it a Humbug?.....	232
Western Agriculture—Letter from Western Boy.....	215
Weed—The Common Groundscl.....	Illustrated. 220

INDEX TO "BASKET," OR SHORTER ARTICLES.

Articles, Publishing.....	204
Asparagus Beds.....	205
Azalea, Fine.....	205
Beef for Government.....	206
Beef, Price of.....	206
Bones, Breaking.....	204
Bones, Use of.....	204
Broccoli.....	206
Broom Corn, Dwarf.....	205
Buttonwoods.....	205
Canada Thistles.....	205
Carrots, Wild.....	206
Cider Mills.....	206
Clothes-Wringers.....	205
Corn Fodder.....	204
Diarrhoea Remedy.....	206

Everlasting Flower.....	205
Fairbanks' Scales.....	205
Farms, Southern.....	204
Flower Beds, Form.....	205
Fruit, Bottling.....	206
Fruit, Preserving.....	206
Fruit Stains.....	206
Fuchsia, Defective.....	205
Grape Vines in Pots.....	205
Grapes and Wine.....	205
Hungarian Grass.....	205
Lightning Rods.....	205
Locust Suckers.....	205
Lotte-y Humbug.....	206
Manu e, Liquid.....	204
Melous, Training.....	205
Microscope Humbug.....	206
Missouri Lands.....	204
Muck and Lime.....	206
Mushroom Culture.....	206
Nurserymen, Reliable.....	204
Papaw Bark.....	205
Persimmon Seed.....	205
Photographs of Lincoln.....	206
Plants Named.....	206
Plants for Shade.....	205
Plaster, etc., for Land.....	204
Poudrette Museum.....	205
Sandy Land, Improving.....	204
Soap and Caterpillars.....	205
Squashes, Mixing.....	205
Tree Protectors.....	205
Turnip Seed per Acre.....	205
Vine Culturist.....	205

Notes and Suggestions for the Month.

July, if the weather be only what we hope for, will give the farmer but little time for reading. His labors begin early and close late, to be renewed with the next dawn. Men are very likely to overwork, and over-ambitious boys, by too hard mowing or pitching, or by doing "the work of a man" in some other way, injure themselves for life. Many a farmer is undersized, crooked, or one-sided, because he was ambitious, when a boy, of being told that he was worth as much as a man in the harvest field. They only realize when too late, that they will never be worth so much again.

Drouths may come, and constant working of the surface, mellowing the soil, deeply as possible, without injury to the roots of the growing crop, is the cure which almost all may apply. A fine mellow surface absorbs water from the air. We can not too often urge irrigation. The brooks and streams which can be conducted over meadows and lower-ground, are of almost inestimable value, and yet it is hard work to make farmers believe it. Every man may have a demonstration of the advantages to him in a fortnight's time, if he will only conduct a small stream over his grass land. The time is not far distant when many farms will have irrigated meadows, yielding three, four, or five crops of luxuriant grass during a single season.

Barns.—Clean out thoroughly during rainy weather. Begin at the top and sweep down all spider webs, chaff and mouse litter from the beams and girders. Turn over loose boards on the ground floors, and brush out wire-worms, sowbugs, centipedes, and all other insects that exist there and in cracks. Where there are large cracks in the upper sides of beams, fill them with coal tar, and then scatter clean sand over them, so that it will settle into the tar. This preserves the timber and also repels insects.

Barley.—Cut before it is dead ripe, and cure with care, as the grain will be heavier and brighter, and command a greater price in market; and the straw will furnish a great amount of fodder. When hay caps are not used on the barley shocks, to protect them from rain, the long straight bunches of straw should be placed carefully all over the tops of the shocks to turn the water as much as possible, and save the grain,

Beans.—Field beans may be planted as late as the middle of this month, where early potatoes have been dug, or where Indian corn has failed.

Buckwheat.—Sow as soon as the middle of the month in this latitude. Where there is danger of early frost, put in the seed sooner. Do not sow more than one bushel per acre. Twenty-four quarts of good seed is sufficient. Buckwheat may be sowed after barley, in many localities, and ripen before frost. Sow the seed very evenly, and roll the ground where there are any small stones or clods, in order to have a smooth surface on which to harvest the grain.

Butter.—See that milk pails and pans are thoroughly scalded; that those who milk have clean hands; that the milk is kept in a cool and airy place; that the cream is skimmed off at the right time; that churning is done often; that clean salt is used, and that the butter well worked and neatly packed in inodorous vessels.

Cabbages.—Where the ground is rich, nice heads may be raised before winter from plants set any time in July, if they are kept well hoed.

Corn.—Keep the horse-hoes and cultivators in motion among the growing corn. Use a short whiffle-tree when the stalks are so large as to break off easily. Straighten up all hills that are not disposed to grow erect. Hot weather is the best time to work among growing corn. Better pull than to cut large weeds; Indian corn does not need root pruning.

Cabes.—See that they have a good supply of clean fresh water, during the hot weather. Let them have access also to a tub containing salt. Wean them gradually. It is very injurious to withhold a full supply of milk, abruptly, and confine them to grass and water. It often stunts them so that they never recover from it.

Clover.—Read the articles on clover seed, and making clover hay, in this and previous numbers. Where clover has got the start of stock in pastures, it is better to mow it off and let a new crop grow, than to let it go to seed, as animals do not relish it when it is old and tough.

Draining.—Look out for, and give early orders for good tiles. Round or pipe tiles are best, if well made and burned. Never use soft ones. A well burnt tile ought to ring like a bell when struck, and a soft one will not unfrequently be crushed by the weight of earth settling over it.

Fallows.—Read the remarks on summer fallows on page 211 of this number. Rather than allow a good soil to lie exposed to the burning sun for several months; sow three or four bushels of Indian corn per acre. In six weeks there will be a good burden of green manure to plow under. Let fathers repeat it to their sons, and let them impress it upon their posterity, that fallowing good land tends to impoverish it.

Grain.—Make timely calculations to commence harvesting grain before it is dead ripe.

When it is to be threshed soon after it is cut, stack it close to the barn doors, and run the straw into the barn. By this means a large amount of fodder can be saved in good order.

Grass and Hay.—Read the suggestions about making hay on another page. Where grass grows very large in moist places, and falls down, let it be cut and made into hay at once. When a farmer has a large quantity of grass to mow, if he waits until it is all fit to make into hay, unless he has an abundance of help, some of it will become too ripe. This will suggest the importance of sowing different kinds of seed, in some meadows, so that part will be fit to cut a few days in advance of the rest.

Hay Mows.—Store the hay as evenly as possible, so that it will come out easily. Let a boy, or weak man manage the hay fork, and let a strong man mow away the hay, as that is much the hardest work.

Hoeing.—The object of hoeing corn and root crops is not simply to keep down the weeds, and to draw a little fresh earth about the roots, but it is primarily to stir and loosen the surface, that the air and rains may have free access to the soil in which the roots are. The frequent passage of a light cultivator or horse-hoe is of great benefit to crops on land suffering from drouth.

Hedge and Fence Rows.—Ply the bush-hook, and keep down the brush; let no weeds go to seed.

Manure.—If care be taken, an immense quantity of weed growth may be converted into good manure, either by throwing it in the hog pens, or by making a regular compost of it, putting it in alternate layers with any fermenting manure; or piling it up and pumping liquid manure over it. Cows brought to the yard nights, and fed an armful of grass each, cut in the morning, and thus well wilted, will drop manure enough to pay for the labor over and over again, if it be only well collected and composted.

Oats.—Send careful men through the fields, and pull up dock, mustard, or other weeds. Where oats fall down before the panicles are formed, they had better be cut at once, and cured like hay, as they make excellent fodder. Grain does not fructify well, after the straw has fallen down.

Pastures.—Do not feed off pastures too closely, as the grass will be a long time starting again, especially in hot and dry weather. It is bad policy to keep so much stock that pastures are always very short. The leaves of grass perform the office of lungs. Therefore, let plants have top enough, that the breathing may not be obstructed.

Potatoes.—Finish cultivating and hoeing potatoes as soon as practicable, as the roots should not be disturbed after tubers have begun to form. If weeds appear among them, they should be pulled rather than hoed up.

Poultry.—Keep a good dust bath for the fowls, and add unleached wood ashes to it occasionally; watch any appearance of vermin, and clear them out with an application of kerosene, which may be rubbed under the wings, and on the backs and breasts of the birds. Whitewash occasionally and thoroughly-houses, perches, nests, and all.

Sheep.—The best attention for sheep this month is to allow them an abundance of good grass and salt. Dry ewes and yearlings are very liable to be in heat this month. See that hucks do not run in the same flock with them, unless they are shackled as directed on page 213. If there are any old ewes in the flock, separate them at once, where they may be fed one pound of corn meal daily. If confined in a small enclosure, they may be fed mowed grass and meal. Managed in this way, they will make good mutton in two months. Old ewes will fatten much sooner in hot, than in cold weather.

Stacks.—Where hay or grain is put in stacks, make a foundation at least half a foot from the ground. The best way to build a stack is, long and narrow, and to cover it with good boards, placed directly on the top, forming a roof like the covering of a lean-to, sloping only in one direction.

Swine.—As soon as green peas are fit to feed, let the swine have a good supply. Keep shoats in a

thriving condition. When they are confined in close quarters, mow an armful of red clover for them, once or twice a day. Where whey is fed, it will make much better swill to mingle meal, or shorts with it, and allow fermentation to commence before feeding. Swine of all kinds like clean and pure water, as well as any other animals; and if they could always have access to it, they would not probably "wallow in the mire."

Soiling.—Millet, Hungarian grass, oats, sorghum, and corn may be sowed for soiling.

Turnips.—There is no kind which gives better satisfaction on the whole than the purple top strap-leaf. It is the turnip for the million, both for the table, for market, and for feed. Swedish turnips (Rutabagas), sowed during this month, make excellent table vegetables, better than if sowed earlier, because tenderer. Sow in drills, and give some cultivation. Sow broadcast only among other crops in open corners, or by-places, and where you cannot use the seed-drill well.

Tanbark.—When teams have little to do, and laborers are at leisure, haul spent tanbark and deposit it in some dry place, for littering stables next winter. Dry tanbark is an excellent absorbent of liquid manure, and it will pay to haul it, as well as saw dust, one or two miles. In summer it can usually be obtained readily. In autumn it is sometimes scarce.

Tools.—Keep all implements under cover, or in the shade during hot weather. The sun warps and cracks the wood work of scythes, rakes, and forks, and when they are covered with dew, a thin scale of rust is soon formed on bright surfaces of iron and steel, all of which injure them more than ordinary use; alternate rain and sunshine will often straighten bent pieces of wood.

Tedders.—When a farmer has much hay to make, it will pay to procure a tedder, and keep it in constant operation, until the hay is fit to rake. Grass will cure much faster when it is flying through the air, than when it remains on the ground.

Ventilators.—Make one or two near the middle of every stack, and mow, by tacking four boards about one foot wide together, making a trunk; set these on the end, and draw them upwards, as the mow, or stack is carried up. Some holes should be bored through the floor where the ventilator stands, to let in the air. A bag stuffed with hay answers a similar purpose to the trunk of boards, but, of course, may not be left in the top of the hole, as the trunk may, when the mow is full.

Wheat.—In localities where winter wheat will be fit to harvest the last of the month, see that every thing is in readiness before the grain is fully ripe. Wheat makes more and better flour, if it is cut before the heads droop; before the kernels have passed the "dough state." Leave an acre, or more of the earliest and best to ripen fully for seed. Wheat makes better flour to put it in shock, as soon as cut, rather than to sun it in the swath, as is sometimes practised. In lowery weather, cover the shocks with hay-caps.

Weeds.—Write the words, *Mow Weeds*, in large letters, where all hands will be sure to see them; and let every laborer understand, that if it is too wet to work at hay, grain, or hoed crops, weeds may be mowed, close to the ground. In many pastures, large bull thistles cover nearly one half the ground. They should be mowed not only to allow the grass to grow, but to prevent the seed blowing over the country.

Wood.—For use next winter, fire-wood should have the benefit of the hot weather in July and August, if not already cut and piled under shelter.

Work.—Drive your work in the cool parts of the day. From four o'clock to seven in the morning—the very time when most farmers do the least work—is the pleasantest time to labor. Rest from 11 to 1 o'clock. Then work will go much easier, than to rest during the cool part of the day.

Yards.—Grade and drain barn and stable yards for winter. Level up low places by hauling in hard and heavy earth in time to allow it to settle before heavy rains in autumn. Where the surface is un-

even, plow down the knolls and ridges, and make the surface quite level and smooth in the summer.

Work in the Orchard and Nursery.

Although the orchards in the vicinity of New-York City flowered profusely, they, at the present time, show but a very moderate promise of fruit, and as far as we have observed, only a medium crop is likely to be realized. Great complaint is made of ravages of the tent caterpillar, which has in some sections quite stripped the foliage from the trees. If this were an evil beyond our powers of control we should feel more sympathy for the sufferers than we do, but, of all the insect pests, this is the most easily managed. The eggs are placed in large bunches, and conspicuously upon the twigs, as if for the very purpose of being readily destroyed, and as soon as the caterpillar begins work he puts up his sign in the shape of a tent, which can be seen long before much damage is done, and hundreds captured at a swoop. It is some work to clear a large tree of the nests, but it is a labor which will pay, and two or three times going over the orchard will save many bushels of fruit. It is likely that those who have suffered from the caterpillar this year, will heed our frequent and timely warnings concerning their destruction. Trees which were set out this spring should be making a good growth, but if, as is often the case, the buds show a few leaves and push no shoots, it is an indication that they need a severe cutting back.

Budding.—The time for performing this operation will vary with the season, location and kind. Whenever well formed buds can be had, and the bark "runs," or parts freely from the wood of the stock, the buds may be put in. Work as close to the ground as possible, and exercise the greatest care in procuring buds true to name, and in keeping the varieties so marked that there will be no mistakes. Plums are usually the first to be worked. Stocks budded last year may now be cut off smoothly, close to the shoot from the bud.

Cherries.—Exercise care in picking, and allow no limbs to be broken or the bark to be injured.

Grafts.—Remove all suckers that stand near the graft, and keep the cut surface of the stock covered with wax or clay.

Insects.—Kill moths as directed last month. Late crops of the tent caterpillar will be found here and there, and must be removed. The slug appears on the pear tree this month, and may be treated to a dusting of lime shaken from a bag tied to a pole.

Layering.—Shoots of this year's growth may be layered as soon as the wood is somewhat hardened. The process is described on page 187, last month.

Manure and Mulch.—Newly planted trees especially, will need mulching, and bearing trees will be benefited by it, especially if coarse manure is used. The crop in established orchards will be much finer if the grass is removed from over their roots and a coating of long manure spread there.

Thinning.—Should be attended to, especially on young trees. The overbearing of a tree when young, seriously checks its future growth. Where fine specimens are desired, thin very freely.

Pruning.—Where large limbs must be removed, it is best done this month. In cutting off a limb, do it with a clear notion of the object to be gained. If the head of a tree is too crowded, if it has been allowed to grow one-sided from neglect, if some limbs are too near the ground, or if there is chafing by the crossing of two branches, it may be beneficial to cut. Use a rather wide set saw and be careful not to strip the bark. Cover the wound with melted grafting wax. Remove all suckers and useless "water shoots."

Seeds and Seedlings.—Collect seeds as fast as they ripen. Shade seedlings as directed last month. Keep the ground free of weeds.

Transplanting.—By using proper care to prevent the roots from drying, evergreens may be removed to a moderate distance, but they must not be kept out of the ground many hours. We recently saw some locusts transplanted last year late in June,

which were in fine condition. The trees were cut back very severely, almost to straight poles.

Weeds.—The plow, hoe and cultivator must be kept constantly bright by use, if one would keep the better of weeds. These are quite as injurious to young trees as to other plants.

Kitchen Garden.—Those who have small gardens do not generally make the most of them, for the reason that they do not practise a system of rotation. The ground occupied by early potatoes may be used the same season for cabbages, beans, lettuce, peas, or celery; peas may be followed by any of the above except beans, or late spinach, or turnips may be sown. The list of things which may be sown late, given last month on page 187, will be useful as a reminder, and in sowing in rotation do not let closely-related plants follow one another; thus cabbages should not follow turnips, nor beans be sown directly after a crop of peas has been taken from the same ground.

Asparagus.—Keep the weeds from the beds and give a dressing of manure. Cut off all the tops which have the larvæ of the beetle, and burn them.

Beans.—Plant for late crop and forward the Lima by liquid manure and good culture. Help them if they are not disposed to wind of themselves. In saving seed, select the most prolific plants and allow none to be picked from them.

Beets may still be sown for a late crop. Thin those up as soon as green enough. The young plants are excellent greens.

Cabbages and Cauliflowers.—The early sorts will soon be out of the way, and the land may be prepared for celery or other succession crop. Transplant the late crop, observing the hints given last month on page 186. Give liquid manure when they are well established, and hoe often, especially in dry weather. The caterpillar is often very destructive. When the brood are first hatched they remain near together, and may be removed by breaking off a single leaf, but when larger they scatter in search of food and must be killed in detail.

Celery.—The admirable article of Mr. Henderson, on page 218, gives sufficient directions for growing.

Carrots.—Sow some for late, if young carrots be desired. Thin others and keep the ground hoed until the tops meet.

Corn.—Plant for late use and for drying.

Cucumbers.—Hoe as long as the vines will allow; water if they suffer from drouth. Those for pickles may still be sown. Select the finest for seed.

Egg Plants.—Hoe and earth up, and feed them with liquid manure, and mulch them.

Endive.—Sow for late crop the same as lettuce.

Herbs.—Cut as they are ready to flower, dry in the shade and put up in paper bags or tight boxes.

Hoe and Rake.—The free use of these is wonderfully persuading to all vegetables. Use them after a rain to break the crust that forms, and use them before a rain, and at all times when the soil is not too wet. A thorough stirring of the soil in a dry time is better than watering.

Lettuce.—Save seeds from the finest heads. Sow the Silesian in partial shade.

Manure.—Give the roots plenty of food in the liquid form. House slops are good. Liquid manure from hen droppings—a peck to a barrel of water—is better. Cow manure tea is good also.

Melons.—Treat the same as cucumbers. Remove all the fruit that will not ripen before frost.

Onions.—Thin if they are crowded. Pull those that are ripening, and dry thoroughly before storing.

Peas.—Save seed. Plant some of the early varieties for late. Clear off the ground occupied by the early ones and prepare it for some other crop.

Rhubarb.—Keep the flower stalks down and give the plants rest and manure.

Seeds.—There is no difficulty in saving good seed if one will only take sufficient care. It is often the case that all the first fruit of a plant is taken for use and seed saved from that which is produced

later, and it is no wonder that sorts treated in this way "run out." To get seed that will continue to produce not only the same, but improved results, set apart a sufficient number of plants of cucumbers, tomatoes, peas, beans, corn, etc., for seed only, and allow nothing to be taken from them for use. When the fruit is set, take off all but a moderate crop of select specimens, and allow those to ripen for seed. When one plant of a variety is seen to be a few days earlier than the rest, mark it for seed. By a careful selection of seed, the quality of our garden products can be greatly improved.

Sweet Potatoes.—Keep the ground clean and move the vines to prevent them from striking root.

Squashes.—The squash bugs should be looked for and caught before they lay their eggs, and any eggs that are found on the under side of the leaves crushed. The only remedy yet known for the squash borer is to dig him out. If the vine wilts, look for the hole made by the borer. If this is near the root he may sometimes be dug out and the vine saved, but usually the discovery is made too late. Hoe the vines and allow them to strike root.

Tomatoes.—Last month we gave an account of a method of training. Other modes may be adopted or the vines be allowed to fall over upon brush placed for the purpose. Pinch in the branches so that one leaf will remain above the bunch of blossoms. If the vines are eaten, search for and kill the large green worm that does the mischief.

Turnips.—Sow the Swedes or Rutabagas, and White French, and other late kinds.

Weeds.—A good crop of these may be raised with but little trouble, but if other things are preferred, use some of the weeding implements described and figured in this and previous numbers.

Fruit Garden.—Every one growing fruit should aim to have the best of its kind, and now that the different ones are ripening in succession, he should compare his own varieties with those grown by others, to see what room there is for improvement. The local horticultural exhibitions and farmers' clubs, are very instructive to this end; and where these are not held, one should visit his neighbors to compare notes.

Blackberries.—Keep the ground free of weeds by hoeing, or a heavy mulch, which is better, as it is difficult to work among the bushes. Tie up the branches that bend over with their load of fruit.

Currants.—If the worm makes its appearance, give a dusting of white hellebore, as advised last month. The borer, which eats the pith, is often very troublesome. It comes from an egg laid by a small moth near a bud. Some plan for trapping the moths is greatly needed. Much pruning may be saved by removing needless shoots when they first push. Shading a portion of the bushes will retard the ripening and prolong the season.

Dwarf Fruit Trees.—Thin the fruit freely if at all disposed to overbear. If the trees are to be kept dwarf, summer pinch them as directed in article on pyramids, published in January last. Give manure and mulch. Treat the red spiders to frequent syringings of soap suds, and if the slug appears dust with air-slaked lime.

Grape Vines.—Keep all vines, young or old, tied to the trellis or stakes. Pinch the laterals to one leaf and when a new growth starts from the pinched lateral, pinch that again to one leaf, and keep doing this. Stop the growth of fruiting canes by pinching them at 3 or 4 leaves beyond the uppermost bunch of fruit. Do not allow any vines, young ones, especially, to overbear. See article on mildew on page 217, and use sulphur as there directed. Thrips are very troublesome in some places; it is said that sulphur will keep them away.

Raspberries.—As soon as the fruit is off, cut away the old canes and remove all of the new ones not needed for next years' bearing.

Strauberrries.—After the picking is over, fork a good compost in around them. Keep the runners pinched off unless new plants are needed.

Flower Garden and Lawn.—Now that the novelty is over, the amateur should not abate his zeal, and allow the borders to fall into partial neglect. There is abundance of work for those who would keep their grounds in complete order, in suppressing weeds, removing stalks from plants out of flower, training rampant growers, pegging down bedding plants, transplanting annuals for late bloom, etc. The surface of the soil should be kept loose, and when it bakes after a rain, it needs to be raked or hoed over.

Bulbs.—Those which have finished their growth, which may be known by the wilting of the leaves, may be taken up, and put in papers, as directed last month, or in boxes or flower pots of dry sand.

Carnations.—Propagate as directed last month, and keep those in flower neatly tied up.

Dahlias.—Set out a stake, and then set out the root. Train to a single stem, or allow three of the lower branches to push, which will form a large, bushy plant; these side branches will also need stakes. Keep them growing and safely tied up.

Evergreens.—Prune single trees or hedges, if not already done, and remove the grass from immediately over their roots.

Geraniums.—If the plants are long-legged and straggling, cut them back severely, so as to form compact and well shaped specimens; they will soon push out more shoots and flower finely.

Gladiolus.—Tie the flower stalks to stakes.

Grass.—Mow as often as long enough, and in hot weather, if the grass is light, do not rake it off, but leave it as a mulch. Pull up coarse weeds, and keep all the margins closely trimmed.

Potted Plants.—See that all have sufficient shade, and do not suffer from dryness. If the pots are to be plunged, put a little coal ashes at the bottom of the hole, to keep the worms out of the pots.

Propagation.—The stock of shrubs may be increased by layering, and many herbaceous plants, such as phloxes, by cuttings, taken before flowering.

Pruning may be done to ornamental trees, as directed for fruit trees under Orchard and Nursery.

Rhododendrons.—Mulch, and carefully remove the forming pods, unless seeds are desired.

Roses.—Cut back the perpetuals freely, to secure a late bloom. Layer the new growth of those it is wished to propagate. Rose bugs must be caught and killed, and the slug cured by the use of whale-oil soap. Keep the new growth of the climbing sorts well tied up to the trellis.

Seeds.—Collect from the best specimens only, which should have been marked when in flower, just before the pods burst.

Verbenas.—Keep well pegged down. A correspondent of the Gardener's Monthly says: Take a bit of bast matting, or similar material, 3 or 4 inches long, pass it around the stem, until both ends meet, and then with a stick press the two ends into the soil, and it will hold the plant in place.

Watering.—This should only be done when the plants show signs of suffering. Remove the surface earth around the plant, give water copiously, and when it has soaked away, replace the earth.

Green and Hot-Houses.—The tropical plants which remain in the house, after the others are removed, should be secured from burning by the mid-summer sun, by whitewashing the glass, or the use of a muslin screen. The atmosphere must be kept moist by sprinkling, and the earth in the pots properly watered. All rubbish is to be removed, and everything kept neat.

Budding.—Shrubs which are propagated in this way, are worked whenever the bark will lift, and well formed buds are to be had.

Insects.—Continue to destroy by the methods heretofore noticed in the Calendar.

Potting.—Collect sods, and stack up to decompose for potting compost. Potrooted cuttings and seedlings. If large plants are in a sickly condition, wash the earth from the roots, remove diseased roots, head back the top, and re-pot in fresh earth.

Propagation.—Geraniums and other plants, needed for blooming next winter, may now be started from cuttings. Inarch Azaleas, Camellias, and other hard-wooded plants, whenever the wood gets firm.

Pruning.—Use the knife, or with soft-wooded things, pinching, to bring into good shape.

Cold Grapery.—The vines must not be allowed to suffer from dryness, and if there is any danger of this, water the borders with weak liquid manure. As the growth pushes from the laterals, it must be pinched as before directed. Thin the berries with a pair of scissors, those made for the purpose are safest, removing one half, or more, according to the variety; beginners often make the mistake of leaving the bunches too crowded; a greater weight of finer fruit will result from proper thinning. Mildew shows itself in spots on the leaves, and when it appears, the vine of the house must be kept as dry as possible, and the syringing discontinued. Sprinkle sulphur freely over the floor of the house, and keep dry until the difficulty disappears. If not troubled by mildew, continue to sprinkle every evening. The temperature should be 90° to 95° at midday, which during the night may decrease to about 85°.

The Apiary for July.—Prepared by M. Quinby, by request.—All who have had experience in removing boxes from the hives, when there was not a full supply of honey from the flowers, have had some difficulty to get rid of the bees, without losing a considerable portion of the honey. A gentleman in Cherry Valley, N. Y., has given me his method of getting the bees out, which, although I have not tested it, I think must be preferred by some, to any method heretofore given. Firstly, he designates each hive with a number, and when the boxes are put on, each one receives the same number as the hive. When a box is full, an empty one, to replace it, is numbered in the same way. Two slides of zinc, or heavy tin are used to slip between the box and hive, one to keep the bees from coming up out of the hive, the other to keep the bees in the box, and is lifted off with it, and the box inverted. The empty box is put on the full one, and the slide removed, giving the bees free passage to the upper box. Any number of boxes may be set on one board, and by striking the board gently with a stick, or hammer, the bees immediately leave the full for the empty boxes, when the slide is inserted and each box containing the bees returned to the hive to which it belongs, which is known by the number. If a large number of boxes are to be taken off at one time, it will be necessary, without a corresponding number of slides, to use pieces of glass, or wood to lay over the holes in the tops of the hives, while other boxes are being taken off. The advantages of this method are, that no bees can fly to annoy any one; and all young bees that have never before left the hive, and are usually lost, are returned; the bees are already in the box, and go to work sooner; the honey in the box is clean, etc. Boxes should never remain on the hive after they are full. A few cells next the glass will not be sealed in a long time, and to wait for every one to be finished, involves the soiling of the combs. When a hive has more boxes part full, than the bees are likely to finish, a part or all may be removed to some other strong stock to finish. No harm will be done, if changed two or three times. One box finished, is worth two or three half full.

Should a hive refuse to swarm, and a great many bees cluster outside for want of room, a second set of boxes may be put on by making holes through the top of the lower ones. Those part full should be raised, and empty ones put under. It is not good economy with the movable comb hive, to allow colonies to become so crowded with bees, as to remain outside in large numbers, for a long time. When all cannot find employment in the hive and boxes, it is well to remove some of the full combs—every alternate one, when more than one is taken—and supply empty frames to be filled. The full combs containing brood, may be given to weak, or

late swarms (after jarring off bees), thus making those vigorous and valuable, that might otherwise be almost worthless. In the swarming season, such colonies may be divided.

See if any stocks are exhausted by swarming, till too few bees are left to protect the combs from worms. If the worms cannot be kept out, break up the hive, save the honey and wax, and thus avoid breeding a swarm of moths, to infest the other hives. When queens are not raised artificially, and kept to supply queenless stocks, it is good economy to have a small swarm or two, to keep the queens to supply destitute ones. Flag, as a material for hive, will answer equally as well as straw for wintering, but does not look quite as well. A better quality of straw can be secured in the harvest field. Select it by handfuls, make it even, shake out all short ones, cut off the heads, and put away to be made into hives, some rainy day before December.

It is unnecessary to look for a second swarm, when the first issued sixteen or eighteen days before. Not one in 500 will vary from this rule. Perhaps not one in a hundred will issue after 14 days—and usually not after 10 or 12.

In the last sentence of the Apiary for June, for other edge, read under edge.



Containing a great variety of items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Republishing Articles.—We are very often requested to republish some particular article, and have now a letter before us asking for the reproduction of an article which appeared only a little over a year ago. It would be very easy to make up a paper by reprinting old articles, but we are obliged to keep moving on. To meet such requests as these we have always on hand plates to print the numbers for several years back, and can furnish any single number or volume.

Are they Reliable.—A correspondent in Princeton, N. J., wishes to purchase a large number of strawberry plants, and desires to know if he "can implicitly rely upon those sent out by— or —, as being true to name." We refer to this as a sample of many letters we do not notice. We cannot undertake to specify in these cases. Their advertisements being found in the *Agriculturist* is proof of their general respectability as dealers, and we cannot go beyond this. It would be impossible for us to say that any nurseryman can be "implicitly relied on" to send plants true to name, as those with the best possible intentions are liable to be deceived by others, or to be mistaken as to the identity of a fruit. It very often happens that, to meet the demand, a nurseryman propagates a large stock of a variety before he fruits it, and then finds to his mortification that he has been selling the wrong thing. Mistakes like this are almost impossible to avoid.

Delaware, Maryland, and Virginia Farms.—To many inquirers we must answer that there is good land for sale in the States above named, as well as everywhere else almost. A man can afford to buy poor land which is close by railway facilities, and thus within such easy reach of the great markets, that he can dispose of early vegetables and fruit at the best prices. If further off he must have better land, or some other compensation. Northern farmers are going in considerable numbers into Maryland, Delaware, and Virginia, and if they will only take with them the industry, frugality, and intelligence which would make them successful in New-York and New England, they will succeed well in their new homes. Never buy without seeing the land and knowing exactly what you will surely know within a week after your purchase is made. Take nobody's word for any thing you can see and judge of.

Missouri Lands.—By reference to our advertising columns in this issue, will be found the advertisement of the MISSOURI LAND COMPANY, of St. Louis, who are prepared to furnish all necessary information regarding land in Missouri, and at all times facilitate the immigrant, or the agents for colonies, in securing the best and cheapest lands in the State. Heretofore the settler desiring to purchase has been compelled to ramble over the State, trusting to chance or local land agents for such

information as they may gather. This company is organized on a very broad basis, having its local agents in every county, enabling them to secure the most complete information, and make their office the Real Estate Exchange of the State. The State presents many attractions to the enterprising immigrant. Mountains of iron, mines of lead, copper, etc., millions of acres of fertile soil, its central position, and temperate climate destine it to be in the future one of the most important States. It has thrown off the incubus of slavery that so long has impeded its progress, and now as a free State offers homes to all enterprising men. Missouri stands on the highway of the nation, between the Atlantic and Pacific. Notwithstanding the havoc of war, its railroads are fast approaching completion. The disloyal inhabitants impoverished by the war, are selling their improved farms very low. The Company furnishes information and answers communications free of charge.

Corn for Dry Fodder.—E. W. Allen. When the corn has its full size, cut it at the ground; let it wilt in the sun a day, turn and sun it another day; bind with straw in small bundles, say 8 inches in diameter; set the bundles up bracing to sustain one another in long rows 2 and 2, or set them against rails or a fence, or in very open stocks. Thus they will gradually dry sufficiently in about two weeks to put up in large round stocks, capped to shed rain. Before cold weather stack near the stock yard or put in the barn.

How to Bring up Sandy Land.—James Clayton, Mason Co., Ill. writes: "We have a good deal of land in this county on which nothing but rye can be grown, it being nearly clear sand. What is the best way to improve this sandy soil?" Such land may probably be brought up in two seasons so that a tolerable crop of clover may be raised, and after that corn, wheat and roots will follow in a few years. Buckwheat sown now on land which has a small dressing of some ammoniacal manure, 100 to 150 pounds of guano, or 200 or 300 pounds of bone dust per acre, will give a good growth probably. Plow this under soon after the first blossoms appear, and then sow rye. In spring, say by the middle of May or first of June, when the rye begins to head, turn it under and sow corn or sorghum broadcast, (or in drills if the land is weedy, which it probably is not) and plow this under in August, and if desired, buckwheat or turnips may be sowed, (the latter quite thickly) and this crop plowed under; the buckwheat before frost, or the turnips before hard freezing. After this you will be able in all probability to get a good crop of red clover, which means wheat or any thing else, (after it) provided the same system is kept up, and a well manured crop is introduced once in about four years.

Does Plaster, Guano, etc., Hurt the Land?—"R. B." Portage Co., O.—No! not if properly used. If these things increase your crops, you must give back to the soil in proportion to the amount it yields, the ingredients which constitute the earthy part of plants. If this be neglected then in a few years with your big crops you will accomplish the same amount of exhaustion which it might have taken many years to have done without any high-pressure fertilizers.

How to Use Bones.—"Leslie." After breaking them up, compost with horse manure. Fork over the heap by-and-by, and throw out the hard ones, mash the others; make up another heap and use the hard bones again with some fresh ones. Another way is to break them as small as you can and throw them all into a heap, sprinkle them thoroughly with water, heap a layer of soil over them and let them heat. Keep a little plaster sprinkled over the outside of the heap. After they have heated well for some weeks, fork or rake the heap over; compost the fine part any where you like, and subject the rest to a repetition of the process. The broken bones, after soaking with water several days, may be treated with oil of vitriol, (half-water) added pretty freely, and the heap worked over with a shovel. A large part of the bones will be converted into superphosphate, and may be applied mixed with saw dust or earth.

How to Break Bones with a Sledge. L. A. Gavineau. Find a log with a hollow say 14 inches in diameter. Saw this so as to form a ring about a foot high, and split or saw a piece out of the side, leaving the ring like the letter C. This partial ring is placed on a rock or other hard and heavy base; the bones, one at a time, are placed in the middle of it and struck with a sledge hammer, which should be so held that the pieces, or the unbroken bone, if the blow does not crush it, will not fly through the opening made for the handle of the sledge. With patience bones may be broken in this way, but every community should have a good mill.

Liquid Manure.—"W. R." has a quantity

of hen manure, which he wishes to use in the liquid form. A peck or so in a barrel of water will make it quite strong enough. This should not be put upon the foliage, but over the roots of plants. It is better to apply it weak and have it diffused in the soil, as far as the roots extend. Once or twice a week will be often enough, and if possible apply it just before a rain.

What I found in a barrel of Poudrette.—Lemuel Church, writes: "In a past number of the *Agriculturist* I saw it stated that stovepipes, water buckets, etc., etc., were taken from the night soil before it was prepared for poudrette. I found in a barrel of poudrette a year or two ago, the following articles: coal cinders, ashes, burnt and unburnt bones and shells, pieces of earthen, stone, glass and china ware, pieces of window and looking glass, pieces of black, blue, green and white bottle glass, pieces of tobacco pipes, bricks, lime and cement, shirt and other buttons, a hog's tooth, a marble, whalebone, rattan, straw, fish scales, pieces of springs of hoop skirts, wire, leather, rags, egg shells, piece of slate, a carpet tack, matches, corn, oats, seeds of dates, oranges, watermelons, muskmelons, and raisins, two kinds of seeds name not known, cherry stones, saltpetre, a child's toy of turned wood, dead leaves, etc., etc." A curious compost, truly!

Quantity of Turnip Seed per Acre.—"A. H. J.," Morris Co., N. J., asks of the *Agriculturist*: "How much turnip seed is required to sow an acre broadcast?" There is no rule that can be recommended to suit different kinds of turnips, and a variety of soils. If the seed is good, and the soil in fine condition, one pint will be sufficient to seed it well, if distributed evenly. Mingle the seed with eight or ten quarts of gypsum, dry sand, or ashes, and sow both ways. Divide the seed into as many parcels as there are rounds sown. (A round has the width of two casts—forth and back.) In this way the seed can be scattered very uniformly. If there is danger that the turnip fly will destroy more or less of the young plants in the seed bed, better sow one quart of seed. Then, if they are too thick, after the tops are too large to be injured by the fly, go through them and thin out with a broad hoe or a bayonet hoe. A man can thin a large patch in a day.

Merits of Dwarf Broom Corn.—Elias Reed, of Lucas Co., O., writes to the *Agriculturist*: "The proportion of limber corn in my crop was comparatively small, probably not more than one sixth part of the whole. But, without this, I know not what we should have done for the middle of the brooms, as the greater portion was only suitable for wrappers. Those who have seen the brooms made of this corn acknowledge that they are very nice and elastic. The stalks of this variety, if cut up as soon as the corn is pulled off, which is the usual manner of harvesting it, afford more fodder than I know how to raise from any thing else, on the same ground. The leaves of the dwarf corn are large and numerous, of course they absorb from the atmosphere more nourishment than small ones. The stalks are well covered with husks which, if properly cured, make nutritious feed for stock. It is doubtless two weeks later than the tall variety, and therefore should be planted early and on rich soil." Our readers will remember that we have published reports unfavorable to this variety. Each kind has its strong and sensible advocates.

Tree Protectors.—These are mostly constructed with a view to prevent the wingless female insect from crawling up the trunk of the tree to lay her eggs, from which the destructive worms (*larvæ*) are hatched, as noticed in an article on canker worms. Seymour's Patent, manufactured by P. & F. Corbin, is very simple in principle, easily applied, and durable. "Canker" worms, and all that come from crawling ancestry, will be effectually headed off by their careful use.

Weighing on the Farm, of grain, wool, cattle, etc., would in many instances be of great advantage to the producer. With a good scale at hand, there will be no need of estimating in selling produce by weight. The increase of stock under different modes of treatment can be correctly noted, thus enabling one to judge of the proper management. Fairbanks' scales advertised in this paper, have a long tried and fully sustained reputation for accuracy and durability. Their manufactures are we believe the most varied and extensive in this country, if not in the world.

Lightning Rods.—Some one concerned in the sale of a patent lightning rod, writes to say, that the article published in the June *Agriculturist*, upon the structure of lightning rods, does him great injustice. To

which we reply, we can not help it. We gave some general principles, such as are recognized by scientific men, and if this is unjust to any patented notion, so much the worse for the patent. Now, we have not the least doubt, that most of the patented rods will protect a building, if properly applied, for they generally fulfil the essential conditions stated in the article referred to, and the patented portion usually applies to some unimportant peculiarity, which it is easy to make people, who understand nothing of the subject, believe to be essential. As we never before heard of our correspondent's rod, we certainly had no reference to him, and as his especial grievance is, that the article recommended iron, while he sells copper rods, we will say that copper is a much better conductor than iron, and that a rod of copper of a given size will conduct electricity much more readily, than an iron one of the same diameter. As an iron rod, sufficiently large and properly placed, will afford adequate protection, it is generally used on account of its greater cheapness and stiffness; but there is no reason why those who choose to do so, should not use copper.

Clothes-Wringers have deservedly become a household institution in the land, to the great satisfaction of the housekeeper, and the benefit of those who have to pay for clothing. From several years' experience with the Universal Wringer, we believe it has paid for itself every year in the saving of the wear of garments, to say nothing of the relief to the wrists of the washerwoman. We have sent out hundreds of these implements as premiums for obtaining subscriptions to the *Agriculturist*, always with satisfaction to the recipients, and we have yet to hear of a family where they have been thrown aside from dislike, after being well tried.

Mixing of Squashes.—"Long Island." Different varieties will mix, but the readiness with which they do so, seems to vary. We have excellent authority in proof that squashes and pumpkins will form a cross. As to the question whether the results of such a mixture will be manifest in the fruit, or only be seen in its progeny, it is one upon which we have but little positive information, and concerning which we should be glad of facts. We have given, last year, all the proof upon this point in our possession. The general belief is that the fruit is not affected, and we know one large cultivator who grows the different varieties in proximity, and says he can discover no change in the fruit, but that he never plants seed of his own raising for fear of crosses. Please give us the result of the planing of your squashes and pumpkins near together.

Canada Thistle.—A Canada correspondent is "in a state of mind" because this farmers' pest is in our country called after his country, and thinks it is in some way an unmerited reproach upon Canada. If we had had the naming of the plant, we should have spared our neighbors over the border, but as it is now we are obliged to use a generally recognized name. The British subjects dignify one of their troubles as the American Blight, so we don't see but the account is square. We suppose that the thistle is named so because the plant first found its way to this country from Europe by the way of Canada, and the people of that country ought to be made to suffer a little for giving such a rebel aid and comfort, until he was strong enough to make a raid across our borders. If it will comfort our Canadian friend, we will admit that *Cursed Thistle*, one of its European names, is more expressive and appropriate.

Grapes and Wine.—O. D. E. It is not possible to make wine from unripe grapes. If your grapes have a "very thick skin," the variety is probably not worth cultivating. It makes but little difference whether they drop or rot. It is likely that the juice of green grapes, with the addition of sufficient sugar, would make a liquid which some people call wine, as will the juice of rhubarb stalks, but we don't encourage the making of such stuff. We shall probably have something to say of wine-making at the proper season; in the meanwhile see article in last October's *Agriculturist*.

Grape Vines in Pots.—M. H. H., Mount Pleasant, Iowa, writes to know how to dwarf a grape vine so that it will grow in a pot. Our native vines may be grown in pots for amusement, and we should select the Delaware for the experiment. Plant a 1-year old vine in a large pot, and treat as we directed April, 1864.

Vine Culture at the South.—The gentleman who advertises respecting vine culture in the Southern States, comes recommended to us as one of experience and reliability, and one whose reputation is worthy the attention of Northern capitalists.

Asparagus Beds and Currant Bushes.—"Subscriber," Carlinville, Ill., asks "how

deep should Asparagus roots be covered with soil?" Three to four inches. "Should the seed that falls annually be suffered to sprout and grow?" No, the young asparagus plants are as troublesome as any other weed. "Does the bed need a protecting coat of manure in this latitude?" Yes, not only as a protection but for the nourishment thus afforded. See method of training the Gooseberry and Currant on page 339, November, 1863.

Training the Melon.—W. A. Duff, Wells Co., Ind. This is but little practised in our country. Pinch the end of the plant when it has made two leaves: this will cause two runners to grow, (one from the axil of each leaf) which are stopped by pinching when they have made 5 or 6 leaves, and the branches which start from these may be allowed to run, or be stopped by pinching when sufficient fruit is set.

Form of Flower Beds in Turf.—"Lady Subscriber." An oval is the most generally pleasing form. A crescent with rounded points, is very appropriate in some situations. Avoid all angular shapes or anything elaborate.

The Fuchsia drops its buds.—"M. D. W.," Portage Co., O. There are but few of the Fuchsias which will bloom during the winter, and probably your plant needed rest. The best way with Fuchsias generally is, to put them in the cellar after they have dropped their leaves in autumn, and keep them there till March or April. Then by watering them and placing them in a sunny window, they will start into a vigorous growth, and give an abundance of flowers all summer.

A Fine Azalea.—There was shown on our exhibition table a magnificent specimen of Azalea Iveryana, remarkably well shaped, over three feet across and so completely covered with bloom, as to conceal the foliage. This plant was a whole floral exhibition in itself, and reflects great credit upon its grower, Wm. John Hutchinson, gardener to F. A. Lane, Esq., Staten Island.

An Everlasting Flower for Name.—"U. B.," Adrian, Mich. The specimen is *Gnaphalium fetidum*, so much used by the French under the name of *immortelles*, to form funeral wreaths. The seeds may be had at seed stores, and it does best in rather poor soil.

Seeding down with Hungarian Grass.—E. Wilson, Westchester Co. This millet makes so much leaf and shades the ground so much, that it is hardly possible for the grass sowed with it to get sufficient strength to bear the sun after the Hungarian grass is cut. We have seen a seeding take very well and make a good sward the first season, sowed with Hungarian grass, but this is not a usual occurrence.

Persimmon Seed.—J. L. Martin, Merrick Co., Kansas. We never had occasion to plant these; should gather the seed when the plant was thoroughly ripe and keep in sand until spring.

The Buttonwoods.—"Buttonwood" Philadelphia, asks what is the matter with some trees in his vicinity. The unhealthiness of the Buttonwood or Plane trees, extends to most parts of the country, and we have not seen a flourishing one this year. The trouble, with how much truth we cannot say, is attributed to not maturing the growth of the year before. The trouble first became serious in 1842, and since then the trees have had a hard struggle for existence, and they seem to look worse this year than ever before.

Locust Suckers.—A. J. Richards asks, if the common locust will throw up suckers if raised from seed. Yes, it will sometimes sucker under any circumstances, and especially if the roots are wounded by the plow or otherwise.

Papaw-Bark for Tying.—J. A. Whistler, Ray Co., Mo., uses the bark of the papaw as a substitute for bass bark to tie up grape vines, etc. The bark is removed from the tree and soaked in water until the layers separate readily, taking care not to let it be in the water too long, as it becomes weakened.

Plants in Partial Shade.—C. Days, Huron Co., C. W. Among fruits, raspberries, gooseberries and currants; of vegetables, carrots, celery, late lettuce, radishes, spinach, and probably some other things will do well when not in the sun until afternoon.

Soap waste for Caterpillars.—A correspondent takes the liquor left after making hard soap from soft by means of salt, dilutes it with two parts of water, and throws the liquid over the trees by means of a syringe; he says that it effectively destroyed caterpillars.

Muck and Lime Compost.—F. V. F., Fairfield Co., Conn.—There are so great differences in and various qualities of muck that it is impossible to compare it with any standard. Barnyard manure is about as uncertain a one as could be named. In composting with lime, use about two bushels of good oyster-shell lime (best slacked on the place) with one load (say 25 bushels) of muck. It will, if fine, make a good top-dressing for rye and may be applied in the spring, but better in the fall, at the rate of 30 or more loads to the acre. Dress grass lands with it in August or early in Autumn, rather than in the spring. In composting muck with lime, ashes, soda ash, or any such thing, spread a layer 6 inches thick and sprinkle over the lime or other article in due proportion, and make the heap of convenient height by placing other layers in the same way. After a few weeks cut the heap down, beginning at one end, and pile it up again, shoveling it over and thus mixing all together.

How to Clear Land of Wild Carrots.—B. B. Satterlee.—Put the land in hoed crops and keep it clean and frequently stirred in such weather as the seed will sprout in, for two years. Most of the seed in the ground will thus germinate and be killed. On sward land it is hard to kill them, but never letting one go to seed, and letting no seeds from the road or neighbor's fields wash on, will work an effectual riddance.

Plants named.—M. R. Allen, York Co., Me.—1, *Corvus Canadensis*, the Dwarf Cornel or Bunchberry. 2, *Smilacina bifolia*, or Two-leaved Solomon's Seal. 3, *Uvularia sessilifolia*, Sessile-leaved Bellwort. D. W. Hooker, Vt., the seed of some kind of *Bigonia* or Trumpet-creep, but the particular one cannot be told from seed alone. F. Schreiner, Crawford Co., Pa., the American Yew, *Taxus Canadensis*. Miss E. Noble, Shawang Co. One of the Morels, which are generally eatable fungi, but whether this is a wholesome one or not we are unable to say. J. Foulke, *Chionanthus Virginica* figured in the *Agriculturist* for June, 1864. E. D. Velle, Suspension Bridge, *Oldenlandia purpurea* var. *ciliolata*, Blinets. We are obliged to repeat that we cannot undertake to guess at poorly crushed fragments; though willing to name plants for our friends we must ask them to send fair materials. One lady sends us some 25 fragments, each rolled, when fresh, in a scrap of paper and tied with a thread. To open each one of these minute bits would take more time than we can well afford. If the lady will press her plants and give specimens at least as large as will cover an envelope it will give us pleasure to name them for her.

Bottle the Fruit.—Preserves are becoming and should be obsolete. It is so easy to put up fresh fruit in bottles or jars, that every one may thus preserve almost every kind of fruit and sauce, and keep it in nearly its fresh state. We use the Baker, or Potter & Bodine glass jars almost exclusively, after having tried numerous other kinds. The ripe but not over-ripe strawberries or other fruits, are picked clean, put into a glazed vessel with a little sugar, ($\frac{1}{2}$ to a $\frac{3}{8}$ the weight of sugar, according to the sweetness of the fruit) and simply heated through—just boiling up once is usually sufficient. The glass jars are warmed as wanted, by plunging them rapidly into hot water a few times, then filled with hot water for a few minutes, when they are emptied and the hot fruit is dipped in carefully, to keep it as whole as possible. The jars are filled to the top, allowed to stand a minute or two, and gently jarred to cause the rising and escape of any air bubbles. They are then filled again to the top, the top edge of the jar wiped off with a damp cloth, the caps fastened on firmly, and then set away in a cellar until wanted for use. Rhubarb, tomatoes, etc., are simply cooked as for the table, and put up hot, without any sugar.

Preserving Fruit.—In May last we gave an account of Prof. Nyce's house for preserving fruits. Now, in the middle of June we have the opportunity to test some of the fruit that has been kept there since last autumn. Apples, such as Baldwin, Rambo, etc., are now as fresh, crisp and sprightly as one could wish, and the process may be regarded as a perfect success.

Blackberry Root Good for Summer Complaint.—We have great faith in a decoction of fresh blackberry root for looseness of the bowels. Last summer it completely cured a severe case of chronic southern or army diarrhoea, after the other remedies of the best physicians had proved unavailing, and it invariably cured in many other cases where it was afterwards recommended. Dig the green roots, rejecting those that are large and woody. Wash thoroughly clean, and steep in water at the rate of a quart to half a pound of the root. Boil down one-half, and then strain or pour

off. Put the liquid in a bottle with about $\frac{1}{4}$ its bulk of brandy, whiskey, or alcohol, to keep it from souring, and cork tight. A tablespoonful of this, rather less for a child, is to be taken three or four times a day, say before each meal time. We would not go from home, especially southward, without taking this preparation along. The blackberry brandies or cordials made from the berries are of little account as a remedy for diarrhoea. *The virtue lies in the roots, not in the berries.*

Inquiry about Cider Mill.—C. B. R., Portage Co., O., inquires for the best and cheapest kind of cider mill, with which the apples are ground by horse power, and the cider to be pressed out without laying up a cheese with straw, and capable of making 40 or 50 barrels per day. If there are any cider mills of this capacity in existence, we have never heard of them. There are those capable of grinding apples enough in a day to make 60 barrels of cider; but the pomace must either be laid up in a cheese with straw, or a large wooden curb must be employed to retain the pomace in place. In order to make good cider, pomace should not be pressed until after it has been ground 20 or more hours. Where cider is made on a large scale, the apples are ground by water-power, or steam, and kept in large vats 15 or 20 hours before the cider is expressed. A hydraulic press may be used. By this means the grinding and pressing do not interfere with each other, and the pomace is allowed to remain long enough to secure a good flavor and color for the cider, which it cannot have if pressed as soon as the apples are ground.

Broccoli.—R. S. Cotterell, Minn. Broccoli should head the same year. It is usually surer to head than cauliflower, but is a poor substitute for it.

Mushroom Culture.—"Subscriber" will find an account of the manner of making the beds, etc., by one of our most successful growers, in the *Agriculturist* for May, 1864.

Fruit Stains.—It does not appear to be generally known that the stains of strawberries, and of most other fruits, as well as coffee stains, may be readily removed from table linen and other white fabrics by pouring boiling water upon them before washing.

Photographs of Lincoln will adorn the homes of thousands of those who cherish his memory. Those published by F. P. Whiting, in this city, are correct likenesses, and handsomely finished. The representation of "Lincoln at Home," will probably be a favorite.

The "Washington Mutual Benefit Association," for which circulars are widely distributed by mail at the West is a swindle. Atkinson Depot, N. H., is gaining an unenviable notoriety as the point whence such operations are carried on. Will not some one there enforce the law against lottery swindling?

Bowen's Microscope, advertised in many papers to be sold for 25 cents, is worth nothing.

Price of Beef—New Government Contract.—In the April *Agriculturist*, p. 107, we gave the terms and conditions of the contract for supplying the army and navy from March 15 to June 15th. The contract has been taken for three months more by the same parties, and on the same conditions, but at a large reduction in prices. The previous contract was at \$13.49 per 100 lbs. live weight for first quality cattle; the new terms are \$9.35, a reduction of nearly thirty-one per cent., or from 24 cts. to 16 $\frac{1}{2}$ cts. per lb. for the dressed weight, reckoning 56 lbs. dressed to the 100 lbs. live weight, which is the usual shrinkage allowed for good cattle. The contractors are pretty likely to understand the state of the supply in the country and the probable range of the market. For the terms of delivery, quality of cattle, etc., see page 107.

Exhibition Tables at the Office of the American Agriculturist.

The following articles have been placed on our tables for exhibition during the past few months. Want of space has prevented noticing them previously. This list does not include the fine show of strawberries recently held, details of which are given elsewhere:

Fruits.—Isabella Grapes, well kept; John Cole, Staten Island. Iron Apples; G. M. Usher, Port Richmond, N. Y. Model of Duchess Pear, original weight 35 $\frac{1}{2}$ oz.; Dr. I. M. Ward, Newark, N. J. *Strawberries.* Agriculturist plant in fruit; Isaac Pullen, Hightstown, N. J. *Triomphe de Gand*; Daniel Hax, Egg Harbor City, N. J. Russell, Green Prolific, Downer's, La Constante, Agriculturist, and Lemmig's White; C. S. Pell, N. Y.

Orphan Asylum. Wilson; E. D. Cadwell, New Brunswick, N. J. Agriculturist, G. M. Usher, Port Richmond, N. Y., and W. Teft, Fordham, N. Y., also from W. Teft, fine seedlings from Agriculturist. Chorlton's, *Triomphe de Gand*, *Crimson Favorite*, and *Agriculturist*; John Cole, Tompkinsville, N. Y. Wilson; O. F. Tilson, Highland, N. Y. *Black Hamburg Grapes*, cluster weighing 2 lbs., 1 oz.; John Ellis, Hart's Corners, N. Y. Peaches, Nectarines and Apricots; John McGowan, gardener to Blakesly Wilson, Esq., Hudson City, N. J. Normandy Pippins, imported from England; Dr. Hall, N. Y. City.

Flowers.—Beautiful Camellias; Wm. Chorlton, Staten Island, N. Y. *Gorgonias*; A. N. Roberts, N. Y. City. Bouquet of Everlasting Flowers; Jas. Vick, Rochester, N. Y. *Fine Cut Flowers*; Miss M. E. Cortleyer, Staten Island. *New Seedling Tea Rose*; I. Buchanan, Astoria, L. I. *Fuchsia*; C. M. Mandewirth, N. Y. City. *Fuchsia*, *Tulips*, *Narcissus*, *Ixia*, *Wistaria*, etc.; C. S. Pell, N. Y. Orphan Asylum. *Cut Flowers*; T. Kavanagh, Brooklyn, N. Y. *New Seedling Rose*; Wm. H. Burgess, Glen Cove, N. Y. *Fine Bouquet*; Keyser's Island, South Norwalk, Ct. *Dahlias in Bloom*; John Abberlee, N. Y. City. *Splendid plant massed with blooms of Azalea Iveryana*, and blooms of *Passiflora Decasneii*; John Hutclinson, gardener to F. A. Lane, Staten Island. *Purple Hyacinths in bloom*; Jacob Newkirk, Hudson City, N. J. *Lilium auratum*; Dr. Payton, N. J. *Bloom of Clematis Sieboldii bicolor*; W. S. Carpenter, Rye, N. Y.

VEGETABLES, GRAIN, ETC.—*Fine Yellow Flint Corn*, Wm. Brush, Sandwich, Conn. *Cracker, Dover, or Irish Cup Potatoes*; S. P. Champney, Saunderville, Mass. *Peach Blow Potato*, weight 1 lb., 9 oz.; H. G. Randall, Middle Island, N. Y. *Large Turnip*, weight 21 lbs.; Mr. Lott, Milford, Pa. *Improved China Tree Corn*; J. L. Husted, Greenwich, Conn. *8-rowed Yellow Corn*; J. Van Woert, Fort Lee, N. J. *Carrot*, curious growth Capt. Nimmo, Flushing, N. Y. *Clover and Timothy Hay*, handsomely cured; J. B., Westchester County, N. Y. *Large Mushrooms*, Judge Sturges, New Durham, N. J. *Large Corn and Carrots*; Cornelius Van Horn, La Fayette, N. J. *Deep Red Corn*; H. B. Rogers, Huntington, L. I. *2 Stalks Rhubarb*, weight 3 lbs. 8 oz.; E. Frapwell, gardener to M. A. Ferguson, Lakeland, L. I. *Asparagus*, 19 stalks weighing 4 lbs., 5 oz.; Edward Windust, Oak Neck, N. Y. *Stalk of Sugar Cane*, 24 feet long; Mr. Kirkham, Porto Rico, W. I.

MISCELLANEOUS.—Specimen of powder, used in firing the 300 pounder on Morris Island at Charleston, from 3d R. I. Heavy Artillery. *Squankum Marl*; Thos. Winsor, Farmingdale, N. J. *Mistletoe* from an Oak Tree; A. W. Roberts, N. Y. City. *Sharks Teeth* found in Marl, Edward Pitcher, Monmouth Co., N. J. *Native Australian's Boomerang*; A. W. Roberts, N. Y. City. *Large Brahma Pootra Egg*; Mr. Saunders, Port Richmond, N. Y. *Gopher Skin*; L. Bishop, Jackson, Kansas. *Excellent Sorghum Syrup*; Henry Marsden, Columbia City, Iowa. *Large Hens' Eggs*; A. E. Noble, Brooklyn, N. Y.; J. S. Heddon, Verona, N. J.; Robt. Sullivan, Brooklyn, N. Y.; W. H. Bridges, Oyster Bay, N. Y. *Bayonet from Battle Field of Petersburg, Va.*, Brick and Wood from Libby Prison, Richmond, Va.; O. Judd, N. Y. City. *Australian Nut*, used by native girls for bracelets; Dr. Hall, N. Y. City. *Perfect egg* contained within another of extraordinary size; A. G. Dean, Staten Island, N. Y. *Wood of Apple Tree* destroyed by Borers, Smith Brown, West Farms, N. Y.

Hints on Showing Poultry.—Poultry Show at the Museum.

During the last week in April a poultry exhibition was held at Barnum's Museum, at which there were not only many fine birds shown, but a number of amateur and professional poultry raisers met, and improved the occasion to make each other's acquaintance, and to talk over their pets. All the more prominent families of fowls, from the mammoth Brahmas and Cochins to the diminutive but haughty Seabright Bantams, were there. The Black Spanish, Brahmas, Polands, and Hamburgs, were the varieties best represented. It was a disappointment not to see the Dorkings, white and gray, in better display, for these fine birds, not without reason, claim the first position as the most useful for all purposes. The most symmetrical trio of Black Spanish fowls was shown of first honors by reason of the cock having a drooping comb. The greatest merit a Spanish fowl can have, is a perfectly white face, but if a cock had the best and most faultless face that ever was seen, it would not excuse a drooping comb. Such a bird, according to the inflexible decision of all fanciers of this country and most elegant breed, must be thrown out of competition.

This may be a useful hint to those intending to exhibit at State fairs, and we make one more suggestion, in re-

ference to the manner in which fowls should be prepared for, and sent to, exhibition, viz.: All fowls should have their legs washed clean before they are sent to a show—scarf, or dead skin, should be removed from the comb, dry dirt from the beak, and stains from the plumage. They should, if possible, always be packed in baskets, which should be round, high enough for the cocks to stand upright in, even when crowing. The baskets should be covered with canvas. Fowls should be thoroughly fed before they leave home for a fair or show, but the food must be soft—bread, sopped or steeped, is excellent; hard food is to be avoided, because the digestion will have to take place without exercise or gravel. Let birds of white plumage run at liberty till wanted to send away. Spanish are improved by confinement in a dark place for some days before showing, giving them just enough light to enable them to pick their food and to perch—they should also be littered with straw, as cleanliness has much to do with the success. Game fowls, it is held, should be kept up for a few days and fed on bread, meal, barley, and peas; these latter make the plumage hard, but they also have a tendency to fatten, which is undesirable in games. White feathered birds, such as Silver Spangled Hamburg, Polands, etc., all require washing. This is not difficult—put a handful of soda in a bowl of warm water; immerse the fowl entirely; rinse thoroughly in cold water; wipe with a flannel and place in a basket with straw, before a fire to dry. When fowls return from a show looking in perfect health, do nothing; but if the combs are dark, or crops hard, a tablespoonful of castor oil may do them good.

(EDITORIAL CORRESPONDENCE.)

Visit to a Virginia Battle Field.—A Guide to the Chief Points of Interest.

Jarratt House, Petersburg, Va., June 7th, 1865.

Last July 4th, while engaged with the Sanitary Commission in caring for our sick and wounded soldiers, I wrote to the readers of the *Agriculturist* from a point 2 to 3 miles north-east of where I now sit, giving an outline map of the localities, and, so far as I could then see, of the military works around the city. Then I could only look over into these streets; to-day, I am pleasant-

ly seated in the heart of the city, with my family and a party of friends. Then a hundred thousand men were intent upon breaking through the armed forces that met them at every point, and the almost unceasing roar of deep-toned cannon, and the rattle of small arms broke upon the ear by day and by night. To-day, only here and there will one find an armed man in blue, and none in grey, and over the vast charnel field nought but the singing of birds, in the few remaining groves, disturbs the death-like stillness.—Then I wrote, that no other spot I had ever seen in this country or in Europe, would so well repay a visit immediately after the war should close, as the region around Petersburg. To-day I feel this more strongly than then. For three days I have wandered among the endless lines of earth-works and fortifications that belt Petersburg on all sides but the north, and I am sure that no more intensely interesting locality is to be found in the world, when we take into account the number of men engaged, the length of time they were here, the severity of the almost daily struggles, and the closing up of the great war, of which the final decisive contest was fought just southwest of this city.—That is hardly an over-estimate which gives 150 to 200 miles as the combined length of the earthworks, rifle-pits, etc., within ten miles of Petersburg. These alone, seen in their present condition, before being greatly marred by the elements, are worth a journey of a thousand miles. . . . Hundreds now come daily, from almost all parts of the country, and many thousands will doubtless visit this place the present year, while the locality will for many years, if not centuries, be increasingly attractive. . . . I learn that very few of the present visitors see more than a small part of what is to be seen hereabouts, because there are no maps or guides to assist them. Thus, most examine the "Nine," Forts Steadman, Sedgewick ("Hell,") and Mahone ("Damnation,") and go home without visiting the field of the decisive operations on April 1st and 2d, last. At the request of many persons here, I will attempt to give a little outline of some of the more interesting points.

The map on this page shows the relative position of Petersburg, Richmond, and City Point. The last was Gen. Grant's Head-quarters, and the base of supplies for the army of the Potomac, during ten months. (For description of this map and of the position of the armies, incidents, etc., see *Agriculturist* for August, 1864.) In the map on next page, is a general outline of the position

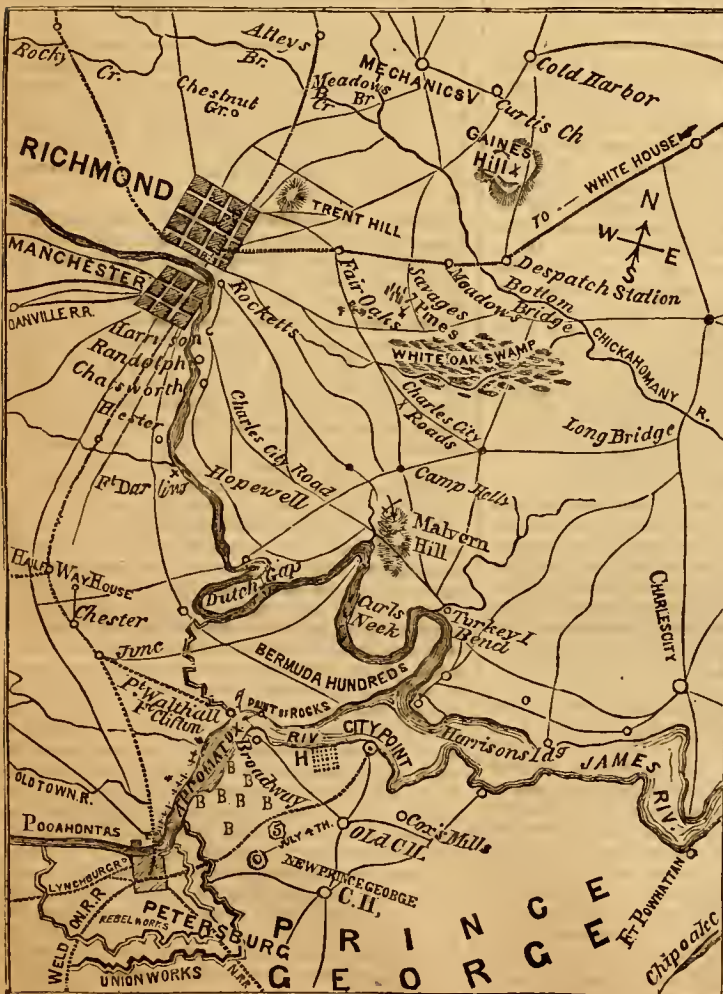
of forts, etc., around Petersburg, prior to April 1, this year. This sketch is from my own notes made while going over the ground, without any measuring line, or any compass save the sun: hence the distances, bearings, and angles, may not be entirely accurate, but they are sufficiently so, to greatly aid the visitor. The map is on a scale guessed at about one inch to the mile. Only some principal points are indicated. There are scores of batteries, and hundreds of short lines, small earthworks, and rifle-pits, etc., not indicated. Beyond or outside of the space covered by the map, for miles away, are to be found forts, earthworks, and scenes of skirmishes and pitched battles, as at Ream's Station down the Weldon railroad, at Five Forks several miles southwest, and also on the Boynton Plank Road, and along Hatcher's Run. The space covered by the map is cut up with lines of breastworks, rifle-pits, earth-forts, thousands of soldiers' huts still standing, and almost unending lines of abatis (ab-a-tee). These last consist of sharpened sticks and tree tops placed firmly in the ground, and leaning outward, a few rods in front of the main lines and around the forts, arranged so as to greatly ob-

struct the approach of an enemy. Most of the abatis are bound together by strong wires. They are being removed quite rapidly for fire-wood, by the negroes and other inhabitants of Petersburg. This, with the washing down of the many earth-ridges and rifle-pits by rains, and the leveling of others for agricultural purposes, will materially change the appearance of the whole region ere long. The main lines consist chiefly of heavy continuous banks of earth, high enough to shield the bodies of the men, too thick to be battered down by cannon, and having a ditch on the side next to the enemy. Forts and batteries are built at convenient distances along the lines, to cover the space between them, and are usually placed upon knolls, or higher portions of the ground. Some of the forts are very large and well finished, with bomb-proofs. A bomb-proof is usually made thus: a shallow cellar is dug, if the ground allow, and walls of logs are laid 6½ to 8 feet high; long log beams are laid across the top, projecting a few feet each way; upon these, a flooring of logs is placed, and earth piled over, and also up against the sides, so thick as to be impenetrable by shell, thus forming a secure retreat. Air and some light enter between the cross-beams. These bomb-proofs are of various sizes and forms; one in Fort Wadsworth is about 150 feet long and some 12 feet wide inside. Ammunition magazines are similarly built. Sometimes the earth walls of the bomb proofs, and of the forts themselves, are kept perpendicular by means of hags, or baskets of earth, or by fascines (bundles of long rods, or sticks bound together). Some of the forts are fine specimens of military workmanship, as Fort Fisher, and Forts Wadsworth and Sedgewick.

The first map shows the general position of the lines last July. In August and September, Gen. Grant advanced his lines to the Weldon Railroad, and secured a second line, curving in north-west at Fort Fisher towards the South-side Railroad, which it was very desirable to reach, and which was so strenuously defended by the enemy. (See map II.) This line was retained.

The most interesting points to be examined by the transient visitor, are: Fort Gregg, (rebel,) Fort Fisher and the tower or observatory (150 feet high) near it, Poplar Grove Church, Forts Wadsworth, Sedgewick and Mahone, the Mine, and Fort Steadman. On horseback, one can go the round of all these in a day, following the dotted line in the direction of the arrows, or in the reverse order, beginning at the north-east. But two or three days will be far more satisfactory. I will sketch briefly a two-days trip by a party of thirteen of us—two ladies, three children of 9 to 14 years, with four men besides the driver all in a large covered spring wagon and four men on horseback. Outfit: a box of eatables, a jug of water and cup, some bags for holding relics, a large hatchet, and field glasses to aid the eyes, brought from home. Clothing and shoes adapted to rough journey. Another valuable adjunct was a package of Daily Papers, selected from the home files, containing descriptions at the time, of movements and battles occurring at the various points to be visited, to be read in connection with the actual examination of the localities.

First Day's Trip.—Starting from the Jarratt House westward, then deflecting to the left, we passed the north side of the rebel hospitals, as shown on the map, and continued west ¼ to ½ mile, until a short turn to the left (south) took us nearly to Mr. Green's house. Then turning to the right, and passing by the negro huts, we continued west across a brook, and up a hill, going just south of Roger A. Prior's residence, situated in the grove of trees on the right. Bending to the south south-west, we followed a field road to the rebel Fort Gregg, a large prominent fort on a hill, ¼ to ½ mile from Mr. Prior's house. All along the route, so far, and indeed all the rest of the way, are seen rifle pits, breastworks, etc. On the road west from the hospitals, the chimneys in the distance (west) indicate where Gen. Lee's headquarters were before the buildings were burned on the evacuation. Before reaching Fort Gregg, we see on the left the remains of a large dam, built to overflow the Union camps, some distance southward.—Fort Gasco. There are two forts of this name, one Union and one Rebel. The latter is a point of great interest. Strong as it is, it was assaulted and taken by storm on April 2nd. Standing on the fort and looking south-east, we see the valley through which the heavy assaulting party came up amid a tempest of lead and iron. The many Union graves in front, and the mounds of rebel dead buried in its rear, with the cannon shot and bullet holes in the palisades, indicate the severity of the struggle. How flesh and blood could have lived through the fire of cannon and musketry, crossed the deep ditch, and climbed into the fort we stand on, it is almost impossible to conceive. But it was done, and this was one of the crowning achievements that secured the evacuation of Petersburg and Richmond. One will not soon tire here, looking over the wide fields on every side, and reading the description of the assault. Just west of Fort



L.—VICINITY OF RICHMOND AND PETERSBURG.



—OUTLINE SKETCH OF THE LOCATION OF THE PRINCIPAL WORKS AROUND PETERSBURG, VA.

Gregg is a large earthwork called Fort Baldwin, and a heavy battery lies a little east of Fort Gregg. Next, going about a mile to the south-southeast, we passed through a stumpy road and crossed the outer lines and breastworks of the two opposing armies, and thence to a farm house, upon the proprietor of which we called, and had a lengthy and interesting chat. He remained here all through the war, and from him we learned many particulars of events of which he had been an eye-witness. From the high ground northeast of his house, is, to us, the most interesting view any where to be seen—including the location of the two armies from September to April, many miles of earthworks, and the scene of the final successful strategic move of the Union army. Our forces had for six months held this line, including forts Fisher, Welch, etc., south of us. Frequent efforts had been made to pass around to the left and reach the Southside railroad, but without avail. The last week in May a heavy force, including Gen. Sheridan's cavalry and the 5th Army Corps, made a detour to the south, and off south-west towards Dinwiddie Court House, as if striking for Burkesville or some nearer point on the Southside railroad. To oppose these, Gen. Lee drew out a large number of his forces from in and around Petersburg, and marched them westward. This was just what Gen. Grant desired. When they were far enough off, the 6th and 24th corps dashed through from Fort Fisher, overcame all resistance, and reached the railroad a mile or so north-west of Fort Gregg (rebel). This fort and others near it were captured, and the enemy's army was thus cut in two. This is indeed the Waterloo of America, compared with which the old Belgian battle field shrinks into insignificance. We advise every one coming to Petersburg, to visit this locality and from here, and from Fort Fisher and the observatory near by, study the whole field.

Remunerating our farmer friend for his time we were consulting, and taking him with us a short distance as a further guide, we next went a little to the south-east to Fort Fisher, which is one of the finest constructed works to be seen here, though hardly so large as Forts Wadsworth, Sedgwick and Steadman. From the top of Fort Fisher, and especially from the observatory near it, 150 feet high, one has a grand view of the fields already described, and can take in at a glance many square miles of the surrounding country. At this point our entire party would have gone home well satisfied with their long journey from home, if no more was to be seen.—But I must omit details, beyond calling attention to the numerous camp huts which cover the country, a few acres in a place, for miles around. Following the general

course indicated by the dotted line on the map, and looking at the fortifications on the way, we next went to the "Poplar Grove Church," whose steeple can be seen in a grove to the south-east. This Church, and the surrounding cabins—mansions we might call them—were constructed by the 50th N. Y. Engineer Regiment. Nowhere, in this country or in Europe, have I seen rustic work that would compare with what is to be seen in this camp, and in the hospital camp a hundred rods or so northwest. Without the aid of engravings, I will not attempt to describe the beautiful arrangement of pine logs, poles and twigs in the attractive structures. Let no one coming hither, fail to see them. Said a traveling companion, as he contrasted these camps and our various forts with those of the enemy, "it is no wonder our men conquered." The old Poplar Grove Church in the vicinity having been burned in the army movements, or by the enemy, this Church was presented to the trustees by the ingenious builders; otherwise we would advocate its removal to the N. Y. Central Park. Some of the huts or dwellings here should certainly be moved to more central or accessible points, as monuments of the skill of our "thinking bayonets."

Turning from the Church to the north-east, we next went to Fort Wadsworth, on the Weldon Railroad, another point of much interest. Those who have time may well go Southward to Fort Dushane, and still further to Reams' Station, and south-west along Hatcher's Run, the Five Forks, etc. Those positively limited for time, and not too weary, may continue eastward along the dotted line, to Forts Howard, Alexander Hayes, Davis, Sedgwick, Mahone, etc., and perhaps finish up the tour in a single day, though it is too much for most visitors who wish to get a full conception of this region. Our party examined forts Howard and Hayes, the surrounding camps, of which the neatly constructed huts are still standing, and then turned up the Weldon Railroad towards Petersburg. Passing through the lines of abatis, the skirmish line of breastworks and rifle-pits, between the two armies, at the distance of $1\frac{1}{2}$ miles towards the city we struck and examined the very heavy main front line of the enemy. We next visited the "lead works" on our way to the city, and reached our hotel at $7\frac{1}{2}$ P. M., most of the party wearied out, but with heads and hearts full. Retiring early, a good night's sleep put us all in good trim for the

Second Day's Trip.—Starting with the same conveyances as yesterday, we went north-east through the city, noting on the way the effects of shells upon the houses, and took the Jerusalem Plank Road to the top of "Cem-

etry Hill," where is a fine bird's-eye view of the works east and north-east of the city. A short distance on, we turned to the left and visited the "Mine." Our newspaper description, read on the spot, brought vividly to the mind and eye the events occurring here on the morning of July 30th, 1864. An hour spent here, and over at the entrance to the Mine, we returned to the Jerusalem Plank Road, and went south-east to Forts Mahone and Sedgwick, noting along the way the ditches and traverses through which troops and supplies from Petersburg reached the advanced lines of the enemy, through the high ground, or passed from one earthwork to another. Forts MAHONE ("Damnation") and SNOWICK ("Hell") are very near each other, and are both on high ground. More men were daily killed and wounded at these forts, than at any other points on the lines. They were fighting almost constantly for months. To expose one's person hereabouts was almost certain death. The picket-lines between these forts, guarded by heavy breastworks, were so near that the men could talk familiarly together from behind their covers. There is more digging of the earth into pits, ditches, etc., at this part of the lines, than at any other. Passing on south-east to Fort Davis, we turned north, followed the line of Union fortifications, looking into Forts Rice, Mickle, Morton, and Haskill, and entered Fort Steadman. The taking of this by the enemy last March, and the speedy recovery of it, are doubtless well remembered by every reader. The bullet and cannon ball and shell marks on almost every square foot of the trees, from bottom to top, on every side, show plainly the fierceness of the conflict here, but I can not spare room for description. Passing on to Fort McGilgvery, and back again to the main road from City Point, we entered Petersburg from the north-east side, and had a fresh view of the shell scarred and pierced houses. Every rod of the route we have taken, perhaps 15 to 20 miles in the two days, is full of interest. No other field of strife so extensive, and so varied, has ever been seen in this country, or in any other, and we trust never will be. Now, no enemies, no bushwhackers, and no restrictions upon travel are anywhere to be met with, in or around Petersburg or Richmond.—We have not space to describe the intensely interesting scenes for forty miles down the James River, from Richmond to City Point, a trip alone worth the whole journey from New York. Richmond itself is a desolation, with its miles of falling walls and chimneys in the burned district, comprising the chief business portion. On our way here, we visited sundry points in that city, including the hospitals, "Jeff's House," Belle Isle, the Tredegar Works, Castle Thunder, and especially Libby Prison, from which I have as relics, a brick from the wall where the prisoners escaped, and a piece of the table in the cell where Hon. Mr. Ely, Capt. Fraser, and other officers were confined. These will be put upon the exhibition table at the *Agriculturist* office, for the curious to look at.

Routes to Richmond and Petersburg.—From New York, there is a line of large steamers, sailing on Wednesdays and Saturdays, direct to Richmond—the Yazoo and Creole. Fare, including state-room and meals, is now \$15. This route gives one a taste of the Atlantic Ocean. A better route, perhaps, is to go to Baltimore, and take the "New Line" of steamers—Leary and Brady. These leave Baltimore at 6 P. M. daily, land you at Fortress Monroe at about 5 or 6 A. M. the next morning, whence you have a pleasant day's ride up the James River, seeing the Rip-Raps, Newport News, the scene of the Merrimack and Monitor conflict, and also passing Jamestown Island, where the first settlement in Virginia was made. The village of Jamestown is burned, but the standing chimneys indicate its former site. The square brick tower or diminutive church on the upper end of the island, shows the spot where Pocahontas saved John Smith's life. You also pass Harrison's Landing, memorable as the base of the Union army under McClellan in 1862. Returning by this route, you leave Richmond at 6 A. M., arriving at Fortress Monroe at 2 or 3 P. M., and have 2 or 3 hours to loiter around the fortress, before taking the $4\frac{1}{2}$ o'clock steamer, which lands you at Baltimore at daylight next morning. Through fare between Baltimore and Richmond is now \$3.00, not including meals and berth or state-room. Fare between New York and Baltimore, \$6.55. One can leave the boat at City Point, and for 50 cents go to Petersburg by R. R., and then to Richmond by R. R., for \$1.00, or go around the other way. The railroad will probably be opened ere long direct from Washington to Richmond, taking one through the interesting scenes at Fredericksburg, the Wilderness, Spotsylvania Court House, etc. The present hotel charges in Richmond and Petersburg are \$4.00 per day. The weather is becoming hot for travel now, except to the strong and vigorous; though with care in diet and drink, our party have had no trouble as to health. Every one journeying southward at this season of the year, should carry a bottle of prepared blackberry root decoction, (described on page 206) or at least some extract of ginger. ORANGE JUDD.



The Red Fox.—(*Vulpes fulvus*.)

We give here an engraving of one of the greatest nuisances to farmers living in the vicinity of ledges, in which a fox can readily burrow in the rocky debris. The nocturnal depredations of a pair of old foxes, who have their young to provide for, will often extend over an area of several square miles, and so sly are they, and so well do they cover their retreat, that it is very difficult to find where any particular fox has his hole. These animals secrete a powerful odor which is in a gland near the base of the tail, and the odor being diffused more or less wherever they go, it is very easy for dogs to track them; but wary and fleet, they usually succeed in baffling their pursuers, leading them a long chase, and getting away at last. Wherever met, the fox is an enemy, and is killed if possible, yet they abound in well-peopled districts both of this country and Europe. They will eat fruit, and small animals which they kill themselves, not unfrequently killing lambs several weeks old. They eat also fresh meat, provided it has no scent of man upon it. By means, therefore, of poisoned meat, it is often practicable to destroy them. Those who are most successful use strychnine, which they insert in small quantities by means of a quill, in many places in a fowl or small animal of some kind, handling it with gloves, which are sometimes scented with oil of Rhodium, a flavor of which most animals are very fond. Such poisoned meat is of course equally deadly to dogs and cats as to foxes, and some family pets might thus be sacrificed, unless care were taken so to suspend it that it shall fall in the way of foxes only. There are statements, which we deem reliable, of strychnine having been used with excellent effect in protecting sheep from other canine animals besides foxes and wolves. And if any of our readers thinks he would rather lose a few sheep than poison any neighbor's dog, which might visit his sheep pastures, we

warn him that strychnine is surer death than even lead to any dogs that may swallow it.

European Sparrows in America.

Every one who has visited Europe may have noticed the sparrows which are so abundant in the cities and villages. They live upon insects, bits of offal of various kinds, grain, crumbs, etc., being regular scavengers, and, especially in breeding time, consume immense numbers of insects, which are said to be the chief food of the young birds—though the appetites of old birds crave a greater variety of food. In some parts



EUROPEAN SPARROWS.

of England there exists a prejudice against the sparrows, because, like the other finches (for they belong to the finch family), they eat grain, and a price is set upon their heads. Some few years since, quite a large number of these birds were imported and set loose in the Central Park, with the anticipation that they would multiply and make themselves at home in this city, where we so greatly need something to

destroy the insects which are such nuisances upon our shade trees. They did not stay where they were, but drifted across the Hudson, and took up their abode (at least some of them did) in Jersey City and Hoboken, where they are now quite numerous in some parts of these cities. The prejudice against them is probably unfounded, at least if their great destruction of insects be taken into account. They are lively, chattering creatures, very active, somewhat larger than our ground sparrow, and darker colored. They have little or no beauty, and no agreeable song, but stay with us all winter.

Raising Turnips, on Heavy Soils and Stumpy Grounds.

On some soils and exposures large crops of excellent turnips may be raised with little labor, while in many other places much labor and manure are essential to produce even a small crop of only fair quality. On some soils turnip seed may be sowed broadcast after a crop of barley or oats has been removed; and the yield will be four

or five hundred bushels or even more per acre, having but little or no cultivation or weeding. On other farms, where the soil will yield 50 bushels of barley, 70 of oats, or 25 or 30 bushels of wheat, a farmer might despair of producing a crop of turnips that would half pay the expense of cultivation, after one of these crops of cereals has been removed. Ill adaptation of the soil to turnips is one chief difficulty; another is the turnip fly. To guard against the ravages of these insects, through some sections (as in Central New-York) it is customary to sow the seed more than twenty times as thick as necessary; and then, as soon as the turnips

appear in seed leaf, scatter dry ashes over them with a fine sieve. Most of the thinning is done with a broad hoe, as soon as they are large enough, and out of danger. This is done in the heat of the day, as the plants that are rooted up will die readily. The hoe is drawn across the drills, leaving groups about 10 inches apart. The thinning is then finished by hand, leaving the best plant in the group standing. Those

that are pulled up, are placed around the standing ones, and operate as a mulch to keep the soil moist. We have found that after turnips form six or eight leaves, and are as large as the little finger, the occasional application of weak liquid manure, after sundown, is productive of excellent results. It is sometimes desirable during this month, to sow turnip seed on "slashing" or new ground that cannot be

plowed on account of roots. Remove the logs and burn over the entire ground if possible, between the 20th and 30th of the month. If there are any grass plots, sheep may be confined in the field, until they have gnawed every green thing close to the ground. The manure thus left operates as a good top-dressing. It is said also, that this preparation with sheep is a perfect preventive of the turnip fly. Be this as it may, the turnip fly has never injured our turnips after sheep had been confined for several days on the ground. The seed is then sowed and the ground harrowed eight or ten times, if it had not been plowed. If mellow earth can be obtained without so much harrowing, the seed is bushed in. Plots of weeds, thistles and grass may be grubbed up with hoes. By these means pretty good turnips can always be raised on heavy soils, and on stumpy land.

How Long to Make Plow Beams.

While there are various ways among some manufacturers of plows, for determining the correct length of a beam, many plow makers have no regular rule for fixing its length, and so every beam is made "by guess." If a beam looks too long, it is cut off. There is a correct length for every plow beam, and if that length be increased, or diminished, the draft, or "balance" of the plow will be incorrect. We have ever maintained, that if a plow is constructed on correct philosophical and mathematical principles, with the beam of the right length, and the draught properly adjusted at the clevis, it will run without holding and plow well, unless some obstruction throws it out. We have made inquiry of manufacturers for more than twenty years, concerning the correct length for plow beams, and found it all guess work in every instance but the following. Solomon Mead, New Haven, Ct., communicates to us a rule which he has adopted in determining the length of beams, for his conical-mold-board plows. In order to put this principle to a correct test, we visited his farm and had his No. 6 adjusted to run about 5 or 6 inches deep, and to cut 10 or 11 inches in width. The draught ring was fixed in the middle of the end of the beam. Having adjusted it as nearly right as practicable we let it run alone, and plowed around the land some six or eight times in succession, without touching either of the handles, except at the ends of the land, in turning out and setting in. As the principle is not covered by a patent any one may adopt it.

This is the rule: Hold one end of a ten-foot pole, with no sag in it, on the share or mold board, at the supposed centre of resistance, a point about 2 inches higher than the sole of the plow, and elevate the other end 4 feet and 2 inches—about the height of a horse's shoulders. If the beam is of correct length, a produced horizontal line (say the edge of a 2-foot rule) crossing the end of the beam in the middle will touch the edge of the pole. If the length of the beam be increased, the forward end must be elevated, in order to be in the correct line of draught. When a plow is properly balanced, it will run as straight as the team travels, without holding. But when it turns quickly aside, either to the right or left, and the plowman is required to hold it constantly in position, it is a certain evidence that there is an imperfection in the mechanical construction of some part of the plow, or it is incorrectly adjusted as to the clevis, gauge wheel, length of traces, or draught chain.

Best Form for Rake Teeth.

The illustrations of rake teeth here presented show the manner of making both iron teeth and wooden ones. Iron ones, (A,) are made of wire about $\frac{7}{16}$ of an inch in diameter, 6 or 7 inches long, with a thread cut on about 1 inch of the end that screws into the rake head. The ordinary round, wooden teeth in hand rakes are too short, both for raking hay and grain. When teeth are too short, it becomes necessary to press down very hard on the handle, or the rake will fill with a small quantity and slip over. This is particularly true when raking and binding grain. If the teeth are 7 or 8 inches long, a man can rake very much easier and faster than when they are only 3 or 4 inches long. For raking grain, the writer

has been accustomed to cut off the wooden teeth of common hand rakes, and bore holes in the tenons of the wooden teeth just large enough to receive the iron teeth, when screwed in so firmly as not to split the head. The holes should be bored true, and the teeth put in with a pair of strong pliers. Such teeth in a good head make an excellent rake. A very desirable form is shown at B, for wooden teeth for a buck rake, as well as for horse rakes. The tenon is square half its length, and the other half at the end is made round. A thin piece is left parallel to the tenon to fit closely to the outside of the rake head, and a wood screw or nail fastens it securely to the head. This is a very strong way of securing rake teeth. The points should always be sharpened, like the figure, on the under side, so that they will run out of the ground instead of into it.

How to Cultivate Hoed Crops.

The aim should always be to dig or tear up as much grass and weeds as possible, and pulverize and stir all the soil between the rows at least two or three inches deep. In order to do this effectually, the teeth of the cultivator should be adjusted to run between the rows in the narrowest places, without disturbing the growing plants. The handles of the cultivator should extend back of it sufficiently far to enable the man holding it to see distinctly whether the last tooth, as it passes the hills, does not cover or cut them up. Thus he may run the implement so closely to every hill along one row, that very little labor will be required with hand hoes. When he returns between the same rows, the cultivator should be run as close as practicable to the next row.

It is essential in using any kind of a cultivator, that the horse be well guided. If he go in the right place, it will be easy to hold the cultivator so as to perform the work well, but otherwise the work will be done in such a manner, as to require much hand hoeing. Where the ground is not strong or lumpy, if a man be a good driver, he may run the rear teeth of a cultivator so closely to the rows of Indian corn, sorghum, broom corn, beans, etc., that mellow earth will be turned just up to the plants, completely covering all small weeds and grass. When cultivated in this manner, unless there are many large weeds to cut up, two hands will do the hoeing well, as fast as one can run the cultivator. When the implement goes jumping and skipping along, while the horse is two or more feet from the prouer

place, it will require four or five faithful laborers to hoe as fast as one man can cultivate. In order to do this work well, the teeth should always be kept sharp and bright, so that the earth will slip from them freely. When the surface of the teeth is covered with much rust, they should be polished on the grindstone, and oiled to prevent rusting, if to stand idle for a day or two. This will always save time and labor.

What is "One-Horse Power?"

The use of the term "horse power" is very common, yet few, except good mechanics and engineers, attach a definite meaning to it, but regard it as indicating loosely, about the power which one horse would exert. It is, however, when used in the sense under consideration, as definite as possible, and means the power required to lift 33,000 pounds a voidrupois one foot high in one minute.

A horse hitched to the end of a rope over a pulley one foot in diameter placed over a deep well, traveling at the rate of about $2\frac{1}{2}$ miles per hour, or 220 feet per minute, will draw up 150 pounds the same distance he travels. The force thus exerted is called in mechanics, a "horse power," it being an approximation to the average amount of continuous power it is fair to demand of a strong horse. If we multiply the weight raised (150 pounds) by the number of feet it was moved per minute (220), the product will be the number of pounds which the same power would raise only one foot high in the same length of time, (33,000 pounds.)

The dynamometer is an instrument made for measuring power, particularly that exerted in drawing. Those used for testing the draft of agricultural implements are simply very strong spring balances, or spring steelyards, graduated to indicate the power required to raise any weight, within reasonable limit, at the rate of $2\frac{1}{2}$ miles per hour. When we apply the dynamometer, in ascertaining the draft of machines, if the index indicates 150 pounds, it is shown that the horse is required to draw just as hard as he would do, if raising 150 pounds out of a well with a rope over a pulley one foot in diameter, at the rate of $2\frac{1}{2}$ miles per hour, and so for other weights.

The velocity at which a team moves is to be considered, as well as the weight to be raised, or the load to be drawn. If a horse travels faster than $2\frac{1}{2}$ miles per hour, while raising 150 pounds out of a well, he exerts more than one-horse power. If he walks slower than this, he does not exert a force equal to one-horse power.

In ascertaining the draught of a plow, or reaper and mower, by driving faster than $2\frac{1}{2}$ miles per hour, the dynamometer would indicate more than the correct draught; and by driving slower, the draught would appear to be less than it really is. In testing the draught of machines a team should always move at the rate of $2\frac{1}{2}$ miles per hour, or 220 feet per minute, which is the universally accepted rate with reference to which dynamometers are graduated, and an easy one to which to approximate in driving with almost any kind of team.

Many people have supposed that 300 pounds—two-horse power—represented the same force that a team would exert, when dragging 300 pounds along on the ground. A horse can haul 600 pounds on the hard ground, with ease; but he could not draw hard enough on the dynamometer to mark more than 250 to 300 pounds, except for a few minutes. The power of a man is estimated at one-fifth of a horse power.

Sharp Mowing-Machine Knives.

The cutting edge of all kinds of knives is composed of numerous small saw-tooth like scratches made by the file, grindstone or whetstone. The same exists on the edge of a razor, but there they are exceedingly fine. The cutting edge of a grain sickle consists of very fine teeth made as a file is cut, with a sharp cold chisel, cutting creases sloping obliquely backward on the under side of the blade, extending quite to the edge. When the serratures thus formed become battered, or bent over, the tool is dull; but so long as they are kept sharp-pointed and erect, which is done by grinding on the smooth side, the edge is sharp.

For cutting straw, hay, or cornstalks, when knives are worked with a drawing stroke, they are usually most effective if their cutting edges are made of coarse serratures, as when ground on a rather coarse stone. On the contrary, when knives operate with a direct stroke, the finer the edges are ground, the easier they will cut. This is particularly true of knives of mowing machines. If ground to an edge on a stone of fine grit, and then whetted with a fine whetstone, even the momentum of the cam which works the knives will be almost sufficient to cut an even swath through heavy grass. Where the ground is smooth and hard, and the grass not very thick at the bottom, and the knives of a mower are sharpened with a fine-gritted whetstone, no difference can be perceived in the exertion of the team, whether the mower cuts a full swath, half of one, or none at all. Dull knives, however, or those having a coarse edge, will require sometimes twice as much power to mow heavy grass, as if they had been put in order with a fine whetstone. Knives of mowing machines are often filed to an edge. If they were operated with a drawing stroke, they would cut grain better than if sharpened with a fine stone. But, as the cut is a direct or crushing one, they should always be rubbed after filing, with a fine stone. Great efficiency in such knives depends almost entirely on the perfection of the cutting edge.

Suggestions about Summer Fallows.

A few years ago, most farmers in our wheat-growing regions, thought that in order to raise a good crop of winter wheat, the ground must be well summer fallowed. The ground was plowed usually about the first of June, and then harrowed and plowed alternately until September. In some instances, it was plowed six, but usually three times; and those who did so, fancied that they received ample remuneration in an increased amount of grain for every additional plowing. But, when the ground was broken up late in June, or the former part of July, and plowed only twice, as a small number of cultivators were accustomed to do, the work was pronounced as "only half done," and the difference between the crops where the soil was plowed five or six times and only twice, would often justify such a remark. Thus it will be perceived, that the soil yielded only one crop in two years, or as it was then termed, "two crops in three years," as oats, or Indian corn, followed by wheat, and then a summer fallow, or grass. In some instances, three crops of winter wheat were raised in succession. As only a limited quantity of manure of a very inferior quality was made, summer fallowing seemed to be essential to the wheat crop. There was not that demand for pork, beef and mutton that now

exists. Consequently, only a small portion of the coarse grain of the farm furnished any fertilizing matter by making manure while fattening stock. The great bulk of the manure was of a strawy character, and only increased the already too large growth of straw. There was but little grain-producing material in it. The good effects of summer fallowing began to fail. The straw was often large enough to yield forty or fifty bushels of excellent wheat per acre; while there would sometimes be not more than ten or twelve. Every year the heads were growing lighter and shorter, and the kernels smaller and smaller. Consequently those who were accustomed to rely on the wheat crop for their revenue, were in a grievous dilemma. This was clean farming, but low culture; while scientific, progressive agriculture requires high cultivation and fertilization in close connection with clean farming. This is the certain tendency of summer fallowing. It is good for wheat, temporarily; but bad for the farm, and worse still for the farmer, permanently. Summer fallowing in the way alluded to, will produce a greater yield of wheat, for a year or two, than any other system of management; but, at the same time, the productiveness of the soil will be impaired in a greater degree than by some other system of management, which will always keep the soil good, and at the same time, produce remunerating crops from year to year.

Prevention of the Hoove.

When neat cattle and sheep eat too much red clover, their stomachs soon become so much inflated with gas, that without immediate relief they often die in a few hours. We have known neat cattle to be hoven and die, in defiance of all efforts to save them, even after they had been grazing in a clover field more than two weeks. Where they can have access to other grass, they will seldom eat enough clover to make them bloat; but, as soon as they are required to subsist entirely on red clover, unless they have free access to an abundance of salt, there is great danger that they will eat too much. We have always been accustomed to keep salt in a tub in the field, where the stock were grazing on red clover; and the animals would eat freely of it many times a day; and we never had an animal affected with the hoove, as long as the salt tub contained a good supply.

Check Reins for Draught Horses.

The head and neck of a horse assist in balancing his body, when not restrained by a taut check rein; just as the arms of a man enable him to walk with more ease when they are unconfined. When a check rein is so short as to hold the head of a horse higher than he is accustomed to carry it, it is impossible for him to travel or draw easily. A man can walk or run much more advantageously with his arms free, and his head and shoulders thrown a little forward, because they are important balances for his body. If draught horses have check reins, they should always be unhitched when they are hauling a heavy draft, especially up hill. If one watches the movements of a horse's head when he slips on ice, or a pavement, he will soon be satisfied that draught horses should not be checked up much. Carriage horses may be made to hold their heads high; but those which have hard pulling should be allowed to do it in the easiest manner, with their heads held naturally.

Hay Cured without Drying.

SUGGESTIONS FOR EXPERIMENTS.

With us all it is a great object to make hay of good quality with little labor. We all have our notions and prejudices, some well formed and others simply prejudices. The Agricultural papers have of late contained several articles on curing hay with very little drying, packing it away so as to exclude all the air possible, and have given statements of the great excellence of the cattle feed thus prepared. When vegetable substances containing as considerable a proportion of water as recently cut grass does, are closely packed and left to themselves, they will ferment. The result of the fermentation is heat, throwing off water and carbonic acid, a softening of the material, and certain changes in its chemical constitution. These changes of character, if not carried too far, are in no way deleterious, but in fact render a portion of the woody fibre digestible, which before was not so.

An article called "Brown Hay" is made in Europe in several ways, all dependent on the same principle. When the grass is cut it is left a while to wilt, a day or two, according to the weather, then laid up in heaps of the size of ordinary hay cocks, which, after standing a day or two longer are lifted without stirring, and laid together in large heaps or stacks and well trodden down as they are laid up. The stacks are formed to shed the rain, and sometimes a little salt is sprinkled in as they are made. The wilted grass is often hauled to barns, or rather buildings for the purpose, and these are packed full, each forkful being thoroughly trodden. When the fermentation comes on in the buildings or the stacks, it will heat and steam powerfully, and there may even be some danger of spontaneous combustion, if dry matters are in close proximity. As the heat subsides, it is trodden again in order to keep all tight when the hay settles, as it does very much, the bulk being reduced fully one half. If the air gains access by cracks or otherwise, mildew will follow. Cattle of all kinds are very fond of this food. It is hard and compressed, like pressed hay—all in a mat—of a brown color, and a sweet, somewhat hay-like odor. In the stack or mow it may be cut with the hay knife or a hatchet, and it is easily broken up to feed out. This article, therefore, however produced, is nothing new, but has an established reputation, and is, no doubt, a very good way to make hay, especially when the grass is very full of weeds; for all these disappear in the softening process which the hay undergoes (unless they are coarse, or of an acrid, or very hard character).

It is said that well wilted grass may be baled up in the field, and thus cured without further care, except to pile the bales together and protect them from rain by a covering of hay or straw.

A man writing to the Boston Cultivator, says he packs wilted grass in air-tight casks or boxes and heading them up, keeps the hay any length of time. The editor of that paper goes into ecstasies over the perfume of the sample box sent to him.

On page 151, (May No.) we published an account of the manner in which a most excellent quality of clover hay was produced by housing wilted grass, putting it in layers between dry salt hay. All these methods we commend to the ingenious, as worthy subjects of experiment during the present haying season.

Halsted's Hay Fork Attachment.

A. M. Halsted, 67 Pearl-st., New-York City, communicates, for the benefit of farmers, an unpatented improvement to be used in connection with a horse hay fork, for carrying the hay to the farther side of a wide mow, or dropping it at an intermediate point. He describes and

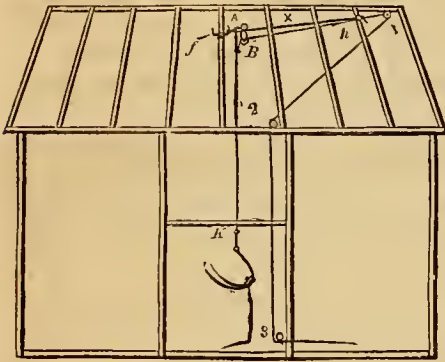


Fig. 1.—HAY FORK ATTACHMENT IN PLACE.

explains it thus, by a reference to the following illustrations and letters. Fig. 1 represents the attachment put up in a barn ready for operation, x , is an iron rod $\frac{1}{4}$ inch diameter, and of the necessary length for the barn in which it is to be placed. On one end is a loop (g , fig. 2), and the other end is threaded and a nut with a handle put on so as to avoid using a wrench— a and b , are two pulleys hung together, the upper of which, a , runs on the iron rod, x ; the hoisting or draft rope passes over the lower pulley (b); f , fig. 2, is one of two hooks of a bar hooked at each end, fastened to a cross-piece, securely bolted or spiked to the two rafters near the center of the barn; and about 2 to 2 $\frac{1}{2}$ feet below the ridge pole. The loop end of the rod x , passes over one of the hooks, and the other end through a cross-piece (h), fastened on the further side of two rafters a little back of the center of the mow. This cross-piece should be placed as near the peak, or ridge pole as the traveler pulley will allow. The rod x , should be serewed up tight by the hand nut. c , is a hook hinged or fastened to the axis of the pulley a , and dropping into the loop g . D , is a trip rod fastened to the hook and passing over it, and embracing the rod x , as shown in fig. 2, thus keeping the hook in proper position. This terminates in a loop, e , at the lower end, through which passes the draft rope. 1, fig. 1, is the first pulley fastened in the peak, or to the ridge pole or rafters, anywhere beyond the termination of the iron rod. 2, is the second pulley fastened to the plate over the door, and 3 the third pulley or "snatch block."

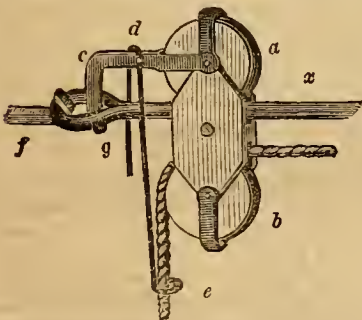


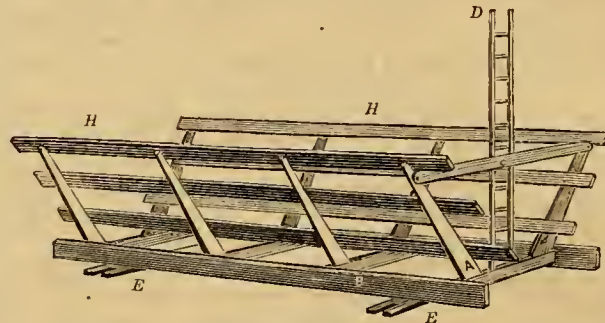
Fig. 2.—HALSTED'S HAY FORK ATTACHMENT.

When the fork is loaded it rises perpendicularly until the knob, k , (fig. 1), meets and pushes up the trip rod, d , e , fig. 2, thus releasing the hook which keeps the traveler pulleys (a , b) in place.

The fork then is drawn along and up the rod, until relieved of the load. When the horse backs, the double pulley runs back down the rod by its gravity, and the hook (c) falls into the loop (g). The fork continues to descend to the load. A forkful of hay can thus be taken over any upper girt, not nearer than 6 or 7 feet to the ridge pole; and by using a long way rod x , can be carried to the third bay from the floor. This arrangement is being used in connection with the fork advertised in this paper by the same inventor, and will be furnished by him.

The Best Wagon Hay Rigging.

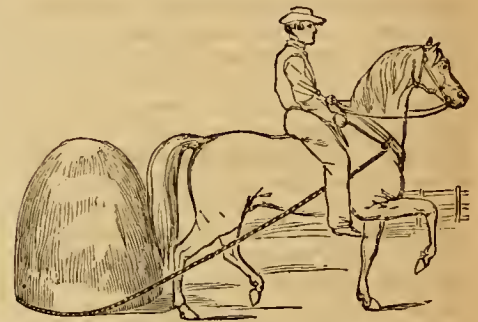
The accompanying illustration represents a convenient, light and strong hay rigging, which is considered by many good farmers superior to any now in use, and we have never met with its equal. It can be made of light or heavy timber. The following are the dimensions of the various parts of one made for our own use: The sills (B), are of basswood, 16 feet long, 2 $\frac{1}{2}$ inches thick and 8 inches deep. Pine, whitewood, or other light timber will make good ones. These sills are held two feet apart by four cross-sills of hard wood 2 inches thick and 6 wide, having a tenon on each end 1 $\frac{1}{2}$ inches thick, and pinned firmly in the mortises. The object of placing the sills so near together is, to give the forward wheels more play when turning around. When the sills are placed against the stakes in the bolsters of the wagon, it is impossible to turn short around. Two saddle pieces, (E , E), of hard wood, 2 inches thick and 3 wide, with gains in the ends to receive the wagon stakes, are bolted to the under side of the long sills (B). These rest on the bolsters of the wagon, and hold the rigging in place as well as if the sills were against the stakes. The arms, (A , A .) are made of hard wood, 4 inches wide



WAGON HAY RIGGING.

by 1 $\frac{1}{2}$ thick at the lower end, where they go through the cross sills. The upper ends are 1 $\frac{1}{2}$ inches square. In order to set these arms at the right inclination, place the sills on the wagon, and lay out the mortises through the cross-sills so slanting, that the arms will not rest on the hind wheels. This will bring the top of the rigging quite low. If it is desirable to have a wide rigging, let the arms be made long. Six or seven feet is sufficiently broad for a large one. The arms should fit the mortises in the cross-sills closely, but not so tightly that they cannot be removed without driving them out. Three or four slats, (H , H .) are secured to the arms (A , A .) with slim carriage bolts, which may be obtained at hardware stores, much cheaper than they can be made by hand. A tight bottom is made of inch boards; and when hauling grain, we had pieces of half-inch stuff fitted nicely between all the slats to catch the loose grain. A cross piece C , of hard tough wood, 3 inches wide by 1 $\frac{1}{2}$ inch thick, is bolted

to the end pair of arms at both ends of the rigging. The sides of the ladder, D , are made of small, light pieces and hard wood rounds, and the lower ends of the sides enter holes in the bottom of the rigging. It is usually most convenient to lay the ladder down, except when putting on a load. It is better to make the ladder wide at the bottom, and not more than a foot wide at the top. The most convenient way to remove such a rigging from the wagon is, to have two small pulleys at each end of the rigging attached to a beam in the barn, and raise it bodily from the wagon, and let it be suspended. In such a place it will always be out of the way, and under shelter. If painted and kept housed, such a rigging will last years.



MANNER OF DRAWING HAY WITH A ROPE.

Drawing Hay with a Rope.

It is very desirable always to devise the best and most economical means to facilitate hard labor in making and securing hay, as well as in doing other kinds of work. For this purpose, many farmers make use of a rope and horse to haul hay cocks, either to the barn, or stack, where the distance is short. The illustration

represents a horse in the act of drawing a cock of hay. One end of a $\frac{1}{4}$ inch rope, about twenty feet long, is fastened to the left trace, and placed around the bottom of the cock, then through a ring in the hames of the harness, and held by the rider. The end of the rope should be sewed through and through, with a strong leather string, in every direction, for two or three inches, to keep it from unraveling. A knot in the end of the rope is objection-

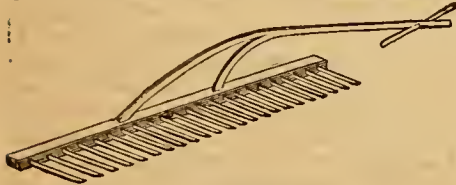
able as it will hinder its being drawn out of the hay readily. In order to prevent the cock from being drawn over towards the horse, lift up the hay all around the bottom, and thrust the rope under it with one foot. It will then be moved off so cleanly, that it will seldom be necessary to rake the scattering spears, where the cock stood. By hitching two horses to the rope, one at each end, and starting at the end of a windrow, letting the horses travel close to the windrow, four or six hundred pounds of hay may be collected in a bunch, as fast as a horse can walk, and hauled, with the team on a trot, to the barn. When the horses first start, however, a man or boy should thrust a fork into the hay, and press downwards on it, until the rope is well loaded. As soon as the cock is drawn to the desired place, one rider lets go the end of the rope and the horse draws it out of the hay.

The principal advantages of drawing hay in this manner are: It save much hard labor of pitching it on a wagon; two small boys who

can not pitch hay will haul a ton to the barn or stack, 20 or 30 rods, quicker than two men will be able to do it with a wagon; cocks can be drawn from a lawn or orchard, where there is not room for a loaded wagon to move; and when a whole cock is taken up by a horse fork, and placed on a mow, or stack, it may be spread around with much less labor, than when a large wad is torn from a loaded wagon. When stacking hay, two boys and one horse will haul it to the stack faster than an active man can pitch it by hand, thus saving all the hard labor of pitching the hay on a wagon. When hay is stored in barns in or near the meadow, two hundred pounds may be put in each cock, after it is well cured, if they are hauled with a rope, as a horse will draw a large one as well as a small one.

The Buck Rake.

The illustration herewith given represents a very convenient and useful rake, for raking light hay or for gathering the scattering hay while a load is being put on the cart or wagon. The sketch was sent by Trevor Yates, Otsego Co., N. Y., who calls it a "shoulder rake," who says that an active boy or girl, 10 or 12 years old, will do more with it than a man with an ordinary hand rake. He thus describes it: The head of the rake is 6 feet long, made of good timber, 2 inches wide and an inch and a half thick. There are 23 teeth in it, about 3 inches apart from centre to centre. The teeth are 9 inches long, made flat, with a 1/2-inch tenon on one side, and sharpened on the under side. The tongue is crooked at the rake end and sawed apart about 2 1/2 feet, then spread about twenty inches to operate as braces. A pin should be put through the handle about 2



BUCK RAKE.

feet from the rake, and the handle should be longer than represented by the engraving. When the rake lies flat on the floor, bore the holes in the head for the prongs of the handle so that the end of the handle will be about 3 feet 8 inches high when the rake is finished. The boy or girl can then take hold of the pin with one hand, place the other on the under side of the tongue and draw it over the meadow. When the rake fills up, push it back a little, so that the teeth will take a new hold under the hay more readily; it will thus carry a big load. This kind of rake may be used advantageously for raking hay into windrows where it is light, as well as raking up the scatterings after hay has been put in cock. The ordinary hand rakes are quite too small and short for raking up scattering hay. For this reason, every farmer should have at least one buck rake. A mechanic of common abilities can make one in a few hours. Such a rake will save much time and labor in haying.

Liquid Manure and Pump for Raising it.

Although a large per centage of liquid manure is water, it is yet very valuable for promoting the growth of all kinds of crops, and often more so than the solid portions. Of course its value diminishes in proportion as it is dilut-

ed with water. When animals are fed grain, the liquid which leaches from their droppings, or is collected beneath the stables, abounds in more fertilizing matter than that which flows from a pile of strawy manure. In the Old World the liquid manure of animals is saved with far more care than in America; and it has been stated by reliable authority, that in Bel-

gium, liquid manure is valued so highly that the urine of a single cow commands over eight dollars per annum. Parties purchase it expressly for increasing the productiveness of their soils. If it is so valuable in other parts of the world, it certainly is worth saving in America. The great difficulty in collecting liquid manure is, a suitable pump. There is usually more or less sediment among it, which would clog an ordinary water pump. We give herewith an illustration of a portion of a very cheap liquid manure pump, which we have found to be very convenient and effective. Any one who can joint a board straight and square, will be able to make one with little or no difficulty. Four pieces of thick board are required, from 6 to 10 feet long. Two of them must be just 4 inches wide, and two others 6 inches wide. The latter two are nailed firmly on the edges of the others. This will make a penstock whose calibre is four inches square, from end to end. Now fit a block in the lower end, and bore a 2-inch hole through it, and fasten a valve over the hole to open upwards, and nail the block in place. The larger the hole the better, if the valve closes it well. The next thing is to make the piston, which is represented by the accompanying illustration, fig. 1. This should be of hard wood, 3 1/4 inches wide, and 1 thick at the lower end, fitting well but working easily. This will allow a piece of leather 1/2 of an inch thick to be nailed on each edge of the piston rod. Procure two pieces of leather, in the form shown in fig. 2, 8 inches long from F, to e, 6 inches broad at F, and 5 inches wide at e. These two pieces are shown nailed to the piston rod, fig. 1, c, c. At A, the rod is shown in two pieces, to indicate an indefinite length. B, is the handle to pump with. After the narrow ends of the leather have been nailed securely to the lower end of the rod, A, place the edges of the leather together, on the edge of the piston rod, and nail them firmly with lath nails. As the piston is thrust downward, the leather will fold together, as represented by the angular lines, c, c, and allow the liquid to rise above it. But as soon as the piston rod is lifted, the leather spreads out to the sides and corners, and raises all the liquid above it, and the liquid rushes through the valve in the lower end of the penstock, following the piston upwards. A spout can be made near the top to conduct the liquid where it is desired. Pieces of cobs, blocks of wood, or chaff will not obstruct the free

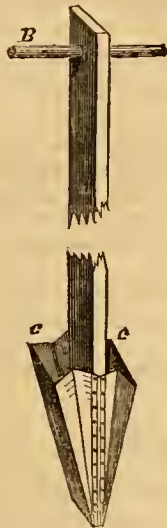


Fig. 1.—PISTON.

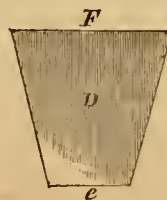
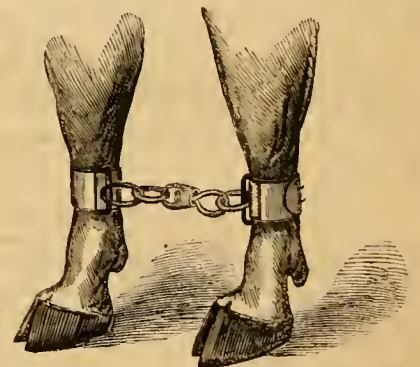


Fig. 2.—LEATHER.

working of this kind of pump. Such a pump will be found useful for pumping sediment from cesspools, or for emptying the vaults of privies, where most of the fecal matter is in a fluid and semi-fluid state. Paper will not obstruct the valve, or piston. Such a pump will draw water out of a shallow well very fast. The deeper the well, the more power will be required to work it.

Improved Shackles for Bulls and Bucks.

The illustration herewith given, represents an improved pair of shackles fastened to the forward legs of a bull. Two strong leather straps, about 2 1/4 inches wide, are buckled one around each leg, and held together by a piece of trace chain, from 12 to 16 inches long. In the middle of the chain is a swivel to keep it from being twisted into kinks, which will occur when there is no swivel, by the animal's throwing either foot over the chain. An iron link in the form of the letter D is welded to each end of the chain, through which the leather straps pass; and a piece of thin, firm leather is sewed over the iron to prevent chafing the legs. Instead of having one large buckle to each strap, it is better to attach two buckles to one strap, by sewing them on the outside of main strap, with separate pieces of leather. Then sew on firmly two straps to enter the buckles. By this means it will be seen, that the main strap is just long enough to permit the ends to meet, while the



buckles and straps are sewed on the outside. This prevents the buckles rubbing the legs. The length of the chain should of course be varied according to the size of the animal.

Such shackles for a buck should be made of much lighter leather and smaller chain, having a swivel in the middle that will work easily. Small chains for this purpose may be obtained at most hardware stores, much cheaper and better than can be made by ordinary blacksmiths. The swivel and a few links can be taken from a light trace chain. The chain for a buck's shackle should not be over 7 or 8 inches long. When the writer was accustomed to keep sheep, the bucks were never separated from the ewes. Such shackles were put on the fore-legs of buck's in the spring, or fore-part of summer, and removed the 1st of December, and an untimely lamb was never seen in the flock.

Sometimes a farmer has a young heifer or a cow which he does not desire to have with calf until some future period; and in some parts of the country the service of a bull at pasture is often stolen in the night, or when the proprietor may not be at hand. To prevent any thing of the kind it is only necessary to buckle on the shackles. When the bull is needed for service, any one who can handle him can take them off at pleasure. The leather should be kept well oiled to render it soft for the legs.

Clay Lands—Crushing Clods.

If a farmer could plow all his land at just the right time for it to crumble down most readily, there would be no use for clod crushers. When there are several acres plowed, and the weather continues dry from day to day, much of it will often become so dry that it will turn up in large clods, in spite of all that can be done. When this is the case, it becomes necessary to make use of the roller and harrow, alternately, until the hard lumps are reduced so fine that the rain will disintegrate them. If manure be hauled out in the spring, when the ground is wet, wherever the team poaches the wet soil—if it is a heavy loam, or calcareous clay—there will be more or less clods, as soon as the soil is plowed; and where the team passes several times in one place, there will often be so much lumpy earth, that it will hardly be practicable to get mellow dirt enough to cover a hill of corn. But the fault is not in the farmer, as his teams and vehicles must travel over the soil, whether it is wet or dry; and even when the soil is thoroughly underdrained, and in a high state of fertility, it will plow up in lumps. It is sometimes utterly impracticable to plow a large field at the best time. Therefore, since clods and lumps are unavoidable, we must adopt the most effectual and economical way to pulverize them. When hard and dry, they are very difficult to crush with any implement, but soon after a heavy shower of rain, when the soil has dried sufficiently to prevent adhering to the roller, or crusher, they may be reduced to powder very effectually. Let a harrow follow the roller to bring up the clods that are partially buried, and roll the second time. If the roller be applied at the correct time, clods will give but little trouble. Where there are lumps between rows of corn or potatoes, the best way to dispose of them is to turn out all hands, with axes, clubs or mauls, and crush them. A blow applied with the flat side of an ax, will do the business as effectually as anything. When weeds and grass are small, this practice will be found almost equal to a dressing with hand hoes. When a field is not underdrained, and is excessively wet, and heavy animals have been allowed to travel over it, we must expect hard lumps when it is plowed.

More about Orchard Grass.

Several inquiries, especially one from S. W. Penney, of Licking Co., Ohio, suggest a few additional remarks on the cultivation of orchard grass. Our correspondent writes that his farm is principally stocked with sheep, that he has been using clover, timothy and blue grass for meadows and pasture, with the addition of early sown rye for late and early feed; and adds: "From what I have read I am disposed to try orchard grass. Please advise me in the *Agriculturist* what other grasses to mix with it for pasture or meadow? How much seed per acre of each? The best time for sowing, whether it should be sown in autumn or spring? and whether it should be cut at same state of maturity as timothy?"

In addition to what is given on pages 114 and 115, we will state that orchard grass no doubt will succeed well wherever timothy will, either for pasture or early hay. If the soil were in a very fertile state, we would sow ten pounds of early red clover seed—which matures about the same time with orchard grass—fourteen pounds (1 bushel) or-

chard grass, and seven pounds (half a bushel) of Kentucky blue grass. The object of the blue grass is to form a better sod than the orchard grass and red clover will make. The blue grass will occupy all the bare spots between the tussocks of orchard grass and the bunches of clover; and will furnish late pasture, when red clover has nearly ceased to grow. But, as red clover and orchard grass grow larger than blue grass, it will not amount to much in making hay. Sow orchard grass and early red clover in the spring, in preference to the fall, as young clover is very liable to be injured by freezing and thawing in winter and spring. It is also better to sow orchard grass in the spring when sowed with red clover, as the two will mature at nearly the same time. If orchard grass and Kentucky blue grass be sowed in autumn, and red clover the following spring, the clover does not have an equal chance with them, and a large proportion of it will be choked and die. All of these kinds of grass should be cut for hay as soon as they have attained their growth and are in full blossom.

Making Clover Hay.

In making clover hay it should be the aim to cut it at that stage of the growth of the plant when it will make the most and best dry fodder; to cure it in such a way that it will retain its green color and nourishing properties in the highest degree, and to perform this labor with the greatest economy and dispatch. The main difficulty encountered is this: if it is not managed properly during the curing process, the hay will be harsh, very dry, and unpalatable; the heads and leaves will drop off before the crop can be cured; and if it is not cured enough it will "mow-burn," badly depreciate in value, and finally be less nutritious than good straw. When managed properly it may be cured so as to retain all the leaves and flowers, and if the weather is not too wet or lowery, even the color of the blossoms will not be entirely lost. We have often picked up heads of red clover, when feeding stock in the winter, which were cured properly, and smelled and tasted as sweet as when just made.

The time to cut red clover for hay, is when it has attained nearly or fully its greatest growth and is in full bloom. If a crop of seed is expected from the second growth, it should be cut a little sooner than this. (See an article in this volume, page 182, on growing clover seed.)

Clover should not be sunned too much. Three or four hours of uninterrupted sunshine, if it is spread out and stirred once or twice, are sufficient. Where it is thick on the ground, or in swaths, the upper side is frequently burned by scorching heat, which renders it harsh and brittle. A convenient amount should be cut as nearly at the same time as practicable, so that it may all be cured alike. When a meadow is mowed by going around it, sometimes a portion of the hay is exposed to the sun several hours longer than it ought to be, while another part of the same grass receives not half enough. This should be carefully guarded against.

If the mowing is done with scythes, commence on one side of the field, and either mow back and forth, or cut around as much as can be laid down in one or two hours. If the clover is cut with a mower, drive around about as much as a team will mow in the same length of time. The object is to have all the hay that is cut at a certain time in the day, lie by itself. As soon as it is cut, spread the swaths

evenly over the entire ground. Then mow another acre or more, or let the clover be spread by another hand as fast as it is cut. The true way is to mow a field as it is plowed, when we commence on one side, working towards the other. The clover that was cut before noon, should be raked and put in cocks before night, if it be a good hay day. After it is cut, the more it can be shaken up and turned over, and "kept in the air," the better the hay will be in the winter. If the farmer owns a Hay Tedder, let it be kept in motion from one hour after the clover is cut, until fit to rake. When clover is allowed to remain in the swath for a few hours, or half a day, or as some practise, a day and a night, before it is turned over or spread, all that portion on the surface will be cured too much, while the middle, or under side will scarcely be wilted. Every stalk should have the benefit, if possible, of a few hours hot sun. The chief object is to evaporate a large part of the water contained in the juices. This may at first be done very rapidly, for while it is going on, the clover is as it were enveloped in an atmosphere of moisture, and cannot parch. As soon as rapid evaporation stops, and it begins to smell and to be hay-like, and not simply wilted clover, it is time to check the drying by putting the hay into windrows or cocks. Here the exercise of good judgment is essential, lest the new mown hay be dried too quickly, and too much, which injures its excellence quite as much as it does to bake bread or cake in too hot an oven.

WHEN THE CLOVER HAY IS FIT TO RAKE.—An experienced hay-maker can decide with great accuracy, even blindfolded, when hay has been sunned sufficiently to rake and put in cock. Before it is cured enough it feels heavy, and it is the water in it that renders it so. As soon as the great bulk of the water is evaporated, it feels not only light, but soft and wilted. At this period it should be raked with all possible dispatch, and cocked up. The semi-fluid substances now in the stalks and leaves, need simply to be cured by the drying atmosphere. The burning sun injures them, just as too much broiling makes something like sole-leather out of a good steak. If in cocks, or in the shade, what remains of the curing is gradual and complete. In cocking hay, the windrows should not be rolled up in compact masses, and pressed down closely, as it prevents the partial circulation of air essential to curing and drying. The cocks should be made narrow and high, by placing one forkful directly on the top of another. When of this form, the new hay cures and dries out much sooner than when the cocks are broad and low. Furthermore, when one forkful is placed above another, the ends of the haulms are on the outside and hanging downward, carry off rain. In wet weather cover the cocks with hay caps; but keep the caps off so long as there is no danger from rain. When the weather is pleasant, let the cocks be forked over every day after the dew is off, by pitching thin forkfuls from them, and laying the hay up into cocks again. An active man will re-cock three tons in one hour; and thus give it a good airing. Repeat this process for three days at least, when the hay may be housed or stacked. When getting it in, as soon as a load is put on the wagon, turn over cocks enough for another load, stirring up the damp hay near the bottom. By the time one load is pitched off, another load will be in prime order to go into the barn. It is not good practice to spread out eight or ten tons of hay at one time, unless there is help enough to secure it before it is injured by too much sunshine or rain,

neither is it well to let hay remain in the cock until it is very dry. As soon as it is well cured it should be stored. If one has an abundance of barn room, it is always better to put one load in a place, even if it should be necessary to move it after a few days. When there are certain indications of a heavy rain before hay can be thoroughly cured and housed, it is well sometimes to put it in before it is really fit to be stored in a permanent mow. Under such circumstances, pitch a load on some loose poles overhead, perhaps another in another place, and so on. Then, after a few days, it may be all forked over and shifted to another part of the barn. This labor requires no more time than to do it in the field, and thus a great amount of excellent hay may be saved from being damaged by the rain, and the labor performed when workmen have little to do.

Western Agriculture.

IS THE AMERICAN AGRICULTURIST ADAPTED TO THE WEST?

The following letter is written to the *Agriculturist* by a young go-a-head westerner, of LaSalle, Ill. It is so true an expression of genuine western feeling that we give it, making it a text for a few words on the same subject regarded from a somewhat different stand point: *Editor of the Agriculturist, Sir:*

"Do not think that your paper will do for the whole American continent. Why, sir, as far as farming is concerned, it will not do at all for the West. Guess it will only do for the East, where it is printed alongside an old stone wall, amongst roots, stumps, sticks, stones, grubs, brush, and all kinds of rubbish generally found on eastern land. Why, sir, if you have never been out west, you can not believe the vast amount of work done here. Men here with one team cultivate 40 acres of land and live 4 miles away from it. Two men and teams can cultivate from 30 to 50 acres of small grain, and from 50 to 80 acres of corn and do it well. We have had men from the East here who declared that ten men could not do the work that one man had to do here. One man and team will plow 2 acres per day, and will mark one way from 30 to 40 acres (for corn.) One man and boy, with team and corn-planter, (Brown's is most generally used) will plant from 10 to 20 acres. We have corn-plows with which we plow from 8 to 12 acres, reapers which cut from 10 to 15 acres. We thresh and clean from 300 to 500 bushels of wheat from 500 to 800 of oats, and about the same of barley a day. Men husk from 30 to 50 bushels of corn, and we never think of cutting up corn stalks unless we have not got hay enough for our cattle in the spring, as they get feed enough in our cornfields through the winter, or until after the 1st of March, when we have to feed them until the 15th of April; then we turn them out into the prairies to go until the 1st of November. Then we take a day and hunt them up and drive them in rolling fat. Now, sir, do not you think this is a much more profitable way of raising cattle than the way you tell us to do on page 137, May number, current vol.? Do not think because we can do so much work here in a day, that we are idle half the time. It is nothing but constant work here from the middle of March to the 1st of December, or till Christmas. You have considerable to say about the best way to drop potatoes, pitch manure, make corn-markers, corn-coverers, etc., but we do not need any such advice here.

These are *facts*—just what you asked for. I can't tell exactly where. Now Mr. Agriculturist, any information you desire about the West, I will cheerfully give it to you.

Yours truly, "WESTERN BOY."

It makes a man's notions of farming expand when he takes his stand on an eminence upon the prairies, where the waving maize fields alternate with those of wheat, and cultivated land, with the unbroken prairie on all sides as far as the eye can reach, realizing that the soil is deep and very fertile, that the climate is genial, and that the multitude of men that are making homes for themselves and their children, all over that broad region, are vigorous, young, ambitious and free. The earth only half tilled, yields most bountifully, and even without tillage the natural crop of wild grass affords abundant pasturage, and hay of passable quality for herds of small and great cattle. The eastern man who has had his little farm of 30 acres in Massachusetts or Vermont, and found enough to do for himself and boys, and perhaps one or two hired men the year round, may well look with wonder at cornfields of several hundred acres in extent, and express himself astonished at the rapidity with which farm work is done. He finds the soil as mellow as the finest garden mould he ever saw, and the subsoil of the same quality to the depth to which no plow can penetrate. He finds moreover the genuine Western Man as full of the West and its glories and advantages as if it were Eden itself, and as if no end of brag and exaggeration (which flows like a river) could convey a false impression.

The West is grand, and it is easy to raise big crops, and to go over many acres a day, and to make great crops without manure, without trouble from weeds, without the necessity for three or four times plowing and hoeing for what we call hoed crops. It is nevertheless true that good farming is dependent upon the same fundamental principles the world over. That what is true for the eastern farmer as regards the relations of the air, the soil, the plant, and the animal to each other, on his small, poor farm is just as true for the farmer on the broad acres of Illinois. If it is not necessary for him to save, and haul, and spread manure now, he should remember that without good husbandry his fields will finally become exhausted and need manuring. If weeds do not trouble him now, let him take the more care they do not find their way upon his land in foul grain seed, etc. If he has ten thousand acres of wild grass, upon which his herds, with those of his neighbors, may range and fatten, he can not tell in how few years his own quarter section will be all the land he can control, and farms and pasturage grounds of different farmers be as well defined as they are further East. If stall-fed beef, and dairies, and milk, and cream, and butter, and cheese, are almost unknown articles of diet, or of farm production, let him live in hope of the good time coming, when home markets, or ready transportation, will make it worth while to know something about their economical production. The prairies are not boundless, their fertility not inexhaustible, and manuring produces almost as desirable effects at the West as at the East.

We admit that we can not mark for corn, 40 acres a day, nor plant 20 acres, nor do a great many things as fast as they do "Out West." The *Agriculturist* is intended to be adapted to the wants of civilized men who till little or much ground, who have live stock to care for,

be it beeves or chickens, households to provide for as regards both the wants of the body and the mind, and we doubt not even "Western Boy" finds some thing both of interest and value to himself. Should he write again we hope he will tell us what he knows from experience, and what his Western neighbors would be benefitted by knowing also.

A New Poultry Book.

There is now in press and soon to be issued by the Publisher of the *Agriculturist*, a new work on Domestic Poultry, by Mr. S. M. Saunders, of Staten Island. It will form, we think, a valuable hand-book for all who keep chickens, whether for economical purposes merely, or for fancy. The number of poultry breeders is fast increasing, who take more delight in the perfection of breeds, and the production of beautiful birds, than in either eggs or poultry, for their own tables or for market. This is indeed a beautiful and beneficial "fancy," and to be encouraged, unless it runs into unwarrantable extravagance, for it is through poultry fanciers alone that we can hope for the preservation in purity of those elegant and beautiful breeds of fowls which are and will ever be of so great use to all poultry raisers, enabling them to impart to common stock those qualities which render the pure breeds famous either as layers, or for the production of flesh. We give on the next page two of the beautiful engravings with which this work is very fully embellished. The first is of three somewhat famous breeds of French fowls, with descriptive extracts from Mr. Saunders' forthcoming book.

"Within the last two or three years some valuable importations of new breeds of poultry have been made into England from France; but I am not aware that they are known on this continent. They have, however, become sufficiently known and appreciated by our British cousins as to demand our attention.

"THE HOUDAN has short thick legs, and a round, well-proportioned body, large head, small top-knot, falling backward. It is bearded, and has five claws on each foot. It is a good-sized fowl, weighing, when fully grown—cock, 6 lbs.; hen, from 4½ to 5 lbs. The plumage should be speckled, white, black, and straw color. The comb is the most remarkable part of this bird; and I can not do better than quote Jacque's description: 'Comb, triple crossways of the beak, composed of two flattened spikes, of long and rectangular form, opening from right to left like two leaves of a book, thick, fleshy, and variegated at the edges. A third spike grows between these two, having somewhat the shape of an irregular strawberry, and the size of a long nut. Another, quite detached from the others and about the size of a pea, should show between the nostrils and above the beak.' This gives the bird a grotesque appearance, and there is an air of impudent drollery and humor about him that is peculiar to the breed. The legs are dark leaden gray. In this breed the hens approach more nearly the weight of the cock than is usual. These fowls are very popular in France, as layers and table-fowls.

"THE CREVECEUR is better known than any of the French fowls; it is one of the best layers, not only on account of number, but also of size, being equal in this respect to the Spanish. It is a short-legged breed, square-bodied, deep chest, well shaped for the table.

"Like most of the French breeds, it is bearded and top-knotted, but the latter appendage is

like a crest, and allows room in front for the comb. This is singularly shaped, and I shall again quote Mr. Jacque: 'Comb various, but always forming two horns; sometimes parallel, straight and fleshy, sometimes joined at the base slightly notched, pointed, and separating at their extremities; sometimes adding to this latter

description interior ramifications like the horns of a young deer. (The cock in the background is of this variety, and shows this appearance.) The same author says: 'The comb, shaped like horns, gives the Creveceur the appearance of a devil.' The legs should be black, or very dark slate blue. Their plumage should be entirely black, having bright blue and green metallic lustre, except the feathers of the belly, which

are dark brown. The hens should weigh from 5 lbs. to 6 lbs. each; the weight of the cock should be 7 to 7½ pounds. The department, of the Creveceur is staid, solemn, and grave.

"The LA FLECHE is a singular bird; with a strong, firm body, well seated on its legs, and long muscular feet. Appearing smaller than it really is, because the feathers are close; every muscular part well developed; black plumage. The La Fleche is the tallest of all French cocks; it has many points of resemblance to the Spanish, from which Jacque believes it to be descended, by crossing with the Creveceur. It has white, loose, and transparent skin; short, juicy, and delicate flesh, which puts on fat easily. As layers they are superior, like the Creveceur, to any breed except the Spanish; but yet, for table use, they are not as good as the Dorking. The La Fleche has the body of the Spanish placed on legs set forward, immediately under the breast rather than the body of the bird. It has a bold, cheerful, lively face; but the general impression is curious from the extraordinary comb, of which I will give the description from Mr. Jacque: 'Transversal, double, forming two horns bending forward, united at their base, divided at their summits; sometimes even and pointed, sometimes having ramifications on the inner sides. A little combing protrudes from the upper part of the nostrils; and, although hardly as large as a pea, this combing, which surmounts the sort of rising formed by the protrusion of the nostrils, contributes to the singular aspect of

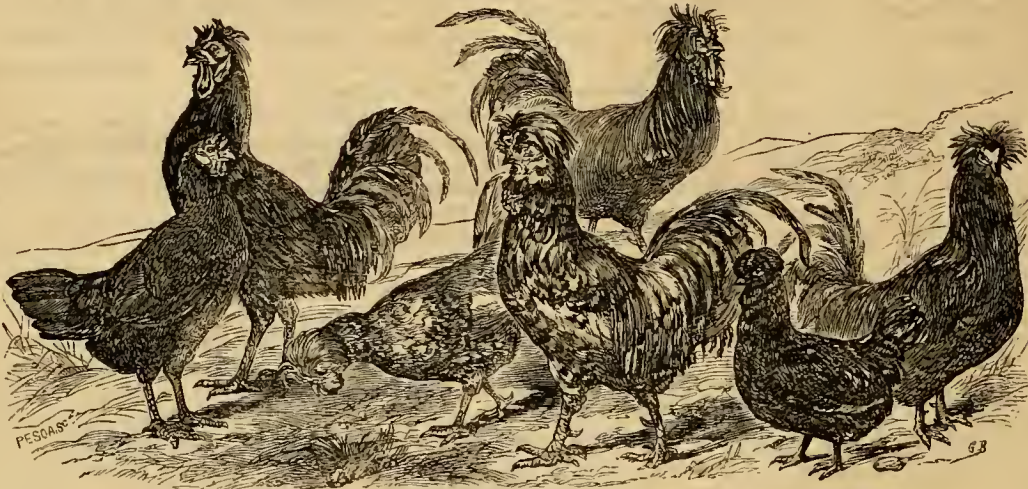
the head. This measured prominence of the comb seems to add to the characteristic depression of the beak, and gives the bird a likeness to a rhinoceros.' [A very singular bird, truly.]

"It should have a large deaf-ear, perfectly white; not so large as the Spanish, but larger than that of any other fowl. It has slate blue

point, which must be round and equal in width to the widest part of the feather; there should not be even a tendency to a curve in it. The side tail-feathers rising from the back to the tail should also be flat, round-topped, and accurately laced. There must not be any hackle or saddle. These are the principal points

of the male. The hen requires the same comb, the same accurate lacing, the prominent breast, drooping wing; her head should be very small, beak sharp. The carriage of these birds should resemble that of a good Fantail pigeon; the head and tail should be carried up, in the strut of the bird, until they nearly meet, and the wing should drop down the side, instead of be-

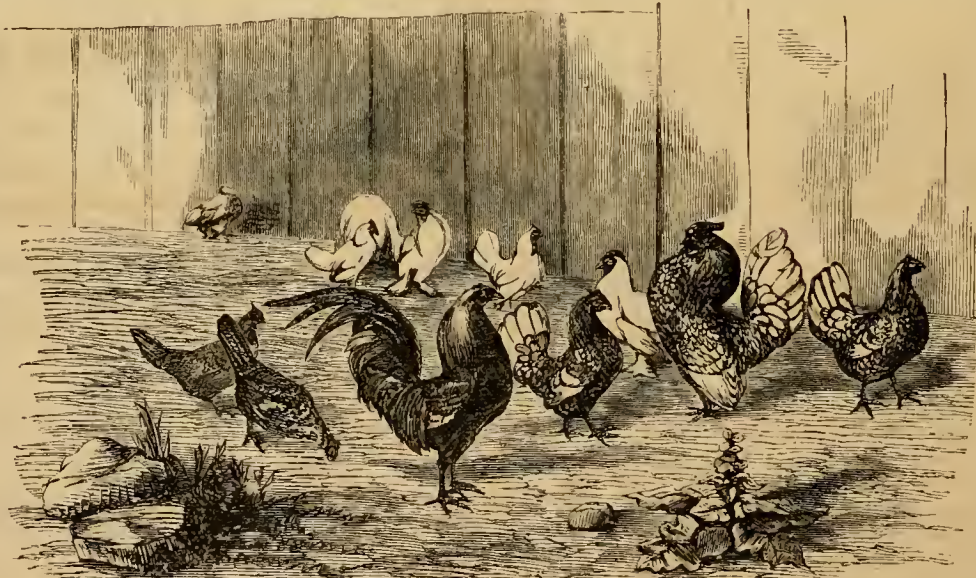
ing carried up. In both sexes the wing-feathers should be tipped with black, and even the long feathers laced. Like all other first-class birds, these are difficult to get; and lest amateurs should be discouraged, I may almost venture to say, a faultless bird is hardly to be found. From the best-bred parents, single-combed chickens will constantly appear, but these will again produce perfectly double-combed progeny. Such are, however, to be trusted, when the possessor of them is sure that, although defective themselves, their parents were faultless in this particular. It is never advisable to breed from a faulty bird, if a perfect one can be obtained. Small size is a desideratum in these fowls. They are, therefore, seldom bred early, as growth is not desired. July is early enough to hatch them. Perfect cocks should not weigh more than seventeen ounces, nor hens more than fourteen. Other Bantams, to pretend to excellence, should be diminutive as the Sebright, and should have the same arrogant gait; but they differ, inasmuch as the males should be large cocks in miniature, with hackle, saddle, and tail fully developed. The rule of comb is not so imperative. In black and white birds it



LA FLECHE. HOUDAN. CREVECEUR. GROUP OF FRENCH FOWLS.

legs, darker or lighter according to age, turning to a spotted gray as they get old. The hens differ from the cock only by having a smaller comb. He must have a white ear-lobe. These are a peculiar but a stylish breed; they are very good layers, and the chickens are easy to rear."

Of the Bantams Mr. Saunders says: "They have long been favorites; their small size, their beauty, and their impudence gaining them admirers. Many years since, only those that were feathered to the toes were admired. The late John Sebright, by much attention and a thorough knowledge of the subject, succeeded in producing birds of surpassing beauty and symmetry. Those that bear his name are the most appre-



GAME BANTAMS. WHITE FEATHER-LEGGED BANTAMS. SILVER SPANGLED SEABRIGHTS. GROUP OF BANTAM FOWLS.

ciated by fanciers. They are of two colors, gold and silver; they must have double combs, with pointed end and rising upwards, and well-seated on the head, firmly fixed, not inclining to one side, nor yet raised on a fleshy pedestal; laced feathers, each being edged with black; blue legs, without even the sign of a feather on them; upright tail, tipped with black at the

should be double; but it is not so necessary, nor does the substitution of a single one cause disqualification. In the black breeds, white deaf-ears are necessary to excellence; and in these and the white, the sickle feathers should be long and well carried. Feathered-legged bantams may be of any color. The Bantams are good layers and mothers, and easily reared."



The Touch-me-not or Jewel Weed.

All through the summer months there may be found in rich, moist, and shady spots a wild flower, a small branch of which is represented in the accompanying engraving. The pale color and general coarseness of the foliage are such that the plant does not at first sight present a very attractive appearance, and its interest is mainly confined to the flowers and fruits. The plant grows from two to four feet or more in height, and has a succulent semi-translucent stem; it is much branched and bears its flowers towards the ends of the branches. The flowers, the shape of which will be seen in the engraving, are curiously formed, the calyx and corolla colored alike, with one of the parts of the calyx much larger than the others, bag-like, and at one end drawn out into a point or spur which is bent over towards the front of the flower. The flowers are of a bright orange yellow, spotted with brown, and their brilliancy together with the grace with which they hang upon their slender stems, have naturally suggested the popular name of Jewel-weed. These showy flowers very seldom produce seeds, but other flowers, which are so inconspicuous that they are seldom noticed, are the fertile ones. In these seed bearing flowers, the petals, etc., do not open, but the pistil is fertilized in the bud; as it grows, the parts of the flower are pushed off. The long and narrow seed pod, when ripe, bursts spontaneously, and scatters the seeds, the five parts which form the exterior of the pod or seed vessel, breaking away from the central portion and curling up with considerable force. A pod after it has burst, is shown at the lower right hand side of the figure. The botanical name is *Impatiens fulva*. The generic name, *Impatiens*, alludes to the impatience of the seed-pod under handling, and its common name, Touch-me-not, expresses the same peculiarity.

upon the leaf, sometimes upon one side only and at others both sides are attacked. The spots rapidly increase in size, and the vitality of the leaf is destroyed; the young wood and buds are often attacked, and the green fruit is also subject to the mildew. If the progress of the trouble is not arrested, the growth is interfered with, and not only is the crop of the present season lost, but even if the buds escape injury, the health of the vine is so seriously impaired that it is afterwards more susceptible to the attacks of disease. When mildew appears on the fruit, it ceases to grow, the skin hardens, cracks and exposes the seeds. All of this trouble is caused by a small parasitic fungus, so minute that it requires a magnifier to see it distinctly. A small portion of the mildew is shown in Fig. 1, very much enlarged. At the lower side are seen a part of the threads which are, in the real plant, exceedingly minute and cobweb-like. These threads are the plant proper; they penetrate the tissues and living on their juices, branch and multiply rapidly, and cause destruction to the leaf and other parts of the vine. The upright, club-shaped bodies, shown in Figure 1, as springing from the horizontal threads, are the re-



Fig. 1.—MILDEW.

This specific name, *fulva*, is in reference to its color, and there is another species, less common than this, with larger and paler flowers, called *pallida*. The closely related garden Balsam, sometimes called Ladies-slipper, is *Impatiens Balsamina*, and in flowers (when single) and fruit resembles this in all important particulars.

Grape Mildew and its Cure.

Some of our correspondents, in view of the frequent recommendation to use sulphur to prevent or arrest mildew, ask how they can know that their vines are attacked by it. The mildew makes its appearance in little grayish patches

productive portions of the plant and contain the spores, or the minute dust, which serve to distribute and multiply the fungus in the same manner that seeds do in plants of a higher order.

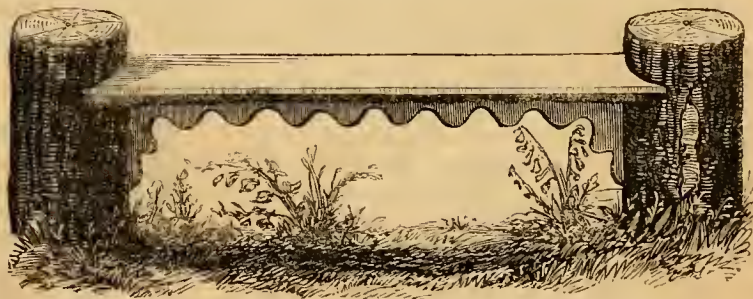
The mildew fungus is called *Oidium Tuckeri*, the specific name having been given in honor of a Mr. Tucker, who gave an account of the mildew when it first appeared in England.



Fig. 2.—SULPHUR BELLOWS.

Vines in a confined and moist atmosphere are more liable to mildew than those in a dry and open situation, and weak and poorly grown vines seem less able to resist it than do strong and vigorous ones. The susceptibility of varieties to attack, differs largely in degree, it being almost impossible to keep it from some, while others are never or rarely troubled by it.

Sulphur in some form has been found to be an effectual remedy; the direct application of the flowers of sulphur is the easiest, and perhaps as satisfactory in its results as any. With vines under glass, the volatilization which takes place at a moderate heat, suffices. Out of doors the plants must be dusted. We have before described a bellows used in France for the purpose of dusting the plants, and in Fig. 2 we give a representation of it. It is like a common bellows with a wide tin nozzle, which has its opening covered with coarse wire gauze. There is no valve on the under side, and on the upper side, for introducing the sulphur, is an opening, which is closed by a cork. The curve in the tube allows the under side of the leaves to be reached with ease. We believe that the bellows is for sale at the horticultural establishments.



Rural Embellishments.

The publication of a design for a rustic vase in January last, has called forth several suggestions in regard to such matters, which indicate that our readers appreciate the value of the ornamental as well as of the practical. We do not find much space in which to treat upon embellishments, yet they are not to be altogether omitted, and we hold that whatever makes home more attractive is really useful. In the matter of rustic vases, Isaac Hicks, of Long Island, finds that a cheese-box, properly strengthened, covered with chestnut-bark, and placed upon a portion of the trunk of a tree for a pedestal, makes a very serviceable and easily constructed vase. O. Ordway, of Hillsborough Co., N. H., makes his receptacle for flowers of the end of an old alcohol or other strong barrel. This is sawed off just above the second tier of hoops, the head strengthened by cleats and set upon a section of a log. The whole is then covered with a rustic work of twigs, bark or rattan, and if need be, painted brown or some neutral tint. Mr. O. thinks, that two kinds of plants are better than

a great variety, and prefers the Periwinkle (*Vinca minor*), or Money-wort (*Lysimachia nummularia*), for trailing over the edge of the vase and some of the dwarf Lobelias for the centre.—In the way of rustic seats, we have quite a novel and easily executed design communicated by C. E. Townsend, of Queens Co., N. Y., whose very clever sketch we have had engraved. Two log-cuts, with the bark on, 2 feet long, and about 20 inches in diameter, are used for the supports to the seat, which is a plank 14 inches wide and 6 feet long. Grooves are made in the logs at 8 inches from the top to receive the seat. Beneath the seat is a curtain sawed out of a 10-inch board, and which is held in place by longitudinal grooves in the logs, under the middle of the seat. The whole readily comes apart, and it may be taken in pieces, and housed in the winter. The plan here given is very simple and unpretending, and in many situations would be all that is required for a lawn seat.

The Culture of Celery.

BY PETER HENDERSON, JERSEY CITY, N. J.

I know of no vegetable on the cultivation of which there is so much useless labor expended with such unsatisfactory results, as celery. Almost all private cultivators still think it necessary to dig out trenches, from six to twelve inches deep, involving great labor and expense, and giving a very inferior crop to that planted on the level surface, in the manner practised on hundreds of acres by the market gardeners in the vicinity of New York.

Our manner of treating the celery crop, of late years, is very much simplified. Instead of sowing the seed in a hot bed or cold frame, as formerly, it is sown in the open ground as soon as it is fit to work in April, and kept carefully clear of weeds until the time of planting in June and July. The tops are shorn off once or twice before planting, so as to ensure "stocky" plants, which suffer less on being transplanted. Celery is always grown as a "second crop" by the market gardeners, that is, it follows after the spring crop of beets, onions, cabbage, cauliflower or peas, which are cleared off and marketed, at latest, by the middle of July; the ground is then thoroughly plowed and harrowed. No additional manure is used, as enough remains in the ground, from the heavy coat it has received in the spring, to carry through the crop of celery. After the ground has been nicely prepared, lines are struck out on the level surface, 3 feet apart, and the plants set 6 inches apart in the rows. If the weather is dry at the time of planting, great care should be taken that the roots are properly "firmed." Our custom is, to turn back on the row, and press by the side of each plant gently with the foot. This compacts the soil and partially excludes the air from the root until new rootlets are formed, which will usually be in 48 hours, after which all danger is over. This practice of pressing the soil closely around the roots is essential in planting of all kinds, and millions of plants are annually destroyed by its omission. After the planting of the celery is completed, nothing further is to be done for six or seven weeks, except running through between the rows with the cultivator or hoe, and freeing the plants of weeds until they get strong enough to crowd them down. This will bring us to about the middle of August, by which time we have usually that moist and cool atmosphere essential to the growth of celery. Then we begin the "earthing up," necessary for blanching or

whitening that which is wanted for use during the months of September, October and November. The first operation is that of "handling," as we term it, that is, after the soil has been drawn up against the plant with the hoe, it is further drawn close around each plant by the hand, firm enough to keep the leaves in an upright position and prevent them from spreading, which will leave them as shown in fig. 1. This being done, more soil is drawn against the row (either by the plow or hoe, as circumstances require), so as to keep the plant in this upright position. The blanching process must however be finished by the spade, which is done by digging the soil from between the rows and banking it up clear to the top on each side of the row of celery, as in fig. 2. Three feet is ample distance between the dwarf varieties, but when "Seymour's Superb," "Giant," or other large sorts are used, the width of the rows must be at least four and a half or five feet, thereby entailing much more labor and loss of ground. For the past six years I have grown none but the dwarf varieties, and have saved in consequence at least one half in labor, and one third in ground, while the average price per root in market has been always equal and occasionally higher than for the tall growing sorts.



Fig. 1.—HANDLING.

The preparation of the soil and planting of celery for winter use, is the same in all respects, except that, what is intended for winter should never be "banked up" with the spade. It merely requires to be put through the handling process, to put it in a compact and upright position preparatory to being stowed away in winter quarters. This should not be done before the middle of September, or just long enough before the celery is dug up to keep it in the upright position. Our manner of preserving it during winter is now very simple, but as the knowledge of the process is yet quite local, being confined almost exclusively to the Jersey market gardeners, I will endeavor to put it plain enough, so that your readers "may go and do so likewise." In this locality we begin to dig up that which we intend for winter use, about the end of October, and continue



Fig. 2.—EARTHING.

the work (always on dry days) until the 20th or 25th of November, which is as late as we dare risk it out for fear of frost. Let it be understood that celery will stand quite a sharp frost, say 10 or even 15 degrees, while 20 or 25 degrees will destroy it. Hence experience has taught us that the sharp frosts that we usually have during the early part of November, rarely hurt it, though often causing it to droop flat on the ground, until thawed out by the sun. It must, however, never be touched when in the frozen state, or it is almost certain to decay. The ground in which it is placed for winter use should be as dry as possible, or if not dry, so arranged that no water will remain in the trench. The trench should be dug as narrow as possible, not more than 10 or 12 inches wide, and of the depth exactly of the height of the celery; that is, if the plant of the celery be two feet in length, the depth of the drain or trench should be two feet also. The celery is now placed in the trench as near perpendicular as possible, so as to fill it up entirely, its green

tops being on a level with the top of the trench. Fig. 3 represents a section across a trench filled with celery in the manner just described. No earth whatever is put to the roots other than what may adhere to them after being dug up. It being closely packed together, there is moisture enough always at the bottom of the trench to keep the plant, at the cool season of year, from wilting. That which is put in trenches about the 25th of

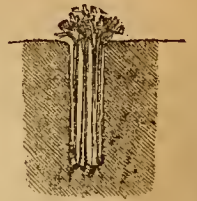


Fig. 3.—STORING.

October, is usually ready to be taken up for use about the 1st of December, that a couple of weeks later, by 1st January, and the last (which we try always to defer to 15th or 20th November) may be used during the winter and until the 1st of April. For the first lot no covering is required, but that for use during the winter months must be gradually covered up from the middle of December, on until 1st of January, when it will require at least a foot of covering of some light, dry material—hay, straw, or leaves—the latter perhaps the best. I have said the covering up should be gradual. This is very important, for if the full weight of covering is put on at once, it prevents the passing off of the heat generated by the closely packed mass of celery, and in consequence it to some extent "heats," and decay takes place. Covered up in this manner it can be got out with ease, during the coldest weather in winter, and with perfect safety.

It may be interesting to some to know what are the profits of this crop. I have cultivated an average of 10 acres of it for the past 16 years, and can speak from this experience. For many years in the early part of that time, it was by no means what we would now call a profitable crop. By persisting in raising the large growing sorts, and the awkward and expensive mode we had then of working it, we were satisfied if it gave us a profit of \$50 or \$75 per acre. But for the last six or eight years, by adopting the flat culture, and the drain or trench system for winter storage, it has done much better, and is now a very profitable "second crop," averaging a clear profit of \$300 per acre, though it rarely brings over \$3 per 100 roots. No doubt, in many parts of the country it would be much more profitable than in the crowded markets of New York. It is shipped from here in all directions; to Philadelphia (largely), Baltimore and Washington, (South,) and to Newport, Providence, Hartford and New Haven, (East.) It is a bulky and expensive article to ship, and the dealer must realize more than double on the purchase, or it will not pay his risk. It must thus cost the consumer, in these towns to which we send it, 8 or 10 cents a head, a price at which it would pay a clear profit of \$1000 per acre.

DOUBLE-WORKING PEAR TREES.—In discussions about fruit it is frequently stated that a certain variety will only succeed on quince stock when "double worked." As this is quite a technical expression, some of our readers ask us to explain what it means. The readiness with which different kinds of pears will unite with the quince stock varies greatly, as does their after growth and vigor when the union has taken place. Double working consists simply in budding the quince stock with a kind of pear that is known to succeed well upon it, letting it grow to the desired size, and then budding

the pear with the variety which will not do well if worked directly upon the quince. In this way the early fruiting, and other benefits resulting from dwarfing are secured.

Notes on Strawberries.

As we go to press at too early a day to allow of any extended account of the fruit shown at our Strawberry Exhibition on June 8th and 15th, we give notes of our observations upon berries in the gardens and those which have from time to time been brought to the office. The present has generally been a favorable season for strawberries, and though the quantities in market have been large, good fruit has brought a good price. These notes are made upon berries in the immediate vicinity of New York, and the opinions given may not agree with the experience of those living in distant localities; but it must be borne in mind that those varieties which are successful in some parts of the West, and elsewhere, may be worthless here, and vice versa.

Agriculturist.—Specimens of this have been sent by several cultivators, and it bids fair to fulfil the hopes entertained of it as being one of the most remarkable berries in cultivation. The vines on Mr. Judd's grounds, though they were urged to make all the runners possible, are something wonderful in the way of fruitfulness, and seem to contradict the statement that a plant cannot make runners and still bear good crops of fruit. Some inquiries have been made as to the sexual character of this variety. Every blossom we have examined has been perfect; still, a close observer, whose accuracy we cannot doubt, states that some of the late blossoms are pistillate only, but that all become fertilized. This favorable opinion of the "Agriculturist" is not drawn solely from plants in Mr. Judd's grounds, but from seeing it elsewhere, and in different soils, and from the reports of those who have had it in cultivation long enough to fruit it. There was one point respecting this variety upon which we had strong doubts. It was known what the plant would do with high cultivation and with good but not excessive care, but we feared that like many other sorts it would, when subjected to the indifferent treatment of inexperienced cultivators, degenerate and prove a disappointment. This doubt is now removed, as we have seen it grow in very poor soil and almost covered with weeds, yet it produced an amount of fruit that in any other variety, under good cultivation, would be considered large. While we do not advocate poor culture for the strawberry, or for any thing else, it is gratifying to know that the "Agriculturist" is a variety that will do well under such treatment as it will be likely to get at the hands of the people generally, and that it does not need especial petting.

Lennig's White.—Altogether the best of the white berries, fine, large, and a great bearer.

Monstrous Hautbois.—This is a remarkably robust variety of Hautbois, and has all the peculiar characteristics of that class. It is a great bearer, and we are informed that the fruit is of good quality. We have only seen it with the unripe fruit, and regard it as a striking variety and promising well.

Ida.—Quite a new sort. Young plants are very vigorous, and make a good show of fruit.

Downer's Prolific.—This comparatively old sort is increasing in estimation with cultivators. It bears well, even under neglect, is very early, of good size and showy, but it is very acid.

Buffalo.—This has been by some considered identical with Russell's Prolific, but upon seeing the plants side by side, we cannot think them the same. Like the Russell, it is a strong plant and a great bearer, but it has much stronger fruit stalks and holds up its fruit better than that variety. Its resemblance to McAvoy's Superior, (we have not compared the two plants,) is still greater than to the Russell, and if not identical to that variety, it is, as far as the fruit is concerned, a distinction without a difference.

Triomphe de Gand.—This variety has done much better this year than last. Its large size and firmness make it an excellent market variety, but to our taste, and we are not alone in this respect, its peculiar flavor is not agreeable.

Burr's New Pine.—An old variety, but one which, in point of flavor, is hard to excel. Mr. Knox puts this as one of the best three, and considering his large experience, this is a high praise. It is usually considered a moderate bearer, but as we have seen it this year it had sufficient fruit to satisfy any one. Berry of only medium size, of good shape and color.

French's Seedling.—This variety, which has for some time been a popular one in the Philadelphia markets, proves well here. It is a very vigorous grower, and good bearer. Size and shape good, color bright scarlet, and of very fair flavor. These qualities together with its earliness make it a good market variety. Flowers hermaphrodite. Said to be an accidental seedling found in a meadow.

Fillmore.—This is one of Mr. Knox's favorites, but it does poorly on Long Island. It is pistillate, of good size, but there it is indifferent in quality and productiveness.

Marguerite.—Large and showy to the eye, but watery and worthless to the taste.

Austin.—Some very honest people think this a good fruit, and we are sorry not to be able to agree with them. It bears largely, but the fruit is soft and of very inferior quality.

Bonte de St. Julien.—A great bearer, and a good family fruit, sweet and too soft to market.

Le Baron.—Soft and flavorless.

Hooker.—This is said to be a rather local berry. In the extensive collection of Mr. Cavanagh, Brooklyn, it is a good bearer. Fruit of good size and among the best for quality.

Ladies' Pine.—A small to medium berry, very pale, fair bearer, and very sweet and rich.

Jucunda.—As we have seen it, large and poor, but has an excellent reputation at the West.

Jenny Lind.—Early and very firm, but not productive here.

Russell's Prolific.—This is well named "prolific." It maintains its reputation as one of the best and most productive of the pistillates. Sometimes hollow at the core and not very firm.

Belle Bordelaise.—This is a variety of the Hautbois with a most peculiar flavor, reminding one of a Black-cap Raspberry.

Fillbasket.—This was probably named by the rule of contraries. It would puzzle one to fill a small basket from a large bed as it grows here.

Progress.—A large and productive fruit, but lacking in flavor, and no progress toward perfection that can be discovered.

Cutter.—Good bearer, good size and flavor, rather acid, bright color, and has all the qualities desirable in a market fruit, except firmness.

Scarlet Magnate.—A very vigorous vine, but only fair bearer. Fruit soft and also quite acid.

Monitor.—Large size and prolific bearer, and a showy market fruit. Quality fair.

Green Prolific.—This is one of the parents of the Agriculturist, and like that is a strong grower and great bearer, but is rather soft and acid.

Crimson Favorite.—A very vigorous vine, but a poor bearer. The fruit is large and of excellent quality.

Gen. Grant.—This is a new seedling by Mr. Burgess of which we have only seen a few berries, and from these we should consider it a fruit of much promise.

Brooklyn Scarlet.—A very fair plant, good bearer, and handsome and excellent fruit.

Col. Ellsworth.—Large in size and indifferent in quality, but a very showy fruit.

Barnes' Seedling.—This is another new variety. It is a large berry, abundant bearer, but the fruit lacks character.

Heins' Seedling.—Another novelty, and a seedling of the Wilson, upon which it is an improvement, being large, of good shape, and spirited flavor.

Useful Things in the Garden.

A number of garden implements have been illustrated in the *Agriculturist* this year, but the catalogue of them is not yet complete. In the choice of implements, whether for hand or horse power, it is a matter of importance to select those which will do the work thoroughly with the least expenditure of force, and if a few ounces can be saved in the weight, or the amount of resistance to be overcome, in a hand implement for the garden, it is a great gain. A correspondent, "J. M.," of Montgomery Co., Pa., sends us a drawing and description of an implement which he considers superior to any other for garden uses. It is not new, but is sold in our stores as a hoe-fork, or potato-hook; still, as it may be new to many readers, we give an illustration of it which will need but little explanation. The curved teeth are about 5 inches long, and filed to a sharp point. They are made



HOE FORK.

with 4 and 5 teeth. It is used by some of our best gardeners in place of the common hoe, to which they consider it as much superior as the spading fork is to the ordinary spade. By its use the soil is worked deeper than can be done with the common hoe, and it leaves the surface in that finely crumbled condition so favorable to growth. Our correspondent says: "in using it, merely drag it down the rows and if those who try it do not find it will do more work than any other description of weeder their experience will be different from mine."

One who has tried the "Adams Patent Weeding Hoe," described in the *May Agriculturist*, page 149, recommends it highly as a great labor-saving implement particularly on smooth ground. With it the ground between rows of onions, carrots, beets, etc., can be thoroughly cultivated close to the plants, more rapidly than four or five men could operate with common hoes. At this rate the weeder would pay its cost in a very short time.



The Common Groundsel.—*Senecio vulgaris*.

The plant of which an illustration is here given, is a native of Europe, but has kept pace with emigration, and is now known in every country settled by Europeans. In this country it is not very common in the newer States, but in the older ones it is quite abundant. Being an annual, it can not be regarded as a very troublesome weed, and none but a very careless cultivator will allow it to overrun the soil. In properly kept gardens the soil should not lie still long enough for weeds from seeds to get much of a foothold, and if any are visible they are only indications that the soil needs to be stirred. The engraving gives a sufficiently good idea of the plant without much description. At the lower right-hand side a head of flowers is shown of the natural size. It will be seen to be much like a head of flowers of the lettuce, except that while the small flowers in that are all flat, in this they are all tubular. They both belong to the same great family, the *Compositae*, the fruit in which is so frequently furnished with a tuft of down which allows it to be carried from place to place by the wind. The seed of the Groundsel is dispersed through this agency, and in order to keep the ground clear of it, it should never be allowed to flower. The plant is also called Simson in England, where it is used in domestic practice and as a medicine for

rots in horses. It probably has no great amount of activity. Birds are quite fond of it, and pieces of it are frequently put into the cages of singing birds. The generic name, *Senecio* is from Senex, an old man, the crown of the ripe heads presenting a tuft of white hairs; the specific name, *vulgaris*, means common.

Among the Rhododendrons.

Among the shrubs cultivated for ornament, there is none more satisfactory and truly elegant than the hardy Rhododendrons. A single plant upon the lawn produces a fine effect, and a clump of them of various colors in full bloom is something magnificent. Knowing that Parsons & Co., of Flushing, L. I., had the most extensive collections of these plants in the country, we visited their establishment in the height of their bloom. Probably no such floral show can be seen elsewhere, as this mass of thousands of Rhododendrons, with colors ranging from pure white to dark purple. Messrs. Parsons made a trial of all the new varieties produced in Europe, and have succeeded in selecting a series of perfectly hardy free blooming sorts adapted to our climate,—for it is frequently the case that those varieties which are fine in Europe, are quite unsuited to this country. Besides importing the best European seedlings, they have raised many themselves, and have some of their own production which excel any of the imported ones. Our native species *Catawbiense* and *maximum*, crossed with the foreign *Ponticum*, *Caucasicum* and *arboreum*, have given rise to a long list of varieties more or less hardy. The quality of the leaf is of as much importance as that of the flower, as it is only those, the foliage of which will endure extremes of our climate, that can be recommended for cultivation. Being broad-leaved evergreens, the winter's sun is very hard upon them, and they do all the better if covered during the winter with a screen of cedar boughs, or a thin straw thatch. The Rhododendrons need a light, rich soil, free from superfluous moisture. A light, sandy loam with plenty of leaf mould, suits them best. Unfortunately for their general introduction, the plants are of such difficult propagation and slow growth, that cultivators are obliged to sell them at a rather high price. The finer sorts bring \$2 and upwards each, while the common *maximum* is sold at about half the price.

The Blight of the Pear Tree.

Every summer we are in the receipt of numerous letters enclosing blackened leaves of the pear tree, accompanied usually by the statement that a tree, apparently in full vigor, has been suddenly attacked, and a part or the whole of it killed. So sudden and so thorough is the work of destruction, that many are led to attribute it to some deleterious matter in the soil. This disease or blight is one of the most serious drawbacks to pear culture, and has received attention from several close observers. In some cases the trouble is caused by a borer, which comes from an egg laid near the bud, and penetrating the stem, soon causes the limb to perish. The injury seldom extends much below the point at which the insect enters, and the dead branch may be removed and burned. The most common form of blight is not produced by an insect, but is attributed to the effect of early frosts, in autumn, upon the unripened wood; hence it has received the name of "frozen sap blight." It has been found to

occur most frequently when early frosts occur after a warm autumn. This being the alleged cause of the disease, it is obvious that the means of preventing it are to select such situations and give the tree such treatment as will induce it to ripen its wood so early that it cannot be affected by sudden atmospheric changes. A wet soil and over-manuring will, especially in a warm autumn, cause the tree to remain in a growing state much longer than if it were planted in a dry situation. A well drained, rich soil is most free from blight, though even here the very vigorous sorts may be attacked by it. Root pruning has been recommended to check luxuriant growth, and would doubtless be beneficial. When the attack is but slight, the tree will usually recover if the deceased limbs be removed, cutting them below the point to which the wood is discolored. Dr. Kirtland, whose suggestions are entitled to respectful consideration, regards the disease as one proper for medication, and has recommended the application of iron to the soil and to the leaves and branches of the tree. He proposes the use of blacksmiths' cinders about the roots, and sprinkling the tree with a solution of sulphate of iron (copperas). How far it is in our power to benefit trees by introducing into their circulation articles not demanded by their growth, is a matter upon which we have little or no positive knowledge, and is an interesting field for careful experiment.

A Sport of the Rose.

Some months ago we gave an engraving and description of the Green Rose, in which the petals are replaced by ordinary leaves; we now have an illustration of a more common, but equally striking departure from the ordinary way of things, in which one rose appears as growing out of another. It is not rare to find roses with



a bud produced from the center, but we have never met with one in which the abnormal condition was so strongly marked as in that represented in the engraving, from a sketch by "W. L. G.," of Wallace, Ind. In flowers generally, the parts are crowded upon a *receptacle*, which is the end of the stem, and is rounded off or enlarged to accommodate them. The stem usually terminates within the flower and it does not often grow beyond it. In these sports of the rose the stem seems to be endowed with unusual vigor, and not contented to stop when it has borne a flower, it continues its growth and produces leaves and another flower. In the present case the growth was so vigorous that a second rose expanded above the first one

before its petals had fallen, and a strong shoot pushing from the center of the second one. Our correspondent mentions that green leaves were found mixed with the petals, and that some were found partly leaf and partly petal. A careful observer will find many examples of abnormal conditions of vegetable growth, and they are worthy of examination, as they frequently give one a clearer insight into the real structure of flowers and other parts of the plant, than we can derive from examining them in the perfect state, in which we usually see them.

THE HOUSEHOLD.

Vinegar Making.

Vinegar, so useful in the household, is prepared from various materials, but whatever is used, or however the process of manufacture, its production in all cases depends upon the conversion of alcohol into acetic acid, or the acid of vinegar. Though the liquid used may not at first contain alcohol, it must have those principles from which it may be produced and alcohol is formed in the process before the liquid becomes vinegar. This is the case where fruit juices or solutions of sugar of any kind are used for vinegar; the change is first to produce alcohol from the sugar, and then to convert the alcohol so formed into acetic acid.

Without going into the chemical changes, this is in brief what takes place, and the essentials in vinegar making are: a liquid containing alcohol, or some material that will produce alcohol, a ferment of some kind, a sufficient temperature and a free admission of air.

As the conversion of alcohol into acetic acid is the result of oxidation, the presence of the oxygen of the air is quite important, and other things being equal, whatever tends to promote free contact of the air and the liquid, very much hastens the formation of vinegar. In apple, grape, and other fruit juices, we have a solution of the sugar of the fruits, which at the proper temperature readily undergoes fermentation; alcohol is produced from the sugar, and a weak mixture of alcohol and water, in the form of cider or wine, is the result. This liquid if left to itself for some months, will at length contain no alcohol, but be changed to vinegar. In the case of fruit juices no ferment is added as they contain a natural ferment, though vinegar is formed much sooner if some old vinegar, or mother of vinegar, be added. Vinegar prepared from fruit juices contains, besides acetic acid and water, various coloring matters, as well as peculiar flavoring principles; these, while they are not objectionable for table uses—indeed rather improve it—render it less fit for pickling, as the pickles have a less fine appearance and do not keep so well. Very pure and colorless vinegar is made directly from whiskey, or some other form of alcohol, and it is this which is found in the market as "white wine vinegar." In making vinegar from alcohol a vat is used of the form shown in the accompanying figure. It may be either a vat built for the purpose or a very tall cask. They are made from 6 to 12 feet high, and we have seen the vats made of two casks put together, with the junction made tight by caulking. About a foot from the bottom of the vat are 6 or 8 half inch holes, bored with a downward slant so that a liquid trickling down the sides of the cask will not run out, and an inch or two above the holes, a false bottom is placed in which are bored numerous $\frac{3}{4}$ inch holes. The cask



is filled with beech-wood shavings to within about a foot or 16 inches of the top. Six or eight inches below the top of the vat is fixed a platform, or cross partition, in which holes are regularly placed, at $1\frac{1}{2}$ inches apart. These are about $1\frac{1}{2}$ inches in diameter, and burned out so that they will remain free. This partition is put in place and the joint between it and the sides of the vat made tight by caulking. Pieces of twine are put into the holes in the partition in such a manner that the liquid, when poured upon it, will trickle through in drops. Four tubes of glass or of cane, $\frac{3}{4}$ of an inch in diameter, are set in holes in the partition; these do not project below, but above they reach to within an inch of the top of the vat, which is closed by a tight cover having an opening to admit the liquid. A thermometer is inserted in a hole in the vat, 6 inches below the partition, so arranged that the internal temperature may be inspected. A wooden faucet is placed near the bottom of the vat, and a glass tube, curved in the form of a gooseneck, is placed with its bend below the row of air holes. The shavings are boiled in good vinegar before they are packed in the vat, and after all is ready, the vat is brought into fermentation by the use of a mixture of one-fifth vinegar and four-fifths of a 3 per cent. mixture of alcohol and water. This liquid is heated to 75° or 80° , and poured into the vat and allowed to trickle through the shavings. The same liquid with the addition of more alcohol is warmed and passed through the next day, and so on until fermentation is well established, and the temperature within the vat has reached to about 100° , when it is ready to commence the process of manufacturing vinegar. The liquid used consists of $28\frac{1}{2}$ gallons of water, 4 gallons of vinegar, and 10 quarts of 80 per cent. alcohol. This, in passing through the vat, becomes converted into vinegar, and the process may be made continuous. In practice, two vats are used, and the liquid, with only a portion of the alcohol, is passed through the first vat, after which the remainder of the alcohol is added to it, and the process completed by passing it through the second. The present high price of all alcoholic liquids will probably prevent many from experimenting in this direction, and this general outline of the process is given in answer to numerous requests for information respecting the manufacture of pickling vinegar. This account is made mostly from our own observation, while the measurements of the vat, etc., are taken from "The Manufacture of Vinegar," by Doct. C. M. Wetherill, a book which gives all the practical details of the process.

Coloring Cheese.

The color of cheese sometimes exerts a greater influence than the flavor, in securing a ready sale. Most people reject a pale, light-colored cheese; and choose those that have a golden color like rich cream, as this is a supposed characteristic of an excellent article. A light-colored cheese may possess all the richness of one that is as yellow as gold; indeed, they may both be alike in quality; and still the golden-colored one will be pronounced best, and command the highest price. So much does a good color enhance the value of cheese in most markets. In order to secure the desired color, it is customary to employ Annatto, but it may be done without. Let the curd remain in the vat, spread out as much as practicable, until it is of the right temperature to be put into the hoop. By allowing it to remain exposed to the atmosphere while it is cooling, instead of dashing cold whey, or water on it—as is sometimes done—the rich creamy color may be secured without the use of any coloring matter. By this means, all the good flavor and richness will be retained; whereas, when the curd is washed, more or less of the valuable portions of it are removed by the whey. If the curd be exposed to the air in this manner, the cheese will be of a uniform color throughout. Then if cured with care and the rind kept smooth by not allowing the outside to dry faster than the inside shrinks, a small quantity of annatto applied to the surface will impart a very good color to the exterior.



Fig. 1.—CITRON FLOWER AND FRUIT.

What is Citron?

By citron we do not mean that variety of water-melon which in itself is a hard green and tasteless thing, but which by the addition of sufficient sugar and flavoring, is sometimes made to serve as a sweetmeat, but that dark, fragrant, candied citron which is found in the stores, and which housekeepers use when they wish to achieve something unusual in the way of cakes. The citron of the shops is the candied rind of a fruit closely related to the orange and lemon—the *Citrus medica*. The tree, which is of medium size, is a native of Asia, and is now cultivated in the warm climates generally. The fruit is in general shape like the lemon, but very rough and knobby on the surface. It is quite large and is said to sometimes attain to the weight of twenty pounds. The rind is remarkably thick and out of all proportion to the size of the pulp. The shape of the fruit is shown in the above engraving, and a section, fig.

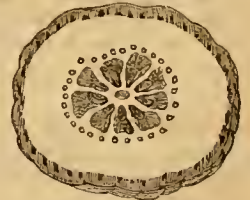


Fig. 2.—SECTION OF FRUIT. filled with an aromatic oil which communicates its flavor to the preserve, and is also extracted for use in perfumery. The rind is preserved in syrup, dried and packed in boxes for exportation. It is said that the rind is sometimes imported, pickled in salt and water, and candied after it reaches here. The Citron is mentioned by Pliny and other ancient writers, and it is supposed to be the fruit called apple in our translation of the Scriptures.

Summer Drinks.

Many wish something other than water during the hot days of summer, and there are many drinks in use which serve to allay thirst more readily than the same amount of pure water. All of these popular beverages contain vegetable acids in a dilute state, and these, when taken in moderation, are both cooling and tonic. The very general use of lemonade, which may be taken as a type of these drinks, is due to something more than its agreeable taste, and is popular testimony to the refrigerant property of citric acid. The citric acid of the lemon, qualified by sugar, and flavored with the oil from the rind, more or less of which becomes mixed with the juice in the process of squeezing, forms lemonade. This may be imitated and the component parts put up in a dry form, as in Morris' Con-

centrated Lemonade, which we have before noticed as a most convenient substitute for fresh lemons. Those who live where lemons are not obtainable, or where they are too expensive, make use of substitutes. A kind of "switchel" is made in some localities, which serves as a very good summer drink, and is much used in the hay field. It is made of vinegar, molasses and water, and flavored with ginger—a homely substitute for lemonade, but very good and much better than many things that are drank. Some of the acid fruits may be made to furnish cooling and pleasant beverages, and we allude to the matter now to suggest providing a stock for another summer. Currants, dried as described in another article, will be found very convenient, as their acid is very refreshing, and a large supply may be put up with very little expenditure for sugar. Where the Barberry is common, a most excellent material for summer beverages may be stored up. The fruit simply preserved in sugar, makes a sort of conserve, which, infused in boiling water gives a palatable drink; but the best way is to make a syrup by boiling the fruit in water and convert the strained liquid into syrup by adding a pound and a half of sugar to the pint. If bottled and set in a cool place it will keep a long time. Added to water in palatable quantity, it is not only pleasant in health but very useful as a drink in fevers. Raspberry Vinegar or Raspberry Shrub is one of the pleasant and nice articles that can be made in the family. Raspberries are placed in a jar and covered with strong vinegar, and set in a cool place for 24 hours. The next day as many more berries are added as the vinegar will cover, and so for a third day. After the last berries have been in for a day, set the jar in a kettle of water, and bring it to a scald, and then strain out the juice through a flannel. Add one pound of white sugar to each 1½ pint of juice, and heat in a tin or porcelain vessel to the boiling point, skim, and bottle. Do not boil any longer than necessary to remove the scum. Thus prepared it will keep for years.

Soap and Soap-Making.

A "Housekeeper" writes to the *Agriculturist*: "As the season has arrived for making this necessary article of domestic use among farmers, I wish to offer a few suggestions and relate a little of my experience in that line. Like most new housekeepers I thought it did not require any great amount of skill or experimental knowledge to make soap—for, thought I—there is nothing more natural than for oil and alkali to unite. So every thing all ready, in the "New of the Moon" I commenced operations. But my lye and grease would not combine in spite of all my efforts. So I repaired to an old housekeeper to divine the cause. "O!" said she, "You did not make in the new of the moon." Yes I *did* though! I made the *same* day that many of my neighbors made, and they had "good luck." Then she assigned several other reasons as foolish as that. In my school-days I had picked up a little Chemistry. While reflecting upon it I concluded that *some other substance must be in the mixture* that prevented it from uniting. And here I would remark that if farmers' daughters, and young ladies generally, would study less Algebra and other (to them) comparatively useless branches, and turn their attention more to Chemistry, Nat. Philosophy, Botany, etc., they would find it of far more practical benefit. So while I pondered, it appeared to me that even if the moon had some influence upon animal and vegetable life, she certainly could not control oils and alkalies. Finally, another individual told me to "put water in it and the soap would come." I did so, but that made it very weak. After diligent inquiry and many absurd reasons "why the soap would not come," I at last ascertained that the woman who assisted in trying the lard, etc., at "killing time" had *salted the grease profusely!* So it was the salt that prevented the oil and alkali from uniting. Putting in water weakened the solution. The result was,—in common parlance—"the soap come." I would say to all housekeepers—old and young,

keep salt out of your grease as much as possible if you would have no difficulty in making soap. The best way for keeping the grease for that purpose is to have a vessel of weak lye into which the grease can be dropped as fast as it accumulates. Their it is safe from mold, rats and worms."

Strawberry Time in New York.

A stranger visiting New York for the first time in the month of June, would think that a large part of the community were engaged in either selling, buying, or eating strawberries. The markets and stores are crowded with them; traveling venders hawk them through the streets; passengers in cars and on foot carry baskets of them; signs hang across the street announcing strawberry short-cake; all these as well as the exhibitions of the fruit at the office of the *Agriculturist*, and the rooms of the American Institute, indicate New York believes in strawberries. Early in spring, the windows of the restaurants show fruit raised under glass, which those who don't mind expense may taste—the general public can only look at it—but it satisfies them to know that strawberries are coming. In May, the southern counties of New Jersey send along their tribute of fruit, but very little of it gets into the mouth of the great public, and it is only when the warm suns of June are felt, that the fruit becomes abundant and cheap enough for everybody to have some. The best fruit, sent with care in neat boxes, never gets very cheap, and is only sold by the regular dealers, while the more common varieties in small baskets holding from a wine-glass-ful to a half pint, are sold by the venders who traverse the most remote streets. "Here they air, three cents a bairskit"—(with a long drawl on the "air," for the regular vender never says basket) is heard from morning till night. These venders are great institutions; a two-forty (\$2.40) horse, a rickety wagon, a rough looking man with a strong voice, and one or two small boys with shrill, high voices, make up the establishment. If one goes to the market or grocers, and buys berries, he will soon after reaching home hear the venders, offering them for a cent or two less by the basket than he has just paid—but let him buy of the peddler and he will find that a *bairskit* is a very indefinite quantity. There are tricks even in the venders' trade, and if one has the curiosity to know how berries can be retailed at wholesale prices, he must go to Washington market early in the morning, when the dealers get their supplies, and he will see how two baskets as put up by the grower are turned into three in the hands of the vender, by either transferring to smaller baskets kept for the purpose, or by a judicious division and shaking up of the ordinary baskets. The fruit in good seasons is reasonably cheap, but we wish that it might be still cheaper, so that the poorer people could get a chance at this great luxury without being obliged to pay even as much as "Three cents a bairskit."

Preserving Currants.

Generally those who have currants at all, have so many that they cannot well be used in the fresh state, and many go to waste, consequently we have frequent inquiries how they can be dried and made like those sold in the stores. We have more than once stated in the "Basket" that the imported fruit was not a currant, but a very small kind of grape, and that there was no process by which the currant we cultivate could be converted into a similar preserve. There is a way, however, in which currants can be preserved without the use of so much sugar as is required in making jelly. Last summer we saw a quantity put up by a lady for the use of the soldiers, and it seemed to us the best thing that could be made from the fruit. It was prepared in this way: Seven pounds of currants were cooked with one pound of sugar until the berries were well broken up, the whole was then put upon a colander and drained, and the juice which was obtained in this way put again over the

fire and evaporated to a thick syrup. The currants which remained upon the colander were then put into this syrup and cooked as dry as practicable without scorching. This was then spread upon plates and put in the sun to dry. Usually the upper surface dries in one day sufficient to allow the mass to be cut in small pieces and turned; the drying is continued until the pieces will not stick together. Prepared thus it will keep well if packed in a box in a dry place, and is most excellent for making a refreshing drink, as it has all the grateful acid of the fruit without the accompaniment of an excess of sugar. By soaking this dried fruit and cooking it with more sugar, an agreeable preserve may be made for the table. In making jelly the currants should not be over ripe, as taken when fairly red they give a better quality of jelly, and do not require so much boiling. It is much better to squeeze the juice from the currants before cooking, than it is to cook both sugar and currants together and then strain. In obtaining the juice, a clothes wringer, now found in every well regulated household, will save a great deal of labor. The berries are put rather loosely into a bag and the whole passed between the rollers of the wringer. The amount of sugar varies according to the character of the currants and individual taste, from 1 pound to 1 pound 3 oz. to the pint of juice. The juice is boiled or simmered and skimmed before adding the sugar, and then the evaporation continued until it will harden upon cooling. Upon this point no precise directions can be given, as juice from currants at the right stage of ripeness will form a jelly with scarcely any boiling, while that from riper berries will require to be boiled 15 minutes or longer. This is a point which experience only can determine.

A Home-made Hearth Rug.

A lady subscriber to the *American Agriculturist* writes: "Procure a coffee sack, tack it tightly on a frame of the size you wish your rug. Get a black smith to make you a crochet-needle about the size of a husking-peg, tapering rather more. With charcoal and rule 'lay out' on the sack the figure you wish for your rug. Gather all the old woolen rags such as are too much worn for carpet, 'Thrums, bits of wool, etc. Tear these in strips and with the hook in the right hand, hold the strip beneath in the left, thrust the hook through the meshes of the sack, catch the rag and pull it through about a half inch, then through again as near to the first as possible. By sorting the different colors and following the patterns, a very beautiful article can be made. After it is all filled up in this way, take a pair of sheep-shears or common scissors, large size, and shear it all off to an even surface. Old dresses are the best; heavy cloth will not work in well. I have seen such rugs in handsome parlors, and when tastefully made they are equal to any."

Cooking without a Fire.

In summer, it is a great comfort to be able to do most of the necessary cooking without a fire, we don't say without heat—for we haven't reached that point as yet—but without making a fire in the stove, generating many times more heat than is necessary, thus rendering the apartment uncomfortable, the cook overheated, and it may be cross. Some one has said that all human affections cease to exist above or below a certain degree of the thermometer, and it must indeed be more than an ordinary mortal who can cook over a large fire on a hot July day, and remain perfectly sweet tempered and lovely. Now as a saver of temper, and in many places of fuel, as well as a promoter of comfort, we remind our readers, of what we have before alluded to, that a good amount of the family cooking can be done by means of kerosene or gas. In those localities where gas is in use, a small gas stove will prepare breakfast and tea with the greatest ease and comfort. Some families use large gas stoves for all their summer cooking, but we have

not had sufficient experience in this to say whether cooking requiring a long application of heat can be done with economy. But most people are beyond the reach of gas pipes, and for them a kerosene stove answers an excellent purpose. We used, last summer, one made by Lesley & Elliott, who also make gas stoves, and found it very convenient, especially at tea time when there is seldom any need of heat beyond that necessary to boil a kettle of water. The apparatus consists of a small iron stove with a large kerosene lamp having three wicks, over which a teakettle, spider or saucepan can be placed, and the whole thing can stand on the kitchen table or dresser, and be put out of sight when not in use. The only especial care required in the use of kerosene is, to see that the wicks are not so high as to cause smoking, and with the gas, to so regulate the flame as not to burn more than is needed. Any person with ordinary tact will find either of these methods of cooking a comfort in hot weather, while others, who don't believe in new-fangled notions, and start with a prejudice against them because they are new, will probably manage to make them unsuccessful.

Hints on Cooking, etc.

Bread.—One pint mashed potatoes, one teaspoonful salt, and one of sugar. (The potatoes should be much wetter than for the table.) Add one teaspoonful of yeast, either home or baker's, but not a bit of flour. Keep this very warm till light. Use this to mix the bread, and mix so that it will just not stick. Let it rise very light, then mould into tins; keep very warm till light again, and bake in a moderately warm oven. I have made good bread in this way from flour not fit to eat without the potatoes.

Steamed Corn Bread.—Mix thoroughly 1 cup of sweet, and 2 of sour milk, 3 of corn meal, 2 of flour, 1 of syrup or molasses, and one teaspoonful of soda. Place it in a pan and steam it over boiling water steadily for three hours.

Butter Crackers.—"R." of Rensselaer Co., N. Y., sends the following: Take 10 cups flour and 1 of butter, 1 teaspoonful of soda, and 2 of cream tartar, with water enough to form a very stiff dough; rub the butter and cream of tartar through the flour, and dissolve the soda in the water, roll thin and bake quickly. With these crackers and vegetable oysters we make oyster soup.

Lime Water for Correcting Acids in Dough, etc.—When bread becomes sour by standing too long before baking, instead of using soda I use lime water, two or three tablespoonfuls will entirely sweeten a batch of rising sufficient for four or five large loaves. I slack a small piece of lime, take the skim off of the top and bottle the clear water, and it is ready for use. A bottle full will last all summer.

Floating Island.—Beat the whites only of five eggs, until they form a stiff froth, then add a little at a time, 4 spoonfuls of powdered loaf sugar, and Currant Jelly, or syrup of any kind of preserves. Pint rich milk or a custard with the yolks in the bottom of a glass or china bowl and put the float on the top.

Poor Man's Jumbles.—2 bowls of flour, 1 of sugar, 1/4 of sour cream or buttermilk, a little soda and cinnamon; to be rolled thin and fried in hot fat or butter.

Tea Crackers.—3 teaspoonfuls flour, 1 of lard, 1 of water, a large teaspoonful of salt. Mix all together, put it on the pie-board and work it well, adding flour until stiff, short, and perfectly smooth. Roll out as thin as a knife blade, prick with a fork, and bake well, but do not brown.

Omelet.—Take 4 eggs, 1 tablespoonful of flour, 1 cup of milk, and a little salt. Beat the whites of the eggs separately and add to the above, (which should be well stirred together,) just before cooking. Butter a spider well, and when hot pour in the omelet. Cook very slowly on top of the stove and keep the vessel covered.

Beet Hash.—Take cold boiled beets and potatoes, equal parts of each in summer and early autumn; in winter, one third beets, and two thirds potatoes; hash them, and fry or stew in milk and butter, with salt and pepper to suit the taste. Heat slowly and thoroughly; if scorched it is spoiled. This is a nice preparation for a breakfast dish.

BOYS & GIRLS' COLUMNS.

Making Garden Work Easy.

Gardening is hard labor or pleasant work, according as one manages to have it. It makes the back and arms ache to hoe through the long rows, and it is very tiresome to stoop among the beets, onions, carrots, etc., to pull the weeds. A boy may think of little but "Oh what long rows these are"—"what hard work this is"—"how I do ache all over"—"I wish dinner time would come." (does not that sound familiar, John?) Such thoughts will help very much to make one tired, and hot and thirsty, and thoroughly uncomfortable. One little gardener we know of, has a different way of looking at things. When planting corn, he was busy thinking of the fine roasting ears which would grow from them. "These are my little eggs," said he dropping some kernels, "I'll put them safely in the nest, and mother Earth will keep them warm, and first you know, all the sprouts will hatch out, and then grow and grow, and next September there'll be a whole brood of my corn on every stalk." And so he went on planting, thinking, and amusing himself with such pleasant conceits, forgetting all about the hard work. When hoeing time came, he called his hoe a musket, the weeds, rebels, and the corn, the Union men, and great sport he had in winning easy victories. That was certainly more agreeable than plying his muscles and so making them ache harder. The secret of easy working is to keep the mind pleasantly employed. The garden is full of ideas for those who will take pains to seek them. On commencing work in spring, the ground is hard and must be plowed or spaded. That may remind you of the thick dullness of an uneducated mind. It takes something stirring to wake up its attention, and prepare the man to receive the seed of new ideas; the older he is, the harder work for him to learn. You remember the proverb, "You can't teach an old dog new tricks." When the seed begins to grow, if too thickly sown it must be thinned, or it will produce little. That may teach the very important lesson that one who would be successful must not have too many plans on hand. Most great men are those who have worked steadily on a few purposes. Then there are fortunate plants growing ahead of all around them, because they happen to grow in very rich earth; but their less prosperous neighbors do not seem to notice it; they go right on growing their best. Surely here is a good lesson. And so from every plant and weed, and from every operation in the garden, profitable and pleasant thinking enough may be drawn, to keep work from being irksome, and to greatly lessen fatigue. Try it the next time you are weeding onions, or hoeing cabbages.

Interesting Traditions of the Earliest Times.

A chief of the Ojibway Indians relates that when he became of suitable age to be made the head of his tribe, the "Medicine Man" or prophet of his people, took him alone into the woods to initiate him into some of the sacred mysteries. When they came to a certain location, the prophet bade him to remove his moccasins, because they were standing on holy ground. He then went to a large stump and drew from it a roll of bark on which certain characters were marked, which he read to the young chief. It professed to give among other things an account of the introduction of death into the world, in substance as follows: Thousands of moons ago, before death was known, this world was fastened to a bright star by a grape vine which grew in the midst of the home of the Indians. At the further end, where it touched the star, was a wicket gate. It had been decreed by the Great Spirit, that this gate must never be touched, that if any one presumed to knock there, death should enter the world. A little old squaw seemed determined to try the experiment, and several times she was detected climbing the grape vine, but was shaken off by the other Indians. But early one morning, to their dismay, they saw her so far up that they could not dislodge her. On she went, until she reached the fatal gate and knocked. Instantly the hand of an angel was stretched forth with a drawn sword, the grape vine was cut, and with the old squaw fell with a crash to the ground. The enraged Indians attacked her with fury, and stamped her in pieces, and so death commenced and has always continued on the earth. Our young readers will see how curiously

this account resembles the fall of man as described in the Scriptures. A tradition apparently of Eastern origin thus accounts for the savage propensities of wild beasts. Before man sinned the animals all lived in peace. The lion, the tiger, and even the fierce hyena, were as harmless and gentle as the innocent lambs in whose midst they fed upon grass and herbage. But when Adam sinned they became sullen and wild, though they did not yet destroy each other. A number of them were present in the field when Cain killed his brother; then the smell and sight of blood maddened them, and a terrible strife followed. Hundreds of them were slain, until each learned which of the others was stronger, and shunned those they could not overpower, and they and their descendants have remained ferocious and blood thirsty.

A CHILD'S QUESTION.—A boy once asked Sir Humphrey Davy why two pieces of rattan rubbed together would give a faint light. The great chemist could not tell, but said he would try to find out, and after considerable experiment he made the discovery that this cane and a large number of plants contain silicic or flinty earth, which helps to stiffen and protect their stalks.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the June number, page 191: No. 156. *Curious Sentence.*—He said that; that that that that that referred to, was incorrectly used....No. 157. *Illustrated Rebus.*—Tooth ink on s in with pleas ewer is necks two its c (omission); or, To think on sin with pleasure is next to its commission....No. 158. *Curious Latin Sentences.*—1, *Quis*, who; *crudus*, raw; *pro*, for; *lectum*, read; *album*, white; *et*, and; *spravit*, blew; or, hurrah for the red white and blue: 2, *Mens*, mind; *tuus*, your; *ego*, I; *et*, and; *labor*, work; *via*, a way; that is, Mind your eye and work away: 3, *Bona*, good; *mali*, apples, *sunt*, are; *desiderabiles*, desirable....No. 159. *Illustrated Rebus.*—Two bee a man re quires sum th in g ye(e)ars (more than years); or, To be a man requires something more than years....No. 160. *Conundrums.*—1, Because it knows no law; 2, Scipio carried the war into Africa, Lincoln carried Africans into the war; 3, General satisfaction; 4, Portugal (is full of Portuguese).—The following have sent in correct answers up to June 8th: I. C. Martindale, 149, 150, 153; Rowland Bobinson, Jr., 153; Belle Curtis and Mary F. Jordan, 153; "A. P.," 152; "J. Y. D.," 147, 155; "T. S. McD.," 147 (There are several correct solutions to the planting problem); Jim R. Hale, 153; Emeline BURGERT, 153.

New Puzzles to be Answered.

No. 161. *Curious Numbers.* From what number can you subtract three and leave the same original number? 2d: 1 from 6 leaves 9, and 2 from 6 leaves 10; how can it be?



No. 162. *Illustrated Rebus.*—Appropriate to the times.

No. 163. *Conundrum.* Louis Napoleon and Maximilian are in dread of the gift of what whole country?

No. 164. *Word Rebus.*—Fuel sheep insect recolored in small spots journalist abbreviated, condensed moisture wash-pitcher opening tea made of dew.



No. 165. *Illustrated Rebus.*—To be remembered by all.

No. 166. *Conundrum*, by John R. Weeks. What river in the United States is like a private in the 54th Massachusetts Regiment?

No. 167. *Puzzling Sentences.*—1, III knees found harm under half covering. 2, Ut rye vatin I am ituu. Read them correctly.

No. 168. *Clock Problem.*—At a certain time between 8 and 9 the minute hand of a clock was between 9 and 10. Within an hour afterward the hour and the minute hands had changed places. What was the time first mentioned?



"THE BOYS ARE COMING HOME AGAIN." — Designed and Engraved for the American Agriculturist.

Such an Independence Day as will be celebrated this month was never known before. In the earlier history of the nation, there was perhaps equal joy among the smaller number who proudly and gratefully commemorated the triumph in the struggle which secured freedom and peace, but then only one point had been settled—the right of the people to self government. Wise statesmen looking to the unknown future felt that the young nation had yet to pass through its severest ordeal; that the time would come when the ability as well as the right of republican government was to be tested. They saw evils already growing, filled with danger to the young republic. How could strong party spirit be restrained from revolution? How could sectional jealousies be prevented? These and other questions might well occasion anxiety, for they have recently shaken the very foundations of the nation. But now we rejoice in a tried nationality, in a FREE land. Sectional hate, party strife and slavery have done their worst, and THE REPUBLIC LIVES! First of all we reverently give thanks to God who has granted victory over the terrible rebellion; next we remember with gratitude and just pride the heroes by whose strong arms, stouter hearts and matchless perseverance, treason is crushed and peace restored. They have well earned the welcome that greets them on their return to the homes they have given so much to defend. The scene which our artist has sketched has already been enacted in many a village, and is yet to gladden hundreds of districts. While all unite in public demonstrations of honor to our noble brothers returning from the field, let them also be remembered as deserving the best gifts of the nation whose life they have saved. Give them all offices of trust and honor for which they may be competent; let children learn their deeds, and ever show them respect; and where the hard fortunes of war have borne hard on them or their families, let the ample provision made for their wants show that we are not unworthy of the blessings secured by their hardships.

Finally, let all our young readers keep in mind that rebellion sprang from the ambition and selfishness of its leaders and the ignorance of its followers, that it was overthrown by heroism derived from virtue and knowledge, which are the surest safeguards of a free people.

Friends Among the Birds.

In response to the invitation in the April *Agriculturist* for our young readers to relate their success in making friends among the birds, James Dilts, Muskingum Co., O., sends an account of a pair of wrens that were made familiar by kind treatment. They came to the house in the fall of 1862, and made their home in some bunches of cotton that hung in the garret, where they were fed and cared for all winter. In the spring they suddenly disappeared, but in a few weeks returned to the neighborhood with a brood of young. These were soon fledged, and set up living on their own account, and the old birds built a nest in the corner of a shop where workmen were thumping and pounding continually, and there raised another family. When these were out of the way, they moved to a box in the garret where they had formerly lived. The following spring they made their first nest in the old location in the shop, but during the summer changed their quarters. They entered the window, passed across the garret, went down a stairway into a store-room, and found a long-necked gourd hanging there, which they at once appropriated, and held through the summer. Presently they were missed again, but late in the fall, they returned and passed the winter among the cotton in the garret. Toward spring one of them died; the other one remained, and when warm weather returned, brought in a new mate to share the gourd occupied the previous summer, where they are now enjoying life. The new comer is quite shy, but the older acquaintance is so tame that it has sometimes come into the window and perched on the dress of one of the

girls in the family. No little bird stoned or shot by a thoughtless boy ever gave half the pleasure derived from petting and taming these friendly wrens.

Another young reader, Townsend Forbes of Queens Co., N. Y., recently described a successful method of attracting the birds to the grounds near his residence. He has a box or tank for containing gold fish, about three feet long, nearly filled with water. In one end of the tank is a sloping shelf passing down to where the water is about two inches deep, where it meets another shelf a few inches wide placed horizontally. The tank is placed in the yard and the birds of the neighborhood, robins, thrushes, yellow birds, sparrows, etc., find this a convenient place for bathing, and large numbers of them come every day to enjoy the accommodation kindly provided for them. Their actions while bathing are very diverting, and they repay the favor done them with grateful music. The boys who take a hint from this will see that any shallow dish in which water is kept will answer the purpose. It is well to have a sloping entrance to the water as birds are shy and like to enter gradually.

A Calculating Hen.

The Canton Mo. Press, is responsible for the following, which is certainly different from any hen performances in these parts. Our hens are ambitious to sit as extensively as possible. "A few days ago, a hen was found on a neighboring farm, incubating upon a nest of five eggs. Considering that too small an undertaking for a full grown hen, the owner removed these and placed thirteen fresh eggs in the nest. On examination soon after, it was discovered that the old biddy had deliberately rolled out eight, thus refusing to cover more than the original number. Four times the experiment was repeated with a similar result, and the obstinate hen was finally left to her select number, thus furnishing evidence not only of her reasoning powers, but of true feminine spunk."

(Business notices \$1 25 per agate line of space.)

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We BUY and SELL all classes of GOVERNMENT SECURITIES at market rates. ORDERS from BANKS and BANKERS executed on favorable terms, and with despatch. Also receive DEPOSITS, and ALLOW INTEREST on current balance.
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Iona and Israella Grape Vines.

Also Vines of all other good Native varieties, for Garden and Vineyard. Price List and Pamphlet sent for 2 ct. stamp. Illustrated Catalogue, 68 large Pages, 25 cents. Descriptive Catalogue, 32 Pages, 10 cents. The two, bound together, 50 cents. These two Catalogues are together a thorough and complete manual of the Vine, and although named Catalogues, only two pages in each are given to that object.

The Descriptive exhibits the principles and general considerations which form the basis upon which grape culture is to be successfully conducted, and is illustrated with many of the best engravings ever prepared for the purpose. The Illustrated treats thoroughly of practice and practical results, illustrated with about eighty engravings, both together constituting the most thorough, practical, and comprehensive treatise on the Vine in the language.

The sixteen-page Catalogue is intended to facilitate the business of selling Vines, and is filled with important matter worthy of the attention of every lover of good grapes.

N. B.—The conditions of full measure of success in Garden and Vineyard are clearly stated in ILLUSTRATED CATALOGUE; and the chapters "On Proper Treatment of the Vines when Received," "On the Preparation of the Ground," and "On Planting," should be attentively read and observed by all purchasers of Vines.

C. W. GRANT, "IONA," near PEEKSKILL, Westchester County, N. Y., 1865.

To Purchasers of Organs, Melodeons, or Harmoniums.

Every one having any thought of purchasing an instrument of this class now or at any future time should send for one of MASON & HAMLIN'S Cabinet Organ Circulars, which will be sent to any address entirely free of expense. This Circular contains much information which will be useful to every purchaser of such an instrument, such as articles on "How to Judge of a Musical Instrument," "History of the Organ," "History of Reed Instruments," &c., &c. Address MASON BROTHERS, 596 Broadway, New York, Or, MASON & HAMLIN, 274 Washington-street, Boston.

PIANOS & ORGANS.

Great Bargains in HALLET, DAVIS & CO'S Grand and Square Pianos—and other New Pianos. Sold on monthly payments. Good second-hand Pianos at \$60, \$150 to \$300.

PIANOS AND MELODEONS TO LET.
 A. E. THOMPSON'S Chapel and Parlor Organs, voiced by a skillful Organist, far superior to all other Reed Organs. Price \$160. T. S. BERRY, 593 Broadway, New York.

UNITED STATES
7-30 LOAN.
THIRD SERIES,
\$230,000,000.

By authority of the Secretary of the Treasury, the undersigned, the General Subscription Agent for the sale of the United States Securities, offers to the public the Third Series of Treasury Notes, bearing seven and three-tenths per cent. interest, per annum, known as the

SEVEN-THIRTY LOAN.

These Notes are issued under date of July 15th, 1865, and are payable three years from that date, in currency, or are convertible at the option of the holder into

U. S. 5-20 Six per cent.
GOLD-BEARING BONDS.

These Bonds are now worth a handsome premium and are exempt, as are all the Government Bonds, from State, County, and Municipal taxation, which adds from one to three per cent. per annum to their value, according to the rate levied on other property. The interest is payable semi-annually by coupons attached to each note, which may be cut off and sold to any bank or banker.

The interest at 7.30 per cent. amounts to

One cent per day on a	\$50	note.
Two cents " " "	\$100	"
Ten " " "	\$500	"
20 " " "	\$1000	"
\$1 " " "	\$5000	"

Notes of all the denominations named will be promptly furnished upon receipt of subscriptions.

The Notes of this Third Series are precisely similar in form and privileges to the Seven-Thirties already sold, except that the Government reserves to itself the option of paying interest in gold coin at 6 per cent., instead of 7 3/10ths in currency. Subscribers will deduct the interest in currency up to July 15th, at the time when they subscribe.

The delivery of the notes of this Third Series of the Seven-thirties will commence on the 1st of June, and will be made promptly and continuously after that date.

The slight change made in the condition of this THIRD SERIES affects only the matter of interest. The payment in gold, if made, will be equivalent to the currency interest of the higher rate.

The return to specie payments, in the event of which only will the option to pay interest in Gold be availed of, would so reduce and equalize prices that purchases made with six per cent. in gold would be fully equal to those made with seven and three-tenths per cent. in currency. This is

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Now offered by the Government, and its superior advantages make it the

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Less than \$230,000,000 of the Loan authorized by Congress are now on the market. This amount, at the rate at which it is being absorbed, will all be subscribed for within sixty days, when the notes will undoubtedly command a premium, as has uniformly been the case on closing the subscriptions to other Loans.

In order that citizens of every town and section of the country may be afforded facilities for taking the loan, the National Banks, State Banks, and Private Bankers throughout the country have generally agreed to receive subscriptions at par. Subscribers will select their own agents, in whom they have confidence, and who only are to be responsible for the delivery of the notes for which they receive orders.

JAY COOKE,
 SUBSCRIPTION AGENT,
No. 114 South Third Street,
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 May 15, 1865.

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 These new elegant Engravings (Nos. 1, 2, and 5 are colored) now ready. No. 1 has a life size Head and Bust, a magnificent Head-piece, and 10 finely engraved scenes of his Life; size, 28x38. No. 2 is filled with the most important events of his Life and Death; size 28x38. No. 3 is a large Crayon Lithographic Likeness, unsurpassed in excellence; size 19x24. No. 4 is a similar smaller Portrait. No. 5 is a chaste and beautiful Ornamental Monument; size 14x18.
 Specimens mailed at above prices. We have also three Lithographs showing the ASSASSINATION, DEATH BED SCENE, and the CATAFALQUE, size 13x17; mailed at 20 cents each; the last three for 50 cents; the two Charts for 75 cents, and the whole eight for \$2.
GENEROUS TERMS TO AGENTS.
 For these and 60 other kinds of colored Maps, Charts and Prints to suit the times, send for new descriptive Price List.
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One Hundred Dollars in United States greenbacks will be given for the largest Frog sent to the "Grand Exhibition of Bull Frogs." For full particulars see the July number of "THE FUNNIEST." This number will be mailed to parties on the receipt of fifteen cents. Address J. M. SHEICK, "FUNNIEST OFFICE," 39 & 40 Park Row, New York.

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 At the Obsequies of ABRAHAM LINCOLN,
THE FUNERAL ODE, by William Cullen Bryant,
The EMANCIPATION PROCLAMATION, Jan. 1, 1863,
Mr. LINCOLN'S LAST INAUGURAL ADDRESS,
 A CORRECT PORTRAIT OF THE LATE PRESIDENT.
 Price, by mail, with Portrait, 30 cents.
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in cases of 2, 4, 6 and 12 dozen. Warranted pure. Price \$3.50 per dozen. Orders must be accompanied by Cash. For sale by T. HARDY & CO., 36 Deyst-st., N. Y.

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 Grape Vines, Small Fruits and Hardy Ornamental Plants. P. O. Address, Ridgewood, Bergen Co., N. J.

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BASHFULNESS.—HOW TO OVERCOME IT.
 See PHENOLOGICAL JOURNAL, Jan. No. 30 cts. FOWLER & WELLS, 889 Broadway, New-York.

Commercial Notes—Prices Current.

NEW-YORK, June 17.

The condensed and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the daily notes of our own reporter.

1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 25 days this month, 359,000 898,000 1,477,000 2,100 131,000 1,723,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 25 days this month, 259,000 476,000 819,000 56,000 78,000 24 days last month, 219,000 655,000 272,000 8,500 61,000

2. Comparison with same period at this time last year. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 25 days 1865, 359,000 398,000 1,477,000 2,100 131,000 1,723,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats. 25 days 1865, 257,000 476,000 819,000 56,000 78,000 23 days 1864, 515,000 4,156,000 668,000 13,400 45,000

3. Exports from New-York, January 1 to June 15: Flour, Wheat, Corn, Rye, Oats, bbls, bus, bbls, bus, bbls, bus.

1865 594,249 399,944 814,241 141 45,017 1864 921,785 5,618,979 133,392 405 19,748

4. Receipts at head of tide water at Albany, each season to end of May:

Flour, Wheat, Corn, Rye, Barley, Oats, bbl, bush, bush, bush, bush, bush. 1865 61,900 403,800 590,500 20,800 99,800 1,741,900

CURRENT WHOLESALE PRICES.

Table with columns for item, May 18, and June 24. Items include Flour, Wheat, Corn, Rye, Barley, Oats, and various types of meal and feed.

Gold, which closed last month (May 16) at 131, advanced by the end of May to 137 1/2, and by Thursday evening, June 15, to 147 1/2. Influenced by this rise, which has been caused by the recent heavy exports of specie, the large purchases of coin to pay duties at the Custom House, and consequent speculative operations in the precious metal—the markets for domestic produce have been more active, and, though prices were irregular early in the month, the tendency through the past week was decidedly upward.

New-York Live Stock Markets.

BEEF CATTLE have come in more freely this month than last, and prices have declined on all grades of animals. There has been considerable effort, among some of the drovers, to keep prices up, but without success, and as vegetables and some kinds of fruits are now plentiful, anything like a decided advance is not to be expected.

Milk Cows.—Receipts have averaged weekly 121. The demand is little better, and prices range from \$40 to \$70 each for poor to good milkers.

Veal Calves.—The receipts of veals for the past four weeks have been very heavy, averaging 3,656. Prices range at 5c@8c, and 10c. per lb., live weight for poor to very good.

Sheep.—There has been a considerable panic in the sheep trade, and a decided decline in prices, since our last report, owing to the large weekly arrivals. The sales range at prices about 3c. per lb. live weight, lower, or 6 1/2c@7 1/2c per lb. live weight for common to good grades. The receipts have averaged 13,056 weekly.

Live Hogs are coming in very freely, especially for this season of the year, averaging 13,775 weekly. Prices range from 9 1/2c. to 10 1/2c. per lb. live weight.

Advertisements.

Advertisements, to be sure of insertion, must be received BEFORE the 10th of the preceding month.

N. B.—No Advertisement of Patent Medicines or secret remedies desired. Parties unknown to the Editors personally or by reputation, are requested to furnish good references. We desire to be sure that advertisers will do what they promise to do.

TERMS—(cash before insertion):

One Dollar per line, (14 lines in an inch), for each insertion. One half column (74 lines), \$75 each insertion. One whole column (148 lines), \$120 each insertion.

EDUCATIONAL AGENCY.—A RELIABLE EXCHANGE, conducted in the interests of all well educated teachers, and of parties desiring to engage such. As the negotiations implied cannot be hurried, applications should be in time. Send for circulars. Address J. A. NASH & Co., 3 Beekman St., N. Y.

FOR SALE. FARMING AND MARKET GARDENING LANDS IN NEW JERSEY.

THE SUBSCRIBERS WILL SELL TRACTS OF GOOD LAND for farming and market gardening, in quantities to suit purchasers, situated in the counties of Ocean and Burlington, on the line of the Karlan and Delaware Bay Railroad, midway between New York and Philadelphia, at from \$10 to \$25 per acre.

For further particulars apply to F. R. CHETWOOD, Elizabeth, N. J. WM. O. GILES, 70 & 72 Franklin-st., New-York. and N. P. TODD, ag't Shamong, Burlington Co., New Jersey.

SORGO.

COOK'S EVAPORATOR and the best Mills are to be had at the N. Y. Agency, Address J. W. BAIN, Pres't. Am. Ag'l Works, 17 Courtlandt-street.

SEEDS.—THOMAS McELROY, Grower and Importer of Foreign, Agricultural, Garden and Flower Seeds, 71 Pine-street, New York.

India Rubber Gloves

are an invaluable protection for the hands in Gardening, Housework, etc., and a certain cure for Chapped Hands, Salt Rheum, etc. Sent by mail on receipt of \$1 50 for Ladies' sizes; \$1 75 for Gentlemen's, by

GOODYEAR'S I. R. GLOVE MFG CO., 205 Broadway, New-York.

Bolivian Guano.

This valuable fertilizer, richer in Phosphates than any other known natural or artificial manure, for sale by the cargo. For terms apply to G. G. HOBSON, 42 South-st., (over savings bank sec.) or to HENRY KENNEDY, DALL & SONS, London, or ALSOP & CO., Valparaiso.

VINELAND

FARM AND FRUIT LANDS, in a mild and healthful climate. Thirty miles south of Philadelphia by Railroad, in New Jersey, on the same line of latitude as Baltimore, Md.

The soil is rich and productive, varying from a clay to a sandy loam, suitable for Wheat, Grains, Corn, Tobacco, Fruits and Vegetables. This is a great fruit country. Five hundred Vineyards and Orchards have been planted out by experienced fruit growers, Grapes, Peaches, Pears, &c., produce immense profits. Vineland is already one of the most beautiful places in the United States.

Fruits and Vegetables ripen earlier in this district than in any other locality north of Norfolk, Va. Improved places for sale.

Openings for all kinds of business, Lumber Yards, Manu factories, Foundries, Stores, and the like.

For persons who desire mild winters, a healthful climate, and a good soil, in a country beautifully improved, abounding in fruits and possessing all other social privileges, in the heart of civilization, it is worthy of a visit.

Letters answered and the Vineland Rural, a paper giving full information, and containing Reports of Solon Robinson, sent to applicants.

Address CHAS. K. LANDIS, Vineland P. O., Landis Township, New Jersey.

From Report of Solon Robinson, Agricultural Editor of The Tribune: It is one of the most extensive fertile tracts, in an almost level position and suitable condition for pleasant farming that we know of this side of the Western Prairies.

Every Child on the Continent should have it!

The Best Children's Paper in America.



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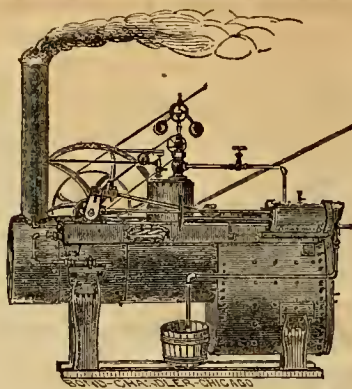
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Cures SORE, TICKS and LICE on SHEEP or CATTLE, adds
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Is constantly made by a beautiful Machine in the Window
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amine. Manufacturers of the New "2 in 1" Mower and Reap-
er, with Self-Rake, and giving notable service. Combined
Wheel Plow and Cultivator. Rights for Sale.—Send for Cir-
culars. Address J. W. BAIN, Prest, American Agricultural
Works, 17 Courtland-st., New-York.

Agriculturist Strawberry Successful.— Plants as Premiums.

The past month has definitely established the great value of this variety. We wish every reader could have looked upon the plot on the Publisher's grounds—the stools in regular order, each almost large enough to fill from a peck to $\frac{1}{2}$ bushel measure, with hardly a defective plant in the whole plot; though most of them were set out October and November, 1864 and not all protected during winter. There is not the least sign of disease or worm in the whole plot; and the usual white grub, so often fatal to this and other plants, in all localities, seems to have let these entirely alone. The fruit was large, beautiful, and of excellent quality; and though the plants were taxed to the utmost in producing runners, which were lifted until April 17th, the fruit was still so abundant, that home dealers readily offered and paid \$300 for what they could themselves pick on a trifle over half an acre of them, with no trouble or expense to the proprietor. As all the plants possible were desired, no effort was made to produce extraordinary specimens, yet under the hard treatment above described, large numbers of berries were picked, ranging only 20 to 30 in the pound; and some were larger still, while the fruit was solid and crimson to the core. These facts were witnessed by many neighbors and visitors. At the second exhibition, June 15th, after the best fruit was gone, this variety was excelled by the Russell, in the weight of three heaviest berries. We leave others, less interested, to speak of the comparative flavor. We have no plants to sell, having agreed with Mr. Knox of Pittsburg, who took all our surplus plants last spring, to sell none this year, except on his account; but from the interest we have taken in bringing out and distributing this variety, we have no little pride and pleasure in the result.

As announced last month, (page 194) we reserved the right to offer plants as premiums for subscribers; and the generally successful sending of the plants by mail in wooden boxes, this year, warrants us in offering to send them thus at any time in autumn, at least prior to September 10. We therefore republish the offer of last month.

I.—To any one who will now, or any time before August 15th, send us four subscribers, at the regular rates (\$5), we will forward, *post paid*, Ten of the Agriculturist Strawberry Plants, of first class, about Sept. 1.

II.—To any one sending ten subscribers now, or before August 15th, we will send Twenty Plants as above.

III.—An so on, for a larger number of names we will send at the rate of 20 Plants for ten subscribers.

Subscriptions may begin at the middle of the volume, July 1st, or date back to the beginning of the volume, Jan. 1st, and receive the back numbers, which are always printed as needed from stereotype plates.

In addition to the above, those new subscribers who have not before had plants of us, may call for a plant or two apiece, if each one sends 5 cents extra along with the subscription, to cover cost of postage, box and packing. We cannot afford the time, trouble and expense of reopening the offer of plants to others than new names coming in under the above premium proposition. The offer of free plants has been open to all subscribers for more than a year, which is surely enough.

The Agricultural Bureau.—A word to President Johnson.

—We have at Washington an "Agricultural Bureau," supported at an annual expense to the country of nearly Two Hundred Thousand Dollars, including direct appropriations, the printing of the annual reports, etc. It might be of great value to the country if properly managed. There are some excellent men engaged in subordinate positions, but we say plainly, that the present head of the Bureau is not competent for his position, and we are quite sure this is the general, if not the unanimous, opinion of the more intelligent agriculturists of the country who are awake to the improvement of this great interest. We should suppose the Commissioner himself would feel this after his four years of office. He must have received many direct and indirect intimations of the feelings and wishes of the public. Owing to the heavy pressure of other public interests upon the late President, the people have hitherto consented to hold the matter in abeyance, though consultations on the subject have been frequent. There is far from entire ignorance in regard to the schemes and "White House" influences that have been brought to bear to keep the Bureau under its past and present direction, and of the efforts to secure the favorable opinion of the members of the next Congress. In behalf of our own hundreds of thousands of readers, and of the country at large, we beg President Johnson to give the subject his earliest possible attention, and place at the head of the

Bureau some man of broad comprehensive views and intelligence, one able to grasp the immense interests involved in the scope of the Department, and lay out and carry into execution such plans as will promote agricultural development and improvement. At present the Bureau falls infinitely below what it should and might be, and there is no hope of its being better, until under more competent direction.

The Washington Monument—Is it a Humbug?

—On the Mall, west of the Smithsonian Institute, at Washington, stands a half or quarter-finished obelisk called "Washington Monument," and thus it has stood for years past. Large contributions have been called for, to aid in building it, from time to time, from Maine to California. In the Patent Office is a model of the proposed completed monument, and at each corner of it is a glass box calling for contributions. While there at the Review, we noticed many patriotic soldiers putting in their hard earned currency freely, and we learned that this had been done very largely during the recent encampment of our armies around the Capital. These boxes are emptied every now and then, and we would like to know what is done with the money. We do not remember any report of receipts or expenditures by the "Association" for several years past, and hear it intimated that some of the managers are not the most loyal, or have not been. It may be all right; but in behalf of the contributors to the enterprise, among whom we have been numbered, we call for full information. Who has charge of the money, and is every dollar legitimately and properly expended, and how?

The Strawberry Show of 1865.

In order to meet both extremes of the Strawberry season, as well as to give those who cultivate in later localities an equal chance with those who live on warm soils, the show was continued through two days, a week apart. The Exhibition on the first day, June 8th, was very full and the fruit of an unusually fine quality. Fewer entries were made on the second day, June 15th, but they included some things not exhibited on the first day. Taken as a whole, the show was a success, and the crowds of persons who visited it, many of them with note-book in hand, showed that these free exhibitions interest great numbers and they cannot fail to be very instructive. The following are the entries and the awards of prizes.

ENTRIES JUNE 8th.

Triomphe de Gand; Crimson Favorite; Agriculturist; John Cole, Tompkinsville, Staten Island.

Seedling: Erastus G. Barret, Sag Harbor, L. I.

Boston Pine; Chilian Pyramidal: W. E. Chilson, Passaic, N. J.

Wilson; Triomphe de Gand: H. & C. G. Atwater, New Haven, Conn.

Agriculturist; Boston Pine; Green Prolific; Vicomtesse; Triomphe de Gand: L. V. Conover, Morrisania, N. Y.

Agriculturist (and 3 plants): O. Judd, Flushing.

Barnes' Mammoth (with plant): TenEyck Bros., Middletown, N. J.

Seedling (and 2 plants); Agriculturist: Seth Boyden, Newark, N. J.

Wilson; Triomphe de Gand: T. W. Sufferns, Sufferns, N. Y.

Gen. Grant (seedling from the Agriculturist): W. A. Burgess, Glen Cove, L. I.

Triomphe de Gand: Geo. Elvins, Hammonon, N. J.

Col. Ellsworth; Seedling: I. L. Nostrand, Brooklyn, Russel; Buffalo; Lady Finger; Monitor; Hovey; Crimson Favorite; French's Seedling; Green Prolific; Triomphe de Gand; Downer's Prolific; Ward's Favorite; Cutter; Vicomtesse; Deptford White: E. Williams, Montclair, N. J.

Russell; Heins' Prolific: E. Falle, Woodstock, N. Y.

Imported German Strawberries: Ernst & Bro., South Amboy, N. J.

Hautbois: I. E. Chapman, Perth Amboy, N. J.

Boston Pine or Bartlett: Edward Kelly, N. Y. City.

Wilson; Triomphe de Gand: G. Henry, Hudson N. J.

Green Prolific; Lennig's White; La Constante; Russell: C. S. Pell, N. Y. Orphan Asylum.

Hooker; Scarlet Magrate, Wilson; Burr's New Pine; LeBaron; Frederick William; Rein Hortense, Charlton's Prolific; Marguerite; French's Seedling; Brighton Pine; Ladies' Pine; Vicomtesse; Scott's Seedling; Cutter; Deptford Pine; Victory; Mrs. Fuller; Austin; Monitor; Albion; Triomphe de Gand; Jenny Lind; Ridgewood; Brooklyn Scarlet; Green Prolific; Belle Bordelaise; Schiller; Col. Ellsworth; Gen. Scott; Iowa; Nicholson's Superb; Gen. McClellan; Black Prince; De Montrieu; Lennig's White; Bonte de St. Julien; Scotch Runner; Victoria; Emma; Napoleon 3d; Albion; Thos. Cavanagh, Brooklyn, N. Y.

Russel; Wilson; Eliza (seedling); Gen. McClellan; Jucunda; Triomphe de Gand; Austin; Green Prolific; Boston Pine; McAvoy's Superior; Buffalo; La Constante; Fillmore; Cutter; Green Prolific; Hovey; Hooker; Brooklyn Scarlet; Virginia; Francis Brill, Newark, N. J.

Agriculturist; Union Scarlet; McAvoy's Superior; Green Prolific; John Grove, Union, N. Y.

Seedling: E. H. Bogert, Manhasset, L. I.

ENTRIES JUNE 15th.

English Seedling, 3 varieties: R. Wade, Troy, N. Y.

Eight Seedlings: W. H. Romeyn, Kingston, N. Y.

Frances Emma (seedling): H. W. Tibbets, White Plains, N. Y.

Perry (Seedling): Geo. Perry & Son, Georgetown, Ct.

Alpine; Hautbois: Thos. Cuthbert, Riverdale, N. Y.

Russell; Wilson; Triomphe de Gand; La Constante: Geo. Herbert, Peekskill, N. Y.

Seedling (Plant): Wm. Teft, Fordham, N. Y.

Agriculturist: O. Judd, Flushing, L. I.

Lennig's White; Russell; Fillmore: C. S. Pell, N. Y. Orphan Asylum.

Russell; Black Prince; Anstin; Triomphe de Gand; Brooklyn Scarlet; Ridgewood; La Constante; Gen'l Scott; Marguerite; Victoria; Cutter; Monitor; Lennig's White; Deptford White; Belle Bordelaise; Hooker; Crimson Favorite; Bonte St. Julien; Vicomtesse; Scotch Runner; Alpine: Thos. Cavanagh, Brooklyn, Boston Pine (Bartlett); Mr. Sperry, Staten Island.

Downer's Prolific; Longworth's Prolific; Union Scarlet; Berry for name: John Crane, Union, N. Y.

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For Best Strawberry, new or old; to Seth Boyden, Newark, N. J., for Agriculturist, \$5.

For Best 12 approved varieties; to Francis Brill, Newark, N. J. \$5.

Second Best do; to E. Williams, Montclair, N. J. \$3.

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For Best show of Strawberry plants in pots, to Thos. Cavanagh, \$5.

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For Heaviest 3 berries of any one variety (Agriculturist, weight $2\frac{1}{2}$ ozs.); to Seth Boyden, and Geo. Herbert, Peekskill, N. Y., (Russell, weight $2\frac{1}{2}$ ozs.); \$2.

For Best pint of White Berries (Lennig's White); to C. S. Pell, N. Y. Orphan Asylum, \$2.

For best Alpines to Thos. Cuthbert, Riverdale, L. I. \$1.

Best New Seedling; Seth Boyden, Newark, N. J., \$5.

For Best pint of each of the following varieties: For Agriculturist, to Seth Boyden; for Russell's Prolific, to C. S. Pell; for Brooklyn Scarlet, to Francis Brill; for Monitor, to E. Williams; for Col. Ellsworth, to Thos. Cavanagh; for Triomphe de Gand, to H. & C. G. Atwater, New-Haven, Conn., and Geo. Herbert, Peekskill, N. Y.; for Wilson, to Geo. Henry, Hudson City, N. J.; for Hovey's Seedling, to E. Williams; for Buffalo, to Francis Brill; for Hooker, to Francis Brill, \$1 each.

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Contents for August, 1865.

American Extravagance in Living.....	254
Barn Plans Wanted—\$300 Premium Offered.....	239
Bees—Apiary in August.....	236
Blackberry Wine and Syrup.....	254
Boys and Girls' Columns—Notes on Getting Fire— Boy in a Predicament—Proper Musical Instrument —President Lincoln's Sympathy—The Hurt Chicken —Problems and Puzzles—Who are the Benevolent? —Arkwright and the Spinning Jenny—The Old Flag in Baltimore—Good and Bad Apples—A German Tradition.....	5 Illustrations. 255-256
Bread, etc., from Wheaten Meal.....	254
Breeding Animals—Slaughter of.....	247
Cows—Maintaining Full Flow of Milk.....	243
Cranberry Cultivation—Practical Experience.....	250
Doors—Remedy for Sagging.....	254
Exhibitions—Times and Places of Holding.....	253
Farm Work in August.....	253
Fences and Highway Cattle.....	242
Flower Garden and Lawn in August.....	235
Fly Poison—A Caution.....	254
Fruit Garden in August.....	235
Garden—Kitchen in August.....	234
German Agriculturist—Terms Changed.....	239
Grain Cradles—Best Form.....	2 Illustrations. 240
Grain—Different Modes of Binding.....	Illustrated. 246
Grain—Raking and Binding.....	246
Grape Vines—New Disease.....	251
Grape Vines—Pot, and Open Culture.....	2 Illustrations. 249
Grapes—Cold Grapery in August.....	235
Green and Hot-Houses in August.....	225
Harvest—Securing.....	Illustrated. 248
Harvest Time Now and Formerly.....	247
Hay—Carrying by Hand.....	Illustrated. 244
Hay-Fork for Oxen—Hutchinson's.....	Illustrated. 241
Manure Tank and Cesspool.....	Illustrated. 245
Market Report and Commercial Notes.....	258
Notes and Suggestions for August.....	233
Orchard and Nursery in August.....	234
Peas—Harvesting.....	243
Pickles—Notes on Making.....	253
Plow—Attachment for Turning Weeds.....	Illustrated. 244
Plow—Hutchinson's Improved.....	2 Illustrations. 245
Plowing Green Crops for Manure.....	Illustrated. 244
P. O. Money Orders—Where Given.....	239
Poultry—Group of Asiatic Fowls.....	Illustrated. 241
Recipes—Soft Sorghum Cake—Gingerbread—Extra Pudding—Egg Puffs—Steamed Indian Pudding—To Remove Lime Spots from Cloth—To Prevent Stoves Rusting—To Keep Steel from Rusting.....	254-255
Recreation and Visiting among Farmers.....	253
Salting Stock, and Salting Hay.....	240
Sanitary Commission and the People.....	253
Sheep Laurel (<i>Kalmia angustifolia</i>).....	Illustrated. 249
Sheep—Management of Hoof Rot.....	242
Shrub—Double Deutzia.....	Illustrated. 252
Soda Wash for Fruit Trees.....	253
Soil—Keep Best on the Surface.....	Illustrated. 242
Sorghum as a Green Fodder Crop.....	240
Strawberries—Notes on.....	252
Trees—Felling; Problems Proposed.....	Illustrated. 240
Turnips Sown in August.....	241
Weed—Field Horse Tail.....	4 Illustrations. 250
Weed—Toad Flax.....	Illustrated. 252
Western Agriculture.....	246

INDEX TO "BASKET," OR SHORTER ARTICLES.

Advertising Pages.....	236
Agricultural Report.....	237
Agriculture at Yale.....	236
Ant Hills.....	238
Barnum's Display.....	239
Bees, Italianizing.....	238
Blackberry, Wilson.....	237
Black Knot.....	237
Cabbage Seed.....	237
Canker Worms.....	238
Catalogues Received.....	239
Churn, Best.....	237
Churning.....	237
Currants, Dried.....	238
Currants, Large.....	237
Current Worm.....	237
Death, A. O. Moore.....	237
Death, Buckminster.....	239
Death, J. Paxton.....	237
Fair American Institute.....	236
Fair, Notices.....	239
Farms, Locating.....	237
Flag Leak.....	237
Foreign Intelligence.....	237
Frog Exhibition.....	237
Fruit Jars.....	237
Grape Mildew.....	237
Grapes, Pine.....	239
Grapes, Iona, Israelia.....	237
Grapes, Training.....	239
Horticultural Humbug.....	237
Horticultural Register.....	237
Hyacinths, Pruning.....	239
Leaky Teats.....	238
Live Oak.....	238
Manures, Phosphatic.....	238
Merchants' Exchange.....	17, 238
Milk, Cooling.....	239
Peach, Hale's.....	239
Plants Named.....	239

Potato Beetle.....	239
Potatoes, Productive.....	238
Shingles, Laying.....	238
Silk Worms in France.....	238
Soldiers' Claims.....	236
Sorgo Machinery.....	237
Steel Traps.....	238
Stings, Remedy.....	238
Strawberry Queries.....	237
Strawberries in England.....	237
Swill Fermented.....	239
Teats, Removing.....	237
Tomato Seed.....	237
Thrips or Fritters.....	237
Wheat, Boughton.....	238
World's Fair.....	236

Notes and Suggestions for the Month.

August is often a very pleasant, but often a distracting month for the farmer. The summer may just begin to be very hard upon the pastures and crops. Wells and springs may be very low. Or rains and mucky weather may rust the grain, and must the hay and hinder work dreadfully, and many things may be perplexing and making extra work. Summer fruit is ripening, and fruit orchards need particular attention. Gunners and flocks of neighbors' turkeys are trespassing, paying little heed to the laws they break or the damage they do. The farmer has emphatically his hands full—so many "irons in the fire" that some will burn unless he uses patience, promptness and discrimination, and is not worried by unavoidable circumstances, however annoying.

Cows.—Read the article on maintaining the flow of milk on another page. Farrow cows, that are to be fattened in the fall, should be dried off at once, so that they may get in good condition before cool weather. It is folly to think of fattening an old, farrow cow while she is milked. To dry a cow off in the shortest time, milk only enough to relieve a painful distention of her udder. This will soon prevent the secretion of milk.

Calves.—Wean calves gradually. Restrict their allowance to one teat per day. Then allow them to suck only a part of the milk in one teat. After a few days longer, let them suck only once a day for a week. Then, once in two days for a week; then once in three days. By this time, if they have been managed as directed on page 169 of the June number, they may be weaned with little disturbance from either dam or calf, and without growing poor, as they always do, when weaned abruptly.

Colts.—Spring colts as well as calves should be weaned generally in August. Confine them in a small, clean enclosure, where they cannot run much; and let them suck twice a day; then once; then once in two days; then once in three days. See that colts and calves do not lack a good supply of clean water and good grass, or fine hay, and salt.

Corn.—Indian corn is now too large to allow a horse-hoe among it. Pull up all weeds and thistles near the hills, and set erect those stalks that wind and storms have prostrated, and hill them sufficiently to keep them up. The brace roots will soon hold them, and the ears will fill much better than if they were lying down. It is always important to attend to this work before the brace roots are formed.

Carrots.—Suffer no weeds to grow among them. Stir the ground frequently between the rows, and if they need manure, apply it in a liquid state with a watering pot, while rain is falling, so that it will not injure the leaves.

Ashes.—Save wood as well as coal ashes. At some asheries, the leaches are shoveled into a river. It will pay well to collect them in large heaps, and cover the wet ashes with boards so that they will dry out by next winter, when teams may haul them to the fields where they are to be spread. They are greatly valued in the older parts of the country, and should be.

Apples.—Confine swine or sheep in apple orchards to consume the wormy fruit as it falls, before the larvæ escape. Picking it up by hand every few days, and burning or burying in a heap of compost with lime, will destroy them.

Buildings.—Examine the roofs for leaks. A crack in a shingle directly over a joint in the course next below it, frequently lets rain through the roof where shingles are good. A heavy coat of coal tar applied to a roof will sometimes stop all leaks. Fasten all loose boards and siding on houses and out-buildings before they become more warped and looser.

Barley.—Secure it from alternate storms and sunshine, if possible, before the straw is nearly spoiled for fodder, and the grain injured by wetting and drying. Secure barley straw, as soon as threshed, for fodder.

Butter.—See that all milk vessels are well scalded and sunned without fail, daily. Where cream cannot be churned daily, keep it cool as possible with ice. Work thoroughly, salt well, and sprinkle a spoonful of clean white sugar between the layers, as they are packed. See that milkers clean not only the udder and adjacent parts, and their hands also before milking.

Drainage.—Improve the dry weather in draining swamps and springy places, where there is so much water at other seasons of the year, as to hinder digging. Fill ditches already dug, before fall rains occur.

Cave Troughs.—Where the water is not collected in cisterns, give cave troughs a liberal smearing with coal tar, whether metallic or wood. See that water and dirt do not stand in them in fair weather. Put up cave troughs to carry water from manure yards, as well as from the walls on which a building rests.

Eggs.—Collect them daily. Change the nest eggs often. An egg will be spoiled by allowing it to remain in a nest for a few days, where hens are laying. Put them little end down in oats in a cool, but not damp, place. Go into a dark room and pass the eggs, two or three in each hand, before a lamp; and if the shells are clean, bad ones can be detected at once.

Food.—Farmers pay too little attention to their daily food. A laborer can not long endure very hard work unless he is fed well.

Fences.—Where rail fences have settled into the ground, pry up the corners, and put stones or blocks beneath. Where no sheep are kept, a rail fence may be raised a foot or more high with blocks and pieces of old rails, and thus save many whole ones. Fasten all loose boards before the wind, or animals, separate them from the posts.

Harrow.—Clean the points of the teeth, and if they must be left out of doors, let them stand on strips of boards, as rust often corrodes them nearly as much as usage wears them out.

Horn Piths.—Collect them at tanneries, and plow them in whole, where there is no mill to crush them. They are valuable fertilizers for any purpose.

Horses.—Do not over-drive in hot weather. Never allow a horse to drink when warm, unless he is to be kept moving as usual. Where they are stabled during hot weather, clean the stables often, litter well, and allow each animal to have a breathing hole in the window or wall before him, if possible. Some horses gall very easily beneath the collar and harness, during hot weather, where the parts do not fit well. Wash the wounds with clean water, and apply a paste made of white lead and linseed oil. Then provide a collar or harness that will not chafe. The comfort of working horses may be much promoted, while in the harness, by hanging strips of cloth to the harness so as to dangle about their fore legs. Long and narrow pieces of sheep skin or old buffalo robe, or two or three raccoons' tails sewed together, will keep the flies effectually from the fore legs. Many farmers in the country adopt the excellent practice of attaching a piece of white shirting to the bridle, to protect the entire under jaw and throat from the bot fly.

Harness.—During stormy days and leisure hours, clean, repair, oil and varnish harness. Always wet dry leather before oiling. Neat's foot oil is best for harness. An excellent black varnish for harness is half a pound of gum shellac dissolved in a pint of good alcohol, an ounce of good lamp black, and an ounce of gum camphor, corked tight in a bottle, shaken up frequently and applied with a swab or brush. Add more alcohol if too thick.

Linseed Cake.—Some farmers, who feed oil meal, frequently purchase in the summer, when it is cheaper than in winter.

Manure.—Scrape manure yards and sheds, and collect all the fine and well-rotted manure to apply to wheat at seed time. Beneath many barns in the country, there are a number of loads of the choicest manure for wheat, which may be shoveled out by taking up a few loose planks in the stable.

Machines.—Purchase or repair thrashing machines, and straw and hay cutters for fall and winter's use. Months often elapse after a machine is ordered before it can be shipped, or come to hand.

Oats.—Harvest before they are dead ripe. If cut when about two-thirds of the panicles appear of a yellowish color, the grain will be heavier and the straw will make excellent fodder. Where one has abundance of room, oats may be gathered loose and much faster, than in sheaves. If bound, they occupy far less space either in a stack or mow. It is well to save seed where it ripens first.

Orchards.—When the ground is not covered with a smooth turf, remove all brush and sticks, level with hoes, harrow thoroughly, put all the stones in close heaps where apples will not fall on them and be bruised, roll, and sow a bushel of orchard grass seed and half a bushel of Kentucky blue grass seed per acre. This will form a soft and smooth surface for the fruit to drop on, when it is to be gathered.

Oxen.—Let oxen work in the cool parts of the day, and enjoy quiet rest and rumination while it is too hot to labor. Feed well, use them gently, and they will do more, and grow fat while working.

Pastures.—Where the ground is very dry and the grass short, it is better to give all stock one feeding of hay, daily, than to allow them to gnaw the grass close to the ground. Sheep, neat cattle and horses will subsist on hay in summer as well as in winter. Pastures must have more time to grow in hot and dry weather, than when vegetation does not suffer for rain. If pastures are short, let stock be fed green corn stalks or sorghum, a portion of the time.

Peas.—When peas are to be fed to swine without threshing, those who practise feeding them prefer putting them in large stacks. Then, those that are wet by rains can be fed out before they have been injured. If designed for sheep next winter, it is better to house them, or put them in long and narrow stacks, and cover with a lean-to roof of boards.

Poultry.—Drive turkeys, ducks and chickens to the meadows and wheat stubbles, that they may eat grasshoppers and scattered grain. A mixture of loppered milk and Indian meal is excellent to make poultry grow and hens lay.

Seed.—Save grass seed of all good kinds to stock down with next month. Gather turnip, carrot, parsnip, and other seed, before birds waste them. Every farmer should save his own seed, and preserve his best roots, grain, grass, etc., for seed.

Sheep.—Lambs should usually be weaned this month, to allow their dams to recuperate before winter. Late lambs need not be separated till next month. Let ewes and lambs be confined in contiguous fields, if possible, as they will be more quiet when only a fence separates them. Let several dry ewes, or those having very young lambs, run with the flock of lambs to make them more gentle and manageable. Examine the heads of bucks for maggots about their horns. Apply tar as warm as it can be and not burn, to any part where the skin is broken, especially where maggots have hatched. It is a common thing for bucks to have bruises and sores filled with maggots about their horns.

Swine.—Read remarks on swine in July number.

Stacks.—Retop them as soon as they settle, raking them off smoothly, when wet, so as to turn all straws down the sides to conduct the rain off readily.

Turnips.—Cultivate and hoe often. Keep down all weeds and grass. Thin out the drills. More roots can be raised at 10 inches apart than at 5 inches. Fill up all vacant places with such as are pulled up. Plants always live better if put out just before night, than in the former part of the day, unless the weather is constantly cloudy.

Tools.—Protect all tools, whether iron, steel, or wood, from alternate rain, dew and sunshine. Moisture and heat will rust iron, while wet raises the grain of wood, makes it rough, and rots the joints.

Wagons.—Keep all wheel vehicles in the shade during hot weather. If a tire is very loose, reset it. If loose but little, the fellows of nice wheels may be saturated with liuseed oil, and wheels of ox carts and lumber wagons soaked in coal tar.

Water.—See that every animal is supplied with clean water. Hens, turkeys and ducks, often suffer for drink in August. Scrub out the water troughs often where horses and neat cattle drink; and see that the timid and weaker ones are allowed to come to the water as often as the master animals. Sheep will thrive well without water, but much better when they have access to it.

Wells.—Make preparations for digging wells where needed this month, when springs of water are low. Collect stones, brick, timber, or water-lime and sand for stoning, bricking, curbing, or plastering. Most farmers can make a well at a small expense, with a little pains and management.

Wheat.—Obtain good seed, free from weed seeds and shrunk kernels. Prepare the ground well, put in the seed in good time, not without a dressing of some kind of manure. If the soil is not well under drained, where it is apt to be too wet for winter grain, better defer sowing winter wheat, and raise spring wheat next season.

Yards.—Improve leisure days after harvest in fencing and improving barn yards. Read about them in the calendar for July, and practise accordingly.

Work in the Orchard and Nursery.

What with the failure of fruit to set freely and the ravages of insects, the harvest of most kinds will be small. Those who live in southern localities will do well to turn their attention to early fruits for the markets of the larger cities. The most miserable apologies for pears, small, green and unwholesome, were brought from Maryland and Virginia, and sold at enormous prices the first week

in July. Now we don't believe in fruit of this kind, and never should buy it, but as there are plenty of people who will pay a good price for the earliest of everything, the fruit raiser must consult the demands of the market. We can not too often impress upon those who send fruit to market, the necessity of sending it in good shape. Careful picking and assorting will always pay, the best fruit being put by itself and the poorer in separate lots, the whole will give a better return than when good and bad are indiscriminately mixed, as then the poor detracts from the appearance of the good, while at the same time it looks worse, by contrast with the better than it would were it placed by itself. Early varieties of apples and pears, as well as peaches should be picked before they begin to soften, as they will carry better and be in good eating condition by the time they reach the consumer.

Budding.—This method of propagation is largely practised this month. The operation is a very simple one, and a few minutes watching of an experienced hand is worth more than a long description. It was illustrated in August of last year, and any one by carefully following that, may undertake it with a good prospect of success.

Borers.—These mischievous carpenter's work industriously this month. The eggs which have been laid upon the bark have hatched and the young grubs will work their way into the trunk, unless paper, or some preventive has been wrapped around it. Now is the time to examine the trunk near the ground, and if any holes are found, follow the maker with a wire or whalebone probe. Nothing kills insects more effectually than crushing them.

Evergreens.—With proper care these may be removed this month, and with more chances of success than if it is done in autumn. Make the removal in a damp time, keep the roots from drying, and see that the holes in which they are placed, are moist, or made so by watering. A few large stones placed over the roots are better than stakes to hold the tree in place.

Layers.—This season's growth of shrubs is generally sufficiently matured for layering, according to directions already given in the present volume. Have the soil into which the layer is put, fine and rich, and with things that do not root very readily, make a slanting cut about half way through the branch on the under side of the portion to be buried.

Pruning.—If the work was not finished in July, better do it the present month than delay it until spring. Some good horticulturists use a very heavy log handled chisel driven with a mallet. With all but very large limbs, this is better than a saw; the cut being made from the underside of the limb, there is no risk of a ragged wound. If a little attention be now paid to the formation of young trees, much pruning may be avoided.

Seeds and Seedlings.—Continue to collect seeds of trees and shrubs as they ripen, and sow as soon as gathered, or keep in sand until spring. This is a trying month with seedlings, and care must be given to properly shade and weed them. Give water when the weather is dry.

Water and Mulch.—If trees set this spring show signs of suffering, remove the surface earth, water copiously, replace the earth and put on a mulch of some kind to prevent evaporation. One operation of this kind will often save a valuable tree or shrub.

Weeds.—These hinder the growth of woody plants as well as they do that of faster growing ones, and every one who raises nursery stock, either for his own use or for sale, will find it to his advantage to keep the plants free of weeds and the soil stirred.

Kitchen Garden.—A good gardener, like a good sailor, always keeps a bright lookout ahead. Not only does the garden require that he should lay his plans for the present year, but he must take some thought for the coming one. There are two things for the benefit of next year's crop which may now be cared for with profit; seeds and manure, two essentials in successful gardening. While we do not think it worth-while for those who have small gardens to raise all their seeds, yet

they can do so with the great majority of them. There is a great deal of nonsense in print about kinds running out and the necessity for a fresh stock. Seeds will run out if the poorest and latest product of the meanest plants is saved for seed, and they can be improved if care be taken to properly select the best of everything. We know of one place, famous for its sweet corn, in which the same variety has been kept distinct and improving for more than 20 years. We know that it seems hard when tomatoes, cucumbers, etc., first come, to take the very earliest and best of them for seed for next year's crop, but that is just the proper way to do. And more than this, the careful gardener will, with corn, beans, and all plants which show distinct characters in the seeds, assort the seeds and reject those which differ from the true kind in size, shape, or color. With all seeds which show any signs of mixture, or deterioration, this selection should be carefully made. Even now the most promising biennials, such as early beets, salsify, etc., may be marked for preservation with the view to produce seed from them. Then as to manures, in even a small garden what a heap of refuse may be accumulated during the summer! We every day go by a large patch of early cabbages, from which the heads are cut for market and the outer leaves and stumps are left to dry up in the field. We shall doubtless next spring hear the proprietor complaining of the scarcity of manure, when by a little labor he could have had a quantity from wasted cabbage refuse.

Asparagus.—There is nothing to do to the beds except to pull up such coarse weeds as make their appearance. If new beds are wanted, gather the seeds when ripe and sow at once, or clean and preserve them for sowing next spring.

Beans.—Plant Refugee or other early sort for late use and for salting. String and break the pods as for cooking, and pack them in stone jars, or in firkins, with alternate layers of salt and beans. Prepared in this way they will keep all winter, and when properly freshened, are almost as good as if recently picked. Limas are disposed to set much more fruit than they can mature. Cutting off the vine at the top of the pole or trellis and shortening in the more rampant side branches, will hasten the development of the remaining pods.

Beets.—Thin and keep the weeds down and the ground loose by hoe. In small gardens it will pay to water beets in a dry time; when their growth is checked they are not so good as when grown rapidly.

Cabbages and Cauliflowers.—Use or market the early sorts, and remove the refuse to the compost heap, or feed it out. Late sorts may be set this month, and make a crop. Caterpillars will be troublesome and must be killed. In some places slugs do great damage. They are found under the lowest leaves, and should be destroyed.

Carrots.—Hoe thin and weed. If young carrots are preferred for the table, sow for a late supply.

Celery.—That planted early in trenches, must be earthed up. Set plants of the latest crop. Read article on page 218, last month, upon flat culture.

Corn.—Keep down weeds, but do not disturb the roots. Note the earliest and finest ears and reserve them for seed. The worm that infests the ears makes its appearance this month, and where the silk has been eaten, search for and destroy him.

Cucumbers.—Seed for next year is best saved by reserving the fruit on the earliest vines. Allow only a few to ripen and pick off all others that set, when very small. Gather for pickles as soon as of suitable size, and put in salt. See article on page 254.

Egg Plants.—Cultivate thoroughly and draw the earth around the stem. Caterpillars are very destructive to the foliage, and if holes appear in the leaves, the enemy will be found on the under side. The rapidly swelling fruit should be kept from touching the ground by means of a handful of straw, or a shingle placed under it.

Endive.—Set out for late crop, at least a foot apart each way. The early plants may be blanched by gathering up the leaves when quite dry, and tying them together near the tips.

Herbs.—Continue to cut as directed last month.

Lettuce.—Sow for a late crop, which will do all the better in a partly shaded place.

Melons.—Remove all fruit not likely to ripen. Those approaching maturity should be turned occasionally and kept from contact with the earth by a shingle or a little straw.

Onions.—Harvest as soon as the majority of the tops fall over. Dry thoroughly if they are to be stored. Many send their onions directly from the field to the market, instead of storing them.

Peas.—Our experience with late sown varieties has not been very encouraging. Those who wish to try it, can sow some of the early sorts now.

Potatoes.—Dig as wanted from day to day, burying the green tops in the rows. Those for seed may remain in the ground until the tops are quite dead.

Radish.—The Chinese Rose-colored is an excellent late variety, which may be kept all winter as easily as turnips. Sow now in vacant places.

Seeds.—Continue to gather as they mature, reading the suggestions given above.

Squashes.—The squash-bug and the borer will need looking after, as well as the 12-spotted *Galeruca*, a yellow insect shaped like a lady-bug, with 12 black spots. It is one of the most destructive of insects, but fortunately not very common.

Sweet Potatoes.—Do not allow the vines to take root, and keep the weeds out.

Tomatoes.—Look out for the worm and cut back the rampant branches.

Turnips.—Thin Rutabagas when large enough. Sow round kinds in places left by early crops.

Weeds.—Allow none to get large enough to perfect seed for next year's crop.

Fruit Garden.—The principal work here is to care for the fruit as it ripens, remove superfluous growth and keep the soil free of weeds. During the abundance of each variety a quantity should be put up in bottles, or otherwise preserved for future use, according to directions already given.

Blackberries.—Allow those for home use to remain on the vines until thoroughly ripe, but those sent to market must be picked while firm enough to carry safely.

Currants.—Remove suckers and weak shoots.

Dwarf Trees.—Thin the crop if there is more fruit than will develop well. Control the shape of the tree by pinching as heretofore directed.

Grapes.—Caterpillars often do mischief by cutting off the end of growing canes; in these the upper lateral may be allowed to grow for a leader. Keep the successive growths of the laterals pinched back to one leaf. Tie up to the trellis, and do not allow neighboring canes to become entangled. Treat mildew with sulphur as recommended last month. If rot appears among the berries, we know of no help for it. It is best to remove decaying bunches.

Raspberries.—Cut away the old canes after fruiting, and encourage the growth of the new ones. These will fruit next year and should have proper attention. Thin to three to each stool, and keep the soil clean, loose and enriched.

Strawberries.—Beds set now with plants which have been struck in pots, or taken up with a ball of earth, will become sufficiently established to bear a fair crop next spring. Keep old beds well cultivated and weeded, and have the runners clipped.

Flower Garden and Lawn.—The burning heats of July and August are most disagreeing to the florist, and many plants are in a state of suspended animation until cooler nights and more abundant rains start them into growth. It is during this time that the value of the plants with variegated foliage is most apparent, and a good selection of them will keep up a gay appearance on the grounds during the heated term. Watering upon any extended scale is not usually practicable, but the effects of drought may be greatly resisted by the free use of the hoe and rake. If it

is necessary to water a plant to save it, let the application be thorough, not an occasional sprinkling.

Box.—Clip into good shape early this month.

Bulbs.—If any spring flowering ones remain in the ground, take them up as directed last month, if the leaves have withered.

Climbers.—It is a very common mistake to make the supports for annual ones too frail, and they break down with the great weight of foliage, aided by the winds. All that are not strong enough should be braced before strong autumnal winds prostrate them.

Dahlias.—Much of the success in cultivating these depends upon proper tying. The stem has very little strength itself and the foliage is very heavy. Remove imperfect buds and all flowers as soon as they have lost their beauty.

Fuchsias.—Cuttings made from the new growth will root with the greatest ease, and make good plants to keep over winter. If any of the more tender kinds have lost their leaves from the heat of the sun, prune them and they will push out fresh growth, and flower when the weather is cooler.

Grass.—Lawns and edgings need a continuation of the care heretofore advised. Root out any coarse weeds.

Gladiolus.—The broad leafy shoots of these are easily prostrated and are difficult to bring back to an erect position. We prefer to keep them all tied to light stakes, as soon as they get large enough.

Hedges.—Give deciduous ones their summer clipping this month.

Layers.—Shrubs and vines may be increased by layering the growth of the present season, as directed under Orchard and Nursery, and in previous numbers. Many of them grow readily from cuttings of the just hardening wood.

Pelargoniums.—Put in cuttings for a stock for winter. Keep trimmed in a compact form.

Potted Plants.—Do not allow them to be neglected. Give all the water they need, and keep weeds out of the pots and insects from the foliage.

Perennials.—The seed of these as well as of biennials may be sown now, and plants for next year's blooming be raised.

Roses.—Make layers. Train up the new growth of climbers. Keep off insects, many of which can be dislodged by suddenly jarring the bushes. One correspondent advises the use of 1 lb. of copperas to six gallons of water. The bushes to be syringed with the solution.

Seeds.—The same care advised in the selection and preservation of seeds in the Kitchen Garden is to be observed with flowers. A knowledge of the methods by which each variety is dispersed will be a guide to the proper time for collecting. Those which burst their seed pods suddenly, like the phloxes and pansy will be lost, if allowed to remain too long. Such are to be collected before the pods open, and placed under a sieve, where the scattered seeds will be saved.

Verbenas.—If these do not root at the joints, peg them down as directed last month.

Zinnias.—The double variety has been much improved by a careful selection of seeds, and the only way to keep the stock good is to save seed from flowers of the best form and color.

Green and Hot-Houses.—If new structures are to be built, or alterations or repairs made to old ones, steps should be taken to have the work finished before the houses are needed for the plants. Potting earth, fuel, and all other supplies are to be laid in in good season. Preparations may be made for stocking the houses by starting cuttings, repotting such plants as need it, and sowing seeds. Very small seeds, such as those of calceolarias, lobelias, etc., need very fine soil and scarcely any covering. Plants remaining in the house must not be allowed to be burned by the sun.

Cold Grapery.—Mildew is apt to appear in warm damp weather, in which case keep the air

of the house as dry as possible, and use sulphur, as directed last month. As the fruit commences to ripen, discontinue the watering. Sudden changes of air will interfere with the successful ripening, and must be guarded against, but free ventilation is needed. After the fruit is ripe, the upper ventilators may be kept open at night.

The Apiary for August.—Prepared by M. Quinby, by request.—Honey that is in glass boxes, and intended for market, should be taken from the hive now, before any collected from buckwheat is added to it. Boxes only two-thirds full of clover honey are often worth as much in market as if finished with buckwheat. This darkest honey being on the outside will make it appear as if the whole was filled with it, and the price will be in accordance with the apparent quality. When to be used at home, it may remain until finished, but all that are not to be finished with buckwheat should be removed immediately. Bees will gather honey from buckwheat through this month, and in many places swarms, (particularly Italians) will issue. When it is desirable to increase colonies to the utmost, perhaps it is not always advisable to return the bees, or part of them to the parent hive, as has been recommended. When the movable comb hive is used, they may be hived and assisted with a comb or two from some hive that has a surplus, and will be benefitted by being deprived of it. If the parent hive can have the queen cells cut out, and a laying queen introduced in a week after the swarm issues, there need be no doubt about its being strong enough for winter. The Italians will raise more bees in the same space of comb, and be stronger from the number raised, than the natives. It may be satisfactory to the bees to get the combs full of honey and brood, and have nothing further to do, but it is doubtful if such is the best state of things, either for the bees or their owner. Take out two or three combs where full throughout, and put in empty frames, making room near the middle of the hive for them. If from unfavorable weather, the colony has not quite enough for winter, the full combs or part of them may be returned to the hive; otherwise they may be given to some destitute hive or appropriated for table use. When bees can add nothing to their stores from buckwheat, it is probable that condemned colonies will furnish more honey now than in September, the usual time for taking it. In favored localities, where but few bees are kept, there might be a gain in leaving them. Those wishing to raise Italian queens after the black drones are gone, and who want to preserve Italian drones, should prepare for it now, as without special care these drones are destroyed before the natives. First, render a colony queenless and keep it so; it may be allowed to raise queens, but they should be removed before laying. As soon as honey fails, feed daily. Make it strong in drones by introducing to it all the sealed drone brood from the other hives. It would be well to make the hive for this purpose larger than usual, to accommodate more frames.

International Industrial and Agricultural Exhibition.—Altona, a city of Schleswig-Holstein, and situated almost as near to Hamburg as Brooklyn to New-York, has, through its most influential citizens, put forth a very attractive programme for a grand exhibition, to take place in June, 1866. An agent has been sent to this country to induce a full display of American machines, manufactures, implements, animals etc. Full explanations may be gained by addressing Austin, Baldwin & Co., 72 Broadway. Mr. Marsh, our Consul at Altona, is earnest in forwarding the interests of the commission who have the management.

Fair of the American Institute and the Greeley Prizes.—The great fair of the American Institute opens this year September 12th, and lasts till October 19th. The horticultural exhibition in connection with it begins on Sept. 16th. At this the fruit in competition for the Greeley prizes will be shown. It will be remembered that Mr. Greeley offered \$100 for the best bushel of the best apples, \$100 for the same quantity of the best pears, and \$100 for the best 6 pounds of grapes, and

the prizes were not awarded last year. The special committee who have these prizes in charge, are Dr. J. A. Warder, Charles Downing. — Ferris, Dr. I. M. Ward, Mr. W. S. Carpenter, Dr. E. W. Sylvester, P. B. Meade and Patrick Quinn. The Institute has secured the ample quarters where the Sanitary Fair was held last year, on 14th street, near 6th avenue.

Official List of the 428 Money Order Post Offices, July 1, 1865.

As a matter of convenience to our readers, we publish the Official list of all the Post Offices where Money Orders may be obtained and paid. At any one of these offices, an order for from one to thirty dollars may be purchased, to be paid at any other one of these offices named. The cost is only 10 cents for an order for \$10 or less, and 20 cents for any sum between \$10 and \$30. For larger sums two or more orders may be purchased.—This is a very great convenience, as the sum sent is almost absolutely secure against loss. Instead of sending money, there is forwarded simply an order payable only to the person for whom it is designed. If by any chance an order is lost, by theft, destruction of mail bags, etc., a duplicate order is issued. Since our publication of the previous list of 141 offices, the system has worked so well that these new offices are established, and probably thousands of other offices will in time be included. We have received a large number of remittances in this way, and advise our subscribers to adopt this mode of sending \$5 and upwards, where a Money Order Office is convenient. For large sums a draft on a New York Bank is preferable. These can be obtained quite cheaply now, from almost any bank or good private banker in any part of the country.

ALPHABETICAL LIST OF MONEY ORDER POST OFFICES.

Connecticut.—Bridgeport, Danbury, Derby, Guilford, Hartford, Litchfield, Middletown, New London, Norwich, New Britain, New Milford, New Haven, Norwalk, Putnam, Rockville, Thompsonville, West Meriden, Waterbury, Willimantic, West Killingly.

Delaware.—Delaware City, Dover, Wilmington.

District Columbia.—Washington.

Florida.—Key West.

Illinois.—Alton, Anroa, Belleville, Bloomington, Cairo, Canton, Carlinville, Centralia, Champaign, Chicago, Danville, Decatur, Dixon, Elgin, Freeport, Galea, Galesburg, Geneseo, Jacksonville, Joliet, Kankakee Depot, Lacon, Macomb, Mount Vernon, Olney, Ottawa, Paris, Peoria, Pontiac, Princeton, Quincy, Rockford, Rock Island, Shawneetown, Shelbyville, Springfield, Sycamore, Waukegan.

Indiana.—Attica, Bloomington, Columbus, Crawfordsville, Evansville, Fort Wayne, Green Castle, Greensburg, Goshen, Hannington, Indianapolis, Jeffersonville, Kokomo, Lafayette, La Porte, Lawrenceburg, Logansport, Madison, Muncie, New Albany, Plymouth, Princeton, Rensselaer, Richmond, Salem, South Bend, Terre Haute, Valparaiso, Vincennes, Wabash, Warsaw.

Iowa.—Burlington, Cedar Rapids, Council Bluffs, Des Moines, Dubuque, Iowa City, Keokuk, Lyons, Marshalltown, Mt. Pleasant, Mascatawa, Newton, Oskaloosa, Ottumwa, Sioux City, Washington, Waterloo.

Kansas.—Atchison, Ft. Leavenworth, Lawrence, Topeka.

Kentucky.—Bowling Green, Louisville, Lexington, Maysville, Paducah.

Louisiana.—New Orleans.

Maine.—Augusta, Bangor, Bath, Belfast, Biddeford, Brunswick, Eastport, Ellsworth, Lewiston, Portland, Rockland, Skowhegan, Waterville.

Maryland.—Annapolis, Baltimore, Cumberland, Easton, Ellicott's Mills, Frederick, Hagerstown, Havre de Grace, Salisbury.

Massachusetts.—Amherst, Bridgewater, Boston, Chicopee, Fall River, Fitchburg, Gloucester, Greenfield, Lawrence, Lee, Lowell, Milford, Natick, New Bedford, Newburyport, Northampton, Pittsfield, Plymouth, Salem, Springfield, Taunton, Westfield, Worcester.

Michigan.—Adrian, Allegan, Ann Arbor, Big Rapids, Cold Water, Detroit, East Saginaw, Flint, Grand Rapids, Hillsdale, Jackson, Kalamazoo, Lansing, Marshall, Monroe, Niles, Pontiac, Port Huron.

Minnesota.—Faribault, Hastings, Mankato, Red Wing, Rochester, St. Cloud, St. Paul, Winona.

Mississippi.—Vicksburg.

Missouri.—Jefferson Barracks, Jefferson City, Kansas City, Pilot Knob, Richmond, Rolla, St. Charles, St. Joseph, St. Louis.

Nebraska Territory.—Nebraska City, Omaha City.

New Hampshire.—Claremont, Concord, Dover, Exeter, Great Falls, Hanover, Keene, Lancaster, Manchester, Nashua, Portsmouth.

New Jersey.—Bridgeton, Burlington, Freehold, Jersey City, Morristown, Newark, New Brunswick, Newton, Paterson, Plainfield, Princeton, Trenton.

New York.—Albany, Alton, Auburn, Batavia, Bath, Binghamton, Brooklyn, Buffalo, Canandaigua, Cooperstown, Cortland Village, Delhi, Dunkirk, Elizabethtown, Elmira, Fort Hamilton, Geneseo, Hudson, Ithaca, Jamestown, Kingston, Little Falls, Lockport, Lyons, Malone, Newburgh, New York, Norwich, Ogdensburg, Olean, Oswego, Owego, Penn Yan, Plattsburg, Port Jervis, Poughkeepsie, River Head, Rochester, Saratoga Springs, Schenectady, Seneca Falls, Syracuse, Troy, Utica, Warsaw, Watertown, Wellsville, West Point, Whitehall, Yonkers.

cense, Troy, Utica, Warsaw, Watertown, Wellsville, West Point, Whitehall, Yonkers.

North Carolina.—Newbern.

Ohio.—Akron, Athens, Bellefontaine, Bucyrus, Cambridge, Chillicothe, Cincinnati, Circleville, Cleveland, Columbus, Dayton, Defiance, Delaware, Finley, Fremont, Gallipolis, Hamilton, Hillsborough, Ironton, Jackson, Jefferson, Kenton, Lancaster, Lima, McConnellsville, Mansfield, Marietta, Marion, Massilon, Medina, Miamisville, Mt. Vernon, Newark, New Philadelphia, Norwalk, Oberlin, Painesville, Piqua, Portsmouth, Ravenna, Ripley, Salem, Sandusky, Steubenville, Tiffin, Toledo, Urbana, Van Wert, Warren, Wooster, Xenia, Zanesville.

Pennsylvania.—Allentown, Altoona, Bedford, Bellefonte, Carlisle, Chambersburg, Chester, Danville, Easton, Erie, Franklin, Greensburg, Harrisburg, Honesdale, Johnstown, Kittanning, Lancaster, Lebanon, Lewisburg, Lewistown, Lock Haven, Meadville, New Castle, Norristown, Philadelphia, Pittsburg, Pottsville, Reading, Scranton, Susquehanna Depot, Towanda, Warren, Washington, Wellsborough, West Chester, Williamsport, York.

Rhode Island.—Bristol, Newport, Portsmouth Grove, Providence, Westerly, Woonsocket Falls.

South Carolina.—Port Royal.

Tennessee.—Chattanooga, Memphis, Nashville.

Vermont.—Bennington, Brandon, Brattleborough, Burlington, Middlebury, Montpelier, Rutland, St. Albans, St. Johnsbury, Springfield, Windsor, Woodstock.

Virginia.—Alexandria, Old Point Comfort, Norfolk.

West Virginia.—Clarksburg, Harper's Ferry, Martinsburg, Parkersburg, Wheeling.

Wisconsin.—Beloit, Black River Falls, Dartington, Eau Claire, Fond du Lac, Green Bay, Hudson, La Crosse, Madison, Manitowoc, Milwaukee, Oshkosh, Portage City, Prairie du Chien, Prescott, Racine, Sheboygan, Sparta, Stevens Point, Waukesha.



Containing a great variety of items, including many good hints and suggestions which we throw into small type and condensed form, for want of space elsewhere.

The Advertising Pages this month present many features of special interest to all, and will well repay perusal. It is satisfactory to the readers to know that none but parties believed to be entirely reliable, are permitted to insert their business cards in the *Agriculturist*—those who will perform what they promise. It is equally pleasing to advertisers to know that our readers are a live class, who take note of what is going on in the business world, and hence we repeat the request heretofore made, that parties writing to advertisers shall mention in their communications that advertisements were seen in this journal. It will also show that they rightfully expect prompt returns and fair dealing, and will thus be mutually advantageous.

Agricultural Instruction at Yale College.

—In connection with the Sheffield Scientific School, there is a special Agricultural Department, which receives the benefit of the United States grant under the Agricultural College act. Instruction in this department consists in two courses of study. The first is called the "full course," and occupies three years, to enter which, applicants pass an examination in the elements of a good education—the standard being high, especially as regards a knowledge of mathematics. The second, or "shorter course" is arranged especially to accommodate young farmers, and occupies seven months, from about the middle (12th this year) of September to the middle of April, during which time one may attend a selection of the most useful exercises of the full course, viz.: instruction in Practical Agriculture, Agricultural Chemistry, and Physiology, Agricultural Zoology, Physical Geography, Forestry, etc. For full information apply to Prof. Geo. J. Brush, Yale College, New Haven, Conn.

Soldiers' Claims.

—Among the many good things the Sanitary Commission has done is the establishment of a Protective War-Caim Association, of which General Scott is President, and its Executive Committee composed of citizens of undoubted and unselfish patriotism. Its objects, as briefly expressed in its business card, "are to secure to soldiers and sailors, and their families, claims for Pension, Pay, Bounty, and Prize Money, without charge, and to give them advice and information." We have before us the report of the workings of this Association for six months, ending June 30th, which shows that 3,179 claims have been filed, of which 1,210 have been paid, amounting to \$199,086.38. The office of the Association is No. 35 Chambers street, N. Y. City, and Henry Greenfield is Secretary. As the Sanitary Commission has been from the beginning purely national in its character, we give this account of one of its departments as of interest to persons in all parts of the Union.

Strawberry Queries.—"J. A. J.," Indianapolis, Ind. Strawberry seeds should be sown as soon as ripe. Fuller's Illustrated Strawberry Culturist is the best work on the subject... Miss B. S. Payson. The pinching off of runners should be continued if fruit is wanted, but if more plants are needed, let the runners grow and strike root.... W. A. Walker, R. I. Pots would be likely to be broken if left out all winter. The plants can be taken up in spring with a ball of earth around the roots without disturbing them much.... E. C. Sohn, Knox Co., Ill. The fact that one of your plants did not bear this spring, is no proof that it is not of the right kind. Plants set in the fall do not always show fruit in the spring. There could not be any mistake with the "Agriculturist" sent from this office, as no other plants grow near them.... V. A. Pearsall. If your plants are really staminate, there is no way to make them fruit. Dig them under and plant kinds with perfect flowers.

Strawberries in England.—It is said that the strawberry crop has been almost a total failure in England this year. This is in part attributed to the extensive planting of new varieties that had not been sufficiently tested. Sir Charles Napier, a variety which very rapidly acquired a reputation, was largely planted and has proved so worthless, that we have accounts of its being plowed under by the 100 acres. Sir Harry and Grove End Scarlet are mentioned among the sorts which have done well the present year.

The Wilson Early Blackberry.—This comparatively new variety has been sent us by John S. Collins, of Moorestown, Burlington Co., N. J. Judging from the fruiting branches exhibited (we have not seen it growing), it would appear to be very productive. Mr. C. says more so than the New Rochelle. The fruit is of very good size and well flavored. We received the first sample on July 5th, and another a week later, at which time the crop seemed to be at its height. The whole crop is said to be yielded in about three weeks. If it proves to be as claimed, a week or more earlier than the New Rochelle, it will prove a valuable variety.

Large Currants.—A few days ago we had some currants from a distinguished horticulturist, who dislikes to see his name in print, which exceeded in size any we have ever seen. They were of the Cherry variety, and appropriately so called, as the largest berry measured $2\frac{1}{4}$ inches in circumference.

The Currant Worm.—J. P. Bogardus, of Sullivan Co., N. Y., says: "A small green worm completely strips the leaves (of currant bushes) as if by magic," and that "children have died in consequence of eating the fruit from the bushes thus affected, it is supposed. Two died in one family about the same time, after eating the fruit." We don't think that the worms had anything to do with the death of the children. We have already noticed the use of white hellebore for the currant worm, and have had accounts of its efficacy.

The Iona and Israella Grapes.—The interest which attaches to these comparatively new varieties has led us to look after their progress during the growing season. Our own vines not being old enough to fruit, we have observed them in the grounds of several cultivators, and made a special visit to Iona Island for the purpose of seeing these varieties. The Iona, especially, on the grounds of Doct. Grant, is remarkably productive, the bunches being very large, and giving a promise of being more compact than has been the case with fruit shown from younger vines. We have already spoken of the high quality of the fruit of this variety, and can now only say that the vines appear as vigorous and as fruitful as those of any kind whatever. The specimens of Israella at the Island were looking finely, though not so full of fruit as a vine we saw near Newburgh. As there has been some discussion about the means taken to ripen this variety, it is but just to say that we saw no indications of anything of the kind, and have no doubt that the story about their being forced was a sheer fabrication. The propagating operations at Iona are carried on upon an extensive scale, and will repay a visit to those interested in grape culture. We understand that all lovers of horticulture are invited to make a visit to Iona Island, which they can reach from the Peekskill station of the Hudson River R. R., where boats may always be had to convey them across.

The Mildew on the Grape.—Along the Hudson the unusually cool nights succeeding warm days have brought on the mildew to an unprecedented extent. In several large collections it has made sad havoc, the leaves in almost every case, and the fruit in many instances, being attacked by it. The Delaware, usually so free from all defects, is, as far as the leaves are concerned,

as bad as any. Several of Rogers' Hybrids have the fruit entirely ruined. The leaves of even such a hardy sort as Hartford Prolific were not exempt, and the Iona and Israella were somewhat touched, but nothing like as badly as the Delaware. These observations were made in the immediate vicinity of Newburgh, and we do not know how far the trouble extends along the river beyond that locality. This visitation was so sudden and unexpected, that none of the cultivators were prepared to use sulphur upon its first appearance. The vines around New York City are also badly troubled by mildew.

Thrips or Fritters.—This pest seems to be on the increase and is really an annoyance to fruit growers. It is a little whitish insect that hops about in the most lively manner, and is about as difficult to catch as a flea. We wish some entomologist would give us an account of its habits. We only know that it has the habit of attacking the leaves of almost everything, from a grape vine to an elm tree. The leaves injured by it seem to lose their vitality and turn pale. One cultivator says that he has kept them off by the use of sulphur, while others say that they have not found this, or any other remedies of any avail. What is the insect, a "thrip," or a "fritter," for it is called by both names, and how can it be disposed of?

Horticultural Register.—It will be seen by advertisement that W. C. Flagg, Secretary of the Illinois State Horticultural Society, proposes to publish a register of all persons in any manner connected with the nursery and fruit business. A work of this kind thoroughly done, will be a very useful one, and as a hint towards making it more complete, we would suggest that he add a list of those journals that are wholly or partially devoted to horticulture.

Tomato Seed.—"A Subscriber" in West Nottingham, Md., wishes to know how to save tomato seeds. The great difficulty with these seeds is due to the fact that they are covered with hairs as well as a very strong mucilage which is very difficult to separate by any ordinary washing. The tomatoes may be put into a vessel of water and the fruit allowed to decay there until the seeds will wash clean, or the pulp containing the seeds may be removed and placed in a dish, until fermentation has so changed the mucilage that it can be washed out. Of course fruit for seed should be selected from the earliest and most prolific plants, and the best shaped specimens only be taken.

Cabbage Seed.—"W. B. G.," Fountain, Ind. We have frequently stated that cabbage seed should not be raised from stumps. On the contrary, the best heads should be preserved with the greatest care, and only the strongest shoots allowed to grow and bear seed.

Horticultural Humbugs.—"A Subscriber" in Bond Co., Ill., wishes us to warn people against tree peddlers who sell "Self-pruning Grape Vines," and plum trees grafted on a stock which does not allow the plum to start until the curculio is gone. If there are any people in Bond Co., Ill., or any where else who can be made to believe any such stuff as he describes, we fear that they don't take the *Agriculturist* and our warning will not reach them. If there is anything that is a nuisance in the West, it is peddlers, and those who sell nursery stock are the worst of the lot.

Foreign Intelligence.—Under the head of "Foreign Intelligence," the Gardeners' Monthly reproduces articles from the European horticultural periodicals. We noticed in the July number of that excellent serial an article on the "Ornamental varieties of the Beech," which we thought read like something we had seen before. Upon referring to our file for September, 1863, we found it was one of our own articles with a few verbal changes to adapt it to England, and it had been appropriated by the (English) Gardeners' Weekly as original. The Country Gentleman also thought the article worthy of being reproduced here, and it also copied it from the English paper. There is nothing like foreign travel to improve individuals, and we suppose that an article is all the better for crossing the ocean.

Where to Buy Land and Settle.—East, West and South? Day after day the post brings us requests for information, where persons should buy land and go to farming, from every part of the country. Returning soldiers, worn-out tradesmen, and mechanics, seek in country life health and happiness which they find so small a share of in the city. Our friends must realize that these are among the hardest questions that can be proposed.—Were we going to "pull up stakes" ourselves, it would take us long to decide where to go. Within 30 miles of New York there are many very attractive spots. The banks of the Hudson and the ad-

joining country furnish romance and picturesqueness of scenery unrivaled, and at the same time well adapted to farming, especially to grazing and the harder kinds of fruits. New Jersey lands are of all qualities and conditions, from swampy to sandy, from mountainous to flat. Delaware is like Jersey, except the mountains. Maryland has a great variety of land; old tobacco farms, well-worn, and forest land, as yet untouched, some very cheap, others dear at any price. And much the same may be said of the whole South, raising cotton, or corn, or tobacco, for the more southern States. The South has many attractions to enterprising good principled men, and cheap lands are the least of these. It is one of the most beautiful and richest countries of the world. The productions are most varied, including a multitude of fruits and plants, of which Northern people know nothing, besides figs, oranges, pecan nuts, etc., which we prize. The country has never been half developed, and white men can bear the climate and work all day in the sun, almost all the year perfectly well, as is demonstrated every year by the foreign mechanics in New Orleans and other cities. "Society" there may not welcome northern men, who ought to go in colonies, so as to form a society of their own and to be independent of those who would maintain the principles which have cursed the land and the nation. Treated as reasonable men and women, the negroes will be faithful laborers and staunch friends, a farmer might find some of them bungling, slow, lazy, and untrusty; but what hands are not? Working among them, taking an interest in them and their welfare, he would see less of this, and secure faithful and cheap labor

The Death of Sir Joseph Paxton.—This distinguished horticulturist died in England on the 8th of June last, at the age of 64. He began life as gardener's apprentice and was afterwards connected with some of the best horticultural establishments in England. He is most widely known as the designer of the first Crystal Palace, built for the first International Exhibition at London, for which service he was knighted. He was a contributor to horticultural and botanical periodicals, and the author of a very useful botanical dictionary.

Good Sorgo Machinery.—The large number of those who are just entering the business of making syrup from sorgo, justifies our calling attention to the superior mills and evaporator made by Blymyer, Bates & Day, and the Clark Sorgo Machine Co. advertised in our business columns. Successful trial for years has given their apparatus a deserved reputation for superior excellence; we can heartily recommend them.

That Big Bull Frog advertised for in our columns is honestly wanted by a reliable man, who will pay the premiums offered as soon as the winners shall be known. Boys living in the vicinity of ponds, or swamps may find frog-hunting profitable, especially if they can secure any of extra size. The exhibition will no doubt be a unique and funny affair.

Report of the Department of Agriculture.—"W. H. G." and many others. We know of no way of procuring this except by making application to the Department. The present Commissioner is Isaac Newton—we wish it wasn't, but he is the man to write to, and he at present lives in Washington, D. C.

Difference in Churning.—J. E. Wilder, Lake Co., Ill., desires us to explain why milk needs churning, where he lives, nearly twice as long, before butter appears, as it does at the East. If he will prove to us that such is the fact, we will try to give a satisfactory explanation.

The best Churn.—We have repeated inquiries as to "which is the best churn?" We cannot answer this question *positively*, because we have never tested them all. But the writer has no hesitation in stating that, after having used the Brinkerhoff churn (advertised page 227, July number) for three years, and testing it thoroughly, he thinks it one of the best, if not the best.

Cutting off Teats.—"F. O. W." desires us to answer through the *Agriculturist* what to do with a double teat on one of his heifers. Twist a piece of small wire around it sufficiently tight, to obstruct all circulation. In 10 or 12 days the teat will drop off, and new skin will form over the scar. This should not be done, however, when a cow gives milk, as the wound would be kept from healing over, by the flow of the milk, before a scab could form over it.

Fruit Jars.—C. H. Howard, Cook Co., Ill., Potter & Bodines' Jars were mentioned because we have tried them and found them valuable. We have no doubt the kind you refer to, as well as others, which are tight when closed, and are easily opened, will prove just as good.

Remedy for Leaky Teats.—As soon as the cow is milked clean, wrap a rag about one inch wide twice around each teat, an inch from each tip, and tie it on with woolen yarn, which is more elastic than linen or cotton. They should be tied in a bow knot sufficiently tight to prevent the milk from coming down to the end of the teats, but not tight enough to produce pain by stopping the circulation of the blood. The rags are of course removed when the cow is milked. Light India rubber bands slipped over each teat are much better and more convenient than strings, and may be obtained at any stationery store. They may be made by cutting narrow slices off from the end of rubber tubes, or by cutting rings out of a piece of old-fashioned rubber shoe. If they clasp the teats too tightly, shave them thinner. A joiner's gouge is the best tool to cut out such rings with. After a few weeks the teats will be so contracted that they will not leak.

Boughton White Wheat.—A correspondent whose name was mentioned in the *Agriculturist* in connection with the Boughton wheat, receives so many questions by letter, that he thinks his statements must be of general value to our readers. For ourselves we only know it to have a very good reputation wherever we have seen it grow—ranking equal to the Soule, Weeks, and other good varieties. Our correspondent says: "1st, The Boughton smooth eared wheat ripens earlier than any wheat I know of—nearly, if not quite a week earlier than the red Mediterranean. In 1863, I had engaged my three acre lot, to be reaped on the 27th of June (fully ripe), but Gen. Jenkins, and then Gen. Lee visited us with about 90,000 Southerners, and hence it was not reaped until the 18th of July. Still, it shelled out very little. The yield was 25½ bushels to the acre. Stood rather thin. Second, Freezing out. The winter of 1863-'64 was a hard one on wheat. Col. McClure and other growers had light crops in consequence of freezing out, but mine was better than ever—the yield from 2¼ acres was 66½ bushels in weight (63 bushels measure); the grain plump, the flour from it the best I ever had, whilst an adjoining lot of red Mediterranean, sowed on the same day, was greatly damaged by the fly, my Boughton, fit for reaping 7 days before, was untouched by that enemy. To the query: I can think of only one reason why my Boughton did not freeze out, namely: I had top-dressed it the fall before."—[Probably with fine yard manure. Ed.]

Cure for Insect Stings.—A French newspaper, the *Sud-Est*, of Grenoble, publishes a cure for insect stings which it says "is not only as efficacious as an alkaline application, but is preferable to this and many other remedies in being always at hand when wanted. It consists in the immediate application upon the wound, sting or bite, of a small quantity of the yellowish secretion formed in the ear, known as *ceramen* or ear-wax. The faculty may scout this as an old woman's antidote; but it is said to prove successful even against the bites of poisonous insects which not infrequently occasion death. The discoverer of the remedy states that the venom in the bite or sting is completely neutralized by this simple means." It is easily tested.

Canker worms (*Phalena vernata*).—Great devastations were wrought by the canker worm in New England during the past months of May and June. In making two trips into Connecticut, we passed, we may almost say, through hundreds of miles of orchards and rows of elms, which were at one time hung with fine webs that glistened in the morning sun, and suspended countless numbers of little naked wriggling worms, and at another the same trees presented an appearance as if a fire had swept over them, scorching and destroying every green thing. The apple and elm trees at about the middle of June had no more leaves, and cast scarcely more shade than in mid-winter, the strong ribs and veins of the leaves being all that the worms had left. They have destroyed the fruit as well, for deprived of the sustenance derived from the foliage it has dropped. Many different contrivances for defense against this pest have been tried, all depending on the same fundamental fact, viz: that the female moths that lay the eggs from which the worms are hatched, come from the ground, ascend the trees by crawling up the trunks, and being wingless they must crawl. We hear the greatest dissatisfaction and lack of confidence expressed in regard to these protectors, but so far as we can learn where they have proved ineffective (as they have we are free to say in the great majority of cases), they were either not put on early enough, or they were not well applied.

REMEDIES FOR THE EVIL.—The fact that the females must crawl up the trees to deposit their eggs, places the multiplication of the insect almost entirely within the power of man. No man ever saw the winged male carry his companion over any obstacle, or into the tree. Impossible obstacles are: 1st, Lead gutters surrounding the

trunks, filled with oil. A cross section of a gutter is like a letter c inverted (thus \odot). The oil is held in the lower part and the upper part forms a roof to keep out the rain; 2d, Cast iron troughs similar to the leaden ones (patented); 3th, freshly tarred bands (upon cloth or paper,) about the trunks, which are not effective after the tar hardens, or in cold weather; 4th, A (patented) inverted metallic trough, a section of which is somewhat like a letter y inverted, (thus Δ .) suspended and attached to the tree by a cloth band on the upper end, 5th, An inverted glass-trough, or gutter (patented) attached to the tree in a similar way; 6th, A strip of tin, two or three inches long, to the lower edge of which a strip of cloth is fastened, the ends of the tin being cut slanting, the upper one lapping, and the tin being smeared with some fluid, offensive to the insect (the formpatented, the fluid not). These plans have all so far as we know stopped the ascent of the insects; the 3d plan is not to be recommended. The 6th is probably the cheapest.—We have little doubt that cloth or tough paper, or such as is made impervious to water by oiling, smeared with some viscous non-drying substance, like tar and molasses, or something of the nature of bird-lime, that which the female moth could not pass, would be effective, and cheaper than anything else, quite a consideration in large orchards.

EARLY APPLICATION.—The application of any preventive must be made as early as the first of September, for the moths begin to ascend as soon as the nights are frosty; and keep it up till the earth is frozen hard. In the spring they commence again as soon as the top of the ground becomes soft from the ice thawing, and they may be seen ascending every mild evening for 6 or 8 weeks. A good deal of labor attends faithfully preventing the ascent of these creatures, but it may be done, and we may save our trees and fruit, and it will be a paying job in the end.

Silk Worm Raising in France.—The experiments (says *La Patrie*, of Paris,) made in the raising of silk worms at the Imperial farm at Vincennes, are now in full operation. A great many breeds of the ordinary mulberry silk worm are being raised there with the view of ascertaining the causes of the epidemic raging among these little animals, and important experiments are made in acclimating various new species, such as live on the leaves of the oak, the wild plum tree, the castor oil plant (*Ricinus*), allanthus, and other trees. At the present time the allanthus worm is perfectly acclimated; they are being successfully raised and the number of eggs of this species produced at the Imperial Sericultural establishment is insufficient to supply the demand; fortunately, however, there are several worm-raisers in the other parts of France, as well as in Switzerland, who are able to furnish large quantities of them.

Ant Hills.—"Ward" has several colonies of ants in his yard, and wishes to know how to get rid of them. We wish we could tell him. We once fought the inhabitants of two hills for several weeks, with everything we could think of, and they rather flourished under the treatment. This was before benzine was in common use, and were we troubled now, should make an experiment with that, by pouring a quantity into the holes, and covering them up with earth, so as to confine the ants in the vapor as long as possible. One correspondent reported that he routed a large colony by burning fire crackers on the hill one 4th of July.

How to Italianize an Apiary in any kind of Hives.—Bidwell Brothers, of St. Paul, Minn., write: "When an Italian Queen has been in a hive 10 days, all the eggs and brood from which a Queen can be made are Italian; then change this hive with one containing a black queen, drive out both stocks of bees with queens, shaking the bees containing the black queen in front of the one which contained the Italian, and as they go in catch and kill the black queen. The bees will then raise an Italian queen from the Italian brood. Next shake the bees with the Italian queen in front of the hive which previously contained the black queen, and in 10 days repeat the operation with another until all are Italianized."

Are Italian Bees Hardy?—Bidwell Bros., of Minnesota, says in answer to this question: "We wintered 28 stocks of bees in the open air, which included 21 of Italians." They ate less and came out the strongest of the lot."

Phosphatic Manures.—It is generally believed that of all the necessary ingredients of plants derived from the soil, none is commonly so easily exhausted, or withdrawn by successive cropping, as Phosphoric acid. The great source of supply of this substance is bones—which consist largely of phosphate of lime. And on all exhausted or worn-out land, manures of which bones or phosphate of lime form a part, in the shape of bone-dust, or composts containing it, superphosphate of lime,

etc., are productive of the most lasting benefit. Peruvian guano contains a considerable quantity of phosphate of lime (26 or 28 per cent.), but proportionally more ammonia (15 to 17 per cent.), which stimulates the growth of crops so that an increased quantity of both bone-earth and other inorganic, or earthy manurial substances are needed by the crops in connection with its use on exhausted land. There have been various deposits found, of the nature of guano, containing far less ammonia and more phosphates. Some of these are very valuable as manures for more or less worn out and exhausted land, containing as they do the phosphates naturally in a state of fine powder, and readily assimilable. Of this character is the so called Bolivian guano, the best samples of which contain some 60 per cent. of phosphates, with between 1 and 2 per cent. of ammonia. It must come chiefly in competition with bone-dust, ordinary grades of which contain about 45 per cent. of phosphates, with about 3 per cent. of ammonia, or its equivalent. The best qualities of bone meal or bone turnings and filings are much richer both in ammonia and the phosphates, (4¼ per cent. of ammonia—57¼ per cent. phosphates.)

Shingles—How to Lay and Nail Them?—"O. H. E., of Portsmouth, N. H.," says he sends us "a chip for our Basket," we hope for more from the same source. In the sawing of shingles from round "bolts" or small trees 6 or 8 inches diameter, the shingles are "slab-ways," or have a piece of the heart in them, or have more sap wood on one side than on the other, and the annual rings lap one upon the other. If the sap side of the shingle is exposed to the weather and the heart side is placed next the roof, it will not curl or warp up; also if the nails are placed one inch each side of a line running through the center of the shingle, especially each side of the heart piece, if there is one, (the usual manner being one inch from the edge, however wide the shingle may be,) the shrinkage will be from each edge toward the center. I have seen roofs shingled with Fir, Hemlock, Spruce, Cedar, and Sapling-pine, retained in their place, and without a split, and also shingled in the old manner with every other one split from shrinkage, making a crack directly over the joint in the lower course, and under the joint in the next course above, causing a leak. We know our plan works well and will be useful to many.

"No. 17 Merchants Exchange."—During the past three or four years we have received from time to time hundreds of circulars sent to our subscribers, and by them forwarded to us, dated "No. 17 Merchants Exchange," although professedly emanating from many different cities and towns. Often they bear the name of a place where "the oldest inhabitant" never heard of the existence of a "Merchants Exchange." Most or all of these are swindling schemes of bogus lotteries (all lotteries are unsafe money traps) to tempt the unthinking. Give a wide berth to all letters and circulars dated "17 Merchants Exchange," especially if they offer great inducements for investing money.

How to Set a Steel Trap.—Take a common steel trap with a stiff spring, but one which springs easily, cover the trap with a piece of cotton cloth, sewing it to the "pane" or treadpiece. Upon this fasten the bait so that it can not be taken off without springing the trap. Set the trap near the rats' runs. J. Amaden, Defiance Co., O., says of this way: "After trying every thing else I fixed my trap according to the above plan and caught 9 rats in one hour."

The Live Oak.—J. McGregor. It is of no use to try to start the acorns of the live oak in Iowa, as the climate is much too cold for it.

A good Yield of Potatoes.—R. Coates of Attleborough, C. W., writes, that one of his neighbors planted, last spring, a bushel of Prince Alberts, cut into small sets, and in the fall harvested 96 bushels. The land had been used for a sheep pasture for several years, and the planting was done on the recently turned sod.

Flag Leek.—"L. A. L." has received some seeds of this from the Agricultural Department at Washington, and wishes to know whether it is useful or ornamental. It is a garden plant of the onion kind, and is used in soups and stews. An account and figure was given in April of last year.

Dried Currants.—J. T. Sullivan, Ind., asks, if the dried currants of the shops are the common red currants, and how they are prepared. The imported currant is not a currant at all, but a very small grape from the South of Europe. Being from Corinth, they were called Coriath, which finally was changed into currants.

The "Spring House" of the Prairie.—D. Kilpatrick, of Des Moines Co., Iowa, writes to express his appreciation of the article on making cheese from few cows, and says: "We think that article alone worth a year's subscription. We cannot make butter, or keep it well when made for want of the "spring house," so familiar to many of your readers, where "He sendeth the springs to the vallies which run among the hills." A spring is a very rare thing on the Prairies. We can make cheese without difficulty on the plan there given, by keeping the curd till enough is obtained to fill the hoop, by hanging it in a bucket in the well. By the way you may tell your readers in like circumstances, that they can have sweet, *caal*, delicious milk every day in the same way. Get a good can, or a pail with a close fitting lid (we have used a coffee boiler to good advantage), fill it with fresh milk and hang it in the well with a strong cord, lowering it near to the water, and using great care not to spill any in the water, or you will spoil your well. Just at meal time draw it up (stirring whatever cream is on it well through, it don't hurt it a bit), and if there are any children about, you will wonder how soon it will disappear to their satisfaction and yours."

Fermented Swill.—A "Subscriber" asks if "swill for fattening hogs will lose or gain any thing by allowing it to ferment?" Swill properly so called can never gain any thing by fermentation, for if "fermentation" be allowed to go on long enough all swill will putrify. Many good farmers allow their swill to ferment to a slight extent before feeding, in order to give it greater uniformity of character, and in case meal of any kind is added to the "house slops," to take the place in a measure of cooking, which is inconvenient in the summer time. When this is practised, however, swill should be kept in several different vessels, so that the feed may be fermented uniformly from day to day.

Fine Grapes.—Those who visited the strawberry exhibition of the American Institute last June saw a collection of exotic grapes, the like of which is seldom exhibited. A large number of varieties were shown, the berries in each bunch being as near alike as if they had been cast in the same mould. This splendid display was made by Mr. John Ellis of the Fox Meadow Gardens, Westchester Co., N. Y., whose extensive graperies furnish the New York market with a large share of this delicious, though costly fruit.

Training in Graperies.—"Amateur." Your plan shows the alternate renewal system, which is very difficult to carry out. Better study Chorlton, or some other authority for the best methods, as we have not space to illustrate them.

Hale's Early Peach.—Isaac Pullen, Esq., of Hightstown, N. J., has sent us fine specimens of this variety from his orchard houses. This is a favorite sort with Mr. Pullen, who finds it at least two weeks earlier than any other. Its quality is excellent, and it is as handsome as it is good.

Catalogues, etc., Received.—William Parry of Pomona Gardeo and Nursery, Cinnaminson, N. J., sends his price list for the fall of 1865. Mr. P. has the Philadelphia Raspberry as a speciality.... We are indebted to Geo. M. Beeler, Secretary, for the Transactions of the Indiana Horticultural Society at its fourth annual meeting. The Transactions of the Worcester Co. (Mass.) Horticultural Society, from 1857 to 1864, have been sent by its Secretary, Edward W. Lincoln.... C. S. De Witt, Montreal, sends us Hind's Essay on the Insects and Diseases injurious to Wheat Crops, a prize essay published in 1857 for distribution in Canada at public expense.

Augustus O. Moore.—Every one having a collection of American agricultural or horticultural books, will find upon one or more of them the imprint of A. O. Moore & Co. Had Mr. Moore been solely a book publisher, a notice of him would scarcely have interested our readers, but as he was thoroughly identified with their pursuits, it seems proper to give more than a brief mention of his life and work. Augustus Olcott Moore was born in Columbus, Ga., in 1822, and removed at an early age, with his parents, to Ohio, in which State, at the age of 19, he purchased a farm which he carried on for four or five years. He afterwards went into the banking business in Cincinnati, where he remained for several years. Being devoted to art, he left mercantile life after several year's experience in it, and gave his time to painting. Though he never ranked himself as an artist, he possessed decided talent in art, and had it not been for his great modesty would have been known as an artist. In 1853, Mr. Moore came to N. Y. City and engaged in the publishing business, which he continued until 1859. As a publisher he was noted for his sympathy and co-operation with literary men and artists—a trait which

was doubtless often exercised in opposition to his interests as publisher. In the revision of Downing's Landscape Gardening, many of the finest sketches were made and put upon the engraver's block by his own hand. The close confinement of the book business brought on hemorrhage of the lungs, and he was forced to relinquish it in 1859. He afterwards travelled in California, Central America, West Indies, Minnesota, and Europe. Several of his observations in Central America were published in the *Agriculturist*, illustrated by his own pencil, and while he was in business, he was a frequent contributor to our columns, especially upon insects injurious to horticulture. Mr. Moore returned from Europe in the autumn of 1864, and died in April last. We have delayed a notice of the death of Mr. Moore for the lack of precise data, and now give this too brief tribute to the memory of a noble, unselfish pure-hearted friend.

William Buckminster, the founder, editor and publisher of the *Massachusetts Ploughman*, died at his home in Framingham, Mass., at the age of 82 years. He was educated at Harvard College, became a lawyer, but subsequently gave up this profession for that of agriculture, and a few years after (in 1841), in connection with his son, established the *Ploughman* in Boston, which has ever since held a prominent place among American Agricultural Journals. Mr. Buckminster retired from the active editorship of the paper in 1862. His acquaintance among farmers and agriculturists was very extensive, and he will be long remembered and sincerely mourned as an earnest, honest, useful man.

Plants Named.—S. A. Hunter, Alleghany Co., Pa.—The common Blue-flag, *Iris versicolor*... H. Humphreys, Davis Co., Iowa. Some kind of *Juncus* or Rush, but quite too young to determine the species.... B. B. Herrick. *Negundo aceroides*, the Ash-leaved Maple, also called Box-elder. Sugar ls sometimes made from this species.... M. R. A., York Co., Me. No. 1 is *Calopogon pulchellus*, one of the most beautiful of our native orchids. No. 2 is the very common Cinquefoil or Five-finger, *Potentilla Canadensis*.

Agricultural and Horticultural Fairs.—If those who have charge of the preliminary work in arranging for exhibitions the coming autumn will send us, before Aug. 10th, notice of place, date, and name of corresponding secretary, or business manager, they will aid us in issuing our annual list in September, and receive the thanks of the editors.

Black Knot.—We have numerous inquirers respecting this, and have had the experience of only one person in treating it. Mr. A. D. Brown, of Mercer Co., N. J., states that he *knows* the following remedy to be effectual. A tablespoonful of chloride of Lime (Bleaching Powder) is mixed with a quart of water, and after it has stood, occasionally shaking, for a few hours it is ready for use. The knot is pared even with the healthy bark, and the solution applied to the wound. Mr. B. says: "I will guarantee that the Black-knot will not appear in that place again." A simple remedy and easily tried.

The Ten-lined Potato Beetle.—We have received from A. S. Runyon, Putnam Co., Mo., as well as from others in different parts of the West, specimens of an insect which is very destructive to the potato crops. The larva, or grub is represented in fig. 1. It is of a yellow color with black dots. The perfect insect, given in fig. 2, is of a pale yellow color, marked with ten black lines, five on each wing cover. Both these engravings are of twice the natural size, and give a sufficiently good representation of the insect to enable it to be recognized. Those wishing a detailed description are referred to Doct. Fitch's article in the Transactions of the N. Y. State Agricultural Society for 1863, p. 796. The female deposits her eggs upon the underside of the leaves, and the brood is hatched in 3 or 4 days, ready to commence their depredations, and if not checked, soon destroy every vestige of vine. The insects fall very readily when the plants are disturbed, and it has been recommended to catch them in pans containing hot water. A writer in the Kansas Farmer states that by timely attention the crop may be saved. He finds it inconvenient to renew the water as fast as it cools, and uses instead, cold water with a thin stratum of turpentine on the surface. The insects, in dropping into the water pass through the turpentine and are killed by it. Probably benzine, such as is used by painters, would answer in place of turpentine, and be at the same time much cheaper.



Fig. 1.



Fig. 2.

Root-pruning Hyacinths.—M. Vasin, of France, finds that by cutting the roots of hyacinths grown in water to within about an inch and a half of the bulb, the bloom is much finer. It is done when the leaves are well developed and before the flower spike has protruded itself above them.

Barnum's latest (not last) Display. Barnum's Museum gave on Thursday, July 18th, an exhibition which completely exhausted its resources. In other words, this curiosity shop, which was known, by name at least, from one end of the land to the other, is destroyed by fire, and all its natural curiosities, relics, antiquities, etc., are gone. The collection, aside from much that was trivial, contained a great deal of real value, and no one could visit it without being instructed, and in this view it is a national loss. Mr. Barnum, however, is not a man to be set back by the loss of a museum, or two, and is preparing to start a new one already, before the stones of the old one are cold, and he calls upon all who have natural or other curiosities, suitable to be placed in such an institution, to communicate with him.

The German Edition of the *Agriculturist*—Reduction of Price.

It gives the publisher pleasure to announce that the reduction in the expenses attending the preparation of the German edition of this journal has been such, that he has decided to receive subscriptions at the same rates with the English edition. This edition has never been conducted at a profit—but very much the contrary. Nevertheless—being fully of the opinion that it ought to pay—and assured on every hand that it has been and is doing a great deal of good among German farmers and others, it has been continued. Now with the improvement in the times, the disbanding of the army and the return to peaceful industries of our soldiers, he is confident, that with a reduction of the price, a large addition to the subscription list may be secured. The agricultural and horticultural portions of the *Agriculturist* are well translated, and besides, a special department is edited by Hon. F. Muench, of Missouri, (well known throughout the Country by his *Nom de Plume* "Far West,") which adds much to the value and interest of this edition.

\$300.00 for a Barn Plan.

One of the subscribers to the *Agriculturist* is about to erect Farm Buildings, and wants a plan. To secure one he authorizes us to offer three hundred dollars (\$300) in prizes, as follows:

\$150 For the best plan.

\$100 for the second best plan.

\$50 for the third best plan.

The plans must be submitted to a committee to be announced in the September number, on or before the first Monday in October. The plan must be for the accommodation of a dairy of 20 cows, 2 yoke of oxen, 6 horses, with young animals to keep up the stock, 100 sheep, 20 hogs, and 300 poultry. The building or buildings must be of wood, and calculated for a level farm. The plans should be carefully drawn to a scale. Working plans and specifications are not now desired; but full explanations of every valuable feature, materials used, in general, and every thing essential to be known by an architect or builder to enable him to prepare working plans, should be furnished. The plans will become the property of the gentleman making this offer, and a selection will be published in the *American Agriculturist*.

In addition a very liberal sum will be paid for the full working drawings and specifications of the plan decided upon after the prizes are awarded. And any new and valuable ideas or suggestions furnished, which may be adopted, will meet with appropriate recognition.

Grain Cradles.

Grain cradles will always be needed, even if horse reapers are used to cut nearly the whole crop. It is important for all to know what constitutes a good cradle, how to put it in order, and how to use it, so as to cut grain and lay it in a swath in a neat and workmanlike manner.

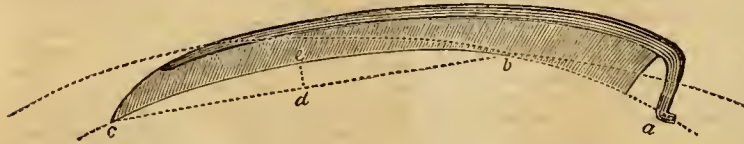


Fig. 1.—PROPER FORM OF CRADLE SCYTHE.

The form of the scythe is to be noted. A very straight scythe is quite as objectionable as one that has too much curvature. When it is too straight on the cutting edge, it will cut too squarely across the standing straws; whereas the cut should be made in a drawing or sliding manner, and the fingers must of necessity be correspondingly straight. The illustration herewith given, figure 1, represents a cradle scythe of a good form. It will be seen that the cutting edge from *a* to *b*, about one foot in length, is the arc of one circle; and the other part, from *b* to *c*, is the arc of another circle of the same size, but in a different position. We have found by measuring, that these circles are about ten feet in diameter, and that the distance from *d* in the dotted line to *e*, when a scythe is four feet long, is about 2½ inches. A cradle scythe of this shape works well, if it is properly hung on the snath.

The question is frequently asked why a cradle scythe is made broader from the back to the cutting edge, than a grass scythe? The object of this is twofold; first is to support the grain after it is cut off, and second to furnish ample room for the straw to slide back from the cutting edge against the fingers, after it has been cut off. If a scythe, no wider than a grass scythe, is attached to a cradle, as soon as the space from the fingers to the cutting edge is filled with straw, the scythe can not cut off any more straw; therefore, as the cradle is "full," it must slide over the rest of the clip.

If the fingers do not correspond with the curve of the scythe, a cradle will not work well, even if the scythe is made according to the most perfect pattern. Figure 2 represents a scythe of the same form as fig. 1. The object of it is to show the relative length and curvature of the first finger of the cradle, when compared with the form of the scythe. The inside of the finger should extend at least two inches beyond the back of the scythe, and it is best to have the finger from one to two inches shorter than the scythe. The small end should stand over the point of the scythe, as represented in fig. 2, and from one to two inches above it. If the first finger rests hard on the scythe, it sometimes prevents the grain discharging freely

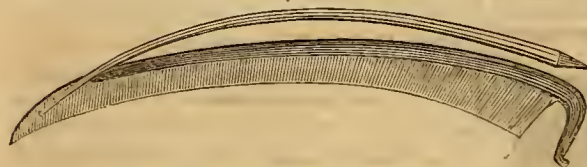


Fig. 2.—PROPER POSITION OF FINGER.

when the cradle is in use. The point of the first finger should always stand as far back as possible, and not catch any straws beyond the scythe. When some straws are pulled down and not cut off, it shows that some of the fingers stand out too far. On the contrary, when the

cradle does not gather all the grain that is cut off, some of the fingers are out too far, or are too short. Sometimes every finger stands exactly in its most proper position and the cradle does not gather all the grain. This can be obviated in two ways; first, by using a shorter scythe; or second, by dulling about two inches of the cutting edge at the point. Sometimes the scythe and lower finger are all right, but the other fingers are so short, that the cradle does not gather all the grain the scythe cuts

off. This difficulty can be obviated in no other way than by attaching a scythe 2 or 3 inches shorter, and cutting off the lower finger to correspond with the scythe, as shown by fig. 2, and to be also of the correct proportional length with the other fingers. Fingers may be "too crooked," or too much curved near the points. It is a common occurrence to see cradle fingers like a sleigh runner—having nearly all the curvature within 12 to 20 inches of the ends. Such cradles never work well, as they carry most of the grain, after it is cut off, near the forward part of the cradle, which causes it to work hard, and to hang too heavily on the point, as well as to hold on too much, when it is being laid in a swath.



Felling Trees—Problems Proposed.

Dr. W. H. Niles, sends a statement with some questions about the mechanical powers involved in a common woodman's expedient to make a tree fall where he wishes it to, which, though intended for our problem column, contains a valuable practical hint, so we insert it here.

The questions will tax the mathematics of some older heads than might find them were they on the children's page.—"The woodman often finds it necessary to fell a tree in an opposite direction to that toward which it leans. To do this he places a stiff pole, *A, B*, against the tree and makes the foot immovable by driving a stake, he then places another pole, *C, D*, a little shorter than the first in like manner against the tree—the centre of this he has weakened by chopping, so that it will bend easily. He now cuts the tree nearly off at the stump, when by bringing the centre

of the pole, *C, D*, down a few inches at *E*, and then lifting with his shoulder until the pole is straightened, the tree is moved in the opposite direction. The end of the pole, *A, B*, is now crowded down the trunk so as to hold what he has gained. By repeating the operation the top of the tree is thrown beyond the base, and the tree falls where he wishes to have it.

Questions.—Suppose the pole, *C, D*, is ten feet long, and a force 100 lbs. is exerted at *E*, what power is exerted against the tree at *C*.—1st. When the centre of the pole at *E*, is 6 inches from a straight line?—2nd. When it is five inches from a straight line?—3d. When it is four inches from a straight line?—4th. When it is three inches from a straight line?—5th. When it is two inches from a straight line?—6th. When it is one inch from a straight line?—and finally, which of the mechanical powers has been thus employed?"

Salting Stock, and Salting Hay.

There can be no doubt that the animal economy requires salt. The natural and universal desire for it, the wide-spread supply of it by the hand of Providence, and the good effects of its moderate use, demonstrate this. It operates both as a tonic and a gentle laxative; it regulates the stomach and bowels, and gives an edge to the appetite. Still, animals may take it to excess, and hurt themselves when they get access to it after long deprivation. It is the favorite practice of some farmers to salt their stock regularly once in so many days, giving them always a fixed quantity. This generally works well. Others prefer to keep a supply always within reach of their cattle, so that they can go and satisfy their natural cravings for it whenever they choose, reasonably supposing it as safe to do so as to allow stock to drink at pleasure from a running stream. In regard to salting hay at the time of harvest in order to prevent heating and moulding, in case the hay is not thoroughly cured, it is most important not to over-salt, as evil effects may accrue to the stock. Six quarts of salt to the ton, evenly distributed, is sufficient for the greenest, and not too much for the animals. Salt, as commonly thrown upon the hay-mow, falls in lumps and handfuls here and there, so that the stock get too much of it to-day and too little to-morrow. When they eat to excess, it produces an unnatural thirst, laxness of the bowels, and weakness of the limbs. It is of course safer and better to store away the fodder, well cured, without salt, and let the cattle have daily access to salt troughs under cover in their yards, where they will take only as much as nature requires.

Sorghum as a Green Fodder Crop.

Indian corn requires a rich soil, and one not liable to suffer from severe drouths, to make a really good growth of stalks for cutting for fodder, green or dry. Sorghum, if the soil be well worked and not weedy, will in many places furnish more fodder and of nearly as good quality, especially in dry seasons. There is not so much need of care in selecting the seed, and this crop, if it get a good start will bear drouth very well. It should be sown in drills about two feet apart. The ground should be deep, mellow, and free from weeds. When the seed first comes up, the little plants are hard to tell from grass, and are liable to be choked, hence clean land is very desirable. It is cut and cured like corn stalks.



GROUP OF ASIATIC FOWLS. — Engraved for the American Agriculturist.

Gigantic Indian Fowls.

As our knowledge of the countries of Central Asia extends, and more especially as naturalists pursue their investigations among those countries where with scarce a doubt our barn-yard fowls were originally native, numerous and very interesting varieties are brought to light. Some prove very useful, as for example, the Brahma Pootra, which has been known only since 1850; others are simply curious, and have failed to impart to crosses the good qualities which they possessed, or to improve when bred with care, even where the effort has been made to engraft upon the breed the excellences of another. A new wonder for poultry fanciers, and perhaps the germ of a new hen-fever, equal to that excited by the Cohan China fowls, has been brought from Central India by a Capt. Hastings Frazer. It is represented in the above group of fowls. The drawing having been made before the birds had recovered from the effects of a long voyage, doubtless does not show them to good advantage. They rejoice in the graceful name of Beegum-Pilly-Gaguzes, from the title of a native Prince. A cock and hen and two pullets are shown. The cock stands 2 feet 6 inches high, and his thigh is so large it can hardly be spanned with one hand. Chickens are said to attain the weight of 8 pounds at 7 or 8 months old. These meagre statements are sufficient to lend an interest to the homely group of fowls of which we present a picture,

and to lead us to watch for further reports of their success or failure in British poultry-yards. Capt. Frazer takes them to Scotland, where he intends breeding them and crossing them with the Gray Dorkings, in the hope of increasing the size of this large and favorite breed.

August Turnips.

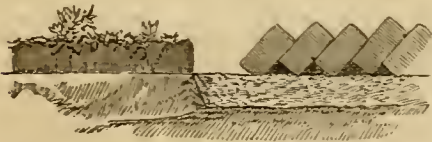
In many parts of the country turnips of excellent quality, and of fair size, can be raised from seed sowed from the 1st to the 10th of August. In other places again, it would be time and labor spent in vain to attempt to raise even a small plot of this kind of roots. If the soil is only right and in good condition, there will be but little doubt of a good crop. On the 5th of October last we saw in one of the central counties of this state as nice, tender and smooth turnips as were ever raised at other seasons of the year, which is unusual for that part of the country. The seed was sowed about the 3d of August. They attained this large growth in two months. As they were superior to any late turnips we have ever met with, the inquiry was raised how they were produced. The proprietor informed us that the soil was a sandy loam, and had produced a crop of early potatoes. Previous to planting the potatoes in the spring, the soil received only a thin dressing of well-rotted barn-yard manure. As soon as the potatoes were dug, the ground was plowed and

harrowed, and the turnip seed sowed in drills about 2 feet apart. The plants were thinned to 8 inches as soon as they were large enough to transplant. After this they were cultivated and hoed twice. They were the Green-top, Strap-leaf variety, known in Central and Western New-York as the Flat Field Turnips, which are usually grown on new land just cleared. There are other varieties of turnips among which are the Long White French Turnip, which will mature if sowed the first week in August, where the soil is adapted to them. We have seen soil in excellent condition, capable of producing three tons of the best quality of hay per acre, 80 bushels of oats, 90 bushels of Indian corn, and thirty bushels of as nice wheat as is usually found in the Genesee Valley of Western New-York, which would not yield a crop of turnips worth pulling, if the seed were sowed as late in the season as the last of July, or the first week of August. But, where turnips will succeed well, our advice is to plow up or spade every available nook and corner and put in turnip seed. Frequently there can enough be raised, after the first of August, to furnish one or two milch cows and a span of horses with a good feeding daily, during the late autumn and early winter, which is much better than to allow weeds to fill the space. Good turnips are also excellent for the table, and good for swine. They cover the ground with a rank vegetation, which makes a good green manure crop, if the roots do not mature.

Keep the Best Soil on the Surface.

There are two classes of soils which ought not to be plowed deep. One of these is the light sandy class which overlies leachy subsoils. Such soils become fertile only when they contain a considerable proportion of mold or humus, the remains of vegetation which has decayed on the surface, or which has been added in manures. Gradual deepening of soils of this character may be effected, provided it be done no faster than organic matter in some form, is added. Plowing the subsoil would be of no use, for that is already too open and porous; but the tillage should be such as to keep the fertile portion near the surface, the plowing being but 4 or 5 inches deep, and the additions of manure and vegetable mold, in the shape of green manure crops, (clover, buckwheat, corn,) etc., frequent and abundant.

The other class is more difficult to manage, but more lasting when brought up to good tilth. These soils are those of a heavy clayey, or gravelly and clayey character—hard to plow, difficult to pulverize, prone to bake, cracking and drying out on the surface so as to suffer in drouths. The soil (if there is anything worthy the name,) is thin, and consists of a sheet of mold, not more than 2 or 3 inches deep. The time was when there was no mold; no more vegetable matter on the surface than can now be discovered in the unfertile subsoil beneath it. But, by the constant operation of alternate rain and sunshine, of freezing and thawing, and the growth and decay of vegetation, a thin stratum of this compact earth has been fitted for the purposes of vegetation and the production of crops. A seed bed has been formed, in which the young plants may commence life. In this mold they may spread their tender roots, and find available nourishment to build up their stems and produce seed. This thin layer of soil is essential to healthy and luxuriant growth. Remove it and seeds will germinate slowly, and the plants be sickly and diminutive. Every crop of grain or grass tends to increase the depth of this stratum of mold, as it is kept on the surface. Let it be buried beneath a portion of the heavy barren subsoil, and the young plants will be deprived almost entirely of their sustenance, until the roots struggling for life, have spread through this tough clayey mass, and reached the fertile mold. A soil of this kind must be tilled in such a manner as to keep the mold on the surface. When it is plowed, the common plow should run only as deep as the mold extends. In the furrow produced by the common plow the Subsoil plow illustrated on page 181 (March), should follow, breaking up and pulverizing the compact stratum so that the surface water will settle down readily without injuring crops by filling the little interstices of the soil, which should be occupied by air only.



The accompanying illustration represents the manner of plowing land so as to keep the mold or best soil on the surface. The five rectangular blocks represent a section of furrow slices turned by a common plow, as deep as the soil or mold extends. At the left hand a small portion of the surface soil is seen unbroken, resting on the compact stratum of subsoil. Beneath

the furrow and furrow slices a stratum of the subsoil is represented as broken up by the subsoil plow drawn in the furrows of the common plow, as the slices are turned one by one. When ground is plowed in this way, the reader will perceive that if there is any good soil it will always remain at the surface. After the roots have spread several inches in each lateral direction, and have attained some size and strength, they will be well prepared to enter the pulverized subsoil, and slowly transform it into fine and fertile mold.

We would not be understood that all soils should be managed in this way, for they should not. We have designated the particular kinds that need similar treatment. There are soils where the most fertile portions are several inches below the surface, which require to be plowed with a deep tiller or trench plow, that will turn up to the surface a more productive soil than is there at the present time.

Farmers should study the character of the different kinds of soil they cultivate, and by investigation and experiment, ascertain how to manage each kind most advantageously and profitably for the production of remunerating crops, and the ultimate benefit of the soil.

Fences and Highway Cattle.

The heaviest tax laid upon our farmers is that self-imposed burden of much fence building. Not a few of the division fences on our farms might be dispensed with, if only a little forethought and management were used. This has been often discussed, and the fact often asserted, never disputed, that there are thousands of farms at the East which will not now sell, and which never would have sold for what it has cost to fence them. It is, however, to road-fences, built for protection against roadside cattle, that we now direct attention. These, in the present state of popular sentiment, can not be given up. The cost of such fences is enormous. According to one estimate, there are now about 50,000 miles of road-fence in the State of New York. If the cost of building them is put at \$1 a rod, and the annual expense of keeping them in repair is as much as that dollar at interest, then the entire annual expense of the road fences in our State is, with the interest on the investment, upwards of \$2,000,000! Other estimates carry the figures higher. Surely it is worth while to consider whether this heavy burden may not be lightened.

According to old English common law, which is modified more or less, or done away with entirely, by the statutes of different States, land-owners are not required to build highway fences. They own the land to the middle of the street, and the traveling public have only the right of way through it. The laws against cattle in the highways are in most cases capable of being essentially modified by town regulations. It is none the less important, that any State laws which hinder the removal of fences, should be repealed at once. As it is, laws against cattle in the highways are often not enforced, through an unmanly fear of retaliation from the owners of the offending cattle. All that is wanted, in most cases, is a settled understanding and agreement among the leading men of a town that they will sustain each other in attempts to abate the nuisance. First, they should unitedly discountenance, by word and deed, the practice of turning stock into the street, or driving those not well herded, or allowing them to be driven. A public sentiment can

ere long be created by co-operation among farmers that will effectually check night pasturing and other trespasses too often now practised with entire impunity; and when moral means will not answer the purpose, then the law may be vigorously enforced. Town regulations may be passed which may go far towards simplifying and regulating this matter. If individual sufferers dislike prosecuting their neighbors, then let it be made the duty of the path-master or other officer to do it; a duty for the neglect of which he shall be fined, and for the discharge of which he shall be well paid. We verily believe that one great reason why so many offenders join in defiance of the law in this and many other particulars, is because the leading men of the town have so little courage to face the chances of political unpopularity and the loss of a seat in the Legislature when it comes each man's turn to "run."

Management of Hoof Rot in Sheep.

Whenever this disease has made its appearance among sheep, it should receive prompt attention, and effectual remedies should be applied without delay, in order to prevent the virus from being communicated to the hoofs of healthy sheep. Every sheep that is in the least affected with hoof rot, should be separated at once from the flock, and kept at a distance from them, until every appearance of the disease is removed. The best time to examine whether the hoofs are diseased or not, is soon after a heavy rain, as all dry dirt will then be washed from their feet, and the hoofs will be wet and soft, and may be shaved off much more easily than when they are dry. Let the sheep be confined in a clean pen, littered with straw, so that but little manure will be held between the parts of the hoofs. Now, let one man place a sheep on one of its sides on a plank or box, about 2 feet high, with all his legs extending horizontally over a large tub of water. While the sheep is held in this position, let another man wash the hoofs clean, using a woolen wash-rag. With a sharp edged but dull pointed knife, remove all the dirt from the cracks and creases of the hoofs; and cut off scaly pieces, and long ill-shapen hoofs. If there are any signs of hoof rot there will be no difficulty in discovering it. Scrape off and wash out thoroughly all the diseased matter, using strong soap suds. Then wipe the hoofs with a dry woolen cloth, and apply the caustic or corrosive as will be subsequently explained.

Sheep should then be turned into a clean dry yard or pasture, for a few hours, where no wet grass will wash off the application, and where the hoofs will not be filled with dirt. The most suitable tools for pruning hoofs are a strong pair of pruning shears that make a drawing cut, a good pocket knife, and an inch or an inch-and-a-half chisel and mallet. All these tools should be properly ground on a stone of fine grit, and then whetted on a fine-grained oil stone. If the tools be put in good cutting order, hoofs may be cut or paired off without difficulty. When hoofs are dry and hard, they are not only more difficult to cut or pare off, but there is danger of tearing off the shell where it is thin. When any of the hoofs have grown beyond the proper length, place the sheep on its feet on a hard plank, and use the chisel and mallet. Chip off small portions at once, when cutting near the quick; and never place the chisel on the hoof so as to cut square across, but a little slanting, as it will cut easier

and be less liable to hurt the sheep. After the long toes have been pruned off, shave off the prominent corners with the pocket knife.

There are several remedies, ointments, caustics, and corrosive applications, which have been employed in curing the foot rot. An application of pine tar and spirits of turpentine mixed, has been used with good results. Blue vitriol pulverized and mingled with tar, applied warm, is another remedy; and a strong solution of blue vitriol in warm water, is also good, the sheep being made to stand a minute or two in a trough containing it. It is, however, apt to be washed off in a short time by wet grass. The best preparation that we have ever used was equal quantities of dry white lead and finely pulverized blue vitriol mingled with boiled linseed oil, but only to that degree that it would barely flow. This is applied with a small swab to the affected parts, after the feet have been prepared as already directed. One or two applications of this preparation during the first stages of the foot rot, will usually arrest its progress in a flock, and effect a permanent cure. But when the disease has required the paring away of a large proportion of the hoof, so much so that the bones are laid bare, as is sometimes the case, it will be necessary to tie pieces of firm cloth over the feet, which are first wrapped in tow. The tow is put around and over the wound, then pieces of coarse toweling, or of old sacks about 5 inches square, are placed beneath each foot, the edges are turned up, the corners folded smoothly to the leg, and tied barely tight enough with woollen yarn to keep the rags from dropping off. The boiled oil causes the lead and copper salts to adhere well, and by drying soon, it forms a good coat to exclude dirt, after the bandage has worn out. Sheep should be examined at least once a week where the hoof rot has made its appearance; and a constant watch should be kept to discover any symptoms of lameness, which is one of the first signs of the disease. Timely attention may save many valuable sheep.

Youatt directs, that after thoroughly paring, "The foot should be washed with a solution of chloride of lime, in the proportion of one pound of the powder to a gallon of water. This will remove the fœtor, and tendency to sloughing and mortification, which are the too frequent attendants on foot rot. The muriate or butter of antimony must then be resorted to, and by means of a small stick with a little tow tied around one of its extremities, applied to every denuded part, lightly where the surface has a healthy appearance, and more severely where fungus granulations have been cut off, or where there are small granulations springing up. There is no application compared to this. It is effectual as a superficial caustic; and it so readily combines with the fluids belonging to the part to which it is applied, that it quickly becomes diluted, and comparatively powerless, and is incapable of producing any deep or corroding mischief. So far as these foot cases are concerned, it supersedes every other application. The change of color in the part will accurately show to what portions it has been applied, and what effect has been produced. * * * The foot should be dressed every day. Each new separation of horn should be removed, and every portion of fungus submitted to the action of the caustic, with a degree of severity proportioned to the necessity of the case. The new horn should likewise be examined. If it appears to be healthy and tolerably firm, nothing should be done to it; but if it is soft and spongy, the caustic should be

lightly applied. The sooner the bandage can be removed, and the sheep turned to some upland or thoroughly dry pasture, the better will it be for the foot and the health of the animal generally. The worst cases of foot rot will readily yield to this mode of treatment, provided the bone has not been exposed, and there are no sinuses running into the joints, or deep-seated parts of the foot, or the pasterns above."

Maintaining a full Flow of Milk.

During the months of July and August in our latitude, the full flow of milk is frequently checked. In most instances grass fails. Sometimes, however, farmers have kept too many animals on a given surface; and many cows have kept the grass from growing, and the usual flow of milk has diminished. Dairymen slide into this practice of over-stocking their pastures at a season of the year when grass grows freely. A cow consumes a certain amount of feed to sustain and to repair the waste of her body. If she can have more than enough for this purpose the surplus will be converted into milk. Therefore, if feed is short, the flow of milk must inevitably diminish. Breeding is another cause of diminution in the quantity of milk. Some cows, even when supplied with all the good grass they will consume, will fall off in milk within a few weeks after being got with calf; and there is sometimes so much shrinkage in the amount of milk, that a cow might be dried off in a short time. Another common cause of failure in the flow of milk is, a want of an abundant supply of pure water.

These are the chief difficulties that people meet with, who keep few or many cows. To obviate the difficulty of short pasturage, a farmer will find it much more profitable to keep fewer cows and so have more and better grass, as two cows when kept on as much grass as they will eat, will yield more milk than three or four cows kept on the same feed, for they would find barely enough to support animal life. By over-stocking a pasture, most of the grass is used up to keep the animals alive, without improving their condition, while a smaller number would thrive well, and at the same time, give a good supply of milk. Therefore, in order to obtain the greatest amount of butter or cheese from a given amount of pasture, the correct way to do it is to keep few cows and feed well. When grass fails, they should have at least one feeding daily of good hay, or green corn stalks, or a few quarts of meal or bran, made thin with water. It is quite important that the flow of milk be maintained; because, if a cow be allowed to shrink in the quantity of milk, it is usually quite difficult, even by extra feeding, to bring it up again. Sometimes it can be done without difficulty. But in most cases it is impracticable.

Whenever it is known that a cow shrinks in her milk after getting with calf, take means to prevent it each year until about three months after the time of turning cows to grass. The aim should be to have such cows come in just in time to recover from the debilitating effects of parturition by the time grass is large enough for grazing. Then her milk will be had at a season of the year when cows are usually most profitable. But if they are allowed to breed early in the season, they are frequently very unprofitable cows; and improper management renders them still more so.

Cows well fed and properly milked, can not be expected to yield a large supply, unless they

have an abundance of good water several times a day. Once or twice is not sufficient. In hot weather they need it three times daily. They relish a pailful of good water as we do a cooling draught from the "old oaken bucket." And they must have it or they will not and can not yield an abundant supply of milk. Large cows that have access to pure water often drink from twenty to thirty gallons daily during the hot weather, and this water assists greatly in keeping up the flow of milk. Withhold a part of it and the supply diminishes. As soon as cows have filled themselves with grass they often desire to drink. They seldom take much water into an empty stomach. Consequently if they are required to drink at a pool of standing, dirty water, perhaps defiled by dung, they will drink no more than is absolutely necessary to sustain life. Such water is not refreshing to cows, or any other animals; and no one need expect that milch cows will keep up the quantity of milk, so long as they are required to use such an unwholesome drink.

Harvesting Peas.

Peas are often mown like grass, and after remaining in the swath a few days they are gathered with forks, with hand-rakes, or with horse-rakes. This is a slow and laborious way. Another plan is to roll them with a scythe. This is done by reaching forward with the scythe among the uncut peas, and drawing it straight backward. Those vines that do not separate readily, are cut off, and when a roll is as large as can be handled easily, the scythe is run around and beneath it to cut off all the vines that would be a hindrance when pitching the bunches on the cart. This is a better way than the first. There are also several ways of raking them with a horse-rake without cutting. Some farmers proceed the same as when raking hay, which leaves a strip beneath each windrow not separated from the ground where they grew. This makes slow and hard pitching. In order to make clean and thorough work, others run the rake gradually into the unraked peas until it is nearly full, when the horse is guided out, and the peas are left on the raked ground. But this is not so good a way as first to run the rake across the field where the windrows are to be made, clearing tracks, say 30 or 40 feet apart, going and returning in the same place. This prepares a strip of raked ground for each windrow. The standing crop is thus simply raked into windrows with a horse-rake (the wooden revolving rake is best); and this will be found the most expeditious, thorough, and easy manner of gathering peas. The crop lies in this shape several days—until it is sufficiently cured to stack or house. It may be pitched upon the cart directly from the windrows, and this is usually better than to roll up heaps, which tangles the haulms and makes subsequent handling laborious. In case of hard rains it is well to turn over the windrows to let those plants which may be matted down upon the ground have a better chance to dry.

Peas may be thrashed at any time. They are fed unthrashed to sheep and hogs during the autumn and winter, to excellent advantage; and the thrashed straw if well cured, is eaten freely by all kinds of stock, and may be used as freely as timothy hay. If not properly cured, all its value as fodder is liable to be lost.

FOWL IDEA.—A correspondent asks, whether hen manure is the best fertilizer for egg plants.



Carrying Hay by Hand.

When hay is to be moved but a few rods, it is often more convenient to carry it on two poles, as represented in the engraving, than it is to haul it on a wagon, or cart, or with a horse, as illustrated on page 212 (July) of this volume. On salt meadows, where the ground is not firm enough to hold up a horse, cocks of hay are often collected in this manner. Two men are able to carry with ease a cock of hay weighing from one hundred to two hundred pounds.

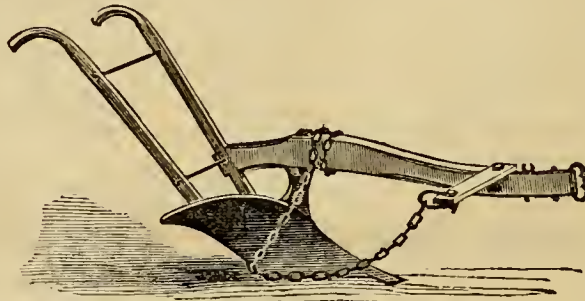
Two smooth poles, seven or eight feet long, with the ends rounded, are used; and if the cocks are not large, two fork handles will serve a good purpose. They are thrust beneath a cock, about thirty inches apart; and the men press their bodies against it, to keep it from turning over either way. Other material besides hay may be carried in this manner to good advantage. Sometimes a lot of corn stalks in bundles are all within an area of twenty rods of the stack bottom. Two men will gather them together with poles quite as soon as they could be loaded on a wagon. If the shocks are securely bound at the tops, the poles may be thrust beneath them. Otherwise the sheaves may be laid crosswise on the poles. Stooks of unhusked corn, and field beans may also be carried in this manner; and nearly every farmer, who keeps stock, will often find this a much more convenient way to carry fodder to his animals, than on a fork, when it must be moved to a distance. The same method is extensively applied in carrying water in a barrel, stone, brick, and other building material. Men are much better adapted to carrying materials than to drawing them, and two men will readily carry between them, on poles, a cock of hay weighing two hundred pounds, when it would greatly fatigue them to draw the same cock with a rope around it.

Plowing in Green Crops for Manure.

One of the most economical ways of improving the fertility of an impoverished soil, or of renovating a barren one, is by plowing under some kind of green crop. Farmers have relied chiefly on red clover for this purpose, and there are thousands of acres of soil naturally unproductive, that have been brought to an excellent state of fertility by applying gypsum to the clover crop, and turning it under as green manure. Indian corn, buckwheat, and some other plants are employed for the same purpose, as are also marrowfat peas, sown thick in drills between rows of early sweet corn, as soon as the corn is cultivated and hoed the last time. Then, as soon as the ears are gathered, every thing is turned under, by plowing crosswise of the rows. In those districts where broom corn

is raised, the portion that remains after the brush has been gathered, is usually plowed in to enrich the soil. The same thing is practised, in some instances, by farmers on our Western prairies. Sometimes tall weeds take almost entire possession of a field, which, when they are plowed in, furnish much vegetable matter for improving the fertility of the soil.

The usual means employed for turning under such materials consists of a log chain, or large tarred rope, having one end attached to the outer end of the whiffle tree of the offside horse, and the other end hitched around the beam of the plow near the standard as represented by the illustration herewith given. The chain should always be only long enough to draw the tops of whatever is being plowed in, along in the furrow, just in time to allow the furrow slice when turning to fall on it. If the chain is a few inches too long, the furrow slice will fall upon it, and be broken, and displaced, as the chain draws out. Take a "rolling hitch" around the beam of the plow, and then adjust the length of the chain until the bight of it will remain on the turning furrow slice, only two or three inches forward of the point where it comes to rest. This will draw the tops of weeds, grass, Canada thistles, and cornstalks completely beneath the falling earth; whereas without such



ATTACHMENT FOR TURNING IN WEEDS, ETC.

a contrivance, the tops would extend above ground, and if not already matured, would continue to grow, sometimes quite as well as if they had not been plowed in. Sometimes weeds and cornstalks are first mowed, close to the ground, and hauled into the furrows, as the plowing is in progress. But in this practice the green material is not distributed as evenly as it is when plowed in without being mowed.

A piece of half-inch round iron bent in the form of a letter U is used instead of a chain, for drawing under red clover, or other crops. But, as a chain is more flexible than an iron bow, it has been found more convenient. When the plow is drawn by oxen, the chain is attached to a stick about 20 inches long, bolted to the upper side of a beam, as shown by the preceding engraving. If hitched to the forward end of the plow beam, the chain will not always run far enough to the right side of the furrow to draw in the tops of all the stalks. However, if the chain is adjusted correctly as to length, the work can be performed quite satisfactorily.

Some plowmen have considered it essential to pass a heavy roller, and sometimes a harrow over corn stalks, and weeds. But we have always found this unnecessary, as the part of the team that travels on the unplowed ground, will always tread it down as fast as it is plowed in; and they will also bend it over in the right direction. We have plowed in green corn stalks, the average height of which was eight feet over the entire field, without using a roller, or harrow to lay it down, as the nearside horse and whiffle trees broke it down in the most desirable manner.

Plowmen experience some difficulty in keeping the bight of the chain back in its proper place on the turning furrow slice. For this reason, they are not able to draw every thing under the slices, as is desirable. To obviate this difficulty, J. & A. Kilmor, Barnerville, Schoharie Co., N. Y., have recently invented and patented an improvement, by which the drag chain is kept in the place desired. Their advertisement in this number will convey a good idea of the improved attachment. We recently saw it tested in plowing in weeds, and it operated in a most satisfactory manner. It is strange, indeed, that such a simple and good contrivance should not have been thought of before. The improvement can be attached to any plow, it being merely a small chain, or strap hitched to the bight of the drag chain, and then to the right handle of the plow.

Hutchinson's Horse Fork.

Sometimes oxen only are used for hauling hay with a wagon, or cart. Then, if the hay is pitched off with a horse fork, a yoke of oxen is employed instead of a horse, and a strong fork is required. For this purpose Mathias Hutchinson, of Cayuga County, N. Y., has furnished a photograph of the first fork that was made in that county. It is not patented; and an ordinary mechanic can make one at an expense of a few dollars. Friend Hutchinson writes: "The fork from which the photograph was taken, had been strained by hard usage, and the tines straitened. They should be made strong, especially near the head, if made of iron. Some make them of steel. The handle (B) is two feet long, the head (A) is three feet four inches, both made of hard white oak, 3 x 3 inches square. The

tines (C) are two feet long; they should be placed 10 inches apart and firmly fastened into the head.

"The handle and teeth should stand at an angle of about sixty degrees. At E the side of the handle is gouged out to receive the rope, and a latch, made of a piece of iron, held in place by the catch (F), retains the rope in the groove of the handle. When the forkful is to

be dropped the small rope is jerked, which raises the catch (F), when the hay falls off, and the fork is suspended by the main rope attached to a ring at D, at the junction of the handle and the head. A wooden button is fastened to the handle (B), having a hole in one end of it for receiving the latch rope. [We think it would be quite as well to let that rope run through a smooth hole in the handle.—Ed.] It is simple and effective in the hands of a skillful workman, on which much depends. It will take off a tun of hay at from four to seven draughts in as many minutes, unless the hay is very short. A few boards should be nailed on the side of the



HUTCHINSON'S HAY FORK.

mow, to the big beam, for the hay and fork to slide on, and a tackle block placed in the peak of the barn, 6 or 8 feet from the edge of the mow. A second block is required for the rope to work under on the barn door post, near the bottom, that the team may draw to advantage. To have another block at the top of the door, to be used when the mow is nearly full, is very convenient, but it is not necessary.

"The hay should be loaded on the wagon with reference to the fork, and properly bound. The fork should be put in the hay, not in the middle, but nearest to one end of the load, at an angle of about 45 degrees with the wagon. The head, and not the teeth, should be turned towards the mow. Then press the teeth their whole length into the hay with the foot, and fasten the rope at the end of the handle. When the forkful has swung over the beam, at the proper time, the operator, by giving the small rope which he holds in his hand a jerk, will unload it instantly. Those on the mow need not attempt to divide the forkfuls; but by keeping the middle of the mow the highest, they may be rolled into the corners, and wherever needed. It is a labor saving machine. However, I have sometimes employed hands who lacked ingenuity to work it to the best advantage."

Hutchinson's Improved Plow.

Good plowing is an essential part of improved agriculture. In order to plow well, we must have good plows. Every effort that is made to improve the form of the common plow is praiseworthy, and every real improvement is welcomed by every good plowman. Jethro Wood, who invented the cast-iron standard of the common plow, immortalized his name by an invention that we could not readily dispense with. He has been called "a whittling Yankee;" it is said that he brought out this grand improvement by whittling potatoes in the form of miniature plows. The world at large will never even know the debt of gratitude they owe to the inventor of the cast-iron standard. Passing by the long list of ambitious mechanics and farmers, who have emulated each other's zeal to discover some improvement in the plow, we introduce to the readers of the *Agriculturist* two illustrations showing an improved plow, made by Mathias Hutchinson, Kings Ferry, Cayuga Co., N. Y., an intelligent practical farmer and skillful mechanic. Fig. 1 represents a land-side view, and fig. 2 a mold-board view of the improvement. The invention consists in the standard and land-side being made in one piece, and placed several inches farther back in the beam, than when the standard is attached to the mold board. The great excellence of this improvement consists in forming a spacious, open throat, which seldom clogs when plowing in coarse manure and stubble. We have long desired to see a plow brought out for all kinds of plowing, one which would work equally well in sod and stubble, and run deep or shallow, without carrying dirt on the mold board. This plow we have put to several rigid tests and know it to be really excellent. Prompted by a laudable ambition to benefit mankind, friend Hutchinson offers the benefits and advantages of his improvement to

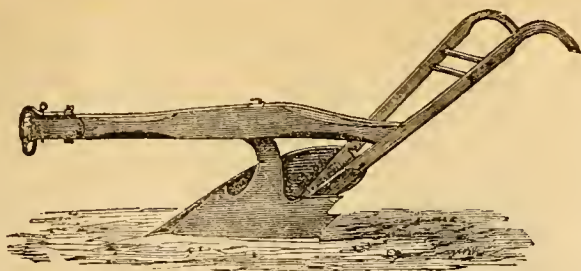


Fig. 1.—LANDSIDE VIEW.

all who desire to make or have made plows upon this plan. He writes: "The inventor desires these improvements to be free to all. A caveat was filed, and model sent to the Patent Office in 1855. The first plow was intended for deep plowing, in sward land. Five years afterwards he made a plow-of-all-work, [shown in our illustrations,] intended to turn stubble as well as sward. This is not so long, spreads wider, and is lighter than the first pattern. The mold-board is constructed on the principle of the screw and wedge combined. The forward part approaches the form of the wedge, and rises and spreads at nearly the same angle; but the greater part is a section of a screw slightly increasing towards the extreme wing.

"The attachment of the standard is to the land-side, as represented in the engraving, which prevents it from being choked out of the ground by stubble. It is of light draft in proportion to the amount of ground it moves, and is easily guided. It breaks the furrow less than some plows, and carries no dirt on the mold board, even in plowing mucky and light ground, after being scoured smooth. Being long and "clipper-built," it is well adapted to turning a deep furrow in stiff clay lands. The edge, including the point, is nearly 20 inches long, and cuts, when new, over 12 inches wide. This is useful in cutting off Canada thistle, clover, and other deep roots, as it lessens the draft of the plow, and assists in turning the furrow in sward; it being more easy to cut than to tear off the bottom of the furrow slice, especially when full of roots."

As friend Hutchinson has assured us that his aim is not to make money by this improvement, we are permitted to state, that a set of casting

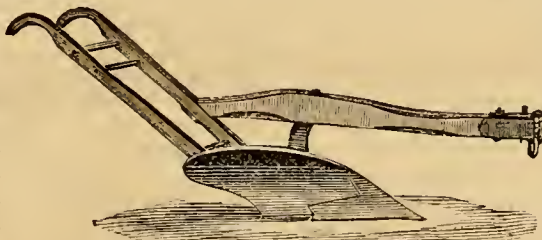
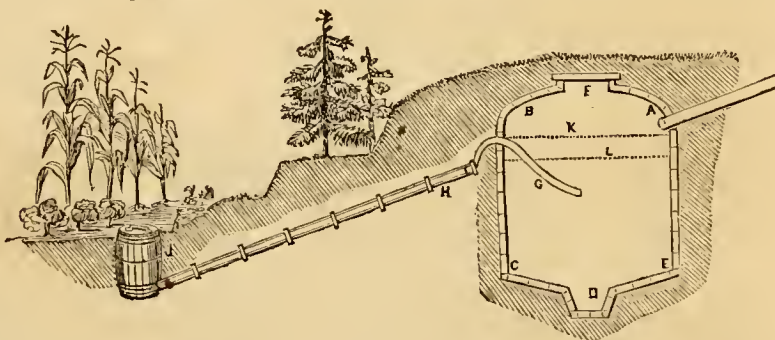


Fig. 2.—MOLD-BOARD VIEW.

for patterns may be obtained at the expense of the casting, boxing and shipping, by communicating with him, by the address above given. We saw this plow tested in a hard, dry, stony, clayey soil, at a plowing match of the Cayuga Co. Ag'l Society. It turned a sod 12 inches wide, 7 inches deep, and received the first prize.

Cesspool and Liquid Manure Tank.

Many persons in the country having flowing water in their houses, are at a loss how to dispose to the best advantage of the waste water, which usually carries off all the slops and waste of the household. An ordinary cesspool, only stoned up, in a disagreeable spot, and in time becomes filled and useless, an evil which is usually remedied by making a new one somewhere else. This method of disposing of waste water involves also the almost total loss of all the fertilizing elements contained in it, a consideration which is yearly becoming of greater importance as the difficulty of obtaining manures increases. To avoid these evils the following plan has been tried by a gentleman of our acquaintance with perfect success thus far, after more than a year of actual operation. His cesspool is near his house, and is of brick, built just like an ordinary cistern. It has a manhole (F) covered with a flag-stone, which is cemented down and covered with several inches of soil. The discharge from it is by a 2½-inch lead pipe (G), the lower end of which is as near the centre of the cistern as possible. The upper end is bent down so as to form a syphon for about six inches of its length, and leads into a glazed pipe drain (H), cemented at the joints. This discharges into the bottom of a barrel (J) set in the ground near the centre of his



CESSPOOL.

garden. The operation of this device is very simple and satisfactory. The discharge from the cesspool is through the lead pipe, the lower end of which is above any sediment, and below any floating substance that can clog it. Nothing is discharged till the cesspool is filled to (K) the highest point of the pipe, and then a steady stream flows until the level is brought down to the lowest point of the syphon. There can be no dribbling stream, and therefore any thing that may possibly enter the pipe is carried along with the flow, and the pipe and drain are always clean. A pump may be set in the cesspool by which it can be pumped out if more of its contents are needed in times of drought than naturally overflow. Should the sediment ever rise so as to clog this pump, the manhole can be opened and the sediment dipped or pumped out, to aid which a depression (D) is made in the centre of the floor of the cesspool. The barrel set in the ground furnishes a constant convenient supply for watering the garden or the overflow may be conducted so that it will greatly enrich the adjacent soil. Such a cistern as this will pay for itself very soon, if it is on the place of any man who will make good use of the liquid manure furnished. Nine out of ten of those who have small places and keep no stock, have poor gardens because it is so difficult and expensive to get good manure. The waste of their own houses is probably abundant for an acre or two of a garden, with fruit trees and lawns in addition.

Different Modes of Binding Grain.

In binding grain each end of the band is, or should be, always held projecting from the closed hand on the side of the thumb and forefinger. There are in common use not less than three different modes of binding. One is, passing the right-hand end over the thumb, with a double twist and tuck; the next is, passing it under the wrist with a double twist and tuck; and the third is passing it beneath the left hand, making a nip about the left-hand end and tuck beneath it, or in common parlance, "nip and tuck." Sometimes binding over the thumb is performed with a single twist and tuck. But, when bound in this manner, unless the bands are drawn very tightly, sheaves are liable to unbind, which is very disagreeable.

The most expeditious way of binding is "over the thumb." This is done by putting the left knee on the sheaf, as shown on the foreground of the harvesting scene on page 248, pressing it closely together, then drawing with the right hand as tightly as practicable, catch the right-hand band with the forefinger of the left hand, while the left hand holds the other end of the band also. Now whirl the right-hand end of the band around the other end with the right hand, giving them a twist, or two twists which is better, and tuck them under the band.

The accompanying illustration represents a sheaf of oats well bound over the thumb with a double twist and tuck. The second mode of binding is done with the left knee on the sheaf; the right-hand end of the band is carried under the wrist of the left hand, and held by letting the wrist drop upon it, until the two ends are twisted together, and tucked under. Sheaves are bound in the "nip and tuck" style by passing the end of the band in the right hand under the left hand, then holding it with the left hand resting on it, when the right hand releases its hold, and renews it again above the left hand. Then the left-hand end of the band is broken over towards the binder, while the other end is brought around it and tucked beneath the band on the side towards the binder. When sheaves are thus bound, the left-hand end of the band forms a good handle for carrying the sheaf.

While binding, the rake handle should always rest against the shoulder of the binder. This makes it easier work for him, than to lay down and pick up his rake at every sheaf. As soon as a sheaf is bound, and the binder straightens his body, his rake is where he can take hold of it, without stooping to pick it off the ground. An active man will rake and bind one thousand sheaves in twelve hours, which is an ordinary day's work. Suppose that it consumes two seconds of time to stoop and pick up his rake at each sheaf, he must necessarily endure the fatigue of picking one thousand rakes off the ground, which will consume not less than thirty-three minutes, besides the useless fatigue. During that length of time he would be able to rake and bind not less than fifty sheaves, not a little saving with many hands.

Another consideration of no little importance in raking and binding is, to make the sheaves of a uniform size, and bind them as nearly in the middle as possible. When they are bound too near the tops, the bands are very apt to slip off while the sheaves are being pitched. If bound too near the butts, the heavy heads are liable to fall in different directions, when they are handled, and they soon unbind. When some sheaves are made very large and others small, it is difficult to make a nice stack with

them, as the courses will not be smooth, and the butts sufficiently even to carry off the rain well. It is also less convenient to load large and small sheaves together, as well as to set them in neat and smooth shocks. When the straw is long, and not very green, there is an advantage in making as large sheaves as a man can bind,



SHEAF OF OATS.

as no more time is consumed in making a band for, and binding up a large sheaf, than a small one; but when straw is quite green, the sheaves should not be made very large. In order to make sheaves of a uniform size, the gavels from a reaper should be dropped off evenly; and when cradlers cut swaths of equal width, there will be no difficulty in making sheaves of a uniform size, if every swath is raked a given distance. But when one cradler cuts a swath nine feet wide, and another six or seven, as is frequently the case, if both swaths are raked the same distance, the sheaves will not be of a uniform size, and of course will not make a smooth stack, or an even mow.

Raking and Binding.

That some men are able to rake and bind a swath of grain as fast as it is cradled, and perform the work well, while other larger and stronger men, by working hard, can not rake and bind more than half as fast, is a matter of common observation. Why it is so, is told in a few words: They do not know how to do it. It is not strength alone, that enables a man to rake and bind grain very fast, but the essentials are skill, and quick movements. To rake swaths into handsome gavels or sheaves, having square butts, and not twice as long as the straw, requires a hand-rake with long teeth, as described and illustrated on page 210 last month. Then, instead of rolling a gavel over and over, keep one foot and leg constantly against the butts, and move it along as the rake slides the gavel. Always keep the head of the rake parallel with the gavel, as this will prevent its running out longer than the straw. When a rake with short teeth is used, if a man has not strength to slide the gavel along, it must be rolled, which is a slow process. Some rakers attempt to even the butts of gavels with the rake; but this consumes too much time.

Some binders always grasp a handful of straw near the middle of the gavel at the heads. This is objectionable, as it frequently makes the sheaf longer. Some separate a handful of straw, and tie the tops in a square knot; this requires too much time. By others the band is laid across the gavel, when each hand grasps one end of a band, and raising the gavel at the same time, they turn it over and bind it; but this is an awkward and slow way to bind. Others divide the band below the hand that grasps it near the heads, then bend all the heads over to one side, and bring up one end of the band over them and place the thumb on it. This manner of making a band requires more time, and the lock is very apt to slip when binding. The best and most expeditious way to make a band is, to take a small handful from the top of the gavel, and while separating it, hold back other

straws with the other hand; then grasp it with the left hand a little below the heads, and dividing the straw with the other hand, take the half of the band at the right side, carry it quickly to the left side of the other half, so that the left half will rest on the back of the right hand. Now elevate the right hand above the left, thus throwing the but ends of the branches of the band into the air above both hands. Pass the portion of the band in the right hand around all the heads of grain, and place the right thumb on them, and the lock will never separate when binding, if it is well made. Next, with the band in the right hand, throw it forward of and around the gavel, while the left hand is passed beneath the opposite side, palm upward, grasping the band in such a manner that its hold need not be relinquished until the sheaf is bound. When the hand grasps the band so that the hold must be relinquished and renewed, it often occupies time enough to finish binding the sheaf. When the right hand is passing the band around the bundle, if the stubble is sharp and stiff, keep the band beneath the palm. By this means the tender skin on the back of the fingers and hand, will be protected from the sharp points.

Western Agriculture.

A LETTER FROM SCOTT COUNTY, IOWA.

Editor American Agriculturist.

It seems to me that the "West" is not properly understood either by its own people, or by our eastern friends. We regard the West as "King" in agriculture and the East as being a "played out" region. Per contra, the East considers us as having fertile soil and cheap lands, but deficient in all else. I believe, that each can learn from the other much that would be beneficial. The letter from "Western Boy," and your comments thereon, in your July number, seem to open the way for a few remarks about western farms and farming operations. Passing over the usual panegyrics on our golden prairies, inexhaustible fertility, etc., the plain fact remains that western farmers need instruction on as many, though perhaps not the same, points as do those of less favored regions. What we of the West need is, the appreciation of the necessity of system and judicious methods in our labors. The majority of western farmers, who are to-day richer than when they came here, have made their profit in the increased market value of their lands. Few have, on average, been able each year to show a tangible profit on their crops. We occasionally, as in 1856-1857 and 1863-1864, have seasons in which good crops and high prices combine to our advantage, and in such years it is not unusual for our farms to yield a profit equal to their total market value. I have known many instances where farms have cleared their cost in one year, but a close observation in the richest and best county of Iowa, through the last ten years, shows that as a class our farmers are but little, if any, better off than when they began. I say this is the case, but in justice to the West, I ought also to say that this need not be the case, and it is to the latter result that the teachings of the *Agriculturist* could exert a powerful and wide spread influence. Our farmers need special and urgent admonitions against—first, attempting to cultivate too much land; second, cultivating too many acres of one product; and third, neglecting to take good care of their horses, cattle, and farming implements. These three are the leading and universal fail-

ings of all western farmers. Add to these, the losses from neglect of rotation of crops, carelessness in selecting and preserving seed and ignorance of the *business* rules which are essential to successful farming, as to success in any other occupation, and the secret of our occasional "hard times" is disclosed. Not one in ten of our farmers can tell the cost of production of a bushel of his grain. Few can calculate the pecuniary difference between selling their corn, or feeding it to stock. Fewer still can tell the distance from market, at which wheat growing ceases to be profitable. If the *Agriculturist* will give us more of its forcible and practical lessons on these and similar topics, "Western Boy" and many others will admit that the *American Agriculturist* is as useful to us as to the rest of mankind. C. S. W.

Slaughter of Breeding Animals.

Several times during the prevalence of the temptingly high prices which have prevailed of late, we have taken an opportunity to caution our readers against slaughtering their cows and ewes, as also heifer-calves and ewe lambs. These cautions, though we hope useful, have been rendered unnecessary in a measure, or at least strongly urged home to the attention of farmers, by the high prices of all the products of the dairy, and the high prices of wool and the demand for sheep for breeding purposes. There are, however, some extensive grazing districts (which, by the way, are notorious for being backward in agricultural progress, and for having few reading farmers), where the high prices of beef have tempted farmers to part with their dry cows and probably other stock, in the expectation of being able, as usual, to supply themselves again from droves passing from the back-country through to market. In this they have been disappointed, and real destitution now prevails which may seriously embarrass farming for some years in these parts of the country.

The Commissioner of Agriculture, too late, sounds an alarm. The poor short-sighted farmers who have sold their cows and heifers will not enjoy particularly to be held up to the commiseration of the world, whose charity they do not ask, and whose pity they will not get. (For who ever thought of wasting sympathy on the boy who killed the golden-egg-laying goose?) We make a few quotations from the Report of the Agricultural Department for April and May:

Mr. Hamilton, president of the Pennsylvania State Agricultural Society, writes: "I have been for some time seriously concerned at the falling off and derangement of agricultural products, particularly in the important one of cattle. It cannot be overlooked by the most casual observer, that from the immense slaughter and waste consequent upon the supply of animal food for the army and navy, whilst importing and breeding are at a stand-still, the most strenuous efforts will be necessary, on the part of the farmer, to prevent an absolute scarcity, particularly in the product of beef-cattle, and that beef must soon be sold at rates that but few will be able to afford. The high prices at present offered by butchers have tempted farmers to part with their *largest and best formed cows*, which under different circumstances would have been retained for breeding, and the most healthy and vigorous heifer calves have been sold to them. From this cause most farms exhibit a poor, ungainly stock of cattle compared with what it formerly was. Ohio, Indiana, Kentucky, Illinois, Missouri, and West Virginia, on

which we used to rely for supplies, present limited resources."

John J. Taylor, of Shelby County, Missouri, says: "I see from your reports that horses and cattle are on the decrease. Should the practice of butchering dry cows, as it has been done in this county, become general over the West, you may expect a continued decrease in cattle; and as I have stood on the streets of our town in the fall season and seen drove after drove of cows driven away for beef, I thought a law ought to be passed to limit this trade."

E. F. Lucas, of Warren County, Indiana, writes that "the usual increase of cattle has fallen off, owing to so many of the best graded cows having been killed and packed into barrel beef the last two years."

The Commissioner adds: "But with the war now at an end, and with scarcely any foreign demand for breadstuffs, a change will take place, and deficiencies in our farm stock will be filled up. To supply the loss of cattle, the first step will be to increase the number of *cows*. This must be done in two ways—to stop their slaughter for beef, an evil and a wrong justly condemned by our Missouri correspondent, and to raise more of the heifer calves. For a time the dairy establishments of the western reserve and other localities should cease from their usual practice of turning a cow on grass to be fattened when her milk product ceases to be profitable. That must be restored by breeding, and not by the purchase of another and the slaughter of the one nearly dry."

The love of money often induces men to work their own injury, with their eyes open. This is generally with the expectation that they will be able to find some way of avoiding the consequences. There is no doubt but the rise in the value of meats affected first the beef stock, then 1 and 2-year old steers and young working cattle, and finally the milchcows, so that any one who had fat dry cows was very apt to sell them at one time; but almost at the same time with the rise in beef, butter and cheese brought "gold prices," and were bought in great quantities for exportation. This gave the cows a great value independent of their worth for beef. That the number of cows in the great dairy regions of the country has decreased, we do not believe, but on the contrary, so far as we can ascertain, it has increased. Veals, however, have been to a great extent indiscriminately slaughtered, and many a nice heifer calf we see daily in the shambles which in two or three years will be greatly wanted on the farm.

To a considerable extent is it true also that fine stylish large mares are sold to the city and the small or ill-formed, pot-bellied, hollow-backed ones are kept to raise colts. The fruit will be like the tree, and in the long run it will surely pay to keep one's stock up by retaining the best animals for breeding. The great consumption of beef in the army has in a measure ceased, but there being in several districts a demand for breeding animals, and for those to fatten, no doubt prices of beef and mutton will be high for some time to come—so high indeed that few if any more profitable branches of farm-industry can be followed than buying and fattening cattle and sheep, but don't fatten the cows and ewes, nor neglect to keep up the stock on the farm. It is very poor policy to attempt to feed more than can be well wintered, but present prospects are favorable for our being able to winter more stock than ever before in the history of farming in this country. The hay crop so far as heard from East and West,

is remarkably good, and generally well secured, corn and roots also promise remarkably well.

The Harvest.

Our artists have furnished us another chapter in the "Pictorial History of the Loaf of Bread." Page 152 told the story of the Seed Time,—how the ground was enriched, and plowed and pulverized, and how the seed was drilled in, or sowed broadcast and then harrowed and rolled; and besides, there too we have the hint given that grain crops precede grass, for behind the harrow the grass seed is cast, and when the grain is cut, the yellow stubble will soon be concealed by its cheerful green.

This month, appropriate to the season, we have *The Harvest*. The whole group of scenes will repay study, equally for the picturesque effect of the whole, and that of each one viewed by itself, for the excellence of the figures, the naturalness of the attitudes, and the life and motion they exhibit, and for the faithfulness with which the different means of harvesting and final securing of the grain, either for the market or the miller, are portrayed.

Time was (not very long ago either) when all the grain in this country was reaped by the sickle; work at which, at this day, over a great part of Europe, women find constant and lucrative employment during harvest time. Ever since the days of Boaz and Ruth, and doubtless for a long time before, the hand-gleaners followed the reapers, picking up the stray heads and the down trodden and over-looked ones. Each reaper cutting handful by handful gathered his or her armfuls and laid them in the gavel, till it was enough for a sheaf, and then bound it. Slow, back-breaking work. How different this, from the sweep of the cradles as lusty arms swing them through the falling grain, sometimes making a cut of 8 or 9 feet, and laying each clip evenly in the swath. Voicelessly perhaps the cradlers go, but the simultaneous rush of the several scythes through the sonorous straw is one of the most inspiring sounds of the harvest field, especially when it begins anew after the musical rip-rap rip-rap of the whetstone. Here the labors are divided, one party cuts, and another set of active hands does the binding.

Even this is slow and tedious, and with the will to do it faster, came the way. The clattering reaper now swoops around the field, and by its automaton rake delivers the gavels ready for binding upon the short-cut, even stubble, as fast as horses can walk. Many binders find enough to do to keep up with the single man with the reaping machine. In the thrashing scenes we see a similar contrast, horses and iron supplanting human muscle. Such has been the advance of the past few years, and this is only a sample of the progress in other departments, not only of agricultural theory and practice, but also in other arts of life and peace, and—for how sadly do many realize it—in the arts of war.

The nation returns now to peace, and peaceful arts will prosper as never before. We may look for great advancement in farming practices, but do not let us go too fast. The heading harvesters so much approved where crops are great and hands are few, and straw of little value, though surprisingly expeditious and excellent in their operation, are adapted to only a limited area of country. This will doubtless be narrowed year by year until they will be counted, with wooden plows, and we may almost say sickles, among the fossils of agriculture.





Fig. 1.—ROOTS CRAMPED IN POT CULTURE.

The Roots of Vines in Pot and Open Culture.

It is generally conceded that the best young grape vines are those raised from cuttings of a single eye. These are started by artificial heat in pots or boxes of pure sand, and when roots have fairly formed, they are potted in a soil which will afford nourishment to the young plants. Some varieties, such as the Delaware, can not be successfully propagated without the aid of heat, and all are managed with more certainty by its aid. In the ordinary way of treatment, the cuttings, after they have rooted and commenced to grow, are placed singly in 2½ or 3-inch pots of properly prepared soil, and when the roots have filled these, a shift is made to larger pots, the plants usually receiving two shifts to larger pots during the season. If the shift be made at the proper time, i.e., as soon as the roots reach the sides of the pot, plants with good roots may be grown in this way. But it often happens, especially where propagation is conducted on a large scale, that the change to larger pots can not be made at just the right time, and the roots finding their direction stopped by the sides of the pot are bent, and even have their growing points turned inward to-

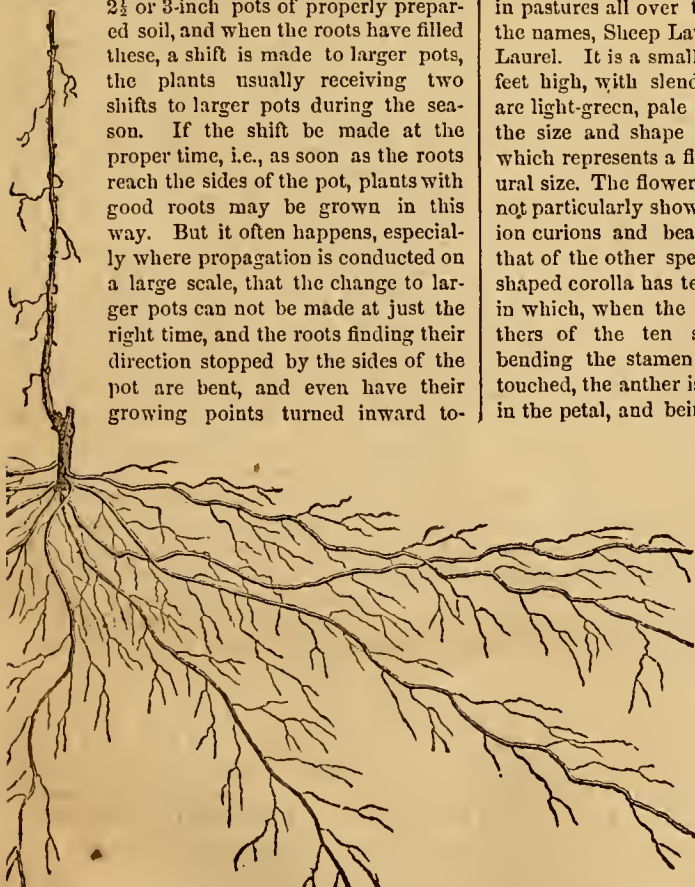


Fig. 2.—ROOTS GROWN IN OPEN BORDER.

ward the center of the ball of earth where they form a twisted and tangled mass. When roots in this condition are transferred to a larger pot, it is evident that they are not in a condition to

avail themselves of the new supply of soil, as their growth has received direction away from the new earth. The consequence is that a new set of root fibres is pushed out from the twisted mass of roots; these grow out toward the pot, and if neglected, will repeat the operation of being directed from their natural course, and will be twisted and bent as were the first set of roots. If this continues as is sometimes the case through all the successive shifts of the vine, there will be at the end of the season a mass of contorted tangled roots, which from having received several checks in their growth, are very difficult to manage when the vine comes to be planted in the open ground. Fig. 1, is a diagram representing a section through a pot containing roots which have been thus neglected: the lines A and B show the size of the smaller pots in which the roots had been grown and cramped. To avoid this unnatural condition of the root, some of our best growers have discarded the potting system altogether, and transfer the young plants directly from the cutting pots in which they are started to a border which is prepared in a greenhouse, or out of doors, covered with sash after the manner of a hot-bed. In this way the roots are free to grow in a natural manner without receiving the several checks to which they are liable in the potting system, and as the root and vine bear a direct relation to one another, the plants thus started show a better growth both above and below ground. The roots of a vine thus treated are shown in fig. 2.

The Sheep Laurel.—(*Kalmia angustifolia*.)

This plant, which is common on hill sides and in pastures all over the country, is known by the names, Sheep Laurel, Lambkill, and Dwarf Laurel. It is a small evergreen shrub, about 2 feet high, with slender branches. The leaves are light-green, pale on the under side, and of the size and shape shown in the engraving, which represents a flowering branch of the natural size. The flowers are crimson, and though not particularly showy, are, upon close inspection curious and beautiful. In common with that of the other species of the genus, the cup-shaped corolla has ten depressions or cavities, in which, when the flower first opens, the anthers of the ten stamens are caught, thus bending the stamen over like a bow; when touched, the anther is dislodged from the cavity in the petal, and being released springs up to-

wards the pistil where it sheds its pollen. When the anther is perfectly developed this movement occurs spontaneously. We notice this shrub on account of its alleged poisonous effects when eaten by sheep. The very general impression that it possesses poisonous qualities is indicated by two of the popular names quoted above, but after a pretty diligent search for authentic statements in regard to its deleterious qualities, we find the accounts very vague and unsatisfactory. Mr. Morrell,

author of a work on sheep, however, positively asserts that it is poisonous, and overcomes its effects by gagging the animal. It would be interesting to know more about the effects of the

plant, and how far it is fatal when no remedial measures are taken. From the antidotes published from time to time by the agricultural papers, we infer that it is at most a weak poison, as they are generally the mildest of remedies or



SHEEP LAUREL.—(*Kalmia angustifolia*.)

quite inert. A list of the proposed antidotes comprises things quite unlike and of contrary effect. Besides the gagging noticed above, we find recommended: roasted onions and milk, lard, salt, mountain dittany, white of eggs, castor-oil, pennyroyal, coffee, and lastly—for it properly comes at the end—a muskrat's tail. Concerning this we extract the following from a recent number of the *New England Farmer*:

"My remedy for poisoned sheep or lambs, which never fails, is, to take a muskrat's tail and cut it fine, say 4-inch long, and steep it until soft, in hot water, (half a pint of water to one tail); when cool give a tablespoonful at a time, once an hour, until your sheep will jump up and run. I have seen sheep and lambs that lay three days unable to get up, made apparently as well as ever, by a few doses."

We should think that a sheep would jump up and run from muskrat soup if it had any life left it. We are not informed whether the potency of the remedy would be increased by chopping the tail finer, or what should be the precise age of the animal from which the tail is taken.—The generic name, *Kalmia*, was given in honor of Kalm, a Swedish botanist of the last century; *angustifolia* means narrow-leaved.



The Field Horse-Tail.—(*Equisetum arvense*.)

Under the name of Pine-Weed, and Low Pine, the Field Horse-Tail has been of late considerably discussed by the agricultural journals and inquired about by our correspondents. The interest in the matter arises from the fatal effects upon horses which have been ascribed to it. As some of those who have written upon the subject have been talking about a widely different plant, the Mare's-Tail, we give figures of the one in question, *Equisetum arvense*, the Field Horse-Tail. The common name in this case is a translation of the botanical one: *Equisetum* is from the Latin, *Equus*, a horse and *seta*, a bristle, and refers to the hair-like character of the branches of some species. The Horse-Tails are what botanists call *cryptogamous* or flowerless plants, as, like the ferns, mosses, etc., they have no true flowers with stamens and pistils, and they do not produce seed, but in its place spores, which are very small round bodies, like dust, by means of which the plants are multiplied. The species under consideration presents two forms which an ordinary observer would never take to belong to the same plant. In damp places in April and May are found numerous simple stems like fig. 1; they are hollow, grooved, of a light brown color, and having at each joint a sort of sheath of a darker color. At the top of the stem is a head, shaped like a pine-cone, made up of scales which bear the spores on their inner surface. These spores are very curious when seen under the microscope. When dry they are like a little ball with four slender arms attached to it, as is represented in figure 2. If, while one looks at these spores through the microscope, another person breathes very gently upon them, the

arms will suddenly coil up and clasp the spore, the movements being so lively that the whole appears as if animated. The appearance of the spore after it has been moistened by the breath is shown in fig. 3, both figures being of course very highly magnified. After the stems above described have shed their spores, they die away and later in the season the barren ones appear, which are green, of the shape of fig. 4, and are eight to twelve inches or more high. These as well as the fertile ones are grooved and hollow, and bear at the joints slender and long branches, the whole having so much the appearance of a miniature pine tree as to suggest the popular names of Low-pine and Ground-pine. With regard to the poisonous qualities of this plant, we are in the same uncertainty as we are respecting the Sheep-Laurel noticed in another article. The testimony is most conflicting, some saying that it is harmless to all domestic animals except horses, others that it harms only cattle or sheep, and others again that it furnishes in some places, the chief forage. One of our editors has for many years fed his horses with hay containing a great amount of this weed without perceptible injury. With regard to the poisoning of animals we are inclined to be a little sceptical, as their instinct generally leads them to avoid injurious plants, and in this matter as well as with many others belonging to agriculture, we are greatly in need of some Institution where the point can be definitely settled. If a certain plant is poisonous, its effects should be studied and its proper antidote known; then the farmer would not be harboring a poisonous plant, nor suspecting an innocent one as the cause of every fit of indigestion his animals happened to have, and he would not waste his time and the animal's

strength by trying various foolish and empirical remedies, such as we have noticed in another place. As the Horse-Tail is mostly found in wet places, draining would help to eradicate it.

For the American Agriculturist.

Cranberry Cultivation.

BY JOEL H. ROSS, M. D., TOM'S RIVER, N. J.

As a compound of truth and error in books and periodicals on the subject of cranberry culture has often led the anxious inquirer astray, or brought him to a stand-still, it may not be amiss or time lost, to look at some of the landmarks of success—especially at the present time, when so many with little or no knowledge of the business are engaging in it.

The cultivation of this fruit was an experiment a little more than 20 years ago, when a man at Cape Cod happened to discover that a small cluster of wild vines growing near his house, became very thrifty where the wind sifted in among them, clean white sand from an adjoining bank. This discovery led to an experiment which settled the question as to what should be done with those neglected and hitherto almost worthless swamps, and soon brought them into market at \$100 per acre. The success that followed, with here and there a failure for want of information, was all that the most enthusiastic cultivator could have expected. But as some reader may say "success" is a little indefinite, I give him two illustrations—one of them taken from Cape Cod, and the other from my own county.

In the summer of '61 I visited the Cape, and for a time enjoyed the hospitality of a worthy old ship captain who had forsaken the water and taken to the mud—a reliable, intelligent, cranberry-experimenting pioneer, and from him obtained many valuable hints. In questioning him a little about the net profits of his bog, he modestly replied, "I had rather talk about my neighbors' success than my own." He remarked that a Mr. Winslow owned two acres in a certain swamp, and being very anxious to put it into cranberries, and finding it difficult to do so and support his family at the same time, some kind neighbor loaned him \$300, which enabled him to accomplish what he so much desired. In a little time the fruits of his faith and works began to appear. He paid off his borrowed money, and soon left the widow and little ones to look for support from that little two-acre plot; nor did they look in vain. Now for the result. The widow's worthy neighbor, the captain, had charge of her bog and gave me the net proceeds of one year's crop. Said he, "her bog is a good one, but nothing extra; her crop last year was a good one, but not more than half as large as has been gathered here; neither did she get an extra price, for she decided to sell too soon, and got but \$11 per barrel; whereas a little later I sold mine for \$13. Yet when the expenses of picking, shipping and selling were deducted, the Boston commission merchant returned her a check for \$1,400." Now we will leave those who have little faith in the profits of cranberry culture, to devise some other way, if they can, in which that man could have invested his \$500 or \$600 to better advantage. Suppose she annually gets but half that sum. What more does she need in a country town, living in her own cabin?

Mr. John Webb, in the town of Jackson, in this county, began to put out a few vines about 20 years ago, and was the first man to commence the business in this section. He labored under many disadvantages, had little or no money,

few to encourage him, plenty to ridicule and call him a fool, and plenty to foretell his failure, and although he had but one leg, with that he hobbled on and over all the stumbling blocks which the kind-hearted incredulity of his neighbors could throw in his way, and finally succeeded in getting out vines from time to time until he now has a bog of ten acres, and though it is smaller than many now in our county, yet he has taken from it I know not how many thousand dollars, but enough to make him measurably independent, and he was recently offered \$9000 for six acres.

LOCATION AND QUALITY OF SOIL.—In selecting a spot on which to embark in this business, four things should be kept constantly in mind, namely: climate, location, price and condition of the soil. In the first place, success very much depends upon *climate*. Cranberries grow in great quantities spontaneously in Wisconsin and Minnesota. But they are an uncertain crop there, because they cannot stand frost when in blossom. For this reason Cape Cod cannot compete with New Jersey, and also because she has not a sufficient supply of suitable soil. It begins to be known that cranberries are a better fruit, and a more certain crop here than they are East or West, North or South of this State. I have little faith in dry land operations, and will here notice one of the indispensable qualities of cranberry soil, and answer the frequent question, "will they do well on upland?"

I answer no, if it has not a moist bottom. But it should not be forgotten that some upland is really *wet*. They can be made to grow to some extent on ordinary garden soil, and so can rice. But they don't belong there; are never found growing there spontaneously; and in my opinion they will never pay there. Some think that vines may succeed in such soil at some future time, and some may also believe that we may yet find sheep and shad yoked up together—a profitable team on dry land or in the ocean; but I don't. If any still cling to the "upland" theory, let them go down to Cape Cod and call on Capt. Cyrus Cahoon, of the town of Harwich, and they will probably get information on the subject which will be satisfactory. At any rate the Captain's experiments and failures were a lesson to me that I shall not soon forget. I saw some of his vines still standing in dry sand, although he had settled most of the ground about 2 feet, I should think, by carting off the sand and dumping it in a pond near at hand, and thus he "killed two birds with one stone," by improving one lot, and by raising up out of the lake another, at the expense of nearly \$700 per acre, which he considered a good investment. In answer to a question about upland cultivation, he remarked that he thought the vines if left standing where they were, would cover the ground in about *eight years*.

While speaking of the characteristics of the soil, we may as well answer another question, "Will they do well on land very wet?" No. They may yield moderately, but not well, if they do not fail altogether. I must again refer the reader to the Captain's experience. His first experiment was a failure because his bog was too *wet*. His next experiment was a failure because his bog was too *dry*. His third experiment was a perfect success because his bog was just *right*, and neither wet nor dry. As for my own experience I could say something about upland experiments, if it were necessary, but I will here say a word about the other extreme. I put out seven acres, and nev-

er got a berry, and abandoned the whole lot, because I could not drain the Atlantic Ocean. Not being familiar with the place, nor on the spot at the time, I was not aware that the tide would back up the fresh water in my ditches so that I could not sufficiently drain the land.

Another question is often asked, namely: "shall we sow seeds?" I answer no. I have tried the experiment in the water and out of the water, in dry land and wet land, in pots and in the soil, subjected to frost and without frost, and have had a few seeds germinate, but have never matured a *single plant*, and if I could succeed it would not pay, for three reasons: It takes too long if they do grow; it costs too much to keep the grass out while the vines are coming in to take and keep possession of the soil; and finally the berries for planting cost more than the vines, as one bushel of the former will buy two barrels of the latter.

PREPARING THE GROUND.—The first thing called for, if the ground be wet, is drainage—ditches of sufficient depth, width and number, to thoroughly drain every part of the bog. It often happens that a ditch cut on the line between the wet and the dry land will so cut off the springs which run in from the high surrounding ground, as to effectually drain the swamp. Good drainage very much depends upon this, and by thus wisely locating the ditches much labor may be saved. Grubbing is the next step, and on some kinds of soil it is no trifling matter. The expense of preparing the ground for the vines is greatly modified by the condition of the soil in regard to roots, stumps, etc. There is so much difference in this respect, between savanna lands and cedar swamps, that the former is better worth \$100, than the latter is worth 100 cents per acre. After grubbing, if the ground have a tough sod or peaty surface, it should be floated (skinned) and the sods burned and ashes scattered, or the turf may be carted off and put into fence or compost. All low spots must be filled up so that water will readily run off. When the ground is cleared of every thing that would interfere with the growth of the vines, clean sand free from loam is wheeled on and spread to the depth of 2 to 6 inches. The ground is then ready for the vines. So much for swamp preparation.—If we take the savanna or moist land for our bog, we shall have a much easier task. We shall have less ditching, grubbing or floating, or sanding, perhaps none, for such land can usually be *plowed*, which in many cases will turn up sand enough; and there will also be less *weeding*. Hence it is very easy to discover why savanna land is worth \$100 per acre more than cedar swamp, let the price of the latter be what it may. After plowing thoroughly, and harrowing and raking off the roots, etc., the ground is usually considered ready for the vines, which are set in stools, from 10 inches to 3 feet apart.

I will now briefly notice the course which I am determined to follow in preparing the ground in future. After the bog is ready for the plow, I shall keep the plow and the harrow on it for one entire summer and also most of the autumn, and longer if necessary, giving an interval between plowing sufficiently long to encourage the germination of every seed thus brought to the surface, and in due season again apply the plow and harrow, and thus alternately produce vegetation and destruction. As early the following spring as the ground will admit, the land should be made mellow and level, and should if necessary be

sanded, and then it is ready for the vines. A diversity of opinion about the proper distance apart for vines sometimes bewilders the beginner, but I am satisfied that they are generally too thickly set. I put out 3 acres at about 18 inches apart, and having many vines left, as I did not get my ground ready for them as I expected, we went over the lot the second time, and a part of it the third time, and consequently the vines were very thick, and I supposed that I should have my ground covered at once with both vines and fruit. The result was, I had too many *runners*, and too few *bearers*. The next spring I put out 15 acres, and set my vines three feet apart, which was a great saving of vines and labor, and I think my last bog will be the best in a little time. One of my neighbors, an intelligent gentleman, A. A. Stanton, Esq., who owns an immense tract of land here, put out some vines last season, and he furrowed out his ground 3 feet apart each way, and put in his vines at the crossings and hauled the dirt on to them, just leaving the tops a little out, and I never saw vines do better.

Perhaps I should notice an objection that may be made to spending so long a season in preparing the ground, as I have proposed above. The only objection that can be made is, a desire to save time. But, a little experience in saving time the backward way, has somewhat modified my ardor for being in a hurry. At the commencement of my boyish operations I too thought that time was everything, and consequently left orders to have 5 acres put out as soon as possible and returned to my residence in the city. What was the result? It was hastily made to *look* like a cranberry bog, and people began to congratulate me on being able to retire. Well, it being unusually grassy at the beginning, there was at that moment from 10,000 to 12,000 living grass roots in the ground to one cranberry vine, although too many of the latter, which were about 18 inches apart, and the result was that the runners soon prevented the use of hoes, and much of the grass could not be pulled up by the roots, and was only broken off to grow again; and after fighting the grass, weeds and briars, two seasons, I became ashamed of the lot, and put on a force to see what could be done toward subduing it, and the result was that 20 days work apparently cleaned up 20 square rods, at which rate it would have cost me \$1000 to have gone over the lot, and clearly revealed the fact that if I had devoted one season to subduing the bog as above recommended, I should have been more than a \$1000 better off, twice told; for where I should have gathered 500 bushels of berries, I have not received 50, nor do I expect half a crop on that field until it is re-set.

A NEW VINE DISEASE.—Last season there appeared upon the vines around New York a disease which has this season showed itself still more generally. It seems to attack the Concord in preference to other varieties, and if not checked, threatens to be a serious matter to vine growers. It first shows itself by swellings on the freshly formed wood, and later appears as well defined blotches with a surface depressed somewhat below the general surface of the stem. The growth of the branch, thus affected, is arrested and the fruit drops. This has been attributed to wounds made by the common June-bug, but this can hardly be the case, as cultivators, who have carefully watched their vines, assure us that they are unable to discover that insects have any agency in the matter.



The Double Deutzia.

The *Deutzia scabra*, a shrub about 6 feet high, and *Deutzia gracilis*, which seldom is taller than 2 feet, are now among the most generally cultivated shrubs. They are from Japan, and are tolerably hardy, and from the profusion of pure white flowers they bear, are deservedly popular. *Deutzia arenata*, which is of somewhat later introduction, has the general habit of *D. scabra*, but differs in the shape of its leaves and in some of the details in the structure of its flowers. Of this species a double variety has been produced, and may be found in the nurseries. One of the flower clusters is shown in the drawing, though being taken late in the flowering season, it is not as showy as the earlier ones. The Deutzias are all easily multiplied by removing the suckers which come up abundantly from the root, though better plants may be obtained from layers. Double flowers are not always an improvement upon single ones, but they are so in the case of the Deutzia.

Notes on Strawberries.

The report of the Annual Show held at the office of the *Agriculturist* appeared in our July issue and that of the Exhibition of the American Institute has been given in the daily papers. Although we gave quite full notes on varieties, there remain some gleanings of our observations made since. The present season seems to have been less prolific in new sorts than the last, and those which have been exhibited were more remarkable for size than for quality. We think that propagators have gone quite far enough in the direction of size, and it is well to rest content with our achievements in the way of large fruit, and give more attention to quality. The *Agriculturist*, Russell, and Triomphe de Gaud, will afford specimens large enough for the present, and though these rank as first-class varieties, we hope to see kinds having all their good qualities in an increased degree. We would not be understood as objecting to large

berries—but we think that there is a tendency to attach importance to dimensions, to the neglect of productiveness, flavor and firmness. With respect to the *Agriculturist* Strawberry, the present season has sustained the opinion expressed last year, that it combined more good qualities than any other berry yet introduced, but we stand quite ready to welcome any variety that shall excel it in any particular.—It is a matter of surprise that any person having land should be without strawberries enough for his family. A few dollars will get plants enough to stock a bed, and even one plant will in two years' time multiply itself sufficiently to plant more

than an ordinary family will need. A residence at a distance from nurseries need be no hindrance, as plants may be sent cheaply and with safety by mail. A note just received from H. E. Hoke, Franklin Co., Pa., gives an account of what can be done with a small area in strawberries. "Two years ago I planted two beds with Wilson, Triomphe de Gaud, and Early Scarlet, the size of one bed 18 feet by 30 feet, the other 20 feet by 20 feet; the yield last season was 140 quarts from both beds; this season they turned off together 305 quarts, the large one giving 132 quarts, the small one 173 quarts; the large bed is a light soil, the small one a stiff heavy clay, both being well manured."

La Constante.—The very fine specimens of this fruit presented on the second day of our exhibition, by Geo. Herbert, of Peekskill, N. Y., merit a special notice. Nothing can be more beautiful in color, shape and brilliancy of surface than this fruit. Unfortunately it is very variable as to its productiveness, but where it does well it is a first-class fruit in every respect. It forms few runners and propagates slowly. Around New-York it is not very prolific, but it succeeds much better in some other localities.

White Pineapple.—A variety under this name is kept in some collections, while others consider it the same as Lennig's White. That it has also been called Lennig's White Pineapple would go to show that they are the same. It is asserted that the White Pineapple, while it is not distinguishable in its fruit from Lennig's White, is a poorer bearer than that variety, and also that the vines are less hardy. We recently saw a large patch which was set last autumn with vines obtained as White Pineapple, bearing remarkably well for such young plants. When ripe, the fruit has a fine blush tinge, is of excellent flavor, and the flesh is of a buttery consistence which make it a great favorite with those who are acquainted with it.

Deptford White.—This has been sent out by some dealers as Lennig's White, but is quite distinct, the fruit being of more conical shape and of a less delicate flavor than that variety.

Toad-flax—A Troublesome Weed.

Within the remembrance of many of our readers there was a plant cultivated in gardens as an ornament, which bore the popular name of "Butter and Eggs." It has quite disappeared from our gardens, but has taken up its abode in fields and meadows, and along the roadside where it not only flourishes without any care, but strongly resists the efforts made to get rid of it. The engraving shows the upper part of a stem with the flowers—the whole stem being from 1 to 3 feet high, and bearing below, long and narrow leaves like those shown in the figure. The structure of the flower is quite curious and will repay examination. The corolla is tubular, and is prolonged beyond the calyx into a spur; above, it is 2-lipped, the upper lip being



TOAD-FLAX.

split in two, and turned back, while the lower lip is divided in three, and bears a prominence or swelling, called a *palate*, which closes up the opening of the corolla. The 4 stamens and the pistil are quite hidden within the flower. The pod, instead of splitting when ripe, opens one or two holes in its sides to allow the seeds to fall out. The leaves are of a pale green, the flowers of a light yellow color, except the palate, which is of a bright orange. This contrast of colors doubtless gave origin to the name "Butter and Eggs." But the most important part of the plant is the root which is woody, creeping, and very tenacious of life, qualities which render it a troublesome weed. Perhaps "troublesome" is a rather mild word, but one of our correspondents took us to task for speaking of a weed as "vile," and thinks it wrong to apply epithets of this kind to a plant, so we will not say of this weed as Doct. Darlington very truthfully does—that it is a "fetid, worthless and very objectionable weed," as well as a

"vile nuisance." In some places the notion prevails that the more its destruction is attempted, the faster it spreads, and with this view patches are sometimes left in the fields for fear of making matters worse by disturbing them. This belief has some foundation in fact, and there is no doubt that plowing and harrowing will break and scatter the roots, every piece of which will start and form a plant. But a field infested with this or similar weeds should be kept in hoed crops until the evil is exterminated. We know that this will kill the Toad-Flax, for we have seen it done, and have yet to see the weed that can long resist the frequent and thorough application of a sharp hoe. In Pennsylvania the plant is known as Ranstead-weed, on account, it is said, of its introduction there by a Mr. Ranstead, who many years ago cultivated it in his garden. The name Toad-flax is the one by which the plant is known in England, and as it is very desirable to preserve uniformity in popular as well as botanical names, we give it the preference over the others.

Soda Wash for Fruit Trees.

Popular errors in regard to scientific matters die very hard; they have more lives than a cat. This is especially the case with absurdities put forth by men who know little of science, to those who know nothing at all, the latter accepting all that may be put forth by the former as "law and gospel." This soda wash talk was made some years ago by "Professor" Mapes at the Farmers' Club of the American Institute, was published in their proceedings, and has been reproduced by agricultural papers which ought to know better, year after year. The directions to make the wash, required sal soda to be heated to redness in an iron vessel, which the learned "Professor" said would drive off the carbonic acid and leave the soda in a caustic state: this was then to be dissolved and used upon the trees. In the report of the proceedings of a recent meeting of the club where this precious nonsense originated, we find accounts of the experience of correspondents and members present in making this chemical preparation which was propounded by their very chemical "Professor." One man put his sal soda in a piece of stove-pipe and succeeded about as well as if he had tried to heat a piece of ice to redness; another put it in an iron pot, but it frothed over and they had a bad time generally. The reason that these gentlemen did not succeed in making caustic soda out of sal soda by heating it, was simply because it is impossible. Any schoolboy with a trifling knowledge of chemistry knows that it is one of the distinguishing characters of the alkalies proper, that it is impossible to decompose their carbonates by heat alone. Sal soda is a carbonate of soda, and besides carbonic acid and soda its crystals contain over 60 per cent. of water. When these crystals are heated they melt, and if the heat be continued, this water will be driven off in the form of steam, and the carbonate of soda left as a dry mass which by an increase of heat may be melted and heated red hot without undergoing any further change, and when it cools it will be precisely the same as the crystals, minus the water. Now when one has been to all this trouble and then dissolves the melted mass in water, he will get precisely the same solution that he would, had he dissolved the crystals at first; and if any one wishes to use sal soda wash, we advise him not to go through with the heating process, which though very "chemical," is very useless.

We have noticed this matter once before in a "Basket" item, and now put it in large print in the hope that some may be saved the tribulation experienced by the gentlemen above referred to. This sal soda nonsense is only one illustration its author has afforded of the adage that "one talks all the better for having some knowledge of his subject," as well as a caution to those societies who publish reports of their proceedings, that they should subject them to some revision, and not allow every absurdity that garrulous people and self-styled "Professors" choose to propose, to go out endorsed by them.

THE HOUSEHOLD.

Recreation and Visiting among Farmers.

This may seem to some a very unsuitable topic for this busy time of the year. On the contrary, it is specially seasonable. Most farmers make life too much a drudgery for themselves and for their children. By working hard from morning until night, and from week to week, with no recreation, they become dull, and do not accomplish as much as they would with a little timely relaxation, "all work and no play makes Jack a dull boy." Nor do they enjoy life nearly so well. They doubtless say to their souls, "I must work hard now, and lay up money against a time of need, or against old age; then I will rest and enjoy myself." They forget that they are meanwhile wearing out their faculties of enjoyment, and are acquiring habits which will unfit them for anything but an old age of continued toil. Let farmers bear in mind, too, the effect of such a life on their children.

As to the way in which farmers shall get recreation, we are not disposed to be particular. Some will choose to get it in one way, and some in another. One very good method is to make up an occasional picnic. Fix on a pleasant afternoon, and take the whole family to some neighboring grove, where the children can romp, where the older folks can rest, and all have a good supper. If several families can unite, it will be all the better. Another way, is to make short visits to the neighbors. To do this, it will not be needful to consume a whole day; this would be an unnecessary loss to you and a bore to your neighbor. But seize on the broken, half-days, or even the hour or two after tea, and ride over to neighbor A's, or neighbor D's. He will be glad to show you his stock and his crops, and his orchard. You will learn something from him, and he from you. At any rate, you will get recreation, and will return to your home and your daily labor with new zest.

The Sanitary Commission and the People.

With the advent of peace, we are happily no longer obliged to remind our readers that they can do this or that for the comfort of the soldier. It is gratifying to know that many of our hints have been acted upon, and we are also glad that we have been able to act as a medium of communication for those of our readers who had no other way of reaching the organized Commissions. The great work of the army being at an end, the Sanitary Commission now states that all further efforts in its behalf may cease, and in making this announcement we add their eloquent tribute of thanks to those who have aided them in their labors.

"To the Soldier's Aid Societies, and through them to each and every contributor to our supplies, to every woman who has sewed a seam or knitted a stocking in the service of the Sanitary Commission, we now return our most sincere and hearty thanks—thanks which are not ours only, but those of the camps, the hospitals, the transports, the prisons, the pickets, and the lines, where your love and labor have sent comfort, protection, relief, and sometimes life itself. It is not too much to say that the army of women at home has fully matched

in patriotism and in sacrifices the army of the men in the field. The mothers, sisters, wives and daughters of America have been worthy of the sons and brothers, husbands and fathers who were fighting their battles. After having contributed their living treasures to the war, what wonder they sent so freely after them all else that they had? And this precious sympathy between the firesides and the camp fires, between the bayonet and the needle, the tanned cheek and the pale face, has kept the nation one; has carried the homes into the ranks, and kept the ranks in the homes, until a sentiment of oneness, of irresistible unanimity, in which domestic and social, civil and religious, political and military elements entered, qualifying, strengthening, enriching and sanctifying all, has at last conquered all obstacles and given us an overwhelming, a profound and permanent victory. It has been our precious privilege to be your almoners; to manage and distribute the stores you have created and given us for the soldiers and sailors. We have tried to do our duty impartially, diligently, wisely. For the means of carrying on this vast work, which has grown up in our hands, keeping pace with the growing immensity of the war, and which we are now about to lay down, after giving the American public an account of our stewardship, we are chiefly indebted to the money created by the fairs which American women inaugurated and conducted, and to the supplies collected by you under our organization. To you, then, is finally due the largest part of whatever gratitude belongs to the Sanitary Commission. It is as it should be. The soldier will return to his home to thank his own wife, mother, sister, daughter, for so tenderly looking after him in camp and field, in hospital and prison; and thus it will be seen that it is the homes of the country which have wrought out this great salvation, and that the men and the women of America have an equal part in its glory and its joy."

Making Pickles.

During the rebellion the army demand for pickles was so great that the high prices they brought were sufficient to give many persons the pickle fever. The numerous inquiries respecting the manner in which cucumbers were raised on the large scale have been well answered by our friend Timothy Bunker Esquire. We now have many asking us about the manner of putting up the pickles, and though we have intimated to the Squire that we would like his views on this matter, we have heard nothing from him. Probably the heavy hay crop around Hookertown keeps him busy, or else he is, as Justice of the Peace, engaged in looking after the morals of that flourishing village. In the absence of any thing from the Squire, we are obliged to tell what we know upon the subject, and thus answer a great many calls for information. In the first place it is necessary to put cucumbers into salt before placing them in vinegar, as the vinegar penetrates much better and the salting removes a crude and raw taste that they otherwise have. We have eaten pickles made by putting cucumbers directly into vinegar, but consider them greatly inferior to those prepared in the usual way. There are two methods of salting; dry salting and in brine. In dry salting, the cucumbers are put in a barrel or other receptacle and sprinkled freely with fine salt; juices exude from the cucumbers to dissolve the salt and thus form a very strong brine, while the fruit itself shrivels very much. This method uses a great deal of salt, but more cucumbers can be put into a barrel than when they are put into a brine. The shriveling is of no disadvantage, as the plumpness is restored when the pickles are soaked. In putting down in brine the process differs according to the scale upon which it is carried on. Where large quantities are raised, new barrels are filled with cucumbers, about half a peck of salt added, and headed up, the barrels are then filled with water through the bung holes, bunged up tightly and shipped. We know a gentleman at the West who sends off a large quantity prepared in this way, but how long they will keep in such a weak brine we

are unable to say, but probably a sufficient time if the barrels are full and tight. Where additions are made as the cucumbers are picked from day to day, a strong brine is used, about a quart of salt to the gallon of water, and the cucumbers kept down by means of a circular board with weights upon it. A great trouble is often experienced with pickles in brine from the formation of a white scum upon the surface. This is probably some microscopic vegetable growth of a character similar to mould. It has been recommended as the best means of managing this to put a cloth under the follower used to keep the pickles under the brine, and each time additions of fresh cucumbers are made to the barrel, to carefully lift the cloth to remove the scum on it, and wash the cloth clean before replacing it.

American Extravagance in Living.

To one who has traveled abroad, or informed himself thoroughly respecting the economy of domestic life in England, and on the Continent, few things are more striking than our American extravagance. We waste in our food much which would be turned to good account in their family maintenance. Much goes into the swill-pail, or is thrown out for the chickens and dogs, and cats, which would there be worked over for the table of the servants, or given to the poor. We are extravagant in dress. Broadcloth and silk, and Patent leather and Alexander's gloves are none to fine for daily use. We are "clothed in purple and fine linen, and fare sumptuously every day." In carpets and rosewood furniture, and lace curtains and mirrors, in carving and gilding, in equipage and grand dwellings,—in short, in whatever may contribute to physical indulgence and material show, we put little or no restraint upon our desires. And what we might, perhaps, with some show of reason do in times of peace and plenty, and low prices, we have continued to do in time of war and national distress, and the enhanced cost of living.

Now, to an outsider, this must look foolish, if not morally wrong. What if we think we can afford this high style of expenditure? Fast living is hurtful to soul and body. Frugality, temperance, self-restraint, are signs of a better character, than wastefulness and headlong self-indulgence. They are productive of truer happiness, more genuine self-respect and better health. Individual extravagance and national luxury have in all past times gone together, and are likely to do so in time to come. It is well to have an eye to the future. There may be rainy days ahead. If they come, we shall be thankful for our economy; and if they do not, it will do us no harm to have provided with habits of carefulness for every contingency.

Blackberry Wine and Syrup.

We are asked how to make blackberry wine without the addition of water to the juice, and how much syrup will be required to the gallon of juice to preserve it any length of time. These inquiries show that the writer does not make a distinction between wine and syrup. If he wishes to make syrup, the juice from the berries should stand 12 hours more or less, according to the weather, until a partial fermentation takes place, and a thick pulp coagulates and separates from the clear liquid. This pulp is removed by straining, and to the clear liquid, sugar is added in the proportion of 12 pounds to the gallon, put on the fire and allowed to come to the boil. Syrup prepared in this way will contain all the "nutritious and medicinal virtues of the fruit." In making wine from fruit juices the object of adding sugar is not to preserve the juice through the agency of the sugar, but to afford a source of alcohol. Few fruit juices, except the better kinds of grapes contain enough fruit sugar to form a sufficiently strong wine to keep without changing to vinegar, hence the addition of sugar. If sugar is added directly to the juice of blackberry, raspberry, and other of our common fruits, it forms a jelly and does not ferment, and it is accord-

ingly necessary to add more or less water. The best blackberry "wine" we ever made was in the proportion of one quart of water, one quart of juice and two pounds of sugar. There is a great misapprehension with respect to the medicinal properties of blackberry wine and syrup. Their curative effects are due to their astringency, which depends upon the tonic acid they contain. This principle is much more abundant in the root than in the fruit, and an infusion of the root, prepared as directed in July, will be found much more medicinal, though perhaps less agreeable, than the "wine" or syrup.

Bread, etc., from Wheaten Meal.

A correspondent, "Nymphca," in Yorkville, N. Y., is quite enthusiastic on the subject of bread from unbolted ground wheat, and sends not only her recipes but specimens of the articles made according to them. The preparations were sweet, light, and palatable, and would no doubt be prized by those who like articles made from wheaten meal. We give her own account of the manner of producing them:

"After all that has been said on the vexed bread question, probably many of your readers may receive with great incredulity the statement that good light, and wholesome bread can be made with simple meal and water. I believe we have spoiled our bread for the sake of having it look white. We take great pains to grind the wheat to an impalpable powder, carefully sift out those portions which conduce most to sweetness, lightness, and nutrition; and then take a vast deal more pains to put in artificial ingredients which at best but poorly restore these important qualities. If good wheat be ground coarsely (if with sharp stones the better) and not bolted, nor sifted, you can, by the following, and other recipes, make good, light bread, quickly and certainly; bread that will keep for days, and yet can be eaten hot with impunity, because it contains no unwholesome drugs or compounds.

Batter Cakes.—Stir wheat meal slowly into cold water till it is of a consistence about half way between griddle cakes and pound cake. Bake in large patty pans or small muffin rings in a hot oven 20 or 30 minutes. If wanted extra nice, use milk instead of the water.—Now please do not laugh at this recipe, nor argue against it; but try it faithfully, and if necessary, repeatedly; and do not undertake to mend it until you can make it. If the cakes do not come out of the oven as light as good wheat bread, your batter is too thick or too thin, probably the latter, or you have undertaken to bake it in a large loaf, or to mar the recipe in some other way. I prefer to use the patty pans which should not be more than $2\frac{1}{2}$ inches across the top, and 1 inch deep. If oblong, they may be 3 or 4 inches long. The fluted tins will do, and if greased with a very little sweet oil, the cakes will soon come out smoothly while hot. Some prefer to drop the batter by the spoonful on a large tin; this saves time. This bread will keep moist and tender two or three days unless it has been salted.

Sweet Batter Cakes.—Make the batter as above, sweeten to the taste (better slightly), and add a dash of cinnamon. Bake as above.

Wheat Meal Rolls.—Pour boiling water into good wheat meal. Stir with a stout spoon into a dough as soft as can be conveniently handled. Work it as little as possible, roll $\frac{1}{4}$ inch thick on a well planed board, cut into inch-and-a-half cakes with a knife or a cake cutter, and bake quickly. This does not require so hot a fire as the batter cakes. The bread is sweeter but not so porous, and will keep longer.

Boiled Pudding.—Make a dough as in the last recipe, and roll $\frac{1}{2}$ inch thick. Stir up shred apples or any slightly tart fruits with wheat meal, and a little water if necessary, and wrapping it up in the crust, turn-over fashion, put it into a bag and boil an hour. Two or three hours will improve it. Eat with sweetened cream or other simple dressing.

Wheat Meal Mush.—Stir wheat meal gradually into slowly boiling water, as for hasty pudding. Let it cook very slowly 20 minutes or more. Eat with sweetened cream. After the meal is all stirred

in, whortleberries either dried or fresh, form a charming addition. This pudding makes a palatable, cheap, and wholesome desert, which can be prepared at short notice.

Ambrosia.—Make a batter as in the first recipe, or a trifle stiffer. Grease a deep dish and spread this batter half an inch thick upon the bottom. Place upon this a layer of small fruits or tart sliced apples, with barely sugar enough to correct their acidity. Put a *very thin* layer of batter, or if the fruits are very juicy, wheat meal should have been added with the sugar, sufficient to absorb the juice in cooking; then another layer of fruit with sugar, flour, etc., covering the whole with a thin layer of batter. Bake about 1 hour in a moderate oven. The best fruits for this dish are tart cherries, blackberries, plums, and grapes. The two points to be observed are, not to let the fruits touch the dish or the surface, and not to let the juices escape in cooking. This dish is better if it ripen a day or two before it is eaten, thus permitting the fruit to permeate the cereal with its juices and aroma.

This, Mr. Editor, is my very own invention and my *chef d'oeuvre*, and as I must needs have a name for it, I have appropriated the type of all excellence among the edibles of ancient mythology."

Fly Poison—A Caution.

There are still many places where the old-fashioned fly-poison is used. Druggists sell it as "Cobalt," an incorrect name, and one which does not indicate the true character of the article, ground metallic arsenic. This when mixed with sweetened water is sure death to flies and equally fatal to people. From the many cases of poisoning of children resulting from the use of this fly-poison, we advise to discard it altogether and endure the annoyance of flies rather than risk the poisoning of children. Darkening the rooms is the best way of getting rid of flies; keep them out with millinet frames.

Sagging Doors.—After doors have been long in use, they sometimes pinch near the top, and the usual remedy is to plane them off at the sticking point. But this planing removes the paint or graining, and is a great evil. The cause of the pinch is the sagging of the door; and this comes from the wearing down of the hinges by long use. Instead of planing off the doors, a better way is to go to the tinner and get some tin or sheet-iron washers made which will just fit the central rod or pivot of the hinge. This will remedy the evil at small expense, and save the mutilation.

Hints on Cooking, etc.

Soft Sorghum Cake.—Take 3 eggs, 1 pint of sorghum molasses, 1 of sour cream, half a nutmeg, 1 teaspoonful of soda. Beat the eggs and molasses together until light, thicken with flour to the consistence of batter cake, this will be enough to fill two common sized stove pans.

Gingerbread.—Take 1 quart molasses, 1 pint lard, 2 pints very sour cream, 2 heaped tablespoonfuls soda, 2 of ginger or nutmeg, mix into a dough as soft as can be rolled; roll thin and bake.

Extra Pudding.—To 1 quart of milk add the yolks of 3 or 4 eggs, sweeten to your taste, let it first raise to a boil, (have the whites beat to a good froth) stir in the whites, then put away to cool. A pudding made in this way I think is hard to beat, and not very unwholesome.

Egg Puffs.—Take 1 pint sweet milk, 1 quart sifted flour, 2 eggs, 1 teaspoonful salt. Mix the yolks with the milk. Beat the whites to froth. Mix all together and divide into twelve earthen cups. Bake 20 minutes in a very hot oven, and eat as soon after as possible with good butter. The cups must be new, or those which have never been wet or greased. The puffs when done will slip out of the cups easily, and are served at table, bottom side up, for beauty. The cups may be cleaned sufficiently by scraping and wiping with a dry cloth. If the cups are ever wet the puffs stick.

Steamed Indian Pudding.—Mix 1 pint of buttermilk, 1 egg, 1 teaspoonful saleratus, 1 of salt, and Indian meal enough to make a stiff batter. Steam for an hour and a half and serve hot with butter and molasses, sweetened cream, or other sauce as may be desired.

To Remove Lime Spots from Cloth.—First use a stiff, dry brush to remove any adhering lime, then rub the spots with a cloth wet in cold vinegar and dry the garment.

To Prevent Stoves Rusting.—Oil them with sweet oil. This does not make a bad smell when the stoves are heated again. They should be very clean when the oil is applied. Coal-scuttles may be oiled with boiled linseed oil.

To Keep Burnished or Polished SHOVELS, TONGS, POKERS, ETC., FROM RUSTING.—A friend practises packing such things in a box, of convenient form, and covering them with quicklime, leaving room for the lime to swell in slacking, as it gradually absorbs water from the air.

BOYS & GIRLS' COLUMNS.

Notes on Getting Fire.

Who first discovered fire and its uses? No man knows. It may have been first seen bursting from a volcano; or lightning may have struck and fired a tree; quite likely the latter was the case, as it is the most common way in which fire is produced without the help of man. In some way it became known to our ancestors very early in the history of the world. We can imagine the wonder and consternation with which they for the first time saw this element devouring the solid wood, and by its strange power compelling them to keep at a respectful distance. But they soon learned to make it one of the most useful servants, and it has played a most important part in the progress and history of all nations. In these days of friction matches, we know but little of the trouble our ancestors had to keep their fire, or to produce it when extinguished. Within the recollection of many of our readers, it used to be one of the regular household duties to see that a stick of hard wood partly burned, was safely covered with ashes at night to keep it for starting with the next morning. When by neglect or accident the fire went out, a piece of steel made for the purpose was struck with a flint, and the sparks from the small bits of steel ignited, were caught upon tinder, or partly burned cotton rags, and thus laboriously and gradually the fire was again lighted. If there were no flint or steel, then one must go to the nearest neighbor for fire—no small task on a cold winter morning in a sparsely settled place. The ancients understood the art of kindling fire from the sun by means of concave mirrors, the bright surfaces of which collected many of the rays in a small spot called a focus, thereby producing intense heat. The burning glass, acting on the same principle, has long been known, and is now a convenience for travelers. Among uncivilized nations, it is still the practice to procure fire by rubbing two sticks together. A gentleman who has often seen the Indians do this, says they use a piece of hard wood about a foot long, having several holes in the side, with a small opening inclining downward from each hole. This stick is laid upon the ground and held firmly with the feet. A small stick of soft wood, with the end rounded to fit the hole in the other piece, is taken between the hands, its end introduced into one of the holes, and then it is rapidly twirled back and forth. This produces much heat and at the same time rubs off small particles from the soft stick, which become partly charred, and fall from the hole down through the small opening on to a dry leaf placed there to receive them. Quite a little pile of these bits collect upon the leaf before one ignites, and falling upon the others sets fire to them. The Indian gathers the whole together in a few leaves, swings them around, and soon has a roaring flame. This is hard work and requires much practice to succeed; our informant often tried, but was never able to produce a spark. It would require too much space to speak in this article of the invention of matches and the improvements made in them, and we reserve it for a future time.

A Boy in a Predicament.

A lady reader of the *American Agriculturist* relates the following incident which occurred to her uncle when a boy. His father kept geese, and for the accommodation of such as wanted to raise families, he built a low house or coop, into which a goose could comfortably enter and occupy her nest. On one occasion a motherly goose had been sitting several days on a nestful of eggs, when little Joshua, then about five years old, wanted very much to

know what progress she was making. Accordingly he lay down before the entrance, and began to introduce his head, but Madam Goose indignant at this intrusion into her private room, made a snap at him, and caught him by the nose! Joshua screamed and struggled, but the old goose held on, and the gander who was not far off, hearing his mate's voice, came flying to the rescue, and mounting on Joshua's back, began giving him an unmerciful drubbing with both wings. The noise brought Joshua's mother to the scene of conflict, and she pulled him away, but the goose held on so tightly that when released, his nose was completely skinned. After he was gawfed, Joshua used to relate this story to show that it is safest for one to keep his nose out of other people's business.

A Proper Musical Instrument.

A certain Presbyterian clergyman in Scotland, many years ago, was very fond of music, and frequently amused himself with playing on his violoncello, on which he was a fine performer. Some staid members of his parish were shocked to hear of what they thought such profane recreation, and appointed a committee to visit and talk with him on the subject. The committee called, and their spokesman after some hesitation, stated what they had heard, that he played on the fiddle, and asked if it were true. "Certainly," replied the minister, "I have what you call a fiddle, which I will show you," and bringing it out he tuned it and at once commenced playing. He went through several favorite national airs, struck off into lively reels and jigs and brought out such sprightly music, that even the committee could scarcely keep their feet still under them. The interview closed without much further being said on the evil of music; they were nearly converted to the minister's faith, that there is a time for such enjoyment. Returning to the meeting which had appointed them, the spokesman, who himself had not been opposed to the music, but had gone to please the people, reported as follows: "Sure friends ye ha'e nae occasion to fash yer selves abune the Dominie's fiddle, for its nae a wee ungodly fiddle, but an unco great gospel fiddle!" with which diplomatic report the people were entirely satisfied, and the minister was left to enjoy music without any further molestation.

President Lincoln's Sympathy.

The following incident related in an exchange paper, well illustrates our late President's natural kindness of heart. A woman in a faded shawl and hood, somewhat advanced in life, was admitted in her turn to the President. Her husband and three sons, all she had in the world, enlisted. Her husband had been killed, and she had come to ask the President to release to her the oldest son. Being satisfied of the truthfulness of her story he replied, "Certainly, if her prop was taken away she was justly entitled to one of her boys." He immediately wrote an order for the discharge of the young man. The poor woman thanked him very gratefully, and went away. On reaching the army she found that this son had been in a recent engagement, was wounded, and taken to a hospital. She found the hospital, but the boy was dead, or died while she was there. The surgeon in charge made a memorandum of the facts upon the back of the President's order, and almost broken-hearted, the poor woman found her way again into his presence. He was much affected by her appearance and story, and said, "I know what you wish me to do now, and I shall do it without your asking. I shall release to you your second son." Upon this he took up his pen and commenced writing the order. While he was writing, the poor woman stood by his side, the tears running down her face, and passed her hand softly over his head, stroking his rough hair, as I have seen a fond mother do to a son. By the time he had finished writing, his own heart and eyes were full. He handed her the paper. "Now," said he, "you have one and I one of the other two left; that is no more than right." She took the paper, and reverently placing her hand again upon his head, the tears still upon her cheeks, said, "The Lord bless you, Mr. President. May you live a thousand years, and may you always be the head of this great nation!"

The Hurt Chicken.

A lady subscriber to the *American Agriculturist* writes: "We have an old hen whose name is 'Pat.' She is not a Hibernian, for eight years ago she was one of a large brood of chickens in our own yard. I was ill at the time, and when the chicken was half grown, she persisted in coming to the outside door of my room, and seating herself gravely upon the door sill. She had a singular resemblance to a Partridge, and we gave her that name—now, it is plain 'Pat.'"

"This morning one of the boys came in with one of Pat's chickens in his hands. 'See here Mother, this poor little chicken has its leg broken.' Some one else sug-

gested that it was the work of 'Old Gobbler'—he had been trying to frighten Pat out of her senses early this morning, and had actually dragged his wings over the poor old mother hen. The kitten lay asleep in the rocking chair, and the children put the lame chicken in its soft warm fur, where it remained quite contented a short time. Soon, however, it began to scream, and I advised the boys to go out and kill it. 'I can't do it,' replied the eldest—and as he never refuses to do as he is requested, I did not insist. I turned to his brother, saying, 'You had better go with it I guess.' It went against him but he bravely took the little thing and went out and put it out of its pain—came back with tears in his eyes, and sat down and wept. I am sure you agree with me, Mr. Editor, that those tears were an honor to him, and not—as some boys of eleven would have thought—a sign of a weak, unmanly spirit. Our dear, departed President, could never have been—I am sure—a cruel, selfish boy; had he been this, he could not have exhibited such sorrow and compassion over the sins and suffering of even his enemies, and never would a vast Nation so have mourned his loss."

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the July number, page 223. No. 161. *Curious Numbers.*—FIVE; take away the three letters, F, I, E, and V or five remains.—2d. SIX; take away S, and IX, or nine remains; take away S, I, and X or ten remains... No. 162. *Illustrated Rebus.*—Lettuce awl key pup in d pen dents day in on r of trees on s over throw; or Let us all keep up Independence day in honor of treason's overthrow... No. 163. *Conundrum.*—A General Grant o. America... No. 164. *Word Rebus.*—Wood ewn bee re specked ed dew ewer whole dew tea; or Would you be respected, do your whole duty... No. 165. *Illustrated Rebus.*—Awl on R tooth e boys in blue hoof ant and one in f reed u m caws; or, All honor to the boys in blue, who fought and won in freedom's cause... No. 166. *Conundrum.*—The Black Warrior... No. 167. *Puzzling Sentences.*—1st. A Chinese found a charrn under a chuff covering. 2d. You try to tease in vain; I am too used to it. No. 168. *Clock Problem.*—48 96-143 minutes past eight o'clock... The following have sent in correct answers up to July 8th. P. L. Vancel, 156; "Compo," 158; Solomon C. Minor, 156, 159; Clarkson Johnston, 159; J. T. Avery, 161, 162, 165; H. Besthesto, 161; Geo. R. Clark, 162, 165; George E. Pomeroy, Jr., 162, 165; Richard H. Bosworth, 165; R. G. Weeks, 165; W. C. Stone, 163, 166.

New Puzzles to be Answered.

No. 169. *Prolific Word.*—From the letters of what single word can the following sentence be made? "Ned and I ran in a barn and a bear ran near a drain, and I bade Ned ride?"



No. 170. *Illustrated Rebus.*—Good advice for the times.



No. 171. *Wire Puzzle.*—This puzzle is made of three or four pieces of wire linked together as shown in the engraving, and a ring slipped on as represented. The puzzle is to get the ring off without breaking or separating the wires. It will be good amusement for a leisure hour to make and then solve the puzzle.



No. 172. *Illustrated Rebus.*—Especially for the boys.

No. 173. *Charade.*—Contributed by Jas. E. Wilkey, Lake Co., Ill. I am composed of 24 letters. My 23, 4, 19, 17, 7, 11, was a mythological deity. My 7, 3, 12, 20, 5, 17, 14, was a learned Frenchman. My 1, 17, 5, 20, 18, 24, is always in a city. My 2, 6, 14, 21, 15, 11, 13, is an inhabitant of the sea. My 2, 12, 5, 5, 6, 14, is a tool much used in carpentry. My 7, 15, 9, 6, abounds in the Southern swamp lands. My 13, 7, 22, 23, 19, 5, 22, 18, 18, 23, are very useful to farmers. My 9, 12, 14, 4, 16, 9, 4, 23, is a city of South America. My whole is what every farmer will find it very pleasant and profitable to have.



Who are the Benevolent?

"What a charitable little girl," say you, on looking at this picture. Perhaps so; may be not—though on a second look at her kind, pitying face, we judge she is benevolent. A lad we once knew was very fond of giving to the poor, and to every good object, provided his father supplied him with the money. Of course everybody who saw him frequently contributing, thought him a very loving, kind-hearted boy. But when his father suggested that he should save part of the money he had earned by weeding in the garden, to give it to a poor boy to buy shoes, so that he might go to school, this charitable appearing boy was unwilling to part with a single penny for that purpose. He wanted his money to spend for himself. We have often seen men subscribe liberally for public objects, where all their neighbors would know it and praise them for it, who would never have given a dime to the most worthy charity but for the praise they expected to receive. So you see a person may give much and often, and at the same time be very selfish. Now, suppose the little girl in the picture to have been eating some very nice cake, made for her by her mother, and the poor homeless, ragged boy wandering away from the city to seek a living among kind hearted farmers, to have passed along just then, and the little girl pitying him to have given up part of her own sweet morsel, that would surely be charity. Whoever is willing to deny himself for the sake of bestowing good upon others, is truly benevolent. And it is most true, as we wish all our young readers to experience for themselves, that there is greater and more lasting happiness in pleasing and benefiting others, than in enjoying good things by ourselves. This lesson most of all others needs to be learned, for the world is full of selfishness and its fruits of suffering. When all have learned it by heart, and practise it, this world will be very much like Heaven, where love reigns.

Arkwright and the Spinning Jenny.

Sir Richard Arkwright, of England, the inventor of the spinning jenny, was originally a poor barber, occupying a cellar, where his sign "Come to the Subterranean Barber, he shaves for a Penny," attracted a good run of custom. He afterward reduced the price to a halfpenny on account of opposition by his brethren in the trade. But he was not content with shaving for a living, and spent so much time contriving machines and making models, that his regular business suffered. One day his wife being angry at his neglect to provide for his family, destroyed some of his models, which for a long time prevented Arkwright from indulging in his passion for invention. He next gained a livelihood by buying and selling hair, having a secret process for dyeing it to required shades. This business led him to travel considerably through the country. At that time cotton fabrics were spun and woven by hand by the cottagers. One weaver could keep many employed in carding and spinning the weft or cross threads of the goods; the warp or long threads were of linen, furnished to the weavers by the large dealers. It was difficult to get enough weft spun to keep the looms going, and it was a

common thing for the weaver to walk several miles in a morning, and to call on a number of spinners before he could get enough for the remainder of his day's work. Arkwright noticed this, and set his inventive brain to work to remedy it. He had the idea that spinning could be done by means of two rollers, one of which revolving much faster than the other, would draw the twisted threads exactly as had been done by hand labor. He accordingly employed a watchmaker named Kay, to make a small model for the purpose. Then he applied to a machinist to make a working machine on the plan, but Arkwright being poor and the success appearing doubtful, he hesitated, but at last agreed to let the watchmaker have two of his men to assist, and the first spinning jenny was finally constructed by them. It was found to work well, improvements were added to it, and before long Arkwright had little difficulty in securing all the money needed to carry on the manufactory—so true is it, that the first starting of every new enterprise is always the

most difficult part of the work. The invention completely revolutionized cotton manufacture, and besides enriching the inventor, it has contributed very largely to the wealth and importance of Great Britain, and to the comfort of the whole civilized world. Cotton fabrics, formerly worn only by the rich, are now easily obtained by all. The first machine of Arkwright is preserved in the Patent Museum, at South Kensington, in London.

The Old Flag in Baltimore.

A gentleman relates the following incidents which came to his knowledge in Baltimore. During the "dark days" just after the attack on the Massachusetts soldiers, the mob would allow no American Flag to be displayed. The last one (they thought) was torn down from an office in one of the principal streets, amid the brawling shouts of drunken ruffians, the helpless indignation of Union men and the tears of patriotic women who witnessed its desecration. The next morning, however, the mob were exasperated by the sight of the glorious but hated emblem hanging from an upper window of an old lady's house. Gathering beneath it they shouted, "Take in that flag!" "Down with that rag!" Presently the owner appeared. "Away with that flag!" they repeated.—"What flag?" asked the old lady.—"Up there in your window," was the reply. "That's my bed quilt," said she. "It's a pity if an old woman can't air her bed clothing without being molested," and shaking it out of the window she showed a bed quilt with a flag worked in each corner. Rough as they were, they were completely shamed out of thoughts of violence, and so every morning, the bed quilt was duly hung out to be aired! The gentleman who related the incident to the writer endeavored to secure the quilt for the Sanitary Fair at Brooklyn, but parties in Baltimore were ahead of him, and it was exhibited and sold there for the benefit of the soldiers.—During the same period, an aged resident of Baltimore called on a Union man and said he earnestly desired, if possible, to look upon the old flag. Come with me and you shall be gratified, said his friend. He conducted the old gentleman to his mill on the suburbs of the city, and taking him to an upper story handed him a spy-glass, saying, "There it is on old Fort McHenry." Soon the aged man descried it in the distance, and gazed long and earnestly, stopping occasionally to wipe away the tears of emotion which flowed freely; and after that every day he walked over a mile to enjoy the privilege of looking upon the Star Spangled Banner, until it was again restored to honor throughout the city, never we trust to be displaced. It is an interesting fact that the national song, "The Star-Spangled Banner," was at first written in connection with this same fort.

Good and Bad Apples.

One day Robert's father saw him playing with some boys who were rude and unmannerly. He had observed for some time a change for the worse in his son, and now he knew the cause. He was very sorry, but he said nothing to Robert at the time. In the evening he brought from the garden six beautiful, rosy-cheeked apples, put them on a plate, and presented them to Robert. He was much pleased at his father's kindness, and thanked him. "You must lay them aside for a few days that they may become mellow," said his father. And Robert cheerfully placed the plate with the apples in his mother's storeroom. Just as he was putting them aside, his father laid on the plate a seventh apple, which was quite rotten, and desired him to allow it to remain there. "But father," said Robert, "the rotten apples will spoil all the others." "Do you think so? Why should not the fresh apples rather make the rotten one fresh?" said his father. And with these words he shut the door of the room. Eight days after he asked his son to open the door and take out the apples. But what a sight presented itself! The six apples, which had been so sound and rosy-cheeked, were now quite rotten, and emitted a bad odor through the room. "Oh, papa!" cried he, "Did I not tell you often that the rotten apple would spoil the good ones? yet you did not listen to me."—"My boy," said his father, "have I not told you often that the company of bad children will make you bad, yet you do not listen to me. See in the condition of the apples that which will happen to you if you keep company with wicked boys."—Robert did not forget the lesson. He remembered the rotten apples, and kept apart from the rude sports of his former playmates.

A German Tradition.

The picture below illustrates the following story. A rich German built for himself a large and splendid castle on a hill overlooking the surrounding country. He owned the land as far as he could see from the top of his highest tower, all except one little cottage surrounded by about an acre of ground, in which lived a very old woman. She had been a nurse in his father's family, had helped to rear him, and this place had been given to her for a home by the former lord. As we said before, the new lord was very rich; but he was also vain, ambitious and selfish. When friends came to visit him he would take them to the top of the castle and proudly point out his vast estate. "All this I own, as far as you can see," he would say, and then added in a lower tone, "all but that little spot where the cottage stands;" and whenever he said this, he felt angry that this was not in his possession. He tried to buy it from the old woman, but she had lived there long, was very comfortable, and would not part with it. Finally, this ungrateful and wicked man determined to get rid of her at all hazards. He therefore hired one of his servants to accuse her of being a witch, and of bewitching his master's cattle. The poor old woman was brought before the lord, who was the magistrate of that part of the country, a mock trial was had, and she was sentenced to have her place sold, and to be banished three leagues from the place. Then, of course, he bought the coveted land and cottage for almost nothing, and the old woman was driven off. As she was leaving the place she uttered fearful curses upon her oppressor, and concluded by saying, "You covet to have all your eye can



see, and to have your mark upon the whole land; your eye shall turn to stone, and your mark shall be branded upon the hill, so that men shall shun the fearful spot where an ungrateful wretch robbed his old nurse of her last comfort." Within a year after a fearful storm burst upon the place. Lightning struck the castle, rending its walls and killing the cruel lord and all his family, and what is most wonderful, the ruins were left in such a way that the old woman's curse was fulfilled, and now if you will study the picture carefully, you may see the eye of the lord turned to stone, and his mark upon the hill.

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Commercial Notes—Prices Current.

New-York, July 19.

The condensed and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the daily notes of our own reporter.

Table with columns for Receipts and Sales of Flour, Wheat, Corn, Rye, Barley, and Oats. Includes sub-sections for comparison with same period at this time last year and exports from New-York, January 1 to July 15.

Gold closed last month (June 20) 139 1/2, and on the 18th inst., 143 1/2. General business has exhibited much more animation since our last, especially in the line of domestic produce, receipts, and sales of the leading kinds of which have been quite extensive, but at reduced and irregular prices. Breadstuffs have been more freely purchased for home use and export. Receivers have met the foreign demand readily from day to day. Early in the month the course of prices was downward. Within the past week or ten days, the arrivals from the interior have been comparatively moderate. Holders have been less eager to sell, and prices have rallied considerably. During the past day or two the export inquiry has fallen off again, and the market closes tamely and heavily for flour, wheat, and corn. In the provision line, the main business has been transacted by speculative operators, and prices have rapidly advanced for hog products, which have attracted most attention. In Cotton there has been greatly increased activity both in receipts and sales, and prices have improved moderately, closing, however, in favor of purchasers. Wool has been in much better request, and within a week or two has risen 3c to 5c per lb., closing buoyantly. No considerable receipts or sales of the new clip have been reported. Manufacturers complain that they are unable to pay the rates asked by holders in the interior, in view of the prevailing prices for woolen goods. Hay has been more abundant and in moderate request, closing at 90c @ \$1.10 for old North River bale, and 68c @ 75c for new crop, per 100 lbs. Hops have been more sought after, mainly for export, at irregular quotations. Seeds have been quiet and depressed. Tobacco has been in good demand, partly for export, at, however, reduced prices.

CURRENT WHOLESALE PRICES.

Table of current wholesale prices for various commodities including flour, wheat, corn, rye, barley, oats, and other agricultural products, with prices listed for June 20 and July 19.

New-York Live Stock Markets.

BEEF CATTLE.—The average weekly receipts of beef cattle for the four weeks ending July 18, is 5146, against 4867 for the previous month. The receipts have been

pretty uniform, and prices, though though they have been considerably lower, at the date of our report are little changed. Good to prime fat bullocks, sell at 16c @ 17c per lb., for the estimated dressed weight; common to fair, 14c @ 15c, and poor to medium 12c @ 13c. The government are still supplied with about 50 head weekly.

MILK COWS.—The average weekly receipts are 98. There is little activity in the trade and prices range from \$40 @ \$60 each for poor to good milkers. Fancy cows sell much higher.

VEAL CALVES.—The average weekly arrivals of veals since our last report is 2113, compared with 3656 for the previous four weeks. Prices range at 7c @ 11c per lb., live weight for poor to good qualities.

SHEEP.—The market has been abundantly supplied with sheep, for some weeks past, and prices are lower, good sheep selling at 6c @ 6 1/2 c per lb., live weight. Lambs are not plenty, and prices are still high. Fair to good lambs selling at \$5 @ \$7 per head.

LIVE HOGS average weekly since our last report 10,581. Prices have ranged comparatively low, until this week, and as there is a scarcity, rates have advanced to 12c @ 12 1/2 c per lb., live weight. A full supply would again bring them down to our previous figures.

Agricultural Fairs, etc.

We give herewith a list of all the fairs of which premium lists have been received, and of others so far as we can learn about the time of, and place of exhibition. We must depend upon our readers to send us information before Aug. 10th, to enable us to furnish a full list for our September number.

STATE FAIRS.

- List of State Fairs including Delaware Horticultural Society, Illinois, Chicago, Indiana, Fort Wayne, Iowa, Burlington, Michigan, Adrian, New York, Utica, Albany, and Ohio, Columbus.

COUNTY FAIRS.

- List of County Fairs including Delaware Co., Ohio, Delaware, Sept. 26th-28th; York Co., Maine, Saco and Biddeford, Oct. 10-12; Worcester Co., Mass. Horticultural Society, Sept. 19-21-22; Fairfield Co., Conn., Norwalk, Sept. 27th-30th; Ed-winn Hoyl, New Canaan, Sept. 26th-28th; Cattaraugus Co., N. Y., Little Valley, Sept. 26th-28th; Chautauque Co., N. Y., Sept. 5-6-7; Dutchess Co., N. Y., Poughkeepsie, Sept. 26th to 28th; Jefferson Co., N. Y., Watertown, Sept. 5-6-7; J. Stears, Jr., Secretary; Oxford, Chenango Co., N. Y., Sept. 25th-27th; Putnam Co., N. Y., Carmel, Sept. 13-14-15; C. M. Belden, Secretary; Queens Co., N. Y., Flushing, Oct. 4-5; Saratoga Co., N. Y., Saratoga Springs, Sept. 5-8; J. A. Covey, Secretary; Susquehanna Valley, Otsego Co., Unadilla, N. Y., Sept. 21-22; Robt W. Courtney, Sidney, Secretary; Ulster Co., N. Y., Kingston, Sept. 20-22; Burlington Co., N. J., Mount Holly, Oct. 3-4; Geo. C. Brown, Secretary; Bucks Co., Pa., Newtown, Sept. 26-27; James B. Lambert, Secretary; Mt. Pleasant, Pa., Equitable Agricultural Association, at Hickory, Sept. 27-28; Geo. Buchanan, Secretary; Belmont Co., Ohio, Belmont, Sept. 19-20-21; A. P. Miller, Secretary; Genesee Co., Mich., Flint, Sept. 27-28-29; F. H. Rankin, Secretary; DeKalb Co., Ill., DeKalb, Sept. 27-29; S. O. Vaughn, Secretary; Kankakee Co., Ill., Kankakee, Oct. 4-6; Emory Cobb, Pres.; Madison Co., Ill., Edwardsville, Aug. 29, Sept. 1; Edward M. West, Secretary; Mercer Co., Ill., Millersburg, Sept. 26-23; J. E. Bay, Secretary; Montgomery Co., Ill., Hillsboro, Oct. 11-13; Richland Co., Ill., Olney, Sept. 28-30; J. W. Beck, Secretary; Clinton Co., Iowa, Lyons, Sept. 12-13-14-15; Wm. W. Sanborn, Secretary; Lambton, Sarnia, C. W. Oct. 5; E. Watson, Secretary; Victoria, C. W., Lindsey; Hampshire, Franklin, and Hampden, Mass., North Hampton, Oct. 5-6; A. P. Peck Secretary; Laporte Co., Ind., Laporte, Sept. 27th to 29th.

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Advertisements, to be sure of insertion, must be received BEFORE the 10th of the preceding month.

N. B.—No Advertisement of Patent Medicines or secret remedies desired. Parties unknown to the Editors personally or by reputation, are requested to furnish good references. We desire to be sure that advertisers will do what they promise to do. By living up to these requirements, we aim to make the advertising pages valuable not only to the readers, but to the advertisers themselves.

TERMS—(cash before insertion):

One Dollar per line, (14 lines in an inch), for each insertion. One half column (74 lines), \$20 each insertion. One whole column (148 lines), \$35 each insertion. Business Notices, One Dollar and a Quarter per line.

\$100

FOR A FROG.

One Hundred Dollars in United States greenbacks will be given for the largest Frog found in the "Grand Exhibition of Bull Frogs." For full particulars see the July number of "THE FUNNIEST." This number will be mailed to parties on the receipt of fifteen cents.

Address J. M. SHEICK, "FUNNIEST OFFICE," 39 & 40 Park Row, New York. Ten other premiums ranging from \$20 downward will be paid for prize Bull Frogs. "THE FUNNIEST" can be had of all newsdealers. Send your orders in advance.

Vegetable Seeds,

For Sowing in August and September.

The following varieties will be mailed post-paid, to any address in the Utoola upon receipt of the price affixed.

Table of vegetable seeds including Radish, Lettuce, Spinach, Kale, Cabbage, Cauliflower, and others, with prices per ounce and pound.

The above varieties of Cabbage and Cauliflower are extensively grown by Market Gardeners near our large cities. The seed may be sown in September, and planted out thickly in cold frames, and protected during winter by shutters. Transplant early in spring and they will be ready to cut in June and July. Address B. K. BLISS, Sprtngfield, Mass.

Sheffield Scientific School of Yale College.

Courses of Agricultural Instruction, including the Practice of Agriculture and Horticulture, Agricultural Chemistry and Physiology, Principles of Breeding and Feeding, Injurious Insects, Rural Economy, Forestry, French and German Languages, &c., &c. Open Sept. 13th, 1885. For detailed Programme, apply to Prof. GEO. J. BRUSH, New Haven, Conn.

SUPERIOR FARM LAND.—20,000

Acres, Fraoklin Tract, at Newfield, Gloucester County, New Jersey, on the Railroad running from Philadelphia to Cape May, 30 miles South of Philadelphia—adjoining the Vineland Tract, and 2 miles North of the Vineland Station—for sale at low prices and on easy terms, in lots to suit purchasers. Circulars with reports of Solon Roblosso, Hoo. William Parry, and others, with full information, sent to applicants, free. Address JOHN H. COFFIN & CO., Newfield, Gloucester Co., N. J. Improved Farms also for Sale.

JARRATT'S HOTEL,

PETERSBURGH, VA., JAMES H. PLATT, JR., Proprietor.

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Destroys Flies instantly, and is not liable to be mistaken for anything else. Is easily prepared and used, and does rapid execution. Each sheet will attract and kill a Quart of Flies—and promotes quiet in reading, peace while you eat, and the comforts of a nap in the morning. Sold by all Druggists.

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Set in Patent Protector and Galde. For sale by JOHN DICKENSON, Patentee and Sole Manufacturer, and Importer of Diamonds for all Mechanical purposes. Also Manufacturer of Glaziers' Diamonds, No. 64 Nassau-st., New-York City. Old Diamonds reset. N. B.—Send postage stamp for Descriptive Circular of the Diamond Dresser.

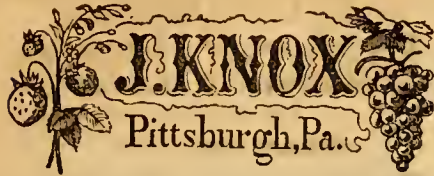
Evarts Tree Protector.

Perfect protection against insects. Town, County, and State Rights for sale at low prices. DAVID LYMAN, Middlefield, Conn.

PHOTOGRAPHS OF PREMIUM CHESTER White Flgs. Price 50 cents each. Sent by mail, Address N. P. BOYER & CO., Gum Tree, Chester Co., Pa.

THOROUGH-BRED Alderneys and Ayrshires for sale by A. M. TREDWELL, Madison, Morris Co., N. J.

BASHFULNESS.—HOW TO OVERCOME IT. See PIRENOLOGICAL JOURNAL. Jan. No. 20. Cts. FOWLER & WELLS, 839 Broadway, New-York.



The July Edition of our Catalogue is now ready, and will be sent to all applicants enclosing 10 cts.

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Box 155, Pittsburgh, Pa.

GRAPE VINES.

Adirondac, Earliest and best Native Grape,
25,000 Vines, 1, 2 and 3 years.
5,000 do **Delaware**, 1, 2 and 3 years.
2,500 do **Iona**, 1 and 2 years.
2,000 do **Isaella**, 1 and 2 years. Also

A Superior Stock of the following :
Allen's Hybrid, Rogers' Hybrids, Creveling, Concord, Hartford Prolific, Rebecca, Union Village, Northern Muscadine, Maxatawny, Cayahoga, Telegraph, Miles, Teddo, &c., &c.
Priced Trade Circulars, and Descriptive Circular forwarded on application.
JOHN W. BAILEY,
Pittsburgh, Clinton Co., N. Y.

THE NEW PRIZE STRAWBERRY "RIPPOWAM."

A Seedling raised by JAS. W. FAULKNER, Stamford, Conn., having been thoroughly tested, the plants are now offered for sale. As a solid marketable berry, it is unsurpassed; enormous in size, twelve berries weighing a full half-pound, sweet, rich and spicy in flavor, of a bright red color, growing upon long stems and rivaling the "Wilson's Albany," in its prolific bearing; foliage large, plants vigorous and hardy. All orders sent to the Stamford Nursery, Stamford, Conn., will receive prompt attention, if accompanied with the money. Price two dollars per dozen.

The Great Agriculturist Strawberry.

Five plants of this superb fruit, \$1 per dozen; \$5 per 100; \$25 per 1000; with all other superior sorts, the best collection in the country. Agents Wanted. Catalogues ready.
B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

The Philadelphia Raspberry.
Wilson's Early Blackberry.
Best Selected Strawberries.

Fruit and Ornamental Trees, Vines, Asparagus and Rhubarb Plants. Send for Catalogue gratis.
WILLIAM PARRY, Cienaminson, N. J.

To Agents and the Trade.

My Autumn Catalogue is now ready, with great inducements to Agents. B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

Thirty acres strawberries, including the new sorts
Agriculturist, Russell, French, &c., at the lowest advertised rates, and charges pre-paid. Agents wanted. Circulars, Handbills, &c., sent on application. A. M. Perdy, So. Bend, Ind.

THE HOG BREEDER'S MANUAL sent to any address free of charge, every farmer should have it. Address N. P. BOYER & CO., Gum Tree, Chester Co., Pa.

Webb South Down Sheep.

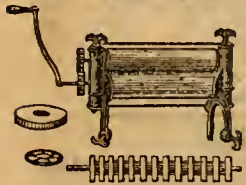
I have now ready for sale and rent 30 rams. For sale a few yearling and older ewes, also ram and ewe lambs, quality surpassed by none. J. C. TAYLOR, Holmdel, N. J.

PERSONS WISHING TO GET THE BEST breed of hogs in the United States, please Address
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BONE DUST.

For Pure, Fresh Bone Superphosphate of Lime, and fine Ground Bones Dust, Wholesale or Retail.
Address A. LISTER & BRO.,
CERES BONE MILLS,
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PATENT CORK ROLLS!!!



THE PEOPLE'S CLOTHES WRINGER

Covered with Beautiful White Duck, the Best the cheapest, and most durable. Cork Rolls, Cog Wheels, Galvanized Iron Frame. Depot of the Company 494 Broadway, New York. Price \$8.00. Agents and Shippers liberal deal with. Send for Circular.

PREMIUM CHESTER WHITE PIGS for Sale.— Sent by Express to all parts of the United States. For Circulars and Prices, Address N. P. BOYER & CO., Gum Tree, Chester Co., Pa.

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The undersigned pay their particular attention to filling orders for

Rosin, Palm Oil, Soda Ash, Sal Soda, Caustic Soda, Indigo, &c. Consignments of Tallow, Grease, and General Western Produce promptly sold by

ABRAM KNIGHT & SONS,
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made of the celebrated, strong, tenacious clay of Woodbridge, N. J., burned with intense heat over the Fire Brick, in Fire Brick kilns, and sold at moderate prices, as the clay must be removed from over valuable beds of the best White Ware, and Fire Brick clay. Also double glazed Stone Ware Pipe, with collars for making water-tight pipe to conduct pure water free from rust and poison. Stove Linings and Fire Brick, &c., &c., of best quality. Shipped by Railroad or water direct from Factory, on Ship Channel of Raritan River, 27 miles from New York City.
CROSSMAN BROS. & CO., Woodbridge, N. J.



TAXIDERMISTS' MANUAL,

GIVING full instruction in Skinning, Mounting and Preserving Birds, Animals, Reptiles, Fishes, Insects, Eggs, Skeletons, &c. Sent by mail, postpaid, on receipt of \$1.00.

Address S. H. SYLVESTER, TAXIDERMIST,
Middleboro', Mass.

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Ready August 15, will contain a full exposure of all Traps and Rascalities of the great city. Numerous illustrative engravings, over 100 large 12 mo. pages, only 25 cents a copy. Full exposures will be found of the thousands of traps set for the unwary, the tempting baits held out to lure to destruction, and everything that any one should know to guard against the dangers of the city. It also contains full and complete exposures of all the swindlers carried on through the mails, items of interest about swindlers, how they carry on their operations, real and fictitious names, cuts, dodges, how people are gulled and how sharpers are sometimes caught in their own traps. Many months have been spent in collecting the facts contained in this book, and it is the most interesting and valuable work of the kind ever issued. Sold by all booksellers and news-men, or sent post-paid for 25 cents. \$2 per dozen, post-paid. J. C. HANEY & CO., Publishers, 109 Nassau-st., N. Y. Send in your orders early so as to get early copies.



INVALID'S TRAVELING CHAIRS,

for in or outdoor use. Prices, \$20 to \$50. Those like the cut, \$25 to \$35, light and strong. Can be propelled by the hands—PATENT CATERING HORSES, for outdoor exercise and amusement. Every boy and girl wants one, prices \$12 to \$25. Send stamp for circular. Children's Carriages, Horse Rocking Chairs, etc.
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Help for Mothers.

Dr. Brown's BABY TENDER relieves the mother, pleases and benefits the child. Is giving universal satisfaction. See full description and Mr. Judd's endorsement in *Agriculturist*, Dec. No., 1864. Send for Circular to J. T. ELLIS, 939 Broadway, New York City.

India Rubber Gloves

are an invaluable protection for the hands in Gardening, Housework, etc., and a certain cure for Chapped Hands, Salt Rheum, etc. Sent by mail on receipt of \$1 50 for Ladies' Sizes; \$1 75 for Gentlemen's, by
GOODYEAR'S I. R. GLOVE MFG CO.,
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\$275. SEVEN OCTAVE. \$275. ROSEWOOD PIANO-FORTES.

GROVSTEEN & CO., 499 Broadway, N. Y. New, enlarged Scale Piano Fortes, with latest improvements. Thirty years' experience, with greatly increased facilities for manufacturing, enable us to sell for CASH at the above unusually low price. Our instruments received the highest award at the World's Fair, and for five successive years at the American Institute. Warranted five years. Terms net Cash. Call or send for descriptive circular.

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GROVER & BAKER'S HIGHEST PREMIUM



ELASTIC STITCH AND LOCK STITCH SEWING MACHINES,
495 BROADWAY, NEW YORK.



Simple, Strong and Durable,
And unapproachable for speed, power and effectiveness of operation. **PRICES REDUCED.**
Dealers Supplied. Send for free Circular to
OARLEY & KEATING, 184 Water-st., New-York.

Lock Stitch Sewing Machine,
For Families and Manufacturers.



THE HOWE MACHINE CO.,
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WHAT MATCHLESS BEAUTY

Lingers on every glossy wave and ripler of her lovely hair.

IVINS' PATENT HAIR CRIMPERS,



For crimping and waving Ladies hair. No heat used, and no injury to the hair.

They are put up in beautifully lithographed boxes containing one set (1 doz.) assorted lengths, with full directions for use accompanying each box.

No Lady's toilette is complete without them. For sale throughout the country. Retailers will be supplied by any first-class Jobber of Notions in New York, Philadelphia, or Boston.

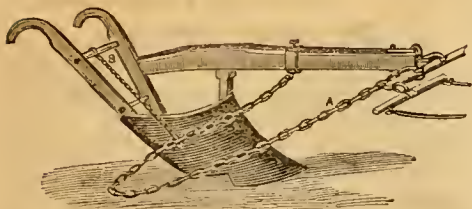
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For Merchants, Druggists, Hospitals, small Job Printers, &c. Address ADAMS PRESS CO., 26 Ann-st., New York. Specimen Sheets of Type, Cuts, &c., Six cents.

KILMER BROS.

Device for Plowing-in Corn-stalks, Weeds, Stubbles, &c.



"Saw it operate on a heavy growth of standing Broom-corn stalks, in Schoharie Valley, N. Y. It worked admirably, covering every particle in the furrow."—H. E. ANSELL, Schoharie Union, N. Y., Mr. HALLENBECK, Farmer, Schoharie, N. Y.

"We witnessed a trial of "Kilmer Bros. Attachment," on a piece of Broom-corn stalks, a large portion of which were lying on the ground. A perfect success. The farmers interests advanced."—L. SANFORD, Ex-Judge, Wm. H. DAVIS, Esq., Schoharie, N. Y.

"The action of the main chain when properly attached, and regulated by the smaller guide chain attached to the plow handles, seemed so to act as to completely sweep under the furrow all standing grass, stalks, or stubble, while the fixtures are extremely simple and easy of application."—Extract Report American Institute Farmer's Club, N. Y.

"The Invention was tried in a field on the Troy Road, N. Y., July 7, 1865, and worked perfectly."—Evening Journal, Albany, N. Y.

"A trial of the Machine took place to-day, on a piece of ground overgrown with weeds fully five feet high. All entirely covered."—Albany Argos.

"We saw it operate on a field thickly covered with a rank growth of weeds. Its success was complete."—Country Gentleman, Albany, N. Y.

"We recently saw it tested on Long Island, N. Y., in plowing weeds, and it operated in a most successful manner."—S. E. TOON, American Agriculturist, N. Y.

For further particulars, Address

J. & L. KILMER, Barnerville, Schoharie Co., N. Y.

See Editorial remarks on page 244 of this number.

Important to Farmers DEIHL SELECT WHEAT.

READ THE FOLLOWING CERTIFICATE.

"The undersigned, farmers of DeKalb Co., Ind., after a full and satisfactory trial of DEIHL SELECT WHEAT, certify that it is a beautiful WHITE WHEAT, ripening fully as early as the MEDITERRANEAN or other RED wheat, equally hardy, withstands the ravages of all insects quite as well, and yields at least one third more to the acre. It is a smooth wheat, the straw short and stiff, standing up remarkably well, and is an entirely distinct variety from any other with which we have ever met, and by far the best and most profitable to raise.

Geo. EGEW, JEREMIAH LEWIS, JNO. MCCURDY, ADRAHAM OCKEE, NOAH SHOWALTER, and others.

Per sale in sacks of 2 bushels each, at \$6 per sack, or in bushels of 3 1/2 bushels, at \$10 each, by

A. M. HALSTED, 67 Pearl-st., New York.

F. BISSELL, Toledo, Ohio,

and by the subscribers,

T. J. & J. T. SHELDON, Cleveland, Ohio.

Seeds for Fall Sowing.

Early White and Red Top Strap Leaf, Yellow Stooe, Yellow Aberdeen, Orange Jelly, or Goldea Ball, Cow Horn (excellent for stock), Ruta-Baga, and several other kinds of Turnip seed, at 10 cents per ounce, 30 cents for four ounces, \$1 per pound. Siberian Kale, 20 cents per ounce, \$2 per pound. American Round Leaf Spinach, four ounces, 25 cts., per pound, 80 cents. Brill's true Early Wakefield Cabbage seed, 75 cents per ounce, \$10 per pound. Improved Lettuce, Simpson's Silesia, Butter, and Hardy Green at 40 cents per ounce, \$4 per pound. Any of the above sent post-paid by mail on receipt of price. Send for circular with directions for cultivation. BRILL & KUMERLE, 153 Broad-st., Newark, New Jersey.

20,000 Lilium Lancifolium, or Japan Lily.

Rubrum and Roseum, each 50 cents, twelve, \$1, one hundred, \$5, one thousand, \$50. Album, 50 to 75 cents each, \$1 to \$5 per dozen. Monstrous Rubrum, Roseum and Album, \$1.50 each, \$12 per dozen. Melpomene, \$3 each. Lilium Anstratum—the new and magnificent Japan Lily, strong bulbs, \$5 each. FRANCIS BRILL, Newark, New Jersey.

A Circular

Which every body should read for useful hints in gardening published 1st of August, and contains priced lists of prize Strawberries, Fruit Trees, &c., and Seeds for fall sowing with directions for cultivating, mailed free by FRANCIS BRILL, Nurseryman and Seedgrower, Newark, New Jersey.

90,000 PEACH TREES for sale, of which 30,000 are Hale's Early, a variety ripening two weeks earlier than any other. Also APPLES, CHERRIES, PEARS, &c., Strawberries, Grape Vines. For circular apply to ISAAC FULLEN, Hightstown, N. J.

SEEDS.—THOMAS McELROY, will on and after 1st Sept., receive orders from the Trade, for Foreign Agricultural Garden and Flower Seeds. Growth 1865, for the Fall and Spring Trade. Correspondents will meet with attention. Seed Grocer and Importer, 71 Pine-st., N. Y.

Choice Flower Seeds.

For Sowing in August and September.

B. K. BLISS,

Seedsman and Florist, Springfield, Mass.,

Would invite the attention of all who are interested in the culture of Flowers, to the following list which have been carefully selected from the stock of several of the most successful Cultivators and Exhibitors in Europe, and can be confidently recommended.

- Calceolarias, Extra select, from flowers which took the first prize at the late London and Continental Exhibition..... 50
- do. Fine mixed, spotted and solid..... 25
- do. Rogosa, from the finest shrubby varieties..... 50
- Cineraria, Extra choice, from all the new varieties... 50
- do. Fine mixed, from the best old varieties..... 25
- Gloxinia, From the finest erect and drooping varieties 50
- Hollyhocks, (Very double,) saved from his unrivalled collection of seventy-five English varieties, if sown now will flower freely next year (100 seeds)..... 25
- Pansy, English, Extra select, saved from the finest prize flowers..... 50
- Pansy, New Fancy, Very beautiful..... 50
- Pansy, Collections of 12 distinct varieties..... \$2 50
- Primula Sinensis fimbriata, (Chinese Primrose fringed,) various colors mixed, extra quality..... 50
- do do do Rose..... 25
- do do do White..... 25
- Pink, Tree, or Perpetual Carnation, Continues in flower a long time, extra quality (20 seeds).... 50
- Pink, Carnation and Picotee, From celebrated German collection..... 50
- Polyanthus, Finest mixed varieties from the collection of an English amateur..... 25
- Mimulus, Finest mixed golden yellow and white ground, covered with crimson, rose and scarlet blotches..... 25
- Tropaeolum, Finest mixed varieties for green-house. 25
- Stock, Scarlet and White Intermediate London, extra, each..... 25
- Stock, French Coardeau, Scarlet Purple and White, mixed, fine for winter flowering..... 25
- Stock, New German Ten Weeks, Extra fine, many colors mixed..... 25
- Stock, New White Wallflower leaved, a superb variety for pot culture, pure white, with large double flowers 25
- Rhodanthe Maculata, Maculata alba, Atroranguinea, 3 varieties of this beautiful Everlasting, excellent for pot-culture, each..... 25
- Sweet Williams, Hunt's extra select..... 25
- Sweet Williams, New Arnicola-flowered..... 25
- Two English varieties of great merit, far surpassing anything hitherto offered.
- Wallflower, Extra fine double German..... 25

Twenty Select Varieties

Of Hardy Annuals, Biennials & Perennials, for fall sowing, will also be sent post-paid for \$1.

B. K. BLISS' Celebrated Seed Catalogue and Guide to the Flower & Kitchen Garden, containing upward of One Hundred Pages of closely printed matter, beautifully illustrated; will be mailed post-paid, to all applicants enclosing 25 cents. Address B. K. BLISS, Springfield, Mass.

Turnip Seed by Mail.

The following varieties, the quality of which can not be exceeded, will be mailed post-paid, to any address in the Union upon receipt of price affixed.

	per oz.	4 ozs.	8 ozs.	per pound.
Early White Dutch.....	10 cts.	35 cts.	60 cts.	\$1 00
White Strap Leaf.....	10 "	35 "	60 "	1 00
Red Top Strap Leaf.....	10 "	35 "	60 "	1 00
Large White Globe.....	10 "	30 "	50 "	75
Large White Norfolk.....	10 "	30 "	50 "	75
Yellow Aberdeen.....	10 "	35 "	60 "	1 00
Goldea Ball (Robertson's).....	10 "	35 "	60 "	1 00
Large Yellow Globe, extra.....	10 "	35 "	60 "	1 00
Long White French.....	10 "	35 "	60 "	1 00
Sweet German.....	10 "	35 "	60 "	1 00
Long White or Cow Horn.....	10 "	35 "	60 "	1 00
Purple Top Ruta-Baga.....	10 "	35 "	60 "	1 00
Dale's Hybrid.....	10 "	30 "	50 "	75
Yellow Flacoad.....	15 "	45 "	80 "	1 50

Address B. K. BLISS, Springfield, Mass.

Turnip Seed for August.

Red or Purple Top Strap Leaf, by Mail,

at \$1 per pound. This variety may be sowed at the rate of One Pound per acre up to the latter part of August, and produces a good crop.

J. M. THORBURN & CO., 15 John-st., New-York.

Woodside Nursery.

Catalogues of Plants now Ready.

Address A. S. FULLER, Ridgewood, N. J. Bergen Co.,

We Have in course of Propagation

235,000 CONCORD VINES,

- 25,000 DELAWARE, 8,000 HARTFORD PROLIFEROUS,
- 5,000 ROGERS' HYBRIDS, 3,000 DIANA,
- 3,000 IONA, 2,000 ADIRONDAC,
- 2,000 ALLEN'S HYBRID, 1,000 ISRAELLA.

and numerous other valuable varieties, both old and new. We thank our customers for the liberal patronage they have bestowed, and assure them of all interest in vine and grape culture that no care or expense will be spared the present season to bring our vines to the HIGHEST STANDARD. Our Prices will merit the attention of Dealers and Planters. Responsible Agents are wanted in every town to form clubs, or to spend the season in canvassing. Large commission will be given to such as can furnish reliable references; none others need apply.

Address with Stamp, WM. PERRY & SON, Bridgeport, Conn.

Sing Sing Grape Vines.

Delaware, Iona, Israella, Adirondac, Allen's Hybrid, Concord, &c., &c.

For the past two years we have been unable to fill any orders in the Spring, but having this year enlarged my Green-Houses, my stock is much larger, and in all respects of better quality than we have before offered.

Vines sold by me are warranted true to name. Prices same as last year. Send for Price List. As the partnership of J. F. DELIOT & RYDER is dissolved, all orders should be sent to J. F. DELIOT, Sing Sing, N. Y.

New Strawberries.

Great Agriculturist.—I have made extensive preparations to supply good, strong plants of this variety at \$1 per dozen; \$3 for 50; \$5 for 100.

Green Prolifere.—A very large and promising variety, \$1 per dozen; \$4 per 100; \$30 per 1000. **Buffalo Seedling,** very large and productive. **French Seedling.**—The largest and best early variety grown. **Lennig's White,** a variety of great promise, and should be in every collection; plants of these three at \$1 per dozen; \$3 per 100; or \$30 per 1000. **Russell's Prolifere,** \$1.50 per 100; or \$10 per 1000. **La Negresse.**—Fruit nearly black. **Negro.**—Fruit large, the blackest of all. **Victory.**—A superb variety, fruit very large, wonderfully productive, and fine flavored, color a beautiful blush. **Progress.**—Fruit of the largest size, very productive, color a brilliant scarlet. These four novelties at \$1.50 per dozen, or the four varieties, one dozen each, \$5.00.

The following eight varieties are Belgian and French Seedlings, and took many prizes at the great shows of 1862 and 1863, **Haguin, Lucida, Perfecta, Orb, Exposition d'Chalons, Frogmere Late Pine, La Delicieuse, Lucas and Emma,** at \$1 per dozen; or the eight varieties, one dozen each, \$6.00.

The following 10 French and Belgian varieties, were selected in 1864, with great care. At the great exhibitions these were the prize berries. **Comtesse d'Artois, Cavoline Superb, Cristal Palis, Excellent, Ferdinand, Helen Samin, Palmee, Monstrous d'Robin, Nantis, Kaminski,** a selection at \$3 per dozen, or the 10 varieties, one dozen each, \$30.00.

Ida.—A new native Seedling, of great promise, fruit large, plants very vigorous, and remarkably productive, \$2 per dozen. **Monstrous Hautbois.**—A remarkable variety, from Belgium, fruit large and wonderfully productive, plants \$1 each, or 6 for \$4. Also the three **Tribune** prize berries, **Monitor, Col. Elsworth, and Brooklyn Scarlet.** The two first are of the largest size, and very productive. The last took the prize for the best flavored berry known; plants \$1 per dozen; \$3 per 100; or \$20 per 1000.

No orders taking for less than one dozen of any variety. Commence delivering in rotation as ordered, the 1st of Sept. Address WM. S. CARPENTER, 156 Reade-st., New-York.

The New Strawberries.

The Great Agriculturist and Great Wisconsin, \$1 per doz.; the Great Buffalo, French's Seedling, Russell, Rogers Eliza, Marguerite, La Constante, Joenada, and others, 50 cts. per dozen. Many fine sorts 25 cts. per dozen. Carefully packed in gutta percha silk, and forwarded by mail to any address. By the 100 or 1000 very low. Priced Descriptive Catalogues now ready of the best collections in the country. Agents wanted. B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

A large Stock of the three GREAT MARKET STRAWBERRY PLANTS

in course of propagation, for sale. **Agriculturist,** at \$1 per hundred. **Russell's Prolifere,** at \$1.20 per hundred. **French's Seedling,** \$1 per hundred. Also other productive and good kinds at 80 cents per 100. Delivered with dispatch in the city of New York without extra charge. Liberal discount on large orders. Address SAMUEL HICKS, North Hempstead, Queens Co., N. Y.

Bloomington Nursery, Illinois.

Two Hundred and forty (240) acres. Splendid stock, Standard and Dwarf. Fifty thousand (50,000) Peach, including Hale's early; Apricots, Grapes, Roses, Osage Orange, Hardy Bulbs, Tulips, Hyacinths, Crocus, all at wholesale and retail. F. K. PHENIX, Bloomington, Illinois.

GRAPE VINES: IONA AND ISRAELLA.

With all other valuable hardy kinds, including large stocks of Delaware and Diana.

The Iona Propagating Establishment, which was the first ever instituted for the production of hardy vines, has heretofore been very large—greatly surpassing in extent and appliances any others of the kind that have sprung up in imitation of it; but it has not been able to supply the demand for plants. The past year the stock of the most desirable kinds was all ordered in the early part of the season, and many applicants were greatly disappointed by not being able to obtain as many as they wished of the most desirable plants.

For the purpose of producing the excellent new varieties of the best possible quality in sufficient number to satisfy the increasing demand, the means of production have this season been very greatly enlarged, and no improvement has been omitted which my knowledge and experience have suggested that will tend to facilitate the propagation of a greatly increased supply of plants that will produce the best results as to hardy vigor and early bearing in Garden and Vinery, for table use and for wine.

The character of the Delaware for excellence and value is now so well established that all good Judges of grapes have accepted it as a standard of comparison, for which it is most admirably fitted.

The important points in which the Delaware is surpassed by the new seedlings *Iona* and *Israella*, and which rank them as the best grapes in cultivation, are also well ascertained and generally admitted. I have spared no care or cost this season to obtain a stock of plants that will increase the well earned reputation of these kinds as well as that of the Iona Establishment.

The Vines at present give promise of surpassing those of any former season in healthful vigor, and I do not hesitate to offer them under the assurance of unequalled quality.

It is of great importance for the hardy and enduring vigor of Vines, and for early bearing and continued productiveness, that the plants should not only be propagated in the best manner, but from the best wood from mature stocks. In this respect as well as in other essential points, I may claim a great advantage for my present stock of *Iona* and *Israella* plants, which have been produced with the greatest care from wood grown for that special purpose, and such as no other can command.

I am happy to invite special attention to these new varieties (*Iona* and *Israella*), which this season show even a greater superiority over all the other kinds than heretofore, in the certainty and abundance of their produce.

While other kinds that have been unduly and injudiciously praised through ignorance or otherwise, have fallen back in reputation toward their proper station, these have advanced in the front rank which they had already firmly attained, and the *Iona* may safely be said to have no competitor in value.

There is much of importance pertaining to vines and their management that is better and more clearly learned by inspection than by the faintest account, and in consequence, I invite all who are interested in the subject to call at Iona Island, and examine both the young plants and the bearing vines. Peekskill, the station for Iona, is less than one hour and three-quarters from New-York, and only about three hours from Albany, and not less than twelve trains pass each way daily.

My own boats are generally at the station to meet passengers by the morning Express trains to convey them to the Island.

In addition to these, Mr. James Ten Eyck, one of the best of boatmen, has established a regular line of boats for the conveyance of passengers to and from the Island, meeting all of the principal trains during the day. He is provided for the comfortable conveyance of passengers in any weather at established charges which are very moderate.

For a full account of my publications on the subject, see the July number of American Agriculturist.

They are named and sent as follows:

"Our Native Grapes with an account of our four best kinds," with Price Lists, constituting a pamphlet of twenty four pages. Sent for two-cent stamp.

Descriptive Catalogue, Ten Cents.

Illustrated Catalogue, 25 Cents

Manual of the Vine, Fifty Cents.

The first named pamphlet is filled with such matter as inquirers on the subject wish to find at the beginning of their investigations preparatory to purchasing, with full tables of the contents of the others.

Besides these and of much importance is the proposition for the formation of Clubs. This shows the best and cheapest method of obtaining vines and is that by which my immense stocks have been chiefly sold the past two years, with general high satisfaction. These propositions are worthy of the attention of dealers and all others.

The premiums for the formation of Clubs are not only very liberal, but enable persons without cost of money, to obtain vines of special quality that can not be procured in any other way.

Address

C. W. GRANT, Iona,
near Peekskill, Westchester Co., N. Y.

P. S.—My stock of transplanted vines two-years old is worthy of special and early attention

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Offer for the autumn trade.

Delaware Grape Vines,

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No. 1. \$30 00 per 100.—\$250 00 per 1000.

\$2,000 per 10,000.

No. 2. \$20 00 per 100.—\$150 00 per 1000.

\$1200 per 10,000.

No. 3. \$12 00 per 100.—\$100 00 per 1000.

\$750 per 10,000.

These vines are grown from single eyes of well-matured wood.—After many years' experience in growing vines, we have for three years past discarded the pot culture, because it induces a cramped condition of the roots, from which they with difficulty recover.

Our vines are therefore grown in broad borders, where having perfect freedom, they make substantial woody roots, full of fibre eyes.

The reports returned to us of the rapid and luxuriant growth of those we have furnished in past years, enables us to recommend these with entire confidence.

For three years our stock has been exhausted in the autumn and subsequent applicants have been disappointed.

Those therefore who wish them should order early.

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No. 1, \$2.00 each; \$18.00 per doz.; \$100 per 100.

No. 2, \$1.50 each; \$12.00 per doz.; \$80 per 100.

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From single eyes, one year old.

\$12 00 per 100; \$50 00 per 1000;

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We also offer fine plants of

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We commend our vines to dealers, as particularly adapted to their needs, and have so arranged the rates that the difference in the prices of different quantities will afford them a good profit.

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FARM AND FRUIT LANDS, in a mild and healthful climate. Thirty miles south of Philadelphia by Railroad, in New Jersey, on the same line of latitude as Baltimore, Md.

The soil is rich and *productive*, varying from a clay to a sandy loam, suitable for Wheat, Grass, Corn, Tobacco, Fruits and Vegetables. This is a *great fruit country*. Five hundred Vineyards and Orchards have been planted out by experienced fruit growers. Grapes, Peaches, Pears, &c., produce immense profits. Vineland is already one of the most beautiful places in the United States. The entire territory, consisting of forty-five square miles of land, is laid out upon a general system of improvements. The land is only sold to actual settlers with provision for public adornment. The place on account of its great beauty as well as other advantages has become the *resort of people of taste*. It has increased five thousand people within the past three years. Churches, Stores, Schools, Academies, Societies of Art and Learning, and other elements of refinement and culture have been introduced. Hundreds of people are constantly settling. Several hundred houses are being constructed, and it is estimated that five hundred will be built during the summer. Price of Farm land, twenty acre lots and upward, \$25 per acre. Five and ten acre and Village lots for sale.

Fruits and Vegetables ripen earlier in this district than in any other locality north of Norfolk, Va. Improved places for sale.

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For persons who desire mild winters, a healthful climate, and a good soil, in a country beautifully improved, abounding in fruits and possessing all other social privileges, in the heart of civilization, it is worthy of a visit.

Letters answered and the Vineland Rural, a paper giving full information, and containing Reports of Solon Robinson, sent to applicants.

Address CHAS. K. LANDIS, Vineland P. O., Lsadies Township, New Jersey.

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THE SUBSCRIBERS WILL SELL TRACTS OF GOOD Land for farming and market gardening, in quantities to suit purchasers, situated in the counties of Ocean and Burlington, on the line of the Raritan and Delaware Bay Railroad, midway between New-York and Philadelphia, at from \$10 to \$25 per acre. In addition to all the common products of a farm, these lands are valuable for growing cranberries, sweet potatoes, peaches, grapes, tobacco and hops. All crops ripen ten days earlier than on Long Island. Squantum marl is delivered at any point on the railroad at one dollar and fifty cents per ton, and fertilizes the land for seven years after its application. The lands are mostly covered with yellow pine timber, suitable for lumber and cord wood. A portion of the timber has been recently cut off, leaving the land ready for immediate cultivation. Price of cedar rails, \$5 per 100. Cord wood, at any railroad station, \$3 per cord. A portion of the lands contain a large quantity of the best potter's clay yet discovered, for the manufacture of yellow ware. Saw-mill within one mile of Shamong Station. A good hotel at Shamong, on the lands offered for sale. The location is very healthy and water excellent. Lands well watered with unfalling streams, and supplied with good mill-sites and water-power for manufacturing purposes. A portion of the purchase money may remain on mortgage.

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SUPER-PHOSPHATE OF LIME.

BAUGH & SONS,

MANUFACTURERS AND PROPRIETORS,

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REDUCTION IN PRICE!

After this date, June 12th, the price of *Baugh's Raw Bone Phosphate* will be reduced to \$60 per 2000 lbs. (3 cents per pound) packed in good bags and barrels and delivered free of portage to any wharf or depot in this city.

SEND IN THE ORDERS EARLY!

Already the indications point to a very heavy trade in our article for the fall season, and although we have immense facilities for meeting a large demand with a prompt supply, we would strongly advise Farmers and Dealers to give us their orders as early as possible.

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Westchester County Farming

—TWO DAYS AMONG THE FARMERS OF WESTCHESTER AND PUTNAM COUNTIES—A LONG RIDE AND EXAMINATION OF FARMS—WHAT I SAW, HEARD AND LEARNED. THE NEW-YORK TRIBUNE is publishing a series of articles on Agriculture. THE SEMI-WEEKLY TRIBUNE of FRIDAY, July 14, contains article No. 1, on Westchester and Putnam Counties, wherein mention is made of Mr. Carpenter's Nursery, Mr. Cook's Farm, Dr. Hexamer's Nursery and Barn, and the Farm of Stephen Wood.
The Semi-Weekly Tribune of Tuesday, July 18, contains Article No. II, on the same subject, in which are descriptions of R. Mott Underhill's Farm, with some thoughts on drainage and sheep; The Farm and Fish Pond of Edward Underhill; Dr. Fountain's Farm and Orchard; Edwin Crosby's Farm; also, the Farm of Leonard D. Clitt; the "Brown" Farm, owned by Mr. G. B. Butler, and Benjamin F. Camp's Farm, near Somers village.
The Tribune contains full reports of the meetings of the Farmers' Club of American Institute, Fruit Growers' Association, Produce, Cattle and General Markets, &c., &c., specially reported for The N. Y. Tribune.

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NEW MUSIC BOOKS.

MASON BROTHERS, 596 Broadway, New-York, have in press and will issue about 1st September a New Collection of Church Music, for Choirs, Conventions and Sloglog Schools, by **SOLOM WILDER and FREDERICK S. DATENFORD,** entitled

THE PRAISE OF ZION.

The authors have had unusual facilities in the preparation of this their first book, having had at their disposal many new compositions by the most popular and distinguished composers, foreign as well as American. The publishers call attention to this new book with much confidence, because of the variety and freshness of its contents, and their general adaptation to the wants of singers.
In order to facilitate its early examination by teachers and leaders of choirs, a single advance copy of *The Praise of Zion* will be sent post-paid, early in August, to any such forwarding as 75 cents, or about half the price of the book.

RECENTLY PUBLISHED.

THE SONG GARDEN, Part First, by **DR. LOWELL MASON.** A School Music-Book for younger scholars, or beginners, containing first steps in the Elements of Musical Notation, with a great variety of new school music. Price 50 cents.
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These new books prove of extraordinary interest. Already introduced into the schools of some of our largest cities, the music teachers speak in terms of the strongest commendation respecting them. The songs are new, fresh, and adapted to young persons, and have intrinsic merit which makes them wear well.
THE KEY NOTE; A new collection of Church Music. By **WM. B. BRADDERY.** This is the latest collection of Church Music by the very popular author of "The Jubilee." Price \$1.50

AMERICAN HORTICULTURAL REGISTER.

The undersigned having been engaged to prepare and publish a Catalogue of American Nurserymen, Horticultural Dealers and Agents and Fruit Growers, desires to procure—
I. Of Nurserymen throughout the United States—the Name, P. O., County, State, Acres in Nursery, Sale Stock for 1865-6, viz.: Number of Apple, Pear, Peach, Cherry, Plum, Apricot, Nectarine and Quince Trees; Grape Vines, Currant, Gooseberry, Raspberry, Blackberry and Strawberry Plants; Stocks; Apple, Cherry, Pear and Quince; Deciduous Trees, Evergreen Trees; Deciduous Shrubs, Evergreen Shrubs, Vines, and Creepers, Roses, Perennial Flowers.
II. Of Dealers and Agents—Name, P. O., County, State; Names of Nurserymen for whom acting; extent of territory furnished or canvassed, (Nurserymen are requested to furnish this information of all their authorized Agents.)
III. Of Fruit Growers—Name, P. O., County, State, Acres planted, Number of Trees, Vines and Bushes of Apple, Pear, Peach, Cherry, Plum, Apricot, Nectarine, Quince, Grape, Currant, Gooseberry, Blackberry, Raspberry and Strawberry.
IV. Of Fruit Dealers—Name, P. O., County, State.
Persons sending the above information, (with a three cent stamp for return postage,) previous to August 15th, will receive a copy of the Register free of charge.
Early, prompt and correct information is urged, and will make this a valuable book of reference to buyer and seller.
W. C. FLAGG, Secretary Illinois State Horticultural Society, Alton, Illinois.

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the *Agriculturist* at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to September 1st.]

Allen's (L. F.) Rural Architecture.....	\$ 1 50
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American Rose Culturist.....	30
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Art of Saw Filing.....(Holly).....	60
Barry's Fruit Garden.....	1 50
Beecher's (Henry Ward) Fruit, Flowers and Farming.....	1 25
Bement's Poulterer's Companion.....	2 10
Bement's Rabbit Fancier.....	30
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Bridgeman's Fruit Cultivator's Guide.....	2 00
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Its contents, aside from their truthfulness are also more thrilling, and brilliant, and touching than the most fervid and elaborate romance or fiction that was ever conceived.

The name, company, regiment, ship, &c., of every soldier or sailor who has during the war performed any brave deed, are recorded in The Casket together with a full detail of the deed itself.

Officers, soldiers, sailors, and their friends and relations who may know of any such deeds, or incidents of any sort, appropriate for The Casket, are requested to forward accounts of them to us with names and particulars for publication in The Casket.

A part of each number of The Casket is devoted, free of charge, to Soldiers' and Sailors' advertisements, and those of their friends and relatives who, by the war, have been separated and are missing. This is a special feature of The Casket and should alone induce you to subscribe.

In short it is the object of The Casket to benefit, in every conceivable way, the interests of all those who have been, or who are, in the service, and also their families. And in return we ask every Soldier and Sailor, and every Soldier's family and Sailor's family, and every friend of the cause to aid it by taking The Casket.

If you can not afford to take it for one year (\$2) take it for six months (\$1). It was started in January, 1865, and as no incident will be repeated, you should start with the beginning, so as to have it complete. Back numbers always on hand.

Soldier's Casket

The July number contains a Thrilling account of a Castle Thunder Prisoner who, after escaping, was

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Together with a correct likeness of this fearful brute, who is of the Russian breed, measures between seven and eight feet long, stands nearly four feet high, and weighs nearly two hundred pounds! This monstrous dog killed two large bears on Belle Isle in single combat, using his immense teeth and claws with terrible effect. He was kept at Castle Thunder, Richmond, to prevent the escape of prisoners and was so carefully trained by his brutal masters, that even after he was captured and fed by the Union Soldiers, he endeavored continually to tear them to pieces.

Every number of The Casket is elegantly illustrated with THE FINEST ENGRAVINGS; and in addition, at short intervals, with SUPERBLY EXECUTED CUTS IN THE RICHEST COLORS.

To give it also a world-wide celebrity, we shall send copies to American Consuls abroad, to all libraries of note in Europe, and to European papers. Wherever the American flag floats, there shall The Casket be sent.

The Casket and National Debt.

The New York Herald has proposed a plan for paying the National Debt. The idea is magnificent and patriotic, but as no money is to be paid down until the whole amount of the debt is subscribed for, it will not work. Now, we propose a practical plan, viz.:

On January 1st, 1866, we shall deposit in The First National Bank of Philadelphia, 100 per cent. of our receipts on The Soldier's Casket for the previous six months, beside the U. S. taxes we already pay. Said deposit to be subject to the order of the U. S. Treasury, and to be a free-will offering from The Casket toward paying the National Debt, whereby the heavy taxes now imposed, (and which, after all, the laboring masses of the people have to pay) shall cease. Our plan has no ifs, and will give all a chance who may desire to help the great work. And in order that the patrons of The Casket may receive their due share of credit the name of each subscriber, handsomely engrossed on parchment, shall be forwarded to the Treasury Department at Washington.

In view of the objects stated above, we ask every one who sees this advertisement to subscribe for The Casket either for one year or for six months, and send us a club, no matter how small.

For Terms, &c., See Third Column.

Soldier's Casket

- A SPLENDID ENGRAVING,
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THE TOMB OF WILLIE SHERMAN,
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- SON OF
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Sergeant Willie Sherman, (or rather William Tecumseh Sherman, Jr.) was the son of Major General Sherman, the hero of the Georgia Campaign. Named after his father, and inheriting all the latter's noble qualities, Willie, though so youthful, evinced a maturity of intellect beyond that of those double his age, which, when he died, was but 9 years and 3 months. While with his father on the Big Black, below Vicksburg, Willie rode constantly at the General's side, and fell a victim to exposure to the sun and deadly climate. In writing of her darling boy, Mrs. Sherman forcibly and tenderly describes the love of herself and husband in the words: "His death has cast a pall over the earth, which to our hearts will never be lifted."

The First Battalion, Thirteenth Regulars, formerly commanded by General Sherman, had all conceived such an affection for the noble boy that they adopted him as "SERGEANT," and upon his death they erected one of the most beautiful monuments over the little grave in which he now sleeps in eternal slumber. The whole design, which was conceived by Captain Lamotte, is extremely chaste; the drums, surmounted and draped by the flags, being peculiarly appropriate.

WE HAVE HAD A SPECIAL, CORRECT, AND FINE ENGRAVING MADE OF THIS MONUMENT, WHICH IS NOW READY IN THE SEPTEMBER NUMBER OF THE CASKET.

In the same number we have also a beautiful engraving, allegorical of the death of General Sherman's youngest child, Charles C. Sherman, who died, it will be recollected, just as the General had reached the ocean through Georgia and South Carolina, and whom he had never seen.

Do not fail to send for a copy of The Soldier's Casket, containing this beautiful tribute to the child of General Sherman, whom every Soldier loves and respects.

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Soldier's Casket

TERMS OF THE CASKET.

Before calling the attention of the readers of the Agriculturist to our terms, we wish to say that the following extracts represent the opinion entertained universally by the Press throughout the whole country, of The Casket.

"It is a publication destined to become very popular with soldiers' families, on account of its thrilling interest to them. Its pages are open to contributors giving narrations of the heroic deeds of our brave soldiers in battles, perilous adventures, &c. It contains many incidents, anecdotes, &c., which will, of necessity, be omitted in general history."—Union Clarion, Princeton, Ind.

"We long ago quit puffing the Magazine trash of the country, but after examining the "Casket," we find it a work worthy of patronage. It is full of interesting incidents of war, and heroic adventures of regiments and individual soldiers, some of whom we are personally acquainted with. We say that it is worthy of patronage, and will act as agent for those who desire to subscribe for it. We have not space for an extended notice, but will gladly show the present number as a specimen of the work."—Argus, Paola, Kansas.

"We have just received a beautifully printed Magazine, with the above title. It is intended as a friend and comforter to soldier's widows, mothers, fathers, brothers and sisters, and is of great value to any one having friends in the army."—Gazette, Kalamazoo, Michigan.

"It will be a record, as complete as time, labor and money can make it, of all the important events of the war, more especially of the battle field. Also, as far as possible, a record of all deaths on the field of battle or in hospital; and accounts of heroic deeds of our brave men. It will also contain a department—which we consider its leading feature—of Questions and Answers; not a la Bonner's Ledger, but of infinitely more importance to those who have had friends in the service. All such, on application, who wish to know the whereabouts or fate of a friend, can obtain the desired information through the Casket, if it can possibly be had. It also contains much choice reading in the way of historical legends, poetry, &c. The copy now before us contains a beautiful frontispiece, which is alone worth the price of the book. But we can not tell half its worth, especially to those who have friends in the army; to such its value can not be reckoned in dollars and cents."—Sentinel, Pontiac, Illinois.

"A prominent feature in this work is its devoted not only to the officers, but to the private soldiers. It is national in its character, and every family in the land that has sent a father, son or brother to the field should at once send for a copy of the "Casket." The number before us contains an article on the "Gallant conduct of the 3d Iowa Vol's. at the battle of Shiloh." Almost every family in the Upper Cedar Valley is deeply interested in this article."—Mitchell County Press, Iowa.

"It is made up of stories and reminiscences of the camp, field and march, all of which are replete with interest.—The subscription price is two dollars per year, or one dollar for six months, which is very cheap indeed for the amount of reading furnished."—Daily Era, New York City.

"A beautiful periodical, which is published in the interest of the brave men who have been fighting the battles of our country on land and sea. The Magazine gives evidence in all its parts of ability and good taste, and we are sure it must become a welcome visitor in numerous households in our land."—Whig, Troy, N. Y.

Soldier's Casket

OUR TERMS ALWAYS IN ADVANCE.

As the cost of publishing such a work is increased enormously beyond what it used to be, we are compelled to do one of two things:—1st, raise the price of single subscription; or, 2d, abolish all club rates. We have chosen the second, as not only most acceptable, but also the fairest to all; and, therefore, our uniform rates of subscription will be

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Not to be behind other publishers in liberality of inducement, however, we have resolved to distribute among those raising clubs for The Casket some of the most splendid premiums ever offered. The raisers of the Three Largest Clubs will receive

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while many small clubs will receive our lower premiums. The distribution of the Premiums will be made

ON JANUARY FIRST, 1866,

the full list of names of successful parties, together with the size of their clubs, being then promptly published.

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The proper way to succeed in raising a club, is to head it with your own subscription, if you can afford it either for one year or six months. Then take this paper, and make a special visit to all your friends, show it to them, tell them you have subscribed, and ask them to join on at once in forming a club. You can send us subscriptions as fast as you get them, as every sum you send, from \$1 upward, will be duly credited to your account on our Premium List.

We would also impress on the reader another fact. Do not suppose that, because you can not raise a very large club you can not get a premium, for it is to give those who can only raise smaller clubs a chance to obtain a Premium that we have made such a large number of Premiums. It is quite likely that the club which will take our highest Premiums will not exceed 45 or 50 yearly subscribers, and also that a large number of clubs of only two or three names will obtain our lower premiums.

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AMERICAN AGRICULTURIST,

FOR THE

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NEW-YORK, SEPTEMBER, 1865.

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Contents for September, 1865.

Apiary in September.....	267
Blackberry—The Kittatinny.....	284
Boys and Girls' Columns—About Getting a Fire—Truthfulness of a Hero—A Noble Example—Problems and Puzzles—The Prisoner and Her Pets—The Judge's Experiment, or Examining Evidence—The Inventor of the Stocking Frame—Rogues Outwitted—The Race.....	4 Illustrations. 267-268
Breeding—In-and-in.....	279
Buckwheat—Hints on Harvesting.....	275
Bees—Burying.....	Illustrated. 275
Capers—About.....	Illustrated. 285
Carving—How to do it well.....	286
Cattle Disease—The Russian Murrain.....	267
Cheese Exhibition at N. Y. State Fair.....	267
Cold Grapes in September.....	267
Corn Fodder—Cutting and Curing.....	278
Corn—Preserving Green.....	286
Corn—Wyandot Methods of Drying.....	286
Currants—Varieties and Culture.....	3 Illustrations. 281
Doors—Self Shutting.....	286
Editorial Correspondence.....	Illustrated. 272
Fairs—Hints about.....	274
Fairs—National, State and County.....	268
Feed—Cutting for Farm Stock.....	274
Flowers—Herbaceous Perennials.....	282
Flowers—Preserving in Natural Form.....	286
Flower Garden and Lawn in September.....	266
Fruit Garden in September.....	266
Gazania splendens.....	285
Grapes and Grape Culture—Notes on.....	283
Hay Caps—A new suggestion for.....	278
Horse—What makes him vicious.....	Illustrated. 280
Garden—Kitchen in September.....	266
Lily—New Japanese. <i>Lilium Auratum</i> ,.....	Illustrated. 281
Moss Roses.....	Illustrated. 284
Market Report and Commercial Notes.....	268
Notes and suggestions for September.....	265
Orchard and Nursery in September.....	266
Pansy—Cultivation of.....	284
Potatoes—When to select seed.....	280
Recipes—Steam-cooked Bread—Chilli Sauce—Green Corn Pudding.....	287
Reclaiming Waste Ground.....	274
Sorghum—A word about.....	279
Splicing—How to splice a rope and an eye.....	4 Illus. 275
Stacks—Building Round, (illustrated).....	276
Stacks—Why they Lean.....	277
Strawberries—Notes on Culture.....	284
Tin Bunker on Curing and Eating pickles.....	285
Weed—Bladder Campion, <i>Silene inflata</i> ,.....	Illustrated. 277
Weed—Horse Nettles— <i>Solanum Carolinense</i> ,.....	Illus. 283
Wells—Drying, Stoning, and Curbing,.....	3 Illustrations. 273
Wheat—Advantages of Drilling.....	278
Wheat—Why it Winter Kills.....	278
Wheat—Preparations of Soil for Winter.....	379
Windows—Substitute for Glass in.....	286
Yeast—Something about.....	287

INDEX to "BASKET," OR SHORTER ARTICLES.

About Names.....	271
American Institute Fair.....	270
Analytical Chemist.....	271
Apple Blossom, Double.....	271
Asbes for Fruit Trees.....	271
Baukiv Horse, Maaing.....	270
Barn Plan Premiums.....	269
Book Premiums.....	269
Catalogues, etc., Rec'd.....	271
Caterpillar Question.....	271
Cattle, Russian Plague.....	270
Cider Vinegar.....	271
Cranberry Culture.....	271
Curecilio Remedy.....	271
Ditching Machines.....	270
Domestic Intelligence.....	269
Eggs, Storing.....	270
Fallows.....	270
Garden Edgings.....	271
Grana Grass.....	270
Grape Trellises, Hill Side.....	271
Glanders, Caution.....	269
Hair, Value as Manure.....	270
Harvests, etc.....	269
Hay and Straw, Chaffing.....	270
Horse Collars.....	270
Ice Houses.....	270
Insects, Killing.....	271

Insects upon Insects.....	271
Insect Queries.....	271
Lime on Wheat Soils.....	270
List of Fairs.....	269
Manure, Keeping.....	270
Meadows, Renovating.....	270
Osier Willows.....	269
Pigeons on the Farm.....	270
Plants named.....	271
Poultry Book, New.....	269
Premiums, Subscribers.....	269
Scythe Sharpening.....	270
Sheep, Weight of Fleeces.....	269
Strawberry Plants.....	269
Subscription Terms.....	269
Toadstools, Great Year.....	271
Tomato Seeds, Saving.....	271
Tree Peddlers, Hard on.....	269
Washing Machine, Doty's.....	269
Wheat, Smut in.....	270
Who Reads Ad's.....	269
Wistaria.....	271

Notes and Suggestions for the Month.

The month of September is one of very varied labors. We sow for next year's crops, and we reap the harvests of the present season. We are anxious lest frost shall pinch too soon, and dread too great heat and drouth, lest our root crops and pasturage shall suffer. September seals the fate of the corn crop which is, next to hay, the most important of the products of the soil. A dry autumn is looked forward to by many; perhaps it will come, if so, it will offer peculiar facilities for draining, getting out swamp muck, and doing many other things, which we could not do if it were wet.

Apples.—When animals are excluded from the orchard, those apples that fall this month should be dried, made into cider for vinegar, or cooked for fattening swine. In the warm weather of September, fruit will dry rapidly. It will therefore require less care than in October, but the apples are not so solid and good.

Agricultural Fairs.—Make plans not only to attend a fair or two, but to contribute some articles of utility or skill, that will add to the interest of the occasion. Discourage horse-racing.

Beans.—Pull early beans as soon as the pods appear well matured. They should not be allowed to stand until they are dead ripe, and the leaves dry. Spread them on the barn floor, or on loose boards under shelter. They will cure in such places better than if piled in the field.

Beets.—Pull up all weeds among them, and throw them around the plants for a mulching. Thin out the small ones for table use. Those that are to remain for winter's use, should be ten inches apart. They will occupy all the ground.

Bones.—Save bones of all kinds for fertilizing the soil. Instead of allowing them to disfigure the yard, or way-side, order every one to be thrown into a large box, or hoghead in the back yard, beyond the reach of dogs. Every family can collect several dollar's worth yearly.

Carrots.—This is the month for carrots to grow. Run a subsoil plow twice between the rows, or spade the ground and dress them for the last time. Let no other green thing but carrot tops be seen. If the ground is not already rich enough, apply liquid manure, or fine manure of some kind, worked in between the drills.

Calves and Colts, unless they are too young, should be entirely separated this month from their dams. If grass is short, they should be fed green corn stalks cut fine, or fine hay, wet-

ted up with a little meal daily, and should have a constant supply of fresh water.

Cows.—Read about cows in Calendar for August. Those that will come in shortly, and are already in good flesh, should be kept in rather poor pasture. Let farrow cows, designed for beef next winter, be dried off at once, but kill no more cows than can be helped.

Draining.—Every rod of good under drain will in one or two seasons pay the expense of making it, by rendering the soil more productive. Where ditches are already dug, let them be filled before heavy fall rains come on and cave in the sides. There is no better time in all the year than September to drain beds of muck and peat.

Debts.—Pay up every financial indebtedness as soon as returns for crops have been received, and do not forget the large amounts due to your soil for the abundant crops of the present season. If the soil cannot make a sight draft for services rendered, it will perceptibly withhold payment, until all such dues are canceled.

Fodder.—Save every thing that will make feed for animals next winter. Mow all fence nooks and cure for hay. Some farmers are glad to dispose of their straw, if any one will remove it free of charge. When farmers are thrashing grain is the time to procure a good supply.

Grass Seed.—There is no better time to sow new or old land with grass seed, than September. If the ground is not in good heart, give it a thin top dressing, which should be harrowed in, and then sow the seed without harrowing.

Granaries.—While they are empty, give them thorough cleaning. Sweep out the spider webs, and whitewash over head, and wash the floor with strong soap suds, or not too strong ley, to kill all insects concealed in the cracks.

Horses.—When not at work, keep in a cool stable during the day, rather than let them be tormented by flies in the field. Feed three times in 24 hours, no more than they eat clean.

Haying and Stacks.—Read about stacks in the present number, and as haying is finished, see that every stack is securely topped off.

Hogs.—Keep fattening swine in comfortably close quarters. Feed well and regularly with ground grain and cooked feed. Give a few handfuls of powdered charcoal, dampened, and sprinkled with meal. It is an excellent tonic. Keep the hogs and their pens clean, change their bedding as it becomes dirty. Where unground and uncooked corn is to be fed, begin as soon as it glazes, it is then more digestible.

Implements.—When not in use, keep washed clean, the bright surfaces oiled and housed.

Irrigation.—Prepare channels while the ground is dry for carrying the wash of uplands and highways upon meadows and pastures. Lay out plats for irrigation at will, where water may be turned on, and good drainage secured.

Manure.—See that no fertilizing material is wasted. Devise the best means for increasing the quantity of manure the following year. Every thing that will grow, or has grown in one season, will rot before the next, if well composted.

Meadows.—Keep all stock from them during the dry and hot weather, until the young grass has attained sufficient size to shade the ground. Let men and boys pick up and haul off stones from mowed fields, so that there will be no obstructions next season.

Muck.—As soon as field labors are not urgent, dig muck and pile it beneath a shed of rough boards, where it will be kept dry and in good condition for use in the stables and manure yard.

Linseed Cake.—Now is the best time to secure by contract a supply for feeding. The profits are found in the manure heap as much as in the beef, though but few appear to know it.

Oak Bark.—Protect from autumnal rains, which rapidly depreciate its value, if exposed to them.

Oxen.—Working oxen and fattening bullocks designed for beef, should now be fed well. Oxen will grow fat and work hard too, if they are used gently, fed and watered regularly, and curried often.

Potatoes.—Dig early sorts as soon as they are matured, and the vines show signs of decay; cover from the sun with tops, and house soon as possible.

Poultry.—When poultry are fed with meal, or grain only once daily, let it be towards evening, rather than morning, to induce them to search after and consume more insects and grass.

Rye.—Sow an acre or more for horse feed and for long straw, if the soil is well drained. If not, sow spring rye on land plowed this autumn, if possible.

Sheep.—Separate those designed for mutton, and feed well with grain. Let all kinds have access to good feed, salt, water, and shelter from cold rains.

Weeds.—Pestiferous plants are now maturing their seeds. Wage a war of extermination upon them. Mow them as often as they are large enough. Cut them down with reapers. Clip them close to the ground with hoes, and when they appear among brush, stone walls, or in any nook where they cannot be cut, put on leather mittens and pull them. Suffer no seed to mature. Few weeds can flourish for many years, if they can not perfect seed.

Wheat.—Read the articles on winter wheat in this number. Prepare the soil well, sow in good season, or defer till next spring and sow spring wheat.

Work in the Orchard and Nursery.

The main work to be done in the Orchard is picking and marketing the fruit. Unfortunately this labor will generally be light, the amount of fruit being so small. As in other times of scarcity of fruit, prices will probably be high, and it will pay to make the most of what there is, and take the greatest care in picking and marketing, as suggested in last month's calendar. Gather peaches before they soften, so that they will reach the retailer unbruised. Pears should never mellow on the tree, but fall varieties are to be picked and marketed as soon as the stem readily parts from the limb, and winter sorts allowed to remain until frosts come.

Budding.—The peach is generally worked this month, but any other stocks, of which the bark will slip, may be budded. Stocks budded earlier in the season, are to be looked to, and if their growth has rendered the bandage too tight, it must be loosened.

Drying and Preserving Fruits.—Peaches may be both dried and canned, and apples dried carefully. Pears, put up in bottles with weak syrup are nice.

Insects.—Treat borers as directed in last month's calendar, and destroy all cocoons and deposits of eggs that are found while picking the fruit.

Labels.—The nurserymen will need a supply of these for the fall trade. All stocks are to be properly labelled at the time they are budded. Renew weather-worn labels. In all considerable collections of fruit there will be one or several trees of which the variety is not known. Take specimens of the fruit of these to the fairs, or to experienced pomologists and endeavor to ascertain the name.

Manure.—The supply for next spring's top dressing ought to be accumulating now, and the compost heap be growing by the addition of stable and barnyard manure, muck, ashes and other fertilizers.

Nursery Rows.—Keep the growing stock clear of weeds by the use of the plow, and if the young trees need it, give them their final cutting back.

Planting.—Preparation may be made for fall planting, by draining, manuring and plowing the land. Attend the horticultural shows and fruit discussions, and visit fruit growers, to get all possible information about varieties before ordering trees.

Seeds.—Seeds of all kinds are to be saved. Pits of stone fruits, bury in the earth, taking care to save those from healthy trees only.

Seed Beds.—Young seedlings often suffer from drouth during this month. Water if needed, loosen the surface of the soil, and keep free from weeds.

Kitchen Garden.—An abundance rewards the labors of the gardener, and he ought to let nothing go to waste. In private gardens, where the surplus is not marketed, there are many things which can be preserved for winter use. Pickles of various kinds are to be salted, tomatoes preserved in jars or jugs, sweet corn and beans to be dried, etc. All refuse is to be carefully gathered up, not only to preserve neatness, but for the benefit of future crops. According to its nature it should find its way to the hog pen, the cattle yard, or be taken directly to the compost heap.

Beans.—Preserve string beans in salt as noted last month. Shell the Limas and dry them. When soaked out in winter they will be found an excellent accompaniment to dried green corn succotash.

Cabbages and Cauliflowers.—Hoe the late plantings and look out for slugs, which are very troublesome in some places. Where young plants are needed to winter in frames for early spring setting, sow the seed this month in open ground.

Celery.—That in trenches is to be earthed up when it is about 10 inches high. For the treatment of that grown with surface culture, see details in Mr. Henderson's article in July number.

Corn.—As soon as the ears are taken from the early sorts, remove the stalks. Cattle are very fond of them. Save enough of the earliest and best for seed. Dry as directed under Household.

Cucumbers.—Save seed as directed in last month's calendar. Go over the vines every day, or at least every other day and gather all suitable size for pickles and put them in brine. See Tim Bunker, on page 255. Those too large for table use make good sweet pickles, and those who like egg fruit will find cucumbers, when sliced, dipped in butter, and fried in the same manner very nice.

Endive.—Blanch when the plants are a foot or less across. The object is to exclude the light and cause the central leaves to become white and tender, and to lose their bitterness, and it is accomplished by tying the leaves together by the tops, by covering with a flower-pot, or with a mat. In either case it should be done where the plants are dry, and if they are wetted by rain the leaves are opened for a short time to dry, and again covered.

Kale.—Sow the kind called German Greens, which is hardy, and will winter over.

Manure.—Have an eye to the wants of next year's crop, and let every particle of refuse from the garden go where it will be converted into compost.

Melons.—Turn, to ripen both sides. They are ready to pick when the stem parts readily from the fruit. The quality is much improved by putting the fruit upon ice for a few hours before it is eaten.

Onions.—When a majority of the tops have fallen, the onions may be pulled. Those to be stored, should be thoroughly dried before housing them.

Parsley.—Sow for plants to keep over winter.

Radish.—The Chinese Rose-colored Winter is greatly superior to any other kind of winter radish. It keeps as well as a turnip, and is fresh, crisp, and has a good flavor. Sow early this month.

Seeds.—Continue to gather according to hints given for last month's calendar. Label everything.

Spinach.—Sow in drills 15 inches apart, and when the plants are large enough, weed and thin them.

Sweet Potatoes.—The vines are to be moved occasionally to prevent them from striking root. Some of the largest roots may be carefully removed from the plants, leaving the smaller ones to grow.

Squashes.—Continue to kill insects. Clear away the old vines of the summer sorts. Allow the vines of winter kinds to root freely at the joints.

Tomatoes.—The disgusting large green worm which is known as the tobacco-worm, which is the larva of one of the hawk moths, is very fond of the tomato. A single one of these will make great havoc on a vine, and strip leaves and young fruit in the most voracious manner. When any tracks are seen, search for and kill the enemy. Preserve a good supply of the fruit in jars, bottles or jugs, and make catsup, during the season of abundance.

Turnips.—By giving the long turnips garden culture, which implies frequent hoeing, a large yield may be had. The round sorts, if sown in good soil this month, will usually make a fair crop.

Weeds.—There should be no unoccupied land in the garden, but if there is any which has no crop upon it, do not let it bear weeds. This is the seed time with many weeds, and a little care now in exterminating them, will save much future trouble.

Winter Cherry.—Gather as the hulls turn yellow, and preserve or keep for winter use in a dry place.

Fruit Garden.—**Blackberries.**—Cut out the old canes as soon as the fruit is off, and allow only two, or at most three canes of the new growth to the stool. These should not be allowed to grow over 6 feet high. Shorten in rampant side shoots.

Currants.—Remove suckers and keep out weeds.

Grapes.—Unfortunately the majority of our readers will be at but little trouble to dispose of their fruit—rot and mildew having done that for them. Those who have escaped these scourges will get good prices, and ought to be ready with packages for marketing their fruit. New, shallow, wooden boxes which will hold 10 pounds of grapes are best. Those who have lost their crop ought not, as we have seen several do, quite neglect their vines, but every pains should be taken to get strong and well ripened wood for another year. Instead of allowing the laterals to grow and weaken the canes, they are to be kept properly pinched, and the prolongation of the main shoot stopped this month.

Pears.—Collect autumn varieties as soon as fully grown, at which time the stem will part from its attachment to the tree by gently lifting the fruit. Spread upon shelves to ripen. There are but few varieties that are not greatly improved in juiciness and flavor by ripening them in the house.

Raspberries.—Train up two or three new canes to each root, for fruiting next year, and remove all others. Keep the ground loose and clean about them.

Strawberries.—Set out beds as described in article on page 284. Established beds, if hill culture is followed, should have the runners clipped.

Flower Garden and Lawn.—If a good share of late blooming plants were provided, the garden should be this month quite as brilliant as ever. The Asters, Double Zinnias, and Helichrysums among annuals, and Salvias, Ageratum, and other bedding plants, are now in their fullest flower.

Bulbs.—Set the spring flowering bulbs late this month, or what is quite as well, early next month. At all events it is safe to purchase bulbs as soon as the dealers get in their stock, as the demand has been for several years greater than could be supplied.

Bedding Plants.—Fuchsias, Lantanas and others which it is desired to keep over winter, are to be taken up and potted before the nights become very cool. Cuttings should be taken while the plants are still vigorous, and struck in pots, or in a sandy spot out of doors; if properly treated, they will soon make good plants for flowering in the house.

Chrysanthemums.—Thin out the weak shoots. Pot some of the best for house blooming. They will wilt some when first lifted, but if kept in the shade, they will soon recover and bloom finely.

Dahlias.—These are in full bloom, and care is to be taken that the autumnal gales do not make havoc with their tender stems. Large branches will frequently split off by their own weight; put in extra stakes if needed, and make thorough work with tying. Remove the flowers as soon as they pass their prime, and cut out all imperfect buds.

Gladioluses.—Keep the stems well tied up and cut off the spikes as soon as the flowers fade.

Lawns.—Mow occasionally. If there are weeds eradicate them. Sow seed on thin or bare spots.

Perennials and Biennials.—Sow seed in well prepared soil early this month, as noted on page 252.

Pits.—If there is no flower pit for wintering half hardy plants, one can be easily made. Dig a pit about 6 feet deep, wide enough to accommodate a hot-bed sash, and as long as convenient. Set posts in the corners and board up the sides, make all tight, and fit the sash to cover it with sufficient slope to carry off rain. Roses, carnations and many other plants will winter safely in such a pit.

Potted Plants.—As the nights become cool, the more tender ones are to be removed to the green house.

Seeds.—Continue to save, as directed in last month's calendar. Label as soon as gathered.

Green and Hot Houses.—The buildings should be made quite ready, as a sudden change in the weather may call them into requisition. Cleaning, painting, white-washing, and all repairs should be out of the way. Do all needed glazing, see that ropes and pulleys are in running order, and that the heating apparatus is likely to last through the winter. Renew bark and saw-dust beds, and provide an ample store of coal, pots, and potting soil. Bring in the more tender plants as soon as the nights become cool.

Annuals.—Sow seeds in pots for winter flowering.

Bulbs.—Pot Cape bulbs, as well as the different varieties of Cyclamens, Oxalis, etc.

Callas.—A good supply of these is valuable for the decoration of the house. Divide and re-pot.

Camelias.—Re-pot if they need it. Clean the foliage with a wet sponge, and where flower buds have set too thickly remove a portion of them.

Potting.—Take up those plants which were turned out into the borders as it is desirable to preserve, or to have flower in-doors during winter.

Dressing.—Pots which have been out of doors need to be cleaned from accumulations of moss, etc., and the surface soil renewed. Stake, trim, remove dead leaves, and put them in complete order.

Cold Grapery.—As with the exception of some very late sorts, the fruit is now ripe, there is nothing to be done except to keep the atmosphere of the house dry. Ventilate freely, but close all up during the continuance of stormy weather.

The Apiary for September.—*Prepared by M. Quinby, by request.*—A swarm of bees issuing with a young queen (that is a second swarm,) is liable to become queenless within a week or two after being hived. If the swarm is large, and honey abundant, the hive will be nearly filled. However large the swarm at first, but few bees will be left by the last of the month, and they are liable to be robbed as soon as honey fails in the flowers. Such should be removed now. Although it may contain sufficient stores for winter, it can never be made into a prosperous colony, as most of the combs will be composed of drone cells; consequently most of the bees raised will be drones. Much of the honey will equal that put in boxes, for the table. The few worker cells will mostly contain bee-bread, and be fit for nothing. All very weak stocks must now be taken care of if unable to defend their stores. If they possess means of defence, although unfit for winter, they may stand

till October, that the remaining brood may hatch. Any person having a dozen healthy stocks, in movable-comb hives, has no excuse for having any such weak colonies, as with timely care in changing combs, making the strong aid the weak, all can be made good. An old stock found queenless, with stores for winter, and uninjured by the voracious may be made prosperous by introducing bees and a queen from some inferior one. Expose no honey where bees can get at it, as it induces robbing. If it is desired to feed, put the honey upon some hive with a cover, to keep bees from it. The infection of foul brood is spread more at this season than at any other. In sections where it exists much care is necessary, and all affected colonies should now be removed. Where there is much of it, the colony appears much stronger than it really is. Strong stocks take advantage of the weaker ones, and carry off the honey, thus infecting all that partake of it. Every old hive, whether weak or otherwise, should be examined. All strong ones may go till next month. Smoke and invert box hives, and open some of the oldest sealed brood-cells. If the bee is dark colored while in the larvæ, it is dead, and not a particle of the honey in such hive should be allowed to be taken into healthy ones without being cleaned by scalding. If the combs are not too old, the honey stored near the outside and top is good for the table, but the combs near the middle and bottom have cells containing dead brood scattered through them, that cannot be easily separated from the rest. It is best disposed of by burying. Remove all surplus boxes. Any honey left unsealed will be removed into the hive, as soon as flowers fail. If they have stored any surplus, they should have enough in the hive without appropriating any from the boxes.

The Russian Cattle Murrain.

For some time past there have been fears that the Russian Murrain among neat cattle, which has been very destructive in Europe, and was gradually working westward, would cross the channel to England with the great number of heeves and veals brought from the continent. There has been less danger of its coming to America, because our importations have been very small of late, owing to the high rate of exchange and gold. Now, however, as gold is lower, and we are beginning to import again, Alderneys, Ayrshires, etc., we hear of the breaking out of this terrible plague among the cattle of London and its neighborhood. On the 31st of July a meeting was held in London to consider this subject, and Professor Gamgee, whose writings on veterinary subjects have made him almost as well known in this country as Great Britain, made a statement of the origin and spread of this cattle plague in and about London, an abstract of which we give. All cattle brought to this country from abroad ought to be examined by a good veterinary physician and quarantined if necessary. They are now subjected to no examination whatever, and ships are constantly arriving which bring cows for milk, and sell the same, by the way, as imported animals, as indeed they are, though probably not half so good as our own common stock. Prof. Gamgee stated that:

"The first appearance of the malady, as far as it can be at present traced, dates back to June 27, when six cows, which had been purchased on the 19th in the Metropolitan Cattle Market, were seized with the disease in Mrs. Nicholl's dairy, 15 Park place, Liverpool road, Islington. Circumstances favored the spread of the malady, as, although the six cows were placed in a quarantine shed, other cows happen to have been in the same place, and thus the malady was propagated. One hundred and fifteen have died. It is impossible now to give the succeeding outbreaks in order of time and without specially naming the cow-keepers. I may mention that the malady has been and is more particularly confined to the districts of Islington, St. Pancras, St. Marylebone, and Paddington. It is at the present moment raging severely in Marylebone, at Kilburn, Hendon, Hempstead and Sydenham, and also it is said at Cheam, Surrey. Since Saturday I have received information directly and indirectly, but chiefly from personal inquiries, concerning twelve distinct outbreaks. I shall state the particulars in the order in which I have gleaned them. 1. The first shed I visited was in Marylebone. Forty-five animals, in apparently the most perfect health, were in this yard on Thursday, the 20th. The owner had been to the Metropolitan Cattle Market on the 14th or thereabouts, and was shown some cattle laboring under the disease. He

approached them within a yard or two, but feared to touch them. Within a week—viz: on Friday, the 21st, he noticed some of his animals sick, and saw they were laboring under the disease he had witnessed in the market. On Saturday he began to get rid of them, and sold twenty-eight by Tuesday, 25th. The remainder of the stock was turned out in fields, I know not where, and is said to be still healthy. 2. A cow-keeper in the immediate neighborhood of the last one had sixteen cows in perfect health, and lost the whole in a fortnight. 3. In an adjoining street a third dairyman had seventy cows distributed in various sheds, besides seventy in the country. A cow was bought in the Metropolitan Cattle Market on the 10th of July, and on the 16th this animal showed signs of the disease. She had been placed in a shed with twenty-three others. Twelve were fat and were sold in the market before any sickness manifested itself on them. The other twelve were seized, including the newly-bought one, and of these eight have died and four are still living, but not at all likely to recover. As yet the remaining stock in distant sheds is in perfect health. 4. An extensive cow-keeper with a choice stock of seventy cows, purchased a Dutch heast nearly a month back. Within a few days it was affected, and the seventy animals were all seized within a fortnight. I saw three convalescent on Saturday, but in a very reduced condition. 5. Near Cumberland market a dairyman having usually between forty and fifty cows, lost the whole within three weeks. 6. Another dairyman in the same neighborhood has the disease among his stock at the present moment. 7. In St. Pancras a dairyman has lost ten within a few days. 8. A cow-keeper in Camden Town had a stock of sixteen cows in perfect health in the early part of this month: they all died in a fortnight. He fumigated and otherwise disinfected his shed, and bought six fresh animals, of which two are already dead. 9. Near Willesden a dairyman has lost sixty-five animals within a fortnight." The remedy he suggested was that they should adopt somewhat similar measures to those put in force when the small-pox broke out among the sheep, in 1862, and which had the effect of successfully checking the disease:—Flocks rigorously isolated for medical treatment or slaughter, pens disinfected, etc.

The same high veterinary authority, after stating the facts of its being communicated by cars and vessels in which the stock has been conveyed, and which have not been properly cleaned thereafter, and of its being communicated to cattle by sheep, though the latter are probably not themselves affected, makes the following statement of the symptoms during the progress of the malady: "The period of incubation of the disease is from four to ten days. When affected the animal gets dull and prostrate, shivering fits appear, there is costiveness, red eyes, mouth hot, great thirst, etc. These premonitory symptoms are succeeded by violent tremblings, peculiar spasmodic agitation of the muscles, discharges from the eyes and nose, costiveness and diarrhoea, and sometimes the surface of the body is cold. These are some of the symptoms, beside which there is often a loss of power in the extremities. This stage lasts about two or three days, having all the appearance of a fever. Lastly, there is evidence of serious changes in the blood, manifested through the effect upon the nervous system, and the animal dies in convulsions. Those attacked become rapidly emaciated, the flanks sinking in. Sometimes death occurs within two or three days, at others not until after a week, while the victim may linger three or four weeks. After death, most of the indications of typhoid fever in man are visible."

The great Cheese Exhibition.

The dairy interests of our country are annually becoming more extensive and important. Thousands of intelligent and prosperous farmers are turning their attention and wealth every year into this channel. It is proposed by the N. Y. State Agricultural Society, to have the grandest display of dairy products at their fair at Utica, N. Y., Sept. 12th to 15th, that has ever been witnessed in America. A spacious, circular tent will be provided for the exhibition of cheese. Such cheeses, entered for this special display, are to be for exhibition only. No one will receive a prize; though we presume it will not interfere with the award of the regular prizes of the Society. It is proposed that all the cheeses be arranged in groups by counties, each bearing the maker's name. This arrangement appears to have the approbation of many of the leading cheese manufacturers in the State, and it secures the active co-operation of the officers of the N. Y. State Cheese Manufacturer's Association, whose President has issued a circular to the members to come up to the call. It is safe to conclude that the exhibition will add greatly to the interest of the State Fair, as well as give notoriety to American cheese dairies, for all cheese makers, both of other States and Canada, are invited to unite in making a display.

Agricultural and other Fairs.

STATE AND NATIONAL FAIRS.

American Institute, N. Y. City, Sept. 12th to Oct. 19th; J. W. Chambers.
Canada East, Montreal, Sept. 26 to 29.
Canada West, London, Sept. 18 to 22.
California, Sacramento, Sept. 11 to 16.
Delaware Horticultural Society, Wilmington, Sept. 12.
13; Ed. Tatnall, Jr.
Pennsylvania East, Morristown, Sept. 19 to 21.
Hartford, Conn., Horse Ass'n, Sept. 12 to 14.
Horticultural Exhibition Am. Inst., N. Y. City, (Greenlee Prizes), Sept. 12 to Oct. 19; See basket item.
Illinois, Chicago, Sept. 4 to 9; J. P. Reynolds.
Indiana, Ft. Wayne, Oct. 2 to 7; W. H. Loomis.
Indiana Pomological, Ft. Wayne, Oct. 1, 2 to 7.
Iowa, Burlington, Sept. 26 to 29; Dr. J. M. Shaffer.
Kentucky, Louisville, Sept. 12 to 15.
Massachusetts Charitable Mechanics Association, Boston, to commence Sept. 26; Joseph L. Bates.
Michigan, Adrian, Sept. 19 to 22.
Michigan, Kalamazoo, National Exhibition of horses, Oct. 3 to 6; C. F. Kidder.
Ohio, Dayton, National Horse Fair, Oct. 3 to 6.
New England, Concord, N. H., Sept. 5 to 8; S. Humphrey.
New York, Utica, Sept. 12 to 15; Col. B. P. Johnson.
Ohio, Columbus, Sept. 12 to 15; J. H. Klippart.
Pennsylvania, Williamsport, Sept. 12 to 15.
Vermont, White R. Junction, Hartford, Sept. 12 to 15.
Wisconsin, Janesville, Sept. 26 to 30.
Wisconsin Hort. So., Janesville, Sept. 26 to 30; J. C. Plumb.

COUNTY AND OTHER FAIRS.

MAINE.

Franklin Co., Farmington, Oct. 3 to 5; L. F. Green.
Hancock Co., Ellsworth, Sept. 26 to 28.
York Co., Biddeford, Oct. 10 to 12.

NEW HAMPSHIRE.

Merrimack River, Nashua, Sept. 20 to 21.

VERMONT.

Chittenden Co., Burlington, Sept. 19 to 21.
Franklin Co., Enosburgh Falls, Sept. 20, 21; W. S. Rublee.
Rutland Co., Rutland, Sept. 27, 28; Henry Clark.

CONNECTICUT.

Fairfield Co., Norwalk, Sept. 27 to 30; Edwin Hoyt, New Canaan.
Housatonic, New Milford, Sept. 26 to 28.

MASSACHUSETTS.

Barnstable Co., Barnstable, Oct. 5.
Bristol Co., Taunton, Oct. 3.
Berkshire Co., Pittsfield, Oct. 3 to 4.
Essex Co., Lawrence, Sept. 26, 27; Chas. P. Preston.
Franklin Co., Greenfield, Sept. 28, 29; A. DeWolf.
Hampden Ag. So., Springfield, Oct. 3, 4; J. M. Bagg.
Hampshire, Franklin, and Hampden, North Hampton, Oct. 5, 6; A. P. Peck.
Hampshire, Amherst, Sept. 26 to 27.
Highland, Middlefield, Sept. 14 to 15.
Hampden East, Palmer, Oct. 10.
Housac Valley, North Adams, Sept. 19 to 20.
Housatonic, Great Barrington, Sept. 27.
Middlesex, Concord, Sept. 21.
Middlesex North, Lowell, Sept. 28.
Middlesex South, Frammingham, Sept. 19.
Martha's Vineyard, West Tisbury, Oct. 1.
Nantucket, Nantucket, Sept. 26.
Norfolk, Dedham, Sept. 28.
Plymouth, Bridgewater, Oct. 5.
Worcester Co. Hort. Soc., Worcester, Sept. 19 to 22.
Worcester Society, Worcester, Sept. 21.
Worcester West, Barre, Sept. 28.
Worcester North, Fitchburg, Sept. 26.
Worcester South, Sturbridge, Oct. 5.
Worcester, Southeast, Milford, Sept. 26.

NEW YORK.

Albany and Rensselaer Cos., Island Park near Albany, Sept. 19 to 22.
Broome Co., Binghamton, Oct. 3 to 5.
Chenango Co., Norwich, Sept. 18 to 20.
Chautauqua Farmers and Mechanics' Union, Fredonia, Oct. 4 to 6; Jno S. Russell.
Cattaraugus Co., Little Valley, Sept. 26 to 28.
Chautauqua Co., Sept. 5 to 7.
Delhi Ag. and Mechanics' Association, Oct. 5, 6.
Dutchess Co., Poughkeepsie, Sept. 26 to 28.
Delaware Co., Walton, Sept. 26 to 28; E. W. Kellogg.
Essex Co., Elizabethtown, Sept. 21, 22.
Gorham (Ontario Co.) Reed's Corners, Sept. 8.
Greene Co., Cairo, Sept. 19, 20.
Genesee Co., Batavia, Sept. 20, 21.
Jefferson Co., Watertown, Sept. 5 to 7; J. Stears, Jr.
Monroe Co., Rochester, Sept. 26 to 28.
Manlius and Pompey, Manlius Village, Sept. 28 to 29.
Moriah, (Essex Co.), Port Henry, Sept. 28, 29.
Newburgh Bay Horticultural Society at Newburgh, Sept. 27 to 29.
Oneida Co., Rome, Sept. 25 to 28; H. B. Bartlett.
Otsego Co., Cooperstown, Oct. 3 to 5.
Ontario Co., Canandaigua, Sept. 20 to 22.
Oxford Agricultural Association, Oxford, Sept. 25 to 27.
Orange Co. Horse Fair, Middletown, Sept. 6, 7; John S. Conkling, Alex. S. Brown, Secretaries.
Orange Co., Goshen, Sept. 6, 7; Jas. J. McNally.
Oswego Co., Mexico, Sept. 19 to 21; Abra. F. Kellogg.
Putnam Co., Carmel, Sept. 13 to 15; C. M. Belden.
Queens Co., Flushing, Oct. 4, 5.
Rushville, (Yates Co.), Rushville, Sept. 26, 27.
Suffolk Co., Riverhead, Sept. 27, 28.
Saratoga Co., Springs, Sept. 5 to 8; J. A. Covey.
Susquehanna Valley, Otsego Co., Unadilla, Sept. 21, 22; Robt W. Courtney, Sidney, Secretary.
Ulster Co., Kingston, Sept. 20 to 22.
Westchester Co., White Plains, Sept. 19 to 21; Cowan.
Washington Co., Salem, Sept. 27 to 29.

PENNSYLVANIA.

Adams Co., Bendersville, Sept. 19 to 21.
Bucks Co., Newtown, Sept. 26-27; James B. Lambert.
Glenwood, (Susquehanna Co.), Sept. 20 to 22; W. Osterhout.
Lehigh Co., Allentown, Sept. 25 to 29.
Mt. Pleasant, Equitable Agricultural Association, Hickory, Sept. 27-28; Geo. Buchanan.
Luzerne Co., Wyoming, Oct. 3 to 5; Steuben Jenkins.
Susquehanna Co., Montrose, Sept. 20 to 23.

NEW JERSEY.

Burlington Co., Mount Holly, Oct. 3 to 4; G. C. Brown.

OHIO.

Ashtabula Co., Jefferson, Oct. 3 to 5.
Athens Co., Athens, Sept. 27 to 29.
Belmont Co., Belmont, Sept. 19 to 21; A. P. Miller.
Cincinnati Horticultural Society, Sept. 25 to 29.
Coshocott Co., Coshocott, Oct. 11 to 13; W. R. Forker.
Clarke Co., Springfield, Sept. 5 to 8.
Delaware Co., Delaware, Sept. 26 to 28.
Franklin Co., Columbus, Sept. 6 to 8.
Fulton Co., Ottoker, Sept. 13 to 15.
Greene Co., Xenia, Oct. 4 to 6.
Geauga Co., Burton, Sept. 19 to 21.
Hancock Co., Findlay, Oct. 5 to 7.
Highland Co., Hillsboro, Oct. 4 to 6.
Harrison Co., Cadiz, Oct. 4 to 6.
Lake Co., Painesville, Sept. 27 to 29.
Madison Co., London, Sept. 7 to 9.
Marion Co., Marion, Sept. 20 to 23.
Meigs Co., Racine, Oct. 4 to 5; Wm. H. Lasley.
Morgan Co., McConnellsville, Oct. 3 to 5.
Morrow Co., Mt. Gilead, Oct. 3 to 5.
Paulding Co., Paulking, Sept. 21 to 22; F. S. Cable.
Portage Co., Ravenna, Sept. 20 to 22.
Stark Co., Canton, Oct. 3 to 6.
Summit Co., Akron, Oct. 4 to 6.
Trumbull Co., Warren, Sept. 20 to 22; H. F. Austin.
Wyandot Co., Upper Sandusky, Sept. 27 to 29.

INDEPENDENT FAIRS IN OHIO.

Claridon, Geauga Co., Oct. 3 to 5.
Greenfield, Highland Co., Oct. 13 to 20.
Jamestown, Green Co., Aug. 30 to Sept. 1.
Richfield, Summit Co., Sept. 27 to 29.
Seville, Medina Co., Sept. 28 to 30.
Conneaut, Conneaut Co., Sept. 27 to 29.
Kenton, Hardin Co., Sept. 29, 30.
Mt. Vernon Knox Co., Oct. 4 to 6.
Ottawa, Putnam Co., Sept. 27 to 29.
Columbia Co., Bloomsburg; L. B. Ru. vrt.
Eaton Co., Charlotte, Sept. 26 to 28.

INDIANA.

Cass Co., Logansport, Sept. 27 to 29.
Hendricks Co., Danville, Sept. 26 to 29.
Laporte Co., Laporte, Sept. 27 to 29.
Posey Co., New Harmony, Sept. 26 to 29.
Warren Co., Williamsport, Oct. 10 to 13; I. Bryant.

ILLINOIS.

Boone Co., Belvidere, Sept. 19 to 21.
Bureau Co., Princeton, Sept. 12 to 14.
Coles Co., Charleston, Sept. 15 to 18.
Du Page Co., Wheaton, Sept. 13 to 15.
DeKalb Co., DeKalb, Sept. 27 to 29; S. O. Vaughn.
De Witt Co., Clinton, Sept. 27 to 29.
Fulton Co., Lewiston, Sept. 13 to 15.
Greene Co., Carrollton, Sept. 26 to 30.
Henry Co., Cambridge, Sept. 13, 14.
Jackson Co., De Soto, Sept. 19 to 21.
Jefferson Co., Mt. Vernon, Sept. 28; J. S. Bogan.
Kendall Co., Bristol, Sept. 19 to 21.
Knox Co., Knoxville, Sept. 19 to 22.
Kane Co., Geneva, Sept. 27 to 30.
Kankakee Co., Kankakee, Oct. 4 to 6; E. Cobb, Pres.
Lake Co., Libertyville, Sept. 19 to 21.
Logan Co., Atlanta, Sept. 19 to 22; S. D. Fisher.
La Salle Co., Ottawa, Sept. 26 to 29.
Macoupin Co., Carlinville, Sept. 3 to 6.
Marshall Co., Henry, Sept. 26 to 28; D. D. Bunn.
Madison Co., Edwardsville, Aug. 29, Sept. 1; Edward M. West, Secretary.
Mercer Co., Millersburg, Sept. 23 to 28; J. E. Bay.
Montgomery Co., Hillsboro, Oct. 11 to 13.
McDonough Co., Macomb, Sept. 27 to 29.
Putnam Co., Hennenp, Sept. 19 to 21.
Pike Co., Pittsfield, Oct. 3 to 6.
Randolph Co., Sparta, Oct. 4 to 6; Wm. Addison.
Richland Co., Olney, Sept. 28 to 30; J. W. Beck.
St. Clair Co., Belleville, Sept. 12 to 15.
Schuyler Co., Rushville, Oct. 11 to 13.
Stark Co., Toulon, Sept. 26 to 28; Wm. Nowlan.
Sandwich Union, (De Kalb Co.), Oct. 3 to 5.
Whiteside Co., Sterling, Sept. 19 to 22.
Stephenson Co., Freeport, Sept. 26 to 29.
Winnebago Co., Rockford, Sept. 19 to 22.
Warren Co., Monmouth, Sept. 19 to 21.

WISCONSIN.

Adams Co., Friendship, Oct. 4, 5; G. W. Waterman.
Columbia Co., Portage, Sept. 19 to 21; H. B. Munn.
Green Co., Monroe, Sept. 22 to 24.
Jefferson Co., Watertown, Sept. 13 to 15; Robert Tompkins.
Lacrosse Co., West Salem, Oct. 4 to 6.

IOWA.

Cedar Co., Tipton, Sept. 13 to 15.
Clinton Co., Lyons, Sept. 12 to 15; Wm. W. Sanborn.
Dubuque Co., Dubuque, Sept. 16 to 28.
Floyd Co., Floyd, Sept. 20 to 21; V. W. Baker.
Guthrie Co., Guthrie Centre, Sept. 14, 15.
Jasper Co., Newton, Sept. 13 to 15.
Marshall Co., Marshalltown, Sept. 13 to 15; Wm. Brenner.
Page Co., Clarinda, Oct. 5 to 7; T. T. Pendergraft.
Scott Co., Davenport, Sept. 15 to 17.
Van Buren Co., Keosauqua, Oct. 5, 6.

MICRIGAN.

Berrien Co., Niles, Sept. 26 to 28.
Cass Co., Cassopolis, Sept. 27 to 29.
Calhoun Co., Marshall, Sept. 27 to 29.
Genesee Co., Flint, Sept. 27 to 29; F. H. Rankin.
Hillsdale Co., Hillsdale, Oct. 4 to 6.

Ionia Co., Ionia, Oct. 4, 5.
Ingham Co., Mason, Sept. 27, 28.
Kent Co., Grand Rapids, Sept. 28 to 30.
Livingston Co., Howell, Sept. 26 to 28.
Oakland Co., Pontiac, Oct. 4 to 6; J. R. Bowmen.
Ottawa Co., Lamont, Sept. 27 to 29.
Shiawassee Co., Owosso, Oct. 4 to 6.
St. Joseph, Centerville, Sept. 27 to 29.
Washtenaw Co., Ann Arbor, Oct. 4 to 6.

KENTUCKY.

Bourbon Co., Paris, Sept. 4 to 8.

CALIFORNIA.

Contra Costa Agricultural Society, Sept. 19 to 22.
San Joaquin District Fair, Sept. 26 to 30.

CANADA WEST.

South Ontario, Sept. 26, 28. Pickering, Oct. 10.
Pell, Oct. 3, 4. West York, Oct. 11, 12.
East York, Oct. 5. Whitby, Oct. 12.
Scarborough, Oct. 6. Whitechurch, Oct. 13.
North York, Oct. 10, 11. Gore of Toronto, Oct. 18.
Toronto, Oct. 19, 20. Lambton, Sarnia, Oct. 5.
East Durham, Port Hope, Oct. 3, 4.

Commercial Notes—Prices Current.

New-York, Aug. 19.

The condensed and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the American Agriculturist, from official and other reliable sources, including the daily notes of our own reporter.

Table with 3 main sections: 1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS, SALES, Comparison with same period at this time last year. 2. RECEIPTS, SALES. 3. Exports from New-York, January 1 to Aug. 19.

WHOLESALE PRICES.

Table with columns for July 19 and Aug. 19, listing prices for various commodities like Flour, Wheat, Corn, Rye, Barley, Oats, etc.

Gold closed July 18 at 143 3/4, and on August 18th, at 142 3/4. In general business, there has been increased activity. Unfavorable crop reports from the interior, especially in reference to wheat, have stimulated the demand for flour and grain, and prices have advanced materially, closing in favor of the seller. The demand has been, to a considerable extent, speculative, though mainly for regular home use, and for shipment. At the close, the leading holders are not eager to realize at prevailing rates, as they anticipate a further improvement. Provisions have been in fair request at higher, but irregular, prices. The wool market has been less active, but prices have not varied materially. The supply of desirable lots is light, and manufacturers were

buying more freely toward the close.....Hops have been brisk and much dearer, under the reports of short crops.....Hay, abundant and in less demand, closing with North River bale at 95@1.10 for old, 60@90c for new, per 100 lbs.....Tobacco in fair request and firm.

New York Live Stock Markets.—

BEEF CATTLE.—The markets have received more than an average supply of beef cattle during the four weeks ending August 16th, namely: 5,765, against 5,146 for the previous month. Prices of good and prime cattle are fully as high as reported last month, and are undoubtedly kept up by an actual scarcity of this grade in the country. Other classes of cattle are more abundant, especially poor and partly fed animals, with which the markets are continually crowded, and in this class there is a large decline, ranging from 1½c@2½c per lb., net weight. From the sales ending Aug. 16th, we take the following quotations: good to prime bullocks, 16@17½c per lb., dressed weight; common to fair, 13@15c per lb., and poor to medium, 9@12c.

Milch Cows.—The average weekly receipts of milch cows are 118, compared with 98 last month. Prices a little higher, ranging from \$40@75 per head for poor to good milkers. Better cows sell \$80@\$100 each.

Veal Calves.—The average receipts of veals for the past four weeks are 1,769, compared with 2,112 last month. The demand has continued good, the receipts all being required for the regular city trade. Prices are higher, as follows: ranging from 11@12½c per lb., live weight, for good; 10½@11c for fair, and 8@9c for common.

Sheep.—The average weekly arrivals of sheep are 179,568. The demand, without exception, has been good, and prices are higher. Good sheep, 7@7½c, and common, 6½@6¾c. Lambs sell at \$1¼@6¾c per head.

Live Hogs.—The receipts of hogs average 10,109 weekly. The arrivals are light for this season, and prices continue high. Good corn-fed selling at 11½@12c per lb., live weight.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Subscription Terms Unchanged.—

The present Subscription Terms are to be permanent. Any future reduction in cost (there is very little as yet) will be made up by increased expense upon the journal itself.—The Terms are: \$1.50 a year; four copies \$5; ten copies \$12; twenty or more copies \$1 each, with extra copy to get up of club of ten or twenty, where no other premiums are called for. *Extra Numbers* are offered to new subscribers received this month, as noted on page 236.—The *German Edition* is now furnished at the same terms as the English.

Premiums for Subscribers.—

We shall soon offer a good and liberal Premium List of articles desirable to almost every one. Any names gathered and sent in this month can be counted in the Premium List to follow.

Strawberry Plants Coming.—

On Monday, Sept. 4th, we shall commence sending off the "Agriculturist Strawberry Plants," promised to subscribers, and as premiums for Clubs. If the weather prove fair, they will all be forwarded during that week. Very rainy weather may delay finishing the job for a day or two longer. We have provided 20,000 good wooden boxes of different sizes, to hold from one to ten large plants each, and hope every plant will go in good condition. We have plants now growing well which were put into these boxes during the warm weather of the latter part of May, sent by mail to Grinnell, Central Iowa, and returned to us unopened. These were sent thus as an experiment, which proved successful. The plants were green and 'wide-awake,' after a ten days' journey of 2,400 miles in the mail bags.—Where many plants go to the same person, more than one box will be used. As soon as the boxes arrive, open them and set the plants in good soil, not too rich nor too damp. Let the ground be warmed by the sun, but shade for a few days, at midday, if the weather chance to be very warm. Expose the roots as little to air as possible, in opening before planting. More plants are killed by chilling in cold, wet soils, than by any other cause, especially after being closely packed for some time. The large green leaves being

useless, and always a detriment in transplanting, they will be mostly cut off before packing the plants.

Bound Volumes of the Agriculturist, from Vol. XVI to XXIII, inclusive, always on hand. Price \$2.00—or \$2.50 if forwarded by the mail.

Good Book Premiums.—Any person forwarding 25 or more names of subscribers may choose from our book list (page 295) any desired books to the amount of 10 cents for each name at the lowest club price (\$1), and to the amount of 60 cents for each name at the regular rate of \$1.50 a year. The premium books will be forwarded paid through, by mail or express. The extra copies offered to the subscribers will be a special inducement to them to subscribe now. An energetic person can get up quite a library by his effort on a single day at any of the County Fairs.

Who reads the Advertisements?—

N. P. Boyer & Co., Gum-Tree, Chester Co., Pa., think that a great many do. This firm advertised Chester White Pigs and offered to send a copy of their Hog Breeder's Manual free of charge. The consequence has been, that they have sold a great number of animals, and by the middle of last month, they had sent 13,000 copies of their manual to subscribers to the *Agriculturist* alone. As this work costs them 10 cents a copy, exclusive of postage, it has been no slight tax. Messrs. B. & Co. state that if, in meeting this unlooked for demand upon them, there have been any mistakes, or omissions, they stand ready to rectify them, if promptly informed.

Domestic Intelligence.—

Under the head of "Foreign Intelligence," in last month's "Basket," we showed how an article of ours had been appropriated by an English paper, and copied by some of our journals as a foreign item. In the *Country Gentleman* for August 3d, we find an article upon "Soils for Potting," accredited to the *Utica Herald*. This article originally appeared in the *Agriculturist* for January, 1864. We, of course, do not suppose that the *Country Gentleman* would have taken it, had it known it belonged to the *Agriculturist*, and as we have not a file of the *Utica Herald*, we do not accuse that paper of producing the article as original. We merely allude to the case to repeat that any papers are welcome to copy from ours by giving proper credit, and to remind those who have the habit of taking articles without doing this, that our paper is copyrighted. We have allowed a great deal of appropriation to go without noticing it, and think it about time to remind those who use the scissors so freely, of the rules of etiquette which obtain among journals, and then, if grass and sticks will not do, we shall try what virtue there is in stones. For ourselves, we generally have more original matter than we know what to do with, and seldom copy from others. When we do, the matter is always fully acknowledged.

Our List of Fairs.—

The long list of Fairs which we present on page 268, has been diligently compared with other published lists, revised and corrected from the most reliable information we can procure. We regret that we have not been able to obtain all our data directly from the Fair managers. It is by far the largest and most accurate list published, and will be of great value to persons who desire to be represented at as many Fairs as possible with articles for Exhibition.

New Poultry Book.—

Entitled "DOMESTIC POULTRY, being a Practical Treatise on the preferable Breeds," etc., by S. M. Saunders. This little work of 104 pages has been recently issued by us—and we believe it will be found to be one of the most common-sense, practical, and useful works which the poultry-raiser can have. Its low price puts it within the reach of all. The author freely expresses his personal preferences for certain breeds, as indeed he should, but quotes as freely the laudations of other varieties by their fanciers.—See our Book List on page 235.

\$300 for a Barn Plan.—

The Plans in response to the offer of prizes for best farm buildings, made on page 239, must be sent in on or before Monday, Oct. 2d. A few days grace will be allowed, provided the Editor of the *Agriculturist* is previously notified of unexpected delay in sending in any plan. The following named gentlemen have been invited to act as a Committee in making the awards: Donald G. Mitchell, New Haven; Samuel Thorne, Washington Hollow, N. Y.; Samuel J. Sharpless, Phil'a.; Lewis G. Morris, Fordham, N. Y.; R. L. Allen, New York; Dr. F. M. Hexamer, New Castle, N. Y.; nearly all of whom have favorably responded.

Hard on Tree Peddlers.—

A Washington telegram reports a decision of the Commissioner of Internal Revenue, that "where a person purchases trees of nurserymen to fill orders previously obtained, and

delivers the same at different stations on the railroad either by himself or his agent, he is required to take out a dealer's license for each and every station at which he delivers the trees. The same decision will apply to his agents." We do not see the propriety or justice of this decision. There might just as well be a separate license required of common peddlers for every town in which they offer their trinkets. The result may be good, however, as it will be likely to cause the delivery to purchasers direct from responsible nurserymen, even of trees purchased through traveling agents, and thus diminish the swindling so largely practiced by some irresponsible tree-peddlers who take orders on the credit of a good nurseryman, and then fill them with trash gathered here and there and everywhere over the country.

Doty's Washing Machine, of which

we have spoken favorably, is hereafter to be manufactured by the Universal Clothes Wringer Company, for States east and south of Wisconsin and Illinois, as noted in the advertising columns.

Result of the Canadaigua Sheep

Shearing.—His Honor, the Mayor of Rochester, really, did the farmers a very important service in offering the \$50 prize for the heaviest cleansed fleece, in proportion to the weight of the animal and the time of growth of the wool. The report of the committee under whose supervision the fleeces were shorn and cleansed, is now before the public. We have not space this month for comments upon the lessons it teaches. Suffice it to say now, that the prize is awarded to a 2-year old ewe in "fair" condition, which weighed 49 pounds. The fleece (367 days old) weighed 9.85 pounds, uncleaned, and 4.75 pounds after scouring. The largest amount of cleansed wool produced in one year was yielded by a Cotswold sheep, viz: 7.06 pounds. We must add that this report of the committee on only 15 sheep, does not conform to what was published at the time of the shearing, when 33 sheep were shorn before the committee, and the weights, both of the animals and the fleeces, given. This leads us to infer that sheep owners who saw that this report was going to damage their flocks, were allowed to withdraw their fleeces, after the shearing.

GLANDERS!—Too Late.—

We have heretofore repeatedly warned our readers and the public against the danger of getting glandered horses from the Government. Now we must reiterate this, and state the fact, that among the horses sold in this city at the Government sales, those well known to have this most malignant and terrible disease, (affecting men as well as horses) have been repeatedly, and we presume constantly, sold. There is not a respectable horse-dealer on 24th street, who will allow a government horse to come near his stable. This statement rests on the assurance of a physician and thorough veterinarian, who also states to us that, within a few days he has seen a badly glandered horse eating his oats out of his master's butcher-cart, which was subsequently filled with meat for distribution to families. Ought these things to be? The Government might better have shot every horse, than to have them spread contagion and death (for the disease is utterly incurable) among the stables of the country, far and near. Besides, we shall very likely hear of men dying in unutterable agonies from this malady.

The Harvests, etc.—

The season has been remarkably favorable to growing crops. Hay in all parts of the country has been very heavy, and usually well secured. The yield of small grains, large at the East, never better in the State of New York, good in Pennsylvania, and at the West, though accounts are conflicting, we believe as good as usual. In fact there is at this season, even less than usual "growing." There is a great deal of wheat on hand, even two years old, still in first hands at the West. The farmers have held on for bigger prices, and may now see how mistaken was that policy. If the prices that have lately ruled, are maintained, it will only be by speculation and gambling, and the profits of this business, taken from the mouths of orphans, and the hard toil of the laborer, are not shared by the farmers. Corn looks very well; apples are reported a short crop in most localities, and it is probable they will be scarce and high. Grapes are poor so far as we can learn.

Osier Willows.—

We have inquiries about the culture of these. Procure cuttings 8 to 12 inches long, after the leaves have fallen. Set them in spring in rows 3 feet apart, 10 inches distant in the rows, leaving the top of the cutting level with the surface of the ground. For the first year, at least, the plantation should be kept as thoroughly tilled as a corn field. A deep, rich, moist soil is best; bottom lands that are occasionally overflowed are suitable, but they must be free from standing water.

The Fair of the American Institute.—The 26th Annual Fair of the American Institute will commence on the 12th inst., and continue until October 19th. The place selected for holding the exhibition is the armory on 14th-street, near 6th avenue, being the same building occupied by the great Sanitary Fair last year. A very extensive and liberal list of premiums is offered for industrial products of all kinds, including those of agriculture and horticulture. Agricultural and dairy productions, as well as preserves, honey and wines must be in place on or before Monday, Sept. 12th. Fruits must be in by Monday, the 18th; Green House plants and florist's flowers generally, Monday, 25th; Evergreens, Ferns, Lycopods, and cut flowers on Monday, Oct. 2d; Table decorations, Baskets, Bouquets, and Rustic stands, Monday, Oct. 9th, and Chrysanthemums, Monday, Oct. 19th. Horticulturists will be much interested in this fair, from the fact that the award of the Greeley Premiums is to be made upon fruits there exhibited. One hundred dollars will be awarded, each, for the best bushel of apples, the best bushel of pears, and the best dish of grapes (not less than six pounds), of the varieties best adapted to general culture. The following varieties of Apples and Pears were exhibited and examined last fall and will not come into competition this year, except from the parties who exhibited the specimens then, viz: *Apples*.—Hubbardston Nonsuch, Fall-water, Cooking's Seedling, Swaar and Baldwin. *Pears* Bartlett, Lawrence, Duchesse de Angouleme and Dana's Hovey. The fruit for which these premiums are offered must be exhibited on or before Monday, the 18th of September. Varieties which ripen at a later period may be exhibited at the rooms of the American Institute on the second Tuesday of November, and the second Tuesday of December, in competition for the same premiums. The following gentlemen compose the Committee to examine and report upon the varieties exhibited: Messrs. John A. Warder, Cincinnati, Ohio; Chas. Dowling, Newburgh, N. Y.; Isaac M. Ward, Newark, N. J.; Wm. S. Carpenter, New York; P. T. Quinn, Newark, N. J.; Wm. L. Ferris, Throg's Neck, N. Y.; E. Ware Sylvester, Lyons, N. Y. Peter B. Mead, N. J., will meet with this Committee in awarding the premium on the Grape. The fruit for these premiums should be directed to John W. Chambers, Clerk of the American Institute, 14th-street, and marked "For the Greeley Premiums." The charges must be paid to the place of exhibition.

Communications on the subject of the exhibition are to be addressed to John W. Chambers, Sec. American Institute, Cooper Union Building, N. Y. City.

How to Manage a Baulky Horse.

"J. C. R.," of Pittsburgh, Pa., writes to the *Agriculturist*, that he saw a stranger open the mouth of a baulky horse and throw in two handfuls of dust and sand from the beaten track of the road, and the animal obeyed his driver immediately and travelled on. We have known a similar effect produced by slipping a small cord around the tongue, or under jaw, and pulling forward on it. "J. C. R." accounts for the phenomenon by supposing that the dust diverts the horse's attention and he forgets his baulkiness for the time being. The best way is to so manage horses, that they will never baulk. This preventive is worth all the remedies in the world.

The Russian Cattle Plague. (Cure Proposed.)—In another article we give some statements concerning this disease. Mr. Louis Burstall, of this city, sends us the following, which is worth remembering, for we may have an opportunity to put the suggestion in practice before long. "Leartiof that in England, the Russian Epidemic has attacked cattle, and as it is possible that this very disastrous disease may be imported into this country, I take the opportunity to direct your attention to a means, which, in this as in many other cases, has proved to be thoroughly disinfecting. This is *Raw Petroleum*, or if it is not to be had, *Kerosene* (or *Benzine*?). But for external use (as a disinfectant) raw Petroleum is preferable. I go so far as to think, that Kerosene should be administered internally to cattle, that have shown the first symptoms of the Russian plague."

To Prevent Smut in Wheat.—David Nutt, Dearborn Co., Ind., recommends one pound of blue vitriol in five gallons of water as steep for seed wheat, to prevent rust. The grain is soaked in it an hour and sowed immediately. The usual practice is, to soak the seed in strong brine, and use about $\frac{1}{2}$ lb. of blue vitriol (sulphate of copper) to five gallons of brine. After the seed has been in this pickle a few hours, it is spread on a floor, rolled in dry slacked lime, and sowed as soon as practicable. The brine floats off all the light seed and also aids the copper salt in killing the smut.

Quick Lime on Wheat Soils.—W. H. Marbles, Allegany Co., Mich., writes with reference to

our article on Soils for Wheat in the April number, page 112: "Quick Lime has a very manifest and lasting effect, pulverizing and generally loosening our clay soils. May it not also act as a decomposer and absorbent? I think I cannot be mistaken that the crop bears drought better where the soil has been limed. It should be slacked only sufficiently for spreading, and plowed under as quickly as possible. In some circumstances it is a cheap manure, as it costs so little to apply it." The same writer speaks highly of leached ashes. In one instance a dressing of these (quantily not given) increased the yield of grain more than ten bushels per acre.

Renovating old Meadows.—"R. C. J.," Columbia Co., Penn., writes: "I have an eight acre meadow, which has not been plowed for thirty-five years. About once fourth, receiving the washings from the public road, produces good Timothy. Another fourth has grown up with wild grass; the balance produces almost nothing. The soil is naturally good, neither too dry nor too wet. The question is, what shall I do to get it in good Timothy? Shall I manure, lime and harrow it thoroughly, and sow it with Timothy? or shall I plow this fall for corn, following with oats or wheat?"—The wild grass is an indication of an excess of water. The first step is to drain and open the soil. Then a liberal dressing of bone dust, lime and barnyard manure, well harrowed in, may produce a good crop next season. Or plow under a dressing of lime, and top dress with well-rotted barnyard manure, and stock down with Timothy, or sow other grass seed also. If done this month, it will yield a heavy burden of grass next season. The best way ordinarily is, to plow and crop it, manuring liberally a few years, and then stock down again to grass, with some grain crop.

Keeping Manure.—*Questions enough for a long chapter.*—Geo. A. Dudley, of Ulster Co., N. Y., asks: I. Should the droppings of the stable be kept under cover, or exposed to rains? II. If under cover, should not the receptacle be just outside the building and roofed over, rather than under the stable, where it would infect the air above? III. Should a pit, in either case, be left with naked walls and earth bottom, or both made water tight with cement? IV. Would an earth bottom absorb value to any great extent from the liquid?

Ans.—I. In regard to the first: under cover. Though on this point Mr. D. says—his own experience has been that, "under cover the heap 'burned' out its vitality, while outside the rains prevented this." This must have been because the liquids were not led over the solid parts, and the heap was not properly spread and trodden down. II. Much better have the manure sheds outside and with closed sides. III. We would cement both sides and bottom of any regular pit, but if the manure sheds were extensive, would not attempt to cement the whole, if the ground was clayey, or a stiff loam, or gravelly clay loam. (IV.) such soils are sufficiently impervious. Sandy and light loam soils allow the manure to soak into them, often to a depth of several feet.

Chaffing Hay and Straw.—Isaac B. Rumford, of Penn., writes to the *Agriculturist*: I do not feed hay to any of my stock except milch cows, because I think straw and grain cheaper and as good. All the hay fed to cows, as well as straw, is chaffed to prevent any waste, and to be able to know exactly how many pounds are fed out. I find by chaffing corn fodder that the stock, except one of my mules, which is rather dainty, will eat it all up. We use a one-horse-power to chaff with, and are sure it pays. I prefer chaffed straw for litter, because it soaks up the liquid manure much better than when not cut. When the litter is chaffed, the manure is in a much better condition for spreading or plowing in.

Ditching Machines.—M. W. Montgomery, Jay Co., Indiana, inquires if there is any machine in successful operation for cutting ditches for tiles? None that we know of. Many of our Western farmers have affirmed that the Mole Plow, which is drawn by a capstan anchored to a tree or post, and makes a round hole 2 or 3 feet below the surface, through the compact subsoil, serves an excellent purpose. The best way to cut ditches is to use the ditching plow, pick, spade and shovel.

Scythe Sharpening.—Chas. E. Townsend, of Queens Co., N. Y., writes: "The ordinary mode of sharpening a scythe with the dry rifle, heats the edge and destroys the fine temper of the blade, the same as the temper of a knife would be destroyed by grinding it on a dry stone. By using a round stone hone, and keeping it in a pail of water, the temper of the blade will be preserved, a keener edge imparted, and with a single honing, double the quantity of grass can be cut than when sharpened with the ordinary dry rifle. The hone should be re-wet two or three times while wetting the blade. A scythe treated in this way will last double the

ordinary time; and those who try this method of wet honing, will be surprised to hear the unwonted, keen, ripping sound of the blade, as it cuts through the grass." To which we say: Very important and useful, if true.

Is Hair worth saving as a Manure?—This question is asked by a Western Pennsylvanian. Had he hailed from this side of the Alleghenies we should have wondered at the question. Hair is very powerful manure, being so rich in nitrogen (which forms ammonia) that it must be used with caution, like guano and other highly ammoniacal fertilizers. It undergoes fermentation rather slowly at first, but if composted with muck and the fermentation quickened by a little barnyard liquor or horse manure, it acts very quickly. Hair, wool, woolen rags, horn shavings, etc., contain more nitrogen than the best Peruvian guano.

Fallows.—When they are not well drained, better drain, and improve their productiveness for a crop of spring wheat, than to sow winter wheat. In some sections of the country new ground in process of being cleared is called "fallow." On such let the rubbish be burned before wet weather, all weeds and bushes cut, and the soil well prepared for winter or spring grain.

The Ice-house Question.—"W. H. O.," De Kalb Co., Ill. How to make an ice-house that will keep ice—that is the question. W. H. O. writes: "Last winter I built a house twelve feet square and eight feet high of pine boards, well jointed. I then built another two feet larger each way around it, and filled the space between them with oat straw, well pounded in; the whole was then covered with a roof and shingled; the space under the roof was also filled with straw, and the ends boarded up. It was filled in February with the most splendid ice I ever saw, all in blocks two feet square and two feet thick. I thought it would last till next winter, but here it is the first of July and my ice all gone, although we have not used a twentieth part of it. Where have I failed in the construction of the building?" This house probably failed to keep ice on account of a lack of drainage, or from a free access of air at the bottom, operating in connection with no ventilation at the top. Not a particle of air should have access below, and no water should stand where the ice will touch it. The walls are all right, only twice or three times as thick as they need be. The roof would be just as good if boarded on the under side of the rafters, with straw stuffed between. Sufficient ventilation would be secured by half-a-dozen 2-inch-auger holes in each end near the peak.

Pigeons on the Farm.—Some one in the periodical called *Our Young Folks*, very prettily expatiates on the wonderful discrimination of the pigeon in eating only the seeds of weeds, and if he happens to touch a planted crop, it is only to pick up the imperfect grains, which this wise bird knew would never grow, but which are just as good pigeon feed as those which would. The writer of all this pretty talk should have seen the pigeons at our peas this spring. They took them out of the ground about as fast as they went in, and as they made clean work, we must, according to this writer's view, have planted none but bad seeds. There was one new kind we particularly desired to try, and though we endeavored to save it by both dog and gun, the pigeons were too much for us. They got up early, staid up late, and watched all the time, which we couldn't afford to do. We lost all our peas, and if somebody chance to have fewer pigeons now than formerly, they must have died from a combined attack of peas and bird shot.

Horse Collars.—A horse cannot work with ease and without galling if his collar fits badly. There is but little danger of a collar being too small for an old horse, if it will pass over his head. Collars should set close to the neck all around. When so large that a man can thrust his arm between the collar and neck, there is great danger of two things—galling and spraining the shoulder by heavy drawing, or a violent jerk.

Eggs.—Store with care in a dry, cool place, for use next winter. Set them on the small end between layers of any kind of meal or flour in a box or barrel. Pass each egg before a light, or look at it through a tube a foot or more long, to tell the good ones. Bad eggs are dark colored. Good ones are translucent, showing the color of the yolk. Pack the boxes full, so as to be able to turn them bottom upward every now and then.

Grass Grass.—F. A. Lamont, Vallecito, Cal. The grass you speak of is one of several species of *Chondrosium*. Some attempts were made to introduce it into the Southern States some years ago, but we have never heard with what success. It is peculiarly adapted to sterile soils where there are long drouths, but we doubt if it would supersede our pasture grasses at the North

Cranberry Culture.—After the August number went to press we had a note from Dr. Ross, whose article on cranberry culture we published, requesting us to supply an omission. In his article he omitted to state that where the vine worm was troublesome, flowing the bed in winter would prevent its attacks. Where the locality admits of it, it is well to have arrangements to flow the bed at pleasure, as after the fruit is set it is sometimes attacked by an insect from which it may be protected by covering with water.

Grape Trellises upon a Hillside.—J. McMurray asks if trellises upon a steep hill should run up and down the hill, or across. The trellis should be at right angles with the slope, for unless the arms be horizontal, it will be impossible to equalize the growth of the canes: the earth will wash less if they run across.

Ashes for Fruit Trees.—E. Presser, Alleghany Co., Penn., inquires "What kind of manure the ashes from furnaces of tanneries will make for fruit trees. Tanners burn their spent tanbark, which makes vast quantities of ashes, which they throw away." Ashes from bark are excellent manure and certainly good for fruit trees; and unless the ground is covered with them so deep as to kill vegetation, there is little danger of applying too large quantities. Still, such ashes are not so valuable as wood ashes, for they contain but a small amount of alkali; hence soap makers consider bark ashes as of very little or no value to make lye.

Saving Tomato Seeds.—M. B. Pratt gives the following as his method of treating tomato seeds: "Lay the seeds and pulp upon a dry cloth, spread them with a knife, then lay another cloth over, and roll all up tight, then scrape off the seeds into a pan of water and wash out with the hand all the pulp that is left after rolling, and lay them in the dry cloth for a few minutes; place them in a paper, and in course of the day they are clean and dry, and ready for sale." Another subscriber spreads the pulp, containing the seeds, thinly upon newspaper, without washing, and allows it to dry there. The paper is then rolled up and put away until spring. When needed for sowing, the paper is cut into strips and planted (seeds, paper and all) in the hot bed.

A great Year for Toadstools.—Every where around New York City the months of July and August have been remarkably favorable to the growth of the different forms of Fungi, not only of the larger kinds, which are popularly recognised as toadstools and mushrooms, but of the more minute ones, known as mildew, rust, etc. A friend informs us that he found the edible mushroom growing as finely and as abundantly in an old orchard in July, as it usually does in October. Various kinds of toadstools have been so abundant in the garden, as to make it necessary to hoe them up like weeds, and such is the rapidity of their growth, that the process had to be repeated the next day. Flower-pots and rustic baskets, placed out of doors, have borne large crops of these fungi, to the detriment of the plants they contained. We have in another place alluded to the general prevalence of mildew, which is a minute fungus growing upon living plants. This has not been confined to the grape alone, but has appeared upon plants not usually affected by it. We had a nice patch of cucumbers in a rather sheltered spot, and the mildew appeared upon the leaves of these and swept them off as if by fire. The rust upon the raspberry, which is still another fungus, has been prevalent and fatal. Indeed all plants of this low grade seem to have perfectly revelled this year.

Garden Edgings — Information Wanted.—W. S. Gridley and several others have written to know of a good substitute for box. We do not know what to recommend. Box is not hardy far north of New York, and there is a great need of some other dwarf hardy plant to use in its place. Grass will do, but it is very troublesome on account of its propensity to run, and it is very difficult to keep it clear of weeds. We have tried *Cratægus Pyracantha*, and *Privet*, but they are naturally large shrubs and do not succeed well when kept as dwarf and close as is required for an edging. The dwarf *Iris* and some other herbaceous plants are used, but they have not a good green color. Annuals are too much trouble, as by the time they are large enough to look well they are cut down by the frost. We shall be glad of any suggestions on this subject.

The Wistaria.—"T. H." It is not unusual for the *Wistaria* to flower a second time, especially in such a damp season as the past summer has been. The flower clusters are, however, never as full, nor as abundant as in early spring, its usual flowering time.

About Names.—"Inquirer" asks if he should say *Whortleberry* or *Huckleberry*. The best

American writers use *Huckleberry*, and English authors say *Whortle*- and *Hurtle*-berry. All these words are derived from *Myrtle*-berry, and we prefer to follow good usage and call it *Huckleberry*. With regard to *Tomato*, it is pronounced both *Tom-ar-to* and *Tom-ay-to*. Though we were taught to give the broad sound to the *a*, analogy with potato would show that the long sound is most proper. Where the botanical name, which follows the rules of the Latin language, becomes the common one, it is often difficult to decide whether the name should be Anglicised or not. There has been much discussion whether one of our beautiful bulbs should be called *Gladiolus* or *Gladiolus*, and an equal discrepancy exists with regard to *Clematis* or *Cle-ma-tis*, though the best authorities adopt the former. Still more puzzling is it to decide what shall be the common name of a perennial, likely to become popular, named from the botanist Michaux, whose name is pronounced *Mee-show*. The plant is *Michauxia*. Shall its common name be *Mee-show-e-ah* or *My-chorx-eye-a*?

Double Apple Blossom.—The London Gardener's Chronicle figures a double apple blossom as a novelty. Scarcely a year passes that we do not see them. They usually appear after the general blooming is over.

Plants Named.—Irene Cole, White Co., Ind. *Lamium maculatum*, the spotted Dead-nettle; a plant from the South of Europe that has been in cultivation for nearly two centuries, and is quite as handsome as some of the "foliage plants" now sold. . . . E. A. G. Wellington, O. A red-leaved *Polygonum*, which has been dropped from the catalogues and we have forgotten the species. . . . W. W. Matthews, Wis. The leaf of *Celastrus scandens*, the wax-work or Climbing Bittersweet, figured and described in August of last year. . . . W. H. Johnson. Some plant of the Borage family which can not be determined from leaves only. . . . J. Barnard. *Hibiscus Moscheutos*, sometimes called American Jute; an account and figure will be found in the *Agriculturist* for Feb. 1863. . . . Louisa Van Tassel, Wood Co., O. Specimen not recognized from leaves only; it looks like some species of *Baptisia*. . . . S. C. Larkin, Worcester Co., Mass., sends a *Helichrysum*, or Straw-flower, in which the head of the flower bears a cluster of smaller heads. This is not an unusual thing with plants of this family, the Hen-and-chicken Daisy is an old and well known example of the same thing. No other plant seen.

Insects upon Insects.—Several have sent us specimens, and others have sent us descriptions of caterpillars of various kinds, which were more or less covered by small white oval bodies, that some of the writers recognised as what they really are—the cocoons of a parasitic insect. It is one of the wise provisions for preventing the undue increase of insects, that most of them have insect enemies. Among the most destructive of these are the *Ichneumon* flies, a term applied to a large class of four-winged insects, which deposit their eggs in the larvæ or pupæ of other insects. The maggots hatched from these eggs, feed upon the living animal in which they are enclosed, and by the time it dies, they have attained a sufficient size to undergo their transformation. The number of parasites that are nourished by one caterpillar is sometimes astonishing. A few days ago we took from our tomato vines the larva of a *Sphinx*, which was almost completely covered with the cocoons of an *Ichneumon*. From counting a portion of these, we estimated the whole number at between three and four hundred. It is quite remarkable that this number of maggots could have lived within the caterpillar, attain their full growth and spin their cocoons, without killing it. Though still alive, the caterpillar was evidently much weakened by rearing such a large unnatural family, and will probably in a short time die from exhaustion.

Insect Queries.—We have of late received an unusual number of queries in respect to insects. While we try to keep the run of those which seriously injure cultivated plants, there are many sent to us which are merely curious to the sender, or are not known as enemies to the cultivator, which we have not heretofore had the means of determining. Finding specimens of this kind to accumulate upon our hands, we have made such arrangements with competent entomologists, as will in future enable us to determine the specimens sent. The field of Entomology is so large, that our best naturalists in this line usually confine themselves to a single order. We must request those who send insects to put them in boxes that will not be crushed in the mail. Very small ones go readily in a quill, and a turned-wooden, or tin pill box, or even a stiff pasteboard pen or other box, answers well for larger ones. There are many grubs, caterpillars, or larvæ, which are not known in the perfect state, and on the other hand there are beetles, butterflies, etc., the grub or larva state of which is not known. As a general thing, insects are the most destruc-

tive, as caterpillars on grubs, and it is well for those who have the opportunity, to watch the transformations of these, and find out what they become in their perfect state. Those caterpillars that spin are easily fed and managed; those which burrow should be provided with a box or flower-pot of earth, in which to make their transformation. Mr. G. C. Morris, of Phila. Co., Pa., writes to know if his potatoes are troubled by the 10-lined Potato beetle, figured in August. This beetle has not yet been found far east of the Mississippi valley, and we have not heard of its doing any mischief below ground. From our correspondent's description, we infer that the trouble is done by the grub of the common May-bug. . . I. Coburn, Columbiana Co., O., sends us a very common pest of the vine, *Philampelus Achemon*. The "eggs" are cocoons of a parasite and are alluded to in another item. This insect does not appear in great numbers, and is readily removed by hand picking. . . Eddie A. Popenoe, McLean Co., Ill., sends us some galls from a grape vine. The remains of the grub were found there, but so much dried as not to be recognised.

Killing Insects.—A Ely wishes to know the best way of killing insects for entomological specimens. Butterflies and moths are almost instantly killed by letting fall upon their bodies a few drops of chloroform. This rapidly evaporates and leaves the insect with its colors unchanged. Beetles may be drowned in alcohol. It is said that Benzine will kill insects very promptly, but that it renders their limbs so brittle that they break with the least touch, and it is necessary to let them remain for a few days, to become flexible, before setting them up.

Still another Curculio Remedy.—Mr. B. B. French of Washington, D. C., writes to the N. E. Farmer, that he has succeeded in keeping the curculio away from his plums by putting a "cartload of gaslime" around each tree. It appears to us that the gaslime must have been very poor, or the plum-trees very tenacious of life. We mention this as an item of current news, but do not advise our readers to try the experiment upon any tree which they are not willing to risk.

A new View of the Caterpillar Question.—It is well known that the tent caterpillar, which is such a scourge to our orchards, is very fond of the wild cherry. A progressive farmer friend of ours, who has a constant battle with the old foggy notions of his less wide awake neighbors, had some wild cherry trees badly infested with caterpillars, and proceeded to cut them down. Some of his neighbors, on seeing what he was at, came to him and implored him to save the trees, as otherwise the caterpillars, being deprived of these, would destroy the neighboring orchards. Our friend kept on with his work, informing the anxious ones that when they set apart a particular field for weeds, with a view to keep them from the rest of the farm, he would keep a grove of wild cherry trees especially for the insects.

How to make Cider Vinegar.—M. Kelly, Fayette Co., Ind., writes in the *Agriculturist*: "I have twenty-four barrels of cider, that has had sulphite of lime put in it to keep it sweet. It is now too sour to drink, and not sour enough for vinegar. Do tell me how to make vinegar of it." Procure a lot of cheap molasses, and mingle one gallon of molasses, or 12 to 14 lbs. of sugar with ten gallons of water. First rack off the cider from the sediment, then add five gallons of such liquid to every barrel of the cider. Fill each barrel not more than $\frac{3}{4}$ full, and place them by the side of some building, covering them with boards to prevent the sun warping the barrel-staves. Leave the bung hole open. A bung hole 4 inches square is better. Or put the cider, after adding the sweetening into large open tubs under a shed, covered with loose boards. It will make excellent vinegar in a few weeks. Then fill the barrels and put them in the cellar, until wanted for market.

Analytical Chemist.—Prof. F. F. Mayer, whose card appears in our advertising columns, is a gentleman well known to us as a competent chemist, and is one to whom we should not hesitate to commit any investigation requiring thorough chemical knowledge.

Catalogues, etc., Received.—B. L. Ryder, West Franklin Nurseries, London, Franklin Co., Pa. Catalogue of Fruit trees and general nursery stock. . . I. W. Hicks & Co., Bridgeport (Conn.) Nursery. General catalogue and special list of vines. . . Francis Brill, Newark, N. J. An abridged list of Nursery Stock, including new Strawberries and 20,000 Japan Lilies. . . Andrew S. Fuller, Wonside Nursery, Ridgewood, Bergen Co., N. J. Descriptive Catalogue of small Fruits, Ornamental Shrubs, etc., with numerous illustrations. . . The twelfth Report of the Ohio Pomological Society, an interesting volume, containing among other useful matter a revised catalogue of fruits suitable for Ohio.

The Hair Worm.—Some one has sent us a specimen of the Hair Worm, sometimes called Hair Snake. It is a dark colored aquatic worm, about a foot long, and exceedingly slender and hair-like. These worms belong to the genus *Gordius*, the most common species, being *aquaticus*. They have the habit of twisting themselves up in most complicated knots, and the name *Gordius* was probably given to them on this account, in allusion to the Gordian knot. Among boys the notion prevails that these worms are horse hairs, which have fallen into the water and become vitalized. It is hardly necessary for us to say that this is an absurd error.

Among the White Mountains.

EDITORIAL CORRESPONDENCE.

Gorham, N. H., July 24, 1865.

While at Geneva, Switzerland, three years ago this month, I fell in company with some English gentlemen, and the conversation naturally turned upon mountain scenery, as Mount Blanc was in view from our hotel window. I was asked about the "White Mountains of New Hampshire," and felt no little chagrin at being unable to speak knowingly of them. I turned the subject as speedily as possible, and talked of our great rivers—the beautiful Hudson and the Niagara, and particularly of the grand Mississippi and its branches, which I could describe from St. Paul and from Pittsburg, all the way to New Orleans. On this topic we can out-talk all Europe, and "the rest of mankind"—east of the Atlantic. And here let me say, that no one should go abroad, sight-seeing, until he has been not only down the lower Mississippi, but up as far as St. Paul and Minnehaha Falls, and also along the thousand miles of the Ohio from Pittsburg to Cairo. Nothing will give one a grander conception of our country and of its majestic scenery. There is nothing in Europe to be named in comparison. The Rhine has been written upon in thousands of journals and volumes; and it is well worth visiting, especially the 80 or 90 miles between Bingen and Bonn, where the vine-clad banks and the ruins of numerous old stone Castles are interesting—the latter from the legends connected with them. But, to say nothing of the Hudson and the Niagara, or of the Ohio and its confluent, the upper Mississippi, in my estimation at least, far excels in interesting natural scenery any thing found along the Rhine. But to return from this digression. After the above tacit confession of ignorance respecting our own Alpine scenery, I resolved to take the first opportunity after the close of the war, to study it; and I am here partly for this purpose, and partly on a tour of agricultural observation and business.

I have been pleased with the ride up from Portland, today, over the Grand Trunk R. R. (though not quite as pleasant as it would have been, but for the poor and poorly served dinner in the Portland Depot.) There is better land and a more advanced state of cultivation than I expected to find in Oxford County, Me. Many of the meadows and pastures, with their meandering streams, graceful elms, and grazing herds, equal the finest rural paintings I have ever seen. Indeed, I think a fine oil painting at home must have been sketched near Bethel. Here we first struck the Androscoggin river, and thence followed its winding course twenty-one miles to this point. But space will not allow me to do more than give a few general impressions, gathered in my journey, here and elsewhere.

{ Summit of Mt. Washington,
6 o'clock A. M., July 26.

Beautiful! Grand! Glorious!! I had half suspected hotel keepers, paid writers, and enthusiasts, of over-praising the White Mountain scenery. Pardon the suspicion. The half has not been told, and can not be. It is worth a thousand miles of foot travel to enjoy one view like this!—Yesterday morning two of us, with our ladies, left the Alpine House at Gorham, and drawn by four good horses, came eight miles through the Glen, or Valley of the Peabody, to the foot of Mount Washington, and then eight miles more up the steep road cut along the declivity of the mountain; and an excellent road it is, running now to the left and now to the right, in a zig-zag course, and rising almost uniformly one foot in eight. The first half is through evergreen forests, from openings in which we get occasional glimpses of the gradually sinking valleys. At one point we have a good view of the summits of the five adjoining mountain peaks, lying from south-west to north-east, viz.: Washington, 6285 feet; Adams, 5800; Jefferson, 5700; the other two each 5400 feet. After four miles of ascent, the trees begin to grow stunted; then we find perfectly formed trees only five or six feet high; then more shrubs; and the last two miles, only masses of loose rocks, with scarcely any vegetation but scattering lichens and mosses. The road up these rocks is almost frightful to the timid and uninitiated, but

one is reassured by the fact that while tens of thousands have ascended, no one has ever received harm. The scenery, even two-thirds of the way up, is grand beyond my power to describe. "We could go home even now, well repaid for the toil and cost of our journey hither," was the frequent expression of our party. Before we reached the top, thick clouds swept over and around us, shutting out of view almost the road under our feet. The cold was so great that our thick under flannels, warm clothing, and over-coats, were very agreeable. We were soon in rain clouds, driven so fiercely that umbrellas could not be held; and even the wagon-top was furled and taken down to prevent our being blown over. It is needless to say, we enjoyed all this—the very thought of riding among the clouds well repaid any discomfort of wind and rain. Reaching the summit, we found warm rooms in the two "tip-top" houses—low built of rough stones, and covered with roofs anchored down by long chains drawn over them and bolted to the rocks. A storm on the Atlantic was mild in comparison with the howling winds and driving rain that swept around us for the half of the night. But a merrier crowd I never saw than the fifty or sixty of us gathered last night, in the outwardly rude, but interiorly comfortable dwellings. The cloud mist penetrated every seam and crevice, but roaring birch-wood fires kept up all night in the large sheet-iron stoves, with warm bedding, dispelled the cold and dampness.

At 4 A. M. we were awakened by a bell, and the welcome announcement that we might perhaps see the sun rise. Every body was soon up and dressed, and wrapped in cloaks and hoods and over-coats, the whole company were quickly out, clambering over the rocky peak, each striving to get the highest stand-point. The sky was almost clear above, but below us the massive clouds hung over the valleys all around, and were still shedding down copious rain drops. Only here and there could be seen the hill-summits that rose above the vapor, like little islands in mid-ocean. As the sun came up from below the eastern horizon, the view around was like the ocean in one vast surging foam. An exultant shout rose from every tongue. "Grand!" "glorious!" "wonderful!" "sublime!" "charmant! ravissant! magnifique!" were faint expressions of the feelings that swelled up in every heart. This anniversary of my birth-day will stand out distinct from every other. I saw nothing among the Alps to equal this. My conceptions of the grandeur of earth, of the greatness of Him who reared these hills, who formed the higher mountains elsewhere, who spread out the plains, and hollowed out the bed of the ocean, have never before been so exalted as on this morning. Just now the cloud-sea has sunk into the lowest valleys, and ceased to pour out rain. It looks like little lakes scattered among hills. We can at this moment look over almost half of New England. I cannot describe the scene. Mr. Starr King, in his book of the "White Hills," and Mr. Eastman, in his smaller Guide Book, have attempted to depict it; but even Mr. King's beautiful language falls infinitely below the reality. Reader, if you ever travel, before the railway shall open an easy route to the Rocky Mountain summits, go not first to Switzerland, but wend your way to the top of Mount Washington, and abide here until you have enjoyed both a storm and a clear sky.

Franconia Notch, July 29.

THE NOTCHES, OR MOUNTAIN PASSES.—The mountain range across northern New Hampshire, is cut through from north to south by three main depressions or valleys, through which wagon roads have been constructed. Along the eastern side of Mount Washington is a valley in which the Peabody river runs northward into the Androscoggin, and the Ellis flows south towards Conway, entering the Saco near Bartlett. The middle valley, seven or eight miles west of the above, is very narrow at one point, where it is called the "Crawford Notch"—there being but a wagon road between the precipitous cliffs. At the Crawford House, near the middle of this valley, and just north of the Crawford Notch, the Saco river rises in a spring near the house and runs southward, then eastward, entering the Atlantic near the south-west corner of Maine. At the barn is another spring, from which the water flows northward, enlarging into the Ammonoosuc river. This enters the Connecticut, which debouches into the L. I. Sound at Saybrook. The Franconia Valley and Notch are a dozen miles or so west of the Crawford or Saco Valley. In this, near the centre, are the head waters of the south branch of the Ammonoosuc, running northward, and of the Pemigewasset river, flowing southward and helping to form the Merrimac river, which passes through Lowell and Lawrence in eastern Massachusetts, and thence into the Atlantic.

The most interesting objects in the "Crawford Notch" are Mount Willard, from which is a very fine view of the Gap and Valley; the Silver Cascade, a most beautiful little stream that dashes down the mountain side for hundreds of feet, its broken waters resembling molten silver; and the "Willey House," where, Aug. 28, 1826, a mountain slide buried a family of this name.

Leaving the Summit of Mt. Washington, we returned

down the carriage road sixteen miles to Gorham, and went by stage round northward over Randolph Hill, and to the "Wambeck House" in Webster, where we enjoyed a first-rate country dinner. Here we had a fine view of the whole Mt. Washington Range, and of the Crawford and Franconia Hills. From this point we went some fifteen miles south or south-east to the Crawford House, over a pretty safe road, but not a very smooth one.

"A rough, stony road," we said to the driver.

"Yes, somewhat stony; but you take the stones away and you won't have any road left."

Not a bad description of many of the roads in the mountains. The 48 miles ride around can be shortened to 7 miles, by taking a bridle-path, on horseback or on foot, from the Summit of Mt. Washington down its western side, to Crawford Notch. Until the construction of the carriage road on the east side, this path was the one usually taken to the Summit; and though rough and steep, it is now adopted by large numbers who enjoy severe horseback exercise—ladies as well as gentlemen.

There is no direct road or path-way from Crawford Notch to Franconia Notch. Though only a dozen miles across, a journey of 27 miles is required by stage, around by way of Bethlehem, to enter the Franconia Notch from the north. The most prominent objects of interest here are the *Profile*, or "Old Man of the Mountain," just south-west of the Franconia House; the *Flume*, six miles down the valley south; the "Pool" and "Basin," not quite so far down; the Echo Lake, half a mile north; and especially Mount Lafayette, to the east. Starting early this morning, I spent six hours in going up this mountain and returning, on horseback. The view from the naked summit, 5200 feet or a mile high, is extensive, and exceedingly interesting, second only to that on Mt. Washington; while the ascent is exciting, to say the least. Your sharp-shod and sure-footed beast literally climbs up and descends over a stony path, so steep that you must lie nearly flat down sometimes and grasp the mane to avoid slipping off. At some points, cross-poles are bolted to the smooth sleep rocks to furnish climbing foot-holds. Every man coming here should enjoy this ride. Ladies accustomed to horseback riding, often accomplish the feat. Until to-day, I had no idea that a horse could climb such steep mountain sides—those which at a little distance look like perpendicular rocks.



THE OLD MAN OF THE MOUNTAIN, or the "Profile," is an object of great interest. Standing near the narrow part of the Franconia Valley, or Notch, and looking up to the west, you see standing out upon the mountain brow, a clear, distinct profile of a Human Face, so well set that the mind insensibly almost endows it with life. I send herewith an original sketch, taken with the aid of a glass, which shows the rocks more plainly than they appear to the unaided eye. The length of the face is estimated to be about 70 feet; yet as it is seen at the lofty height of nearly 1500 feet above you, it appears no larger than that of some huge human giant. But from the fact that the mountain side is entirely inaccessible, one would be constrained to believe some human handi-work had aided in fashioning the features of this Granite Face.

THE FLUME is one of Nature's most curious freaks. A deep chasm, 20 to 60 feet wide, appears almost as if hewn out of solid rock, with perpendicular walls 60 to 70 feet high. Down this chasm the water runs and leaps in a succession of cascades over a rocky bed, for hundreds of feet. At the narrowest point, a huge rock or boulder seems to have fallen into the top of the chasm, and there it remains firmly fastened, though appearing ever ready to drop upon the heads of those venturing under it.

You will not have space for a description of the "Basin" and "Pool," and of the "Echo Lake," a beautiful sheet of water surrounded by lofty hills, which send back in a hundred echoes a "halloo" or the report of a pistol. I go hence to visit Canada East. O. J.

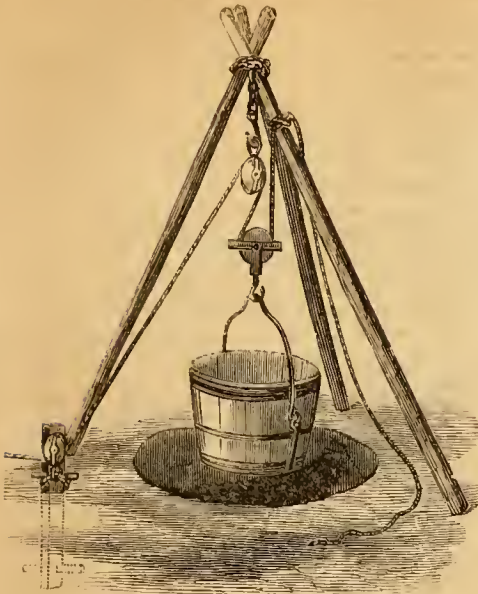


Fig. 1.—DERRICK AND BUCKET.

Digging, Stoning, and Curbing Wells.

The annual waste of manure, and of flesh and fat, caused by driving animals to the brook or spring for water, and by the lack of an abundance of it, will on many farms equal the expense of making a good well once a year. In the summer, all the stock, and the teams in particular, suffer for want of good water; while during the foddering season, when storms prevail, cattle often will not go to drink for a whole day, or even longer, because the water is at a distance from the barn. Then, when thirst compels them to leave the yard, and break their own path through snow drifts to obtain water, they drink too much. On their way to and from the water, they drop much manure, which is wasted. The importance of a good well at every barn, where water can not be obtained from some other source less expensive than digging wells, need not be argued.

The best time to dig wells in our latitude is in September, before hard autumnal rains have raised the streams. At this season of the year, those veins of water only a few feet below the surface are dried up, so that permanent water can be found only by digging deep. If a good vein of water can be reached in a dry time, a well will not be likely to fail. But, if dug when most springs flow abundantly, the water is liable to fail at a period when it is most scarce—at the very time when it should be supplied by a never-failing spring.

The next consideration is, where to dig a well. Our advice is, dig it where it will be most convenient for watering stock. If it is to be dug in the field, the most suitable place would appear to be near the intersection of the lines dividing four fields, so that animals in each lot could be watered from one well, without leaving their respective enclosures. When dug near the barn, a location convenient to two or more yards should be chosen. Sometimes it is necessary to sink a well far below the surface, while in other instances, living water may be reached by digging only a few feet.

For wells of ordinary size, five feet in diameter is sufficiently large; and they can not be much smaller than this, as a man will not have sufficient room to swing his pick and handle the shovel. If the well is, without doubt, to be 30 or 50 feet deep, and to be stoned from the bottom to the top; and if the stones are bould-

ers of irregular form and size, it would be more advisable to dig six feet in diameter, on account of making a thicker and more substantial wall, than is required in shallow wells. If a large number of animals are to be watered, or much water required for any other purpose, the diameter should be increased to 8 or 10 feet, for the purpose of forming a large reservoir, in which the water can accumulate. When a well is very small, a large herd of cattle would exhaust the water before they all could be supplied; whereas, there would be an abundant supply, were there sufficient space for it to accumulate.

If the well is to be stoned many feet deep, the stone should be hauled to the spot before it has been sunk. A few years ago, we employed a man to dig a well, and before he had dug it 10 feet deep, he struck a vein with his pick, when the water rushed in so rapidly, as to prevent stoning it. The water flowed in so fast, that two men were able to lower it only 2 feet in half a day. Therefore, the well was never stoned. At another time, the water rose 6 feet, as fast as three men were able to make the wall. If the inside is to be lined with brick or wood, every thing should likewise be ready for immediate use. The location of the well being determined upon, strike a circle 5 or 6 feet in diameter, which is as large as is needed, and mark it deeply and accurately with a shovel or pick-ax, leaving the outer edge firm and well defined.

The first 12 or 14 feet of earth may best be thrown out with shovels, by making a platform 5 or 6 feet below the surface, from which a man shovels the earth to the surface, as fast as it is thrown up to him. When a well is to be sunk to a greater depth, one man with a horse can haul up the dirt with great ease, by erecting three poles over the well, as represented by figure 1. A strong stake, having a large 2-inch pin through the bottom of it, horizontally, should be set firmly in the ground, so that a horse can not pull it up. Then he will need no one to lead him. This stake or post must not be placed beyond the foot of one of the poles, for the tendency would then be to draw the tripod over. At this stake a block or pulley is fixed, and a rope passes through it and over a pulley near the top of the poles, thence around another at the bail of the bucket, and the rope should be tied near the upper end of the poles. The upper pulley should be suspended at such a height that the dirt bucket may rise just high enough to be emptied into a wheelbarrow when the blocks come together. Thus the horse may continue to pull with all his might, without being able to get away, or to hinder the workman who manages the bucket. By having a wheelbarrow near, the earth may be turned quickly into it, before the horse can back up. When a bucket is drawn up in this manner, it rises only half as fast as the horse travels; and he can with ease elevate three or four hundred pounds at a time.

The best way to make a bucket is, to saw off about one third the length of a strong barrel; nail a board across the bottom on the outside so that stones dropping in will not break the head through; put on a strong iron hoop six inches above the middle of the bucket and attach an iron bail at this point with half-inch bolts, passing through the bail, hoop and staves, or with hooks and eyes. A small lad will be able to empty a large bucket hung in this manner.

DIGGING AND CURBING WELLS IN QUICK SAND.

Whenever there is danger that the earth will cave in, it becomes necessary to curb the sides as fast as the well is sunk. To do this, dig out

the earth in a true circle, plumbing accurately the sides of the well, and when it is 6 to 12 feet deep, set up pieces of 2-inch plank, 6 or 8 inches wide, as represented by figure 2, which illustrates an end view of the staves. Set up one stave perpendicularly, and pin it fast to the earth with wooden pins, at top and bottom, as shown in the illustration. Then set up 3 or 4 more, nailing them together at the edges. Pin every fifth stave, to keep the curb from settling down, when it is undermined. After the last stave has been set up, drive in thin wedges between the staves, in four places if possible, to keep it tight. The staves will soon swell on the outside, and the chinks between them will fill up with sand and gravel, and thus they will form an arch that will resist a much greater pressure than will ever occur at any part of the curbing. Now dig six feet deeper, if it is safe to sink it so far, and set up another course of staves under the first, fastening them as previously directed. In this way, the well may be sunk and curbed with great dispatch and perfect safety to any desirable depth. No other curbing will be required until the staves have decayed.

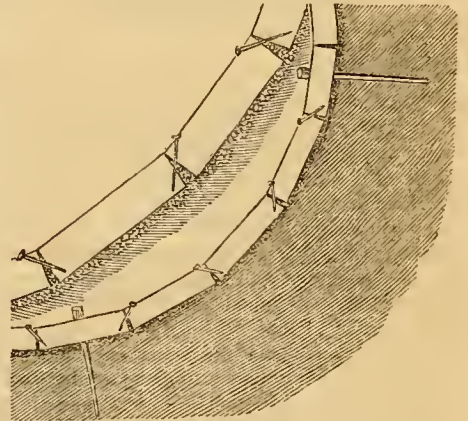


Fig. 2.—WOODEN CURBING.

Still, the whole may better be stoned or bricked up at once on the inside of the curbing.

STONING AND PLASTERING WELLS.

When wells are sunk through sufficiently compact ground, such as will not cave in, the sides may be plastered with two thick coats of water-lime cement, from the bottom to within 4 or 5 feet of the top, when there should be an offset for a brick or stone wall to rest upon, extending to the surface of the ground. Sink such a well 4 feet deep, 7 or 8 feet in diameter; then, dig it 6 feet deeper, 5 feet in diameter, and plaster the surface. After this, dig and plaster about 6 feet, and so finish successive sections, until permanent water is found. This will be as good as stone, if well done. If veins of water break through the green cement, drive a circular piece of tin or wood, a few inches long into the plaster and earth, just below the issue of the water, to keep it from running down and washing off the mortar. Where stone are abundant it is economical to use them instead of cement. If bricks are used instead of stone, they should be well burned, and made wider at one end than the other, so as to fit the curve of the well as represented by fig. 3, at *B*. Water will find its way between the staves at the ends, and between the bricks which should not be laid in mortar.

There is a right way and a wrong way to stone a well. The object is to build a *strong* wall that will not fall inward, instead of a wall having a smooth face, which is of little account. Figure 3, illustrates the manner of placing the stones. In laying up a common wall the large

ends and face sides are laid in front. But, when stoning a well, the large ends are placed in the opposite direction, so that every course of stone on the face or inside, will form an arch. The back side is leveled up with small stone, and much care should be exercised to place many

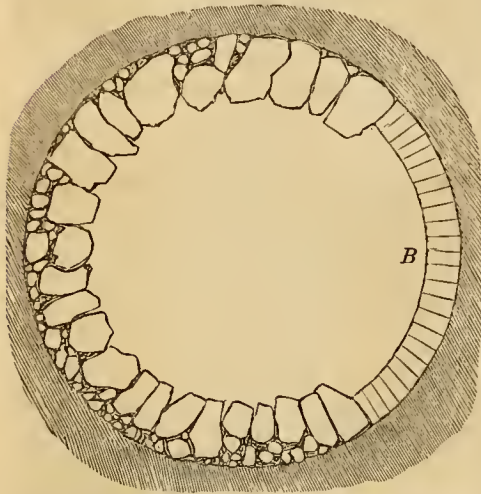


Fig. 3.—STONE AND BRICK WALLS TO WELLS.

small ones against the earth, instead of packing in large ones, to keep the dirt from washing down to the bottom of the well. If gravel can be obtained conveniently, it is a good practice to fill all the interstices between the stones with it. Place a wide board across the wall to stand on, when laying the brick or stone. Marks on each edge of it, will serve as guides for carrying up the face of the wall true. Brick and stone may be lowered by the horse and bucket, in the same way as hauling up the dirt. There is no quicker way to draw the water from a well, when cleaning it out, than to make a valve over a large hole in the bottom of a barrel, and draw up a barrelful at once with a horse. If there is room for a barrel to dip, a valve is not necessary. The stone or brick should be laid in cement, for at least three feet down from the surface, to exclude worms, reptiles and mice.

Hints about County Fairs.

We hope the managers of county and other fairs, are awake to the fact that their meetings are to be unusually interesting this year. Our farmer soldiers are home again. They are taking hold, many of them, of the accustomed work of the farm with new zest, and their interest to see their companions in arms—and those from whom they have been separated, in different army corps and divisions, fighting for the same flag, will lead them to seek all such gatherings. Every body who loves the soldiers will rejoice to be present at these reunions, where the old campaigns will be fought over again, and anecdotes of those that have fallen will keep them alive in our grateful memories. Doubtless also there will be a division of the exhibition halls set apart for relics from the South, and from the battle fields. This is one feature, which will "draw." Besides, we all want to see those southern horses brought home by the officers—those thin necked, smooth limbed, light, lithe creatures, that will jump a five rail fence, or a 12-foot ditch as easily apparently as they will walk across the meadow. Then, too, this has been a very prosperous season. Vegetables and fruits, not cut off early by insects, have done their best to help to make a good show, and the moist season has favored a rapid growth and

large size. The great interest in fine wool sheep has chiefly arisen since the last show, and this is another subject of especial attractiveness. The great advance in wages of farm help awakens farmers more than ever to the necessity of knowing how machinery may do the work for less, and how improved implements will lighten labor, save time, and add to comfort.

Many societies are preparing to hold fairs this season, which have not done so for several years, and it is no less true that a great many people will this year go to the fairs, who have not seen an agricultural and industrial exhibition for a long time. The managers have duties to their exhibitors and visitors, and those who attend the show to see what they can, have duties to themselves and their families.

HOW A CATTLE SHOW AND FAIR SHOULD BE CONDUCTED.

The list of premiums and order of exercises should be published and distributed free, or in some form easily accessible to all. The committees and judges should be instructed to act promptly, and if they do not, a new committee should be at once appointed who will act. Some indication of awards should be placed upon prize animals and articles as soon as possible, after they are made, to give additional interest and instruction to visitors. It is most important that:

No unworthy article should receive any prize. No prize should ever be given to "encourage" a worthy exhibitor, who has taken pains to bring an inferior article, and will be disappointed if he does not get a prize.

No prize should ever be given to "propitiate" an influential patron, who will be offended if his articles are not noticed.

No prize should ever be withheld from an exhibitor, because he is taking too many prizes. No matter if one man sweeps every prize offered by the society (unless there is some rule to the contrary). In every respect the good faith of the society should be considered sacred, and in the keeping of every committee man.

The executive committee of a society should be constantly on the lookout, to secure honest reports; and should a judge be known to violate rules, in passing judgement on his own article, and warping the judgement of his associates, or allowing himself to be biased, his place should be at once supplied by another person. This committee should spend part of each day in listening to complaints, and in doing what they can to right wrongs.

The animals and articles exhibited, should not be crowded, but well exposed to view and careful inspection. And exhibitors should have the fullest opportunity consistent with the rights of others to explain and show off their articles. If an exhibitor can not be present in person, or by an agent, it is most important, not only for himself, but for the gratification of visitors, for him to have cards, or circulars, to be taken by every one. In cases where the show lasts for several days, convocations in the evenings of all interested in participating in an agricultural, or pomological talk, will be found quite well attended. These meetings are usually very interesting, if they are only made free and conversational, and some common sense man has charge of them. They must be seen to, and seen through, by some officer of the society. The mutual admiration often run into, may be healthfully varied by introducing subjects which will call up active, but not acrimonious argument; and nobody should speak much, or more than five minutes at a time, and to the point.

VISITORS' PRIVILEGES.—We consider it our right, when we visit an agricultural fair, to ask questions, and to see every thing. If the people are not there to show off their machines, we are very apt to set a bad example and work them ourselves. Why not? It is exactly what we pay the entrance fee for; and no board of managers ought to consent to have a show of the mere boxed outsides of things, which can only be appreciated when in operation. Exhibitors often refrain from showing their articles at work, because they will not thus compare favorably with others. The visitor ought to know what he wants to see most, before he enters; then when he first goes in, he should make a business of finding out where the things are without stopping to look at them much; then selecting the most important, take each of them in rotation, and study each subject thoroughly. The way to do this and come to quick and correct conclusions, is a real gift. One man will see every good point in a bull, or take the fine lines of a plow into his eye at a glance almost; or with one or two pointed questions, test both the weakness, or strength of the exhibitor and of his machine at the same time. Such a man is a most desirable companion to one going through a show in the way we speak of, but the best company one can have, is an intelligent boy, and if one has none of his own, he can generally borrow one. A man will meet many acquaintances, and his whole day will be wasted, or rather the object he has especially in view will be lost, unless he is ready to excuse himself and make appointments for some future time. The club meeting, if there is to be one in the evening, is an excellent rendezvous, and a man may make a dozen social appointments for the hour before it begins.

When one has seen what is most important, and his wife and young children have made a survey of the knitting work, and have seen the outsides of things by themselves, (they will always prefer to be left alone for an hour or two,) then let the good husband and father take them, and see that they see all that is worth seeing. Above all keep away from the noisy hubbub of rough-scuff, pick-pockets and profanity, that crowd about the trotting course. It is very pleasant before the set trots and matches come off, to go to the seats, or from any good position, watch the promiscuous driving upon a trotting course. There will always be some very beautiful "turn-outs"—fine horses, showing elegant style and brilliant action, which it is very well to see. And if it can be done without wasting half a day, it is quite worth while to see a well contested trotting match; but on the whole the exercises of the trotting course, however valuable their results in improving horses (which we do not believe in), are the least instructive and most time-wastful part of the whole show.

Reclaiming Waste Ground.

There are scores of acres of as valuable land as can be found in our country, overgrown with weeds and worthless bushes. We often see land which could not be purchased for one thousand dollars per acre, strips of uncultivated land along the highway and between farms, and even in the midst of a farm close to the fences where elder bushes, blackberry bushes, milkweeds and other pernicious plants have rooted out almost the last spear of grass, and are bearing undisputed sway. Such things are disfiguring blotches on the face of a nice farm, as well as a reproach to any farmer. The land where

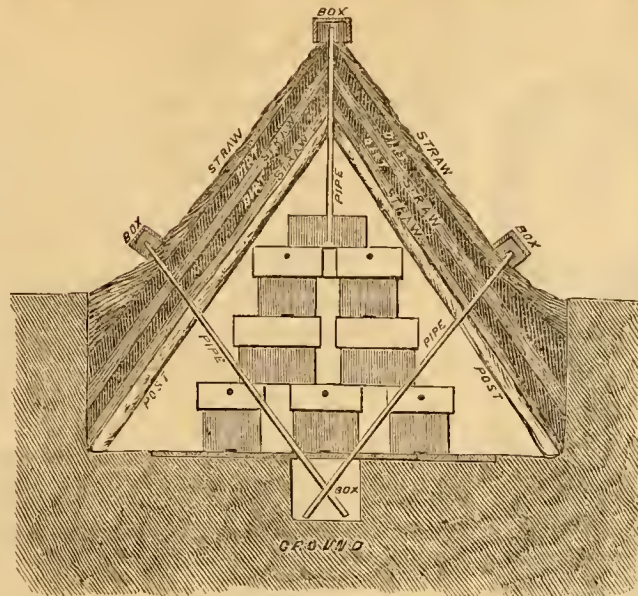
such pests flourish from year to year is rich and would pay the expense of cultivation, and produce at first more valuable crops than that on each side of it; and it ought to be reclaimed, and the unsightly weeds and bushes should be exterminated, for the sake of appearances, if for nothing more. This job is best done in August or early in September rather than not at all. Where it is not found convenient or practicable to plow such uncultivated strips of ground, mow every thing as closely as possible, collect it in heaps and burn it; if the bushes are small, they may be cut with a short, stiff grass scythe; but if they are large, use a bush scythe. Let every thing be cut close to the ground. Then harrow thoroughly and stock down with grass seed. Sow Orchard and Kentucky blue grass seed, so that the grass will be fit to mow for hay next season, before weeds have attained a large growth. If the ground can be plowed, remove the fence when it can be done with little labor, and put a sharp point and a sharp, strong coulter on a good plow, and attach a chain for hauling the weeds beneath the turning farrow slice, as shown in an article in last month's paper. Hitch on a strong double team, and break it all up as deep as the plow will turn well, and the team able to draw it. Always plow around such plots instead of beginning in the middle, thus forming a ridge where the roots will not be disturbed. Harrow several times, and sow at the rate of half a bushel of buckwheat per acre. If the work is properly done, weeds and bushes will give little trouble next season, if the ground is occupied with some hoed crop. If, from some cause, such as wet weather after plowing, or the abundance of rose briars, or brambles, the weeds spring up very badly in spring, another application of the buckwheat after plowing will leave the land in good condition by mid-summer.

Burying Bees.

BY BIDWELL BROS., OF MINNESOTA.

In our previous communication concerning the comparative results shown by two lots of hives of bees, one buried and the other exposed, (page 174) we omitted to say that the two stocks that weighed the least, viz.: 19½ and 23½ lbs. of those wintered in the open air—were Italians. These we swarmed May 12th, and the balance that were exposed, June 5th; while those that were buried we swarmed May 20th, except the one that weighed the least and consumed least. This hive was only half full; the bees have filled it up since spring, and now, July 1st, it weighs 31½ lbs. more than when taken out, and is fit to swarm.

The present time, July 1st, the average weight of those which were buried is 78½ lbs., and of those exposed is 37¾ lbs. Those buried are now ready to work in boxes, or be again swarmed, while those wintered out, except the Italians, are only in fair condition. The two Italians weigh 54½ lbs. and 61½ lbs. We wintered 97 stocks in a large dark room on the floor with the honey boards removed, and 66 in a stone cellar. These came out strong in number, but lost half their bees the first few days they flew out, on account of being diseased from holding their excrements too long. This fact we have noticed for several years, that where bees were wintered in a room, or cellar, and consumed much honey and bee bread, the old bees flew out in the spring and never returned, for whenever bees are hurt, or in any way injured in a hive, they leave the rest and crawl or fly away,



BURIED STOCKS OF BEES.

making them really no better off than those wintered in the open air. With those buried, there can no such objection, provided the following essential condition be secured: Complete freedom from dampness, perfect darkness, and an abundance of air, but no draft upon them.

Bees may be buried when flowers are gone, and left until they come again. Weak stocks may be wintered, but they are usually more trouble than they are worth, because they are annoyed and kept weak, if not robbed by the stronger stocks, and because they consume proportionally more honey to keep them warm, while in the ground each bee eats its own allowance. They are not annoyed by the mice, nor disturbed by the changes of the weather, but really are at rest; nor is the expense much compared with preparing and placing bees in a room, or cellar, or watching out of doors, as the following accurate statement of the way in which we buried our stocks last winter, will show:

On a cool day, when the bees were quiet, we selected a high dry site near our apiary, and dug a pit 8 feet square and 4 feet deep, and threw the dirt well back. We next dug a hole 2 feet square and 2 feet deep in the centre of this, and placed in it an open box of the same size, with its top edge on a level with the floor of the pit. We next placed two old iron gas pipes, 10 feet long and of half-inch bore, one end of each in the box, and the other ends on opposite sides of the pit. These serve to connect with the air on the outside of the pit. The outer ends were covered with caps to keep the dirt out. Pipes of wood, tin, or lead would answer, if small, and secured against mice getting in. We next placed narrow strips of old boards on the bottom, 2 inches apart, on which to place the hives, and between which the air may circulate through the pit. We next removed the honey boards from over the bees, and replaced the caps and opened all the fly holes, and one 2-inch hole in each end of the cap. (In burying common box hives, we would invert them, and place over each an empty hive.) We next placed them in the position shown in the sketch, with the entrances outward, and put an empty hive on top, into which we placed upright a box made of 4 pickets, with two opposite sides, ½ inch shorter than the others, and nailed a board over the top. [This was used we suppose in place of the top ventilating pipes shown in the sketch.—Ed.] We next placed saved posts

upright around the hives (scantling and boards, or plank would answer as well); then covered the posts with 1 foot of dry straw, and then a foot of dry dirt, beginning at the bottom and working up to prevent sliding, then another layer of straw and dirt, which should be smoothed off, and then another layer of straw and brush, or boards, to keep it in place. Remove the caps from off the pipes and place over each a box, as shown in the sketch. The construction occupied two hands ½ day, and two hands ¼ day opening and clearing up. It is important to dig the hole deep enough, so as to get plenty of dirt to cover deeply, and not put over 25 stocks together. As far south as the latitude of New York, perhaps it would not be best to risk so many the

first winter.—[The former article of Bidwell Brothers, excited no little interest. This is explicit, and will save both us and them answering many letters. It would be interesting to know the extreme length of time bees may be buried. We shall be glad of facts on the subject.—Eds.]

Hints on Harvesting Buckwheat.

The excellence of buckwheat flour depends chiefly on the management of the grain between the time of ripening and grinding. The common way of treating buckwheat effectually prevents making good flour, it being allowed to remain in the swath for several weeks, when it should never be suffered to lie longer than a day or two, and it is decidedly better for the grain to rake it and set it on end, as fast as it is cradled. Much less grain will be wasted by shelling out; the straw will cure and dry out sooner, and make better fodder; the crop will be ready for threshing or housing in less time; and the grain will yield a much better quality of flour. It is especially injurious to the grain to be exposed to storms before it is set up, for dirt is spattered all over the grain, by the falling of large rain drops. This makes the flour dark-colored and gritty. Wetting and drying the grain several times, destroys the "life" of the flour. It will never be as white, nor make so good cakes, but will be sticky and the cakes clammy, like the flour of sprouted wheat.

How to Splice a Rope, and to Splice an Eye.

Farmers are proverbially awkward in their use of ropes. Few can make a knot or a tie, or a hitch that will hold, and that they can undo in a hurry, after it has been subjected to a heavy strain. We have to use ropes a great deal, and should know how to manage them better, especially in connection with block-tackle and sheers. We propose therefore to figure and describe some of the most useful splices and knots, and to show how useful they may be in many cases, and how desirable the ability is to make smooth connections and a knot, or tie, that will not jam, but which may be loosened at any moment.

THE SHORT SPLICE.—If one wishes to lengthen a rope for permanent use, as a well rope for instance, it looks very awkward if it is tied in the usual way, and it is much better to splice it neatly. Ropes in common use are composed of

three strands, and each strand of two or more strands, or rope-yarns. Figure 1 shows how two pieces of such a rope are united by what is



Fig. 1. SHORT SPLICE.

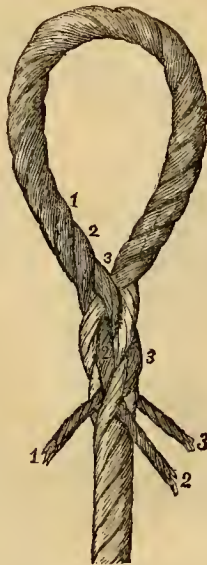


Fig. 2. SPLICED EYE.

termed the "Short Splice." The strands of each end are first untwisted and placed together, each strand being placed between two strands of the other rope. Each strand in succession (first of one rope and then of the other) is then passed over the one it lies in contact with on the left, and is tucked under the next strand. To accomplish this tucking easily, the rope is untwisted a little and a sharp wooden, or iron pin (a marline pin) is inserted, and a place made through which the end of the strand may be passed. The course of strands may easily be traced by referring to the numbering of the dark strands in fig. 1. When all the ends are thus tucked once, we have already a perfectly strong splice, which will bear any strain the rope will, but the ends must be left on, for if the rope is subject to an untwisting operation it might part. If a handsomer finish is desirable, the ends of the strands may be opened, and one of the two yarns of which each is composed may be tucked again. After this both yarns may be cut off. This splice is twice as large as the original rope, but not nearly so large as the knots commonly tied in ropes, and it will go through



Fig. 3.—THIMBLE.



Fig. 4. LONG SPLICE.

most pulleys in which the rope runs loosely.

THE EYE SPLICE.—An eye in the end of a rope (fig. 2) is often very useful, especially when it is to receive a hook, or to be subjected to wear in any way. In such cases the rope is bent round a thimble (fig. 3), which is firmly

enclosed in the eye. This eye is made very much like a short splice, only each strand is tucked twice. The numbers 1, 2, 3, will be a sufficient guide.

THE LONG SPLICE.—When it is necessary to splice a rope, which runs snugly through a block, or a hole, or over a beam, where it is undesirable to have any catching or irregularity, the long splice must be employed. This is shown in fig. 4, and when neatly done, the place of joining will hardly be noticed. The rope-ends are opened as for the short splice, but for a longer distance, and are placed together in the same way. Then one strand of one end is untwisted still further, and the strand of the opposite end, which matches the untwisted one, is laid in to follow it, and is thus carried as far as three twists, or three times around the rope. Next, one of the strands of the other end is run back, and another laid in the same way, so that when this is done, the six strands will lie matching one another in pairs, at *A*, *B* and *C*, fig. 3, in the way shown at *A*. Then tie each pair in simple knots, following the twist of the rope, as shown at *C*. Finally tuck the ends, as shown at *B*, pull all tight and smooth, and cut them off.

These splices are good things for the boys to exercise their ingenuity upon for the coming month, and by-and-by we will give the figures of some useful knots and "hitches" for them to try their hands upon. Twenty-five cents worth of tarred 3-strand rope, scarcely as large as one's little finger, will be all the expense, and the lesson learned will be a very useful one.

Building Round Stacks.

In building a stack of any kind, there are two points of great importance to be observed. The first is to carry up a stack true, and the next is to place the sheaves or material in the best position to carry off the rain. A good foundation is always necessary to keep the bottom dry. This can be made of poles, rails, or plank. It is always a good practice to make a round stack about a pole set firmly in the ground. This will keep it erect when it is settling. When making a round stack, where there is no pole in the middle, it will always be found advantageous to stick a fork at the middle, keeping it there, as the stack is carried up. Then, a stacker can always judge whether he is building the sides uniformly or not.

The illustration herewith given, represents the best way of making a round stack. A bulge is essential to carry the rain as far from bottom as possible. In order to make the first course true, stick a fork at the middle, and tie a string to it; and holding the other end in one hand, walk around the outer edge, and adjust the outside course of forkfuls, until the circle is complete. Keep the middle a little the fullest, until the bulge is formed, when the middle must be raised from one to two feet higher than the edge. The width of the stack will determine the height of the middle above the edge. When stacking hay, straw, or loose grain, lay a course of forkfuls of uniform size around the edge, and then bind this course with another row of forkfuls lapping on the first. Proceed in this manner until the stack is finished.

When sheaves are put in a stack, set up a large bundle in the centre, and continue to stand others around it, leaning them inward until a bottom is formed large enough for the stack. Now, commence again in the middle, and lay a circular course; then another and another course, until the outside course is laid. Great

care must be exercised to see that butts of the sheaves on the outside are sufficiently slanting to carry *all* the rain—not a part only—readily outward. If the sheaves lie nearly flat, the straw on the upper side will carry the rain toward the middle of the stack. The outside course of sheaves should be placed as close together as they can be, to prevent large holes in the outside, where rain will find its way into the sheaves beneath. To prevent the sheaves slipping outward, elevate the top end of every bundle when placing it, and thrust the butts on the underside into the course below it. When they are simply laid down without this security, the courses are very liable to slide off. This is one of the manipulations in stacking that but comparatively few understand. We have seen half a wagon load of sheaves slide at once from the side of a stack built by a man who was ignorant of this part of stacking. As the straw of barley and corn stalks are very slippery, it is difficult to keep the courses from sliding, unless the butts of every sheaf are secured in this way.

TO TOP OFF.—If the stack is being built of sheaves, the middle must be kept so full that there will be a good inclination of the straw in the butts of the bundles. This is always a much better guide than to attempt to keep the middle of the stack at a certain height above the outside. The stacker should move on his knees, over the course of sheaves he is laying; and, in order to keep them as close together as they can be conveniently, he should lay each sheaf partly on the side of the one last laid; and as it is pressed down with the knees, hold it from slipping with both hands. By this means a much larger number of bundles may be secured in a smaller compass than otherwise. If the straws only have a suitable inclination to carry the water outward instead of toward the middle of the stack, rain will injure but a small portion of either straw or grain. If one side of a stack



A STACK BRACED TO PREVENT LEANING.

should be lower than the other, it may usually be carried up even, by using the large sheaves for the lower, and the small ones for the higher side. This oneness should be guarded against before the stack has become onesided. The straightest and handsomest bundles should be placed in the outside course, for the purpose of keeping the stack of the correct shape, as well as carrying off the rain better than tangled bundles, which should form the inside courses, whenever there is any difference in the sheaves. If it is necessary to have a man or boy stand on the stack to pitch the sheaves to the stacker, he should always remain as near the middle as practicable, and not travel about so as to displace the sheaves, after the stacker has left them. Keep the middle full, the form circular,

and draw the courses in gradually. When the stack is not built around a pole, sharpen a small rail or scantling, and set it erect at the center, by thrusting it in two or three feet, so that it will stand while the top is built around it. As the area of the top of the stack diminishes, continue to place the sheaves more erect, until it terminates in one course inclining at an angle of about 45 degrees. Bind the tops of these securely to the pole. Then make a large bundle of long rye straw, wet it thoroughly, so that it will keep in place better, and having bound it with one band at about one third the distance from the top to the butts, slip it down over the top of the stake, and bind the top with several bands, as represented in the illustration. Spread out the butts evenly, and rake them down straight. A stack made according to the foregoing directions will turn heavy showers almost as well as a shingle roof, and the water will all fall clear.

Why Stacks Lean.

Stacks will sometimes lean to such a degree, that all above the bulge must be pitched off, and the stack re-topped. When most of the pitching is done on one side of a stack, the opposite side does not get pressed down so firmly, and it therefore settles more than the side where the material was pitched on. This causes the stack to lean; and by leaning, the courses are turned up to such a degree that on one side it is down hill toward the middle of the stack. Another reason why stacks lean is, that the bulge is laid out further from the centre on one side than the other; and as the side that is laid out the furthest will settle most, the entire stack often leans so far as to fall over.

The usual way of keeping a stack from leaning is, to thrust one end of a rail or pole against it, and set the other end on the ground. This sometimes turns up the courses so as to conduct the rain toward the middle of a stack. To avoid all difficulty from this source, let it be braced as shown in the illustration on the preceding page, by setting one end of a plank a few inches in the ground, and the upper end pressed against the bulge of the stack. This plank should stand perpendicularly, so as not to turn the courses of the sheaves up sidewise. The upright plank is kept in position by a rail or pole resting against a broad stake in the ground, while a cleat upon the plank prevents the other end from sliding. Several such braces may be fitted to a stack, which will hold it in correct position while settling. This manner of bracing a stack before it has settled, when there is danger that a high wind may blow it over, will often be found very convenient. When a stack is braced in this manner, the props can be removed at pleasure; whereas, when thrust against the side, it settles so heavily on them, that it is difficult to take them away if desirable, after it has settled firmly into place.

Indiana Agriculture.

The State of Indiana presents to the traveller the appearance of a region most inviting to the new settler. A great portion of it is well wooded rolling country, alive with streams, capable of supplying power for the employment of a large industrial population. The land is rich, vastly richer than New England, fully equal in most parts to the best districts of New York, Pennsylvania, or even Ohio. The prairies are not so extensive, perhaps not so fertile as those of Illinois, but where fertility is considered in-

exhaustible (though not really so), it is difficult to make very accurate comparisons. A large portion of the land, and we may almost say of the whole State, needs thorough draining; and it is the lack of this that causes fever and ague, which however, as the timber is cut off, is gradually falling back before the march of good farming. Why we do not hear more of and from the farmers of this State, we will not attempt to decide. This is a question for them. The *Agriculturist* books have the names of many thousands of subscribers in this State. They seem to be good readers, but slow writers. The following letter, however, is from one of them; we publish it as a rarity, and do so the more readily, as it is a sort of challenge to Indiana farmers to make themselves and their agriculture better known. Our correspondent writes from "Central Indiana," and signs himself "Clodhopper."—He says:—"I have been a reader of the *Agriculturist* for eight years, but have scarcely ever seen any thing in it, or in other agricultural papers in regard to Indiana farming, or written by an inhabitant of this, my native State. Some of our best farmers have never travelled out of the State, and they read of great things in other States, without thinking what Indiana can do and has done. Some of our local papers try to,

and do, make the impression, that Indiana is far below all of her sister States in every thing; this has a tendency to put the honest old farmers out of heart. But, like all other States, we have a great many farmers who are not honest, and it is not much to their interest to try improvements, because they 'make their Jack' by cheating the really honest ones.

"Another thing that is the most in the way is, we don't mingle enough together. We are not social enough; we pass by one another too often without speaking; we don't feel enough interest in our neighbor's affairs, and we try to do our own business without letting any body know any thing about it, and so, in this respect, every man is a secret society within himself.

"Let me urge my brother farmers to write, and make ourselves more widely known. Let us hear from one another oftener. So far as I can see, and I have travelled a good deal, we are not so far in the rear as some suppose; as for crops we do as well as the best, our stock is good, our permanent land improvements are increasing every day, and what we lack is to have faith in the State, and to let other people know it."

We hope our Indiana friends will be stirred up to let the world know what they are about. Far be it from us to say a word against so magnificent an agricultural district. We have often thought that the fine timber-lands and rolling country offered more inducements to emigrants, and the prospect of more agreeable homes, around which orchards and vineyards would soon spring up, than the immense plains of the grand prairie, or the regions lying further West.



A New Weed—The Bladder Campion.

(*Silene inflata*.)

The Bladder Campion, or Bladder Pink, is a plant which was long ago introduced into New England, where it grows not very abundantly along the road-sides and in fields, but has not heretofore attained a place in the catalogue of troublesome weeds. The plant has recently made its appearance in the eastern part of New York State, especially in Dutchess and Westchester counties, having been introduced there in some clover-seed, and has become established to such an extent as to cause the farmers much anxiety. All such plants are easily managed, if they are taken in hand when they first make their appearance, and before they have time to mature a crop of seed; and as this is an innocent looking one, which would never be suspected of doing any injury, we give an engraving of a flower stem, in order that it may be recognized. The root is perennial, the main or tap-root often over an inch in diameter, and descending deep into the soil, throwing off numerous strong branches. The stems are usually about a foot high, but in rich soil it grows from 2 to 3 feet high, much branched, and usually weak and spreading. The leaves are of a pale green, the lower ones being much larger than those shown in the engraving. The flowers are borne in a loose cluster, and are not without beauty, the white petals being very deeply notched or cleft. The most striking character about the flower is its bladder-like calyx, which very loosely surrounds the seed pod and is very prettily marked with

veins. This peculiarity of the calyx, which is referred to in its common names, enables the plant to be readily identified. The numerous seeds are quite small, kidney-shaped and rough. From the strong growth of the root, the plant is very difficult to extirpate it when once established, and the complaints we have from the localities infested by it, are of a character to induce us to put farmers well on their guard against it.

Cutting and Curing Corn, Sowed for Fodder.

The curing of corn stalks, that is those which bear grain, cannot be done until the corn is well glazed, and then the manner of treatment must be primarily adapted to securing the corn in the best condition. Corn sowed for fodder, however, should be cut when the grain is barely out of the watery state and beginning to be milky, that is when the stalk has attained its full growth, but has not yet become dry and hard. The manner of cutting depends much on the size of the stalks. When they are of ordinary length and size, say 3 to 5 feet high, they may best be cut with a reaping machine, stopping every time a gavel is cut and lifting it off. If too heavy for this, they must be cut by hand. A strong man can swing a cradle, and cut a moderate swath. If this cannot be done, it is better to cut up with a sickle, or corn-cutter, laying the stalks in gavels, than to cut with a common, or a bush scythe. The use of the grass scythe is no doubt the easiest way to cut the corn, but it necessitates picking up the stalks almost one by one, which is very laborious.

If the weather be pleasant, spread out the gavels to the sun, and turn them over before the dew falls. After a few days sunning, bind in small sheaves, and set up in close round stooks, binding the tops with several bands, to make them pointed to turn the rain well. When there is a fair prospect of two or three days of pleasant weather, remove the bands from the tops of the stooks, and set the bundles in long shocks. In this way they will dry out very fast. Before a storm comes on, they should be put again in round stooks, or secured in the barn. A long time is required to cure stalks fit for stacking. When a farmer has plenty of barn room, it is an excellent practice to lay poles or rails from beam to beam, and set the stalks all over them on the but ends. In this way the air can circulate near every sheaf, and none of the stalks will spoil. Those farmers who have hay caps, can cover the stooks with them, and thus secure the stalks well in the field, until they are cured enough to be stacked, or put in the barn.

New Suggestion for Hay Caps.

A certain man, a Yankee of course, has dreamed of an independent fortune and world-wide notoriety, after having brought out a wooden hay cap, made in the following manner: The buts of wide shingles, two or more feet long, are nailed to sticks about 1½ inches square, so as to form a roof like a barn with a ridge pole in it. The upper side of the miniature ridge pole is beveled each way from the middle, so as to give the shingles the right pitch. The ridge poles are about four feet long; and the edges of the shingles are lapped one on the other, as the huts are nailed to the ridge pole. Such a roof will cover a cock of large size, or a shock of wheat, keeping it dry through any storm. The only question is, whether they will not be too

costly, and inconvenient to handle. Where shingles can be sawed cheaply, a few can be made to test their practicability. Thin boards of basswood, whitewood, or pine, not more than one fourth of an inch thick, would subserve quite as good purpose as wide shingles. They could be carried to and from the field in a wagon; and packed in a small compass in a "nest," like wooden bowls. It would be necessary to make the tops of the cocks so, that the wooden caps would fit well, and not be blown off, even by high winds. We would be glad to hear of a few being made where lumber is cheap, and the result reported for the benefit of others. At times, where there is but little to do, such caps might be made and painted with coal tar, to prevent the shingles shrinking and swelling by the action of showers and sunshine.

Practical Advantages of Drilling Wheat.

Among the advantages of drilling in winter wheat over broadcast sowing, are the saving of labor, the saving of seed, and securing more abundant crops. Whether the grain is sowed broadcast, or drilled, the ground should receive the same thorough preparation previous to distributing the seed. If drilled in, one man will complete the operation, by simply going over the ground once. If sowed broadcast, the ground must be harrowed twice after the seed is sowed. This, in addition to the time consumed in sowing the seed by hand, will require about three times longer than is necessary to drill it in. Moreover, the drill, if properly made and adjusted, will deposit every kernel at a uniform depth; whereas, the harrow covers some of the seed too deep, some not deep enough, and some not at all; and if the soil be deep and mellow, the feet of teams will press a considerable portion of it quite too deep.

Another advantage in drilling in the seed is, as soon as an acre or two is plowed, the grain may be put in immediately, thus finishing the work as fast as the ground is plowed. When grain is sowed broadcast, it is much more convenient, and rather important, to have the entire field plowed before sowing, so as to be able to harrow both ways. When a farmer has a drill, he can plow an acre, then harrow it, and drill in the seed all in one day, while the soil is fresh, which is the best condition to hasten the germination of the grain. He thus finishes his work as he progresses, and is always ready for temporary interruptions by storms of rain, which are often attended with more or less injury to the crop. Such delays, especially with spring grain, are often fatal to a good crop.

No man can sow wheat broadcast as evenly as a good drill will distribute it. But as a man when sowing by hand will vary his steps, and the force applied at every cast of the seed, and as the wind will often blow the grain from its course, it becomes necessary to sow much more seed per acre, to secure as thick a stand of plants, as when it is deposited with a drill.

Why Wheat Winter Kills.

When the soil freezes, it is greatly expanded; and the expansion is all upwards, because the unfrozen earth below will not yield to the frozen stratum; and there is no vacant space to be filled by the lateral enlargement. For this reason the surface of the soil is often elevated two, three, or more inches higher than it stands when the ground is not frozen. The writer once had two sticks of timber resting with their

ends on the sills of one of his out-buildings, and the middle of each was supported by posts set in the ground where frost could not reach them. In very cold weather, the entire building would be raised by the freezing of the earth beneath the foundation, so that a plank, 1½ inch thick, could be put under the timbers, on the top of the posts. If the position of shallow-rooted trees, where the ground freezes deeply, be compared with horizontal marks on a building that the frost does not lift, it will often be seen that they stand from one to two inches higher, when the soil is thus frozen, than when free from frost. As the roots of such trees lie nearly in a horizontal position, they rise and settle back with the lifting and settling of the soil. Thus it is with sod ground. The roots of the grass form such a tangled mat near the surface of the ground, that the entire layer of turf settles back in a body, keeping the roots in their true position.

The injury to the wheat plant arising from the freezing and thawing of the soil, is usually the most serious obstacle that farmers meet with in our wheat growing regions. By the alternate freezing and thawing of the surface of the soil, the stools of wheat are lifted and separated from their hold upon the soil. The deep roots which penetrate below the reach of shallow frosts are broken off, and the earth is more or less loosened from the others. Here we perceive the disadvantage of depositing the seed too deep. The roots originating from the seed, being far below the surface of the ground, when the plant is lifted by the expansion of the soil, the stem will be likely to be separated somewhere between the surface of the ground and the roots. The plants then soon die. When the roots strike downward, their hold in the soil is loosened; and as they do not settle back to their original position when the ground thaws, the plants are soon worked upwards, until they are raised almost clear of the soil, as if they had been pulled up by hand. Every practical wheat grower is familiar with all these disadvantages in raising winter wheat. With spring grain, none of these things occur.

In order therefore, to prevent in a great degree, or entirely, any injury to the wheat plant from freezing and thawing of the soil, two things are essential. The first is, thorough drainage, where the soil is at all inclined to be too wet. Dry soils are affected but little by freezing; but when a soil is saturated with water, it often heaves several inches above its usual height. This process so disturbs the roots of wheat, that they have no more hold on the soil, than if just transplanted. Hence, they are apt soon to die.

The next important thing is, to prepare the soil, as has been previously directed, by keeping a thin stratum of the richest soil on the surface, and by depositing the seed at a uniform depth of not over two inches over the entire field, so that the primary roots, those starting from the seed, and those other roots which start from above the seed, will all spread out nearly in a horizontal direction, interlocking with each other, and thus forming a tangled mat like a sward, that will rise and settle back to its proper position, when the soil freezes and thaws, without losing its hold upon the soil.

This is aimed at when wheat is put in with an ordinary drill; and, for the most part, the end sought is secured, if the soil be of a uniform quality and condition, so that the teeth will run at a given depth. But when the soil is mellow in some places, and hard in others, some drills will deposit the seed in the mellow places too deep, so that putting in with a drill will have

no advantage over sowing broadcast, so far as obviating the injurious effects of freezing and thawing are concerned. The teeth of grain drills should be set to run not more than two inches in depth. One and a half inches deep for winter grain is better than two, for reasons already assigned. At this depth, nearly all the roots will be so near each other, that the expansion of the soil will neither break the stem or seriously damage the roots; nor will it cause perceptible diminution of the crop.

A Word about Sorghum.

The amount of land in sorghum is reported as very large. This certainly was to be expected, from the great price sugar and molasses have borne for some years past. The manufacture of syrup continues to be the only profitable aim of the sorghum boiler, for when well made it is a valuable and marketable article. The sugar, what there is of it, has an uncertain value, as it is of very variable quality. The time of harvesting is after the seed has passed the milky state. If necessary to begin early, so as to prolong the boiling season, a portion may be cut a little sooner, but it is better to cut later and stack the cane. Strip the leaves from the cane before cutting up, and top below the second joint. We will not advise as to the best cane mills or evaporating pans. There are several good ones, and like mowing machines, their excellencies make them very nearly equally valuable. The boiling should be conducted rapidly in shallow pans, so that the scum may be removed. If it is possible, boil down the juice and finish it before it has been exposed to the air by standing; but that which is somewhat reduced will better bear exposure than that freshly expressed. The skimming should be very thorough, and the hot syrup should be passed through a filter or strainer of wire gauze to remove specks, etc. Juice of good quality may be evaporated and purified without the use of defecating articles, like lime, soda, eggs, milk, etc.; but when it is necessary to use them, lime is the best neutralizer of acids, and eggs the best coagulator, though fresh bullock's blood is much cheaper. These substances are only added in the finishing process, and will all be removed by the skimming. Economy in fuel is a very important subject. The fire should burn freely, no more air ought to be admitted than will aid the combustion, and all cracks where air can enter except below the fire should be stopped by clay and sand luting. The fire should play along the bottom of the pan, and all the heated air pass as close to the pan as is consistent with a good draft. Nothing is gained in concentrating the syrup too much, and it is done only at the risk of scorching. It should be about the thickness of good West India or New Orleans molasses.

Preparation of Soil for Winter Wheat.

In our latitude, whether winter wheat is to be sowed on summer fallow, or to follow barley or oats, the ground really should have been in the course of preparation during the month of August. As the Midge and Hessian fly are no longer feared in many localities, farmers may now return to the production of winter wheat, with the expectation of raising remunerative crops, if they prepare the soil properly. Our experience with this crop warrants us in stating that the most effectual prevention of the ravages of the midge, is a thorough preparation of the soil, and a liberal application of good,

well-rotted manure, and this has been corroborated by some of the best wheat growers of Western New York. The reasoning on this subject is, that a thorough preparation of the soil produces a more luxuriant and healthy growth, which will withstand the injurious attacks of both these insects, and every good farmer will admit the correctness of the logic. Wheat of any kind needs fertilizers of a very fine, rich character. Indian corn will feed on coarse, unfermented manure, which would be very poorly adapted to the growth of wheat. All good wheat growers agree also on this point, that winter wheat requires a firm soil; and experience proves that soils of this character, yield the best crops of wheat. The light, porous, and mucky soils found on most of our table lands do not produce as large crops of winter wheat as many of the slopes and undulating portions of the country. However, good farmers are learning that by plowing, harrowing and manuring, a fair crop may be obtained where the soil is naturally quite inferior and not adapted to the production of winter wheat.

In preparing oats or barley stubble for winter wheat, it should be plowed at least two weeks previous to the time of putting in the seed. If the soil is thin, let the common plow run only as deep as the soil extends; then break up and pulverize the subsoil with the subsoil plow, instead of turning up too much of the barren soil from below. (Read the article on page 246.) The best time for putting in winter wheat is usually about the first of September. Let the compost, or rotted manure, be hauled and deposited in small conical heaps over the field. Allowing that five bushels are enough for one square rod, when spread evenly, and that there are twenty-five bushels in a two-horse wagon load, thirty-two loads will manure one acre abundantly for a good crop of wheat, if the manure is made of the droppings of work horses and oxen, and fattening bullocks and sheep that have consumed more or less coarse grain. Now spread the manure evenly on about one acre, and bury it and mingle it with the soil with a two-horse cultivator run about four inches deep. Go over it three or four times; and if there are any lumps, use the roller to crush them. The aim should be to mingle the manure thoroughly with 3 or 4 inches in depth of the best soil, and to have that depth finely pulverized, so that the grain may have not only a good seed bed to germinate in, but be supplied with an abundance of available nourishment for promoting the growth of the young plants, so that they may acquire a large growth, or mass of roots before winter. This will be an excellent security against "heaving out" by freezing and thawing, and it will also prepare the plants for starting early the following spring. *

In-and-in Breeding.

There is probably no greater folly than the common stock raiser can be guilty of, than breeding from animals close akin. The results are in almost all cases unfortunate, and tend to the degradation of his stock. This is true of horses and neat cattle especially, of sheep essentially, of swine in a less degree, but still noticeably; and in the case of fowls and pigeons, the evil results are more quickly seen than in any other classes, perhaps. In-and-in breeding, where most carefully conducted, has produced very favorable results; but this was under the direction of men who gave their lives, with severe, assiduous study of animals and their

points, their differences of constitution and temperament, of form, size, etc.; and who were also possessed of an intuition as to which animals would cross well. In those herds, too, where in-and-in breeding has been successfully practised, it must be remembered that the relative numbers of males and females approached much nearer a natural standard, than is ever profitable in economic stock raising. If any one wishes to see how quickly he can run down a superior flock or herd, let him undertake to imitate Bakewell on a small scale.

Cutting Feed for Farm Stock.

The winter is before us; the fairs are at hand, and opportunities to select the best kinds of hay, straw, and stalk cutters are offered to farmers. We have for a long time taken every opportunity to give the weight of our influence in favor of cutting up and soaking, or cooking feed for all farm stock, except sheep. In the hope of stirring up some of our readers to introduce straw and stalk cutters upon their farms, we print the following from "H. A. W.," of Chautauqua Co., N. Y., who goes further than we do in advocating cut feed for sheep. We have no doubt it is excellent for fattening sheep.—He writes:

"From long experience and continued experiments, I am fully persuaded in my own mind, and think it needs but little proof to demonstrate that coarse feed for cattle should be cut, or chopped, and to a certain degree cooked, that they may receive the full benefit. For eighteen years I have personally superintended my farm stock, and practised more or less the cutting of food for all, but more especially for the horses, of which there were at all times three, and sometimes four in the stable. There were also 5 to 12 head of cattle, and from 12 to 35 sheep. The cattle and sheep were sheltered during all storms, after they came to the yards in the fall. The horses had each one bushel of cut straw, which was placed in a tight box and sprinkled with 4 quarts of corn and oat meal (equal parts mixed and ground fine,) and wet with boiling hot water, the whole well mixed, covered tightly and left to soak 12 hours. The feed for all the horses was mixed at once. I believe one bushel of this feed is sufficient for one feeding of a horse from 1000 to 1100 lbs. weight. I never feed but twice a day, mornings and evenings. Observation convinces me that 3 lbs. cooked meal is equal to 5 lbs. raw. I have fed almost every kind of grain to horses, and they relish all when prepared in this way. I feed regularly, whether at work or idle. My horses are always fat, and ready for a drive of 5 or 50 miles a day, as necessity requires. It is a fact that horses will perform more labor on cut and cooked than on long and uncooked feed. So will cows produce a greater flow of milk on such feed. Sheep produce more wool and healthier lambs, when fed with such feed, than when fed otherwise. In February of 1864, I sold to the butcher seven wethers, coming two years old in May following, for 45 dollars. They had been fed regularly from December 1st up to the time of sale. There cannot be a question with the careful observer and experimenter, but that cut and cooked food is from one fourth to one third cheaper. One ton of straw and five bushels of corn ground fine, the straw cut and soaked, with the meal, will keep a horse in better condition than one ton of hay. No enterprising farmer who cuts his fodder will go back to old ways." [Corn stalks well cured, cut and wet up with a little meal, are equal to good hay, for feeding.]



What makes a Horse Vicious.

There is no disguising the fact that viciousness is innate with some horses. It is no doubt sometimes hereditary, and follows some of the best strains of blood we have. That viciousness should accompany a highly nervous organization is not to be wondered at. Hence it causes no surprise when we find such dispositions among the finely organized thoroughbreds—animals of a most sensitive and nervous organization—from which the common expression “thin skinned,” as applied to a too sensitive man, is obviously derived. The treatment horses receive, and the *moral* atmosphere in which they are thrown, have a much greater influence than most horsemen are generally inclined to admit. The pinching, tickling, boisterous stable boy, who annoys a spirited horse for the sake of enjoying his futile, though almost frantic kicks and leers, is affecting the disposition of the horse and his descendants for generations to come, besides putting in jeopardy the lives and limbs of those who are brought in contact with the horse so tampered with. A horse is surely influenced by the psychological character of the men with whom he associates.—A passionate man will have a baulky horse; a slow, plodding brother, one of his own style; and so the nervous, quick, busy man's horse will show the same qualities.—So noticeable is this, that we have often remarked that the family horses of our neighbors, as they

are changed one after another, very soon fall into the very gait and style of their predecessors in the same stables. Were rules, similar to the one which Herbert quotes, followed by all English horse breakers, from the time of Queen Bess down, it would indeed be a wonder, if a good natured horse could be found in the kingdom. This rule of a Norfolk horse-trainer of Queen Elizabeth's time reads as follows:

“If your horse does not stand still, or hesitates, then alrate him with a terrible voyce; and beat him yourself with a good stick upon the head between the ears; then stick him in the spurring place iii or iiii times together, with one legge after another, as fast as your legges might walk: your legges must go like two bouncing beetles.”

This is too much the English and Irish style of horse breaking. The grooms, or horse trainers get angry and thrash, kick, buffet, and bang a horse till they make him as angry as possible, and soon spoil his temper for life; we have no doubt the bad tempers too common in English horses may be chiefly attributed to this cause. On the continent of Europe there are large numbers of English horses (thoroughbreds) kept and bred pure for the sake of crossing with other heavier breeds, and producing large but active, graceful and spirited carriage horses for the monarchs, or nobility. Whoever has been through these studs must have noticed how free almost all the horses, even the old stallions, appeared to be from any thing like viciousness. The same thing is seen in the Southern States, where thoroughbred horses are much more common than with us at the

North. The gentle handling of the negro has wrought a change in the disposition of the horse, while his spirit and pluck, and the strong nervousness of his organization remain, marked characteristics of the breed.—It is possible by severe treatment, by pain and torture, to break the spirit of a horse, and to rule him by fear, keeping him in subjection by the fear of the rod, yet this will never make him less vicious, but rather will add treachery to vice, in destroying the truly noble and affectionate qualities which are natural to him. If these qualities are assiduously cultivated in colts and young horses, viciousness will much more rarely appear than under other treatment. Sometimes, however, it is necessary to conquer a bad tempered horse, and if possible to secure a radical conversion, or change of character, which shall be lasting. No timorous man need undertake this task; he will only make matters worse. A horse tamer should be fearless—the horse will know it; he should be quiet, for then the horse will be put off his guard; he should be firm and give the brute no advantage, but crowd him up to doing something, and that, inevitably what the tamer wants him to do. Thus any ordinary horse will soon give

up and own man, his master. The kindest treatment and even petting must always follow yielding; and if possible to help it, the horse should never be frightened by any treatment, and above all things, he should not be angered by petty torture. His own contrariness should appear to him to be the cause of all his trouble, and man, his best friend. This principle is at the foundation of Rarey's successful practice, detailed in the *Agriculturist* for February, 1861.

When to Select Seed Potatoes.

The best time to select seed potatoes is, when they are dug. As soon as they are brought to the surface and lie spread on the ground, the best can be selected with less difficulty than at any other time. Those that are perfectly matured, and of good shape, having the marked characteristics of the variety, and good average size, should be selected for seed, in preference to those of any other qualities. They should then be placed in boxes or barrels, and kept where they will not be injured by freezing or by warmth. If seed potatoes are saved in this manner for a few years in succession, we have no doubt a decided improvement will be observed in the yield per acre, as well as in the quality of the crops. And we think this practice will also be found an effectual security against small ones, and a good defence against the rot. When potatoes first come from the ground, the skins have a clearness, which they soon lose.

The New Japanese Lily.

(Lilium auratum.)

How much our florists owe to Japan; and the debt has been greatly increased by the gift of the Gold-banded Lily, *Lilium auratum*. All horticulturists will remember the excitement produced by the advent of *Lilium lancifolium*, which is now called the Japan Lily, though we have several others from that country. The one under consideration is likely to become quite as popular, and the two together are enough to put us under everlasting obligations, horticulturally, to that land of fine flowers and queer people. Like its beautiful predecessor, this lily was for a while held at a price which kept it beyond the reach of ordinary cultivators, \$40 a bulb having been asked for it when first introduced. Last spring, the price was \$5, and as it can be rapidly multiplied, we have no doubt that next spring it will be sold at a great reduction from this. We have only seen the plant in pot-culture where it is of course somewhat drawn up and bears fewer flowers than it will in the open ground. It grows two feet or more high and bears from one to four or five enormous flowers. The shape of the leaves and flower is shown in the engraving, though of a much reduced size. The flower from which the drawing was taken measured 8 inches across, and we have measured those which were 11 inches across without stretching out the curved petals. The engraving shows the lily before it attains its greatest expansion; then the form becomes more irregular, three of the petals standing nearly erect; below these, two are stretched out horizontally, while the other one hangs directly down in front. We call all the parts petals, as in the lilies they are colored alike, though there are three outer and three inner ones corresponding to calyx and corolla. The petals are beautifully undulating upon the edges and are gracefully recurved, the three outer ones being much narrower. They are of a pure white, marked by dots of a rich brown; these dots near the end of the petal being on a level with its surface, but toward the middle they become elevated, and near the base they form short coarse hairs. But the most prominent marking of the flower is the broad central stripe of clear yellow, running through the length of each petal, which in the sun give it a brilliancy that well merits the name of Gilded or Gold-banded. The stamens and pistil have a graceful curve and the general effect is lightened by the rich cinnamon-brown color of the pollen with which the anthers are covered. Added to all this stateliness and beauty, the



LILIUM AURATUM.

flower has a rich and pleasing fragrance, a quality so often lacking in showy flowers. We have no doubt that, like the older favorite above mentioned, this will prove perfectly hardy and we shall soon see it in every garden. Like all the scaly bulbs, this lily is propagated with the greatest ease, the scales being broken from the bulb and treated just like cuttings. We have had fine flowers this season from William Chorlton, Staten Island; I. Dingwall, Albany; James Hogg, Yorkville; I. Buchanan, Astoria, all in N. Y., and from Peter Henderson, Jersey City; Brill & Kumerle, Newark, New Jersey; and B. K. Bliss, Springfield, Mass.

Currants, Varieties and Culture.

People who live in the city can have nice currants by paying from 15 to 20 cents per pound, while hard, small and unripe things can be had at 5 cents for the same quantity. Those who live in the country can have the very best as long as the season lasts, by a little expense in getting a start, and a little trouble thereafter. A most wholesome fruit is the currant, and its sharp acid is very grateful in the hot days in which it comes. The currant belongs to the genus *Ribes*, which furnishes us both the Gooseberry and Currant. Gooseberries have prickly stems and their flowers and fruit in small clusters, while currants have stems without prickles, and their flowers and fruit in long racemes, or strings. Of the currants there are several species, the varieties of which are more or less cultivated. *Ribes floridum* is our native black currant, and *Ribes nigrum* the European

the beginner will be pleased to know that the difference between them is much greater in print than in the plants themselves, and that a list of five will comprise all that are really desirable. The scope of the variation is so small, that one in going over a collection of 20 varieties will almost be tempted to say that there are only two sorts of currants, red and white. Yet this is not the case, for there is a difference in both red and white currants, and we have very great improvements upon both the old red and white Dutch, if not in flavor, at least in size of berry and bunch. We will enumerate a few of what



Fig. 1.—VERSAILLES.

seem to us the leading varieties, and leave our readers to make a choice among them—remarking that our notes refer to varieties under good culture. The best varieties, if neglected, will produce but poor fruit, while the common sorts, properly cultivated and pruned, will give a satisfactory yield. The currant will survive any amount of neglect, but the fruit of any of the

one, both of which have very unpleasant fruit and foliage, though valued medicinally and otherwise by some people. *Ribes aureum* is the Buffalo, or Missouri currant, often cultivated in gardens as an ornamental shrub, for its early sweet-scented flowers. Its varieties, the Missouri sweet-fruited and the Utah currant have mawkish and indifferent fruits. Much has been written about the Utah currant, of which there are black, yellow and red kinds, and all equally worthless here, although they may have a value in Utah. It is to the species *Ribes rubrum*, that we are indebted for all the valuable garden varieties, red, white, striped, etc., but for our purpose we may consider only the red and the white. Like all our cultivated fruits, the seeds give plants differing in many particulars from the parent, hence many varieties have been produced. Our catalogues contain so long a list of names, that one is puzzled what to choose, and

varieties, under these circumstances, will bear no comparison with that from the same kind when properly manured, pruned and mulched.

As it is no more trouble to grow the best sorts than poorer ones, we omit all notice of the Red and White Dutch, and give a few descriptive notes on the improved and larger sorts.

RED VARIETIES.—*Versailles*.—This is often called in the catalogues "La Versailles," but as

Versailles is a word which has, in measure, become adopted into our language, we prefer it. This is one of the largest as well as one of the best. It is an enormous bearer, and its berries are very uniform and of large size. A drawing of the actual size, in good cultivation, is shown in fig. 1. We have measured single berries of this variety that were 2½ inches circumference. It is of good flavor, not too sour, and sufficiently early. The cherry currant equals it in size, but is much more acid. The variety sent out as Fertile d'Angers does not seem to be very distinct from the Versailles, at any rate the difference is not sufficient to warrant the keeping of two names.



Fig. 2. FERTILE DE PALUAU.

Fertile de Paluau.—This comparatively recent variety we consider next in excellence to the Versailles, and it will give general satisfaction. The bush has an upright habit, and is a strong grower; the fruit, though not so large as the preceding, is large enough, is in long bunches, tender and of good flavor. A bunch of the natural size is shown in figure 2.

Victoria.—A variety, which ripens late. Its bunches are very long; its fruit, taken before it is fully ripe, is very sour, but when in perfection, is of good flavor, and valuable for its productiveness and lateness.

We might mention many others, for which superiority in some respect is claimed, but these three will be enough of the red sorts for one garden. Intermediate between the red and white are the Champagne, remarkable for its pink color; and the Striped-currant, which has recently come out with the high sounding name of Gloire de Sablons. It is curious for its stripes, but as a fruit it is sour and worthless.

WHITE VARIETIES.—There are some who say they can see no difference in white currants. They are all much sweeter than the red ones, and we think appreciably differ in quality.

White Grape.—For all good qualities we doubt if any variety excels this comparatively old sort. It is much better every way than the White Dutch, and the bush has a different habit.

Attractor.—This variety was perhaps overpraised some years ago, but it is nevertheless a very meritorious sort. It has a peculiar narrow toothed leaf, and a large berry in a rather short bunch. To our taste it is the sweetest and best of the White Currants now disseminated.

White Provence.—This is not much cultivated. The bush has a good habit and the leaves are generally, but not always, edged with white or yellow. The fruit is large and handsome, but has not as good flavor as the above varieties.

White Transparent.—A large bunch and berry, but it is much more acid than the others. While this list does not include all that have been commended by good judges, it contains sufficient from which to make a good selection.

CULTIVATION.—As currants will grow, and bear something, in spite of total neglect, many people are not aware of the benefit it is to any variety to give it the best possible chance for development. Manuring, pruning and mulching will work wonders with the currant; an annual manuring is essential to successful culture, and if large fruit is desired, the bushes should be properly pruned, and during the fruiting season, heavily mulched. Plants one or more years old can be procured from the nurseries, or they may be raised with the greatest ease from cuttings. Portions of wood of this year's growth, set this fall, will give good plants next year. Having obtained cuttings, about a foot long, from a reliable source, remove with a sharp knife all but the three upper buds, and set them in good soil with the buds above the surface. Take particular care to press the soil closely in contact with the lower end of the cutting. The next year the object should be to get one good and strong upright shoot. Select the shoot from the bud that pushes strongest, and train it to a stake, pinching back the others. In this way plants with a strong single stem will be obtained, which are to be planted out 5 feet distant each way, in autumn. The next spring the treatment will depend upon the mode of training adopted, which may be the tree, pyramid, or vase method. To train a bush in the tree style, remove all buds so as to leave a clean stem from 6 inches to a foot above the surface of the ground, and then cut the top back, so as to leave three strong buds; these will form three branches, which are allowed to grow during the season, and the next year are cut back to two buds each, which will give a round headed tree of six branches, each of which are afterwards to be cut back one half, and have all superfluous shoots trimmed out. To train a currant bush on the pyramidal system, treat just as described for the dwarf pear in January last, and follow a similar method of summer pinching.

The vase-form of training consists in having several main branches with fruit-bearing side shoots, and is preferred by many good cultivators. To practise this, cut back a one year old plant of a single stem, to four or six buds. Encourage the growth from these, and if necessary train them to a hoop, to ensure an equal spread-

ing of these main branches. These upright stems may throw out side branches the first year, or not until the second, in either case they should be pinched back to 4 inches, when they get to be 6 or 8 inches long. If any shoot afterwards pushes from a side branch, pinch back to a single leaf. By training bushes in this form with the centre kept open, fine fruit can be raised.

Herbaceous Perennials—Easily Cultivated, and Adapted to Every Garden.

The most brilliant effects of color in the flower garden can undoubtedly be produced by means of bedding plants and annuals, but they both involve a great deal of trouble. Unless one has a green-house in which to grow a stock of geraniums, verbenas, and other bedding plants, there is quite an outlay in procuring a supply each spring from the florists, while with annuals the sowing and transplanting require a great deal of care, which is only repaid by one short season of bloom. To be sure there are many, of both annuals and the tender bedding plants, that we would not do without, but we do not like the custom, which has obtained of late years, of running altogether to these, to the neglect of the herbaceous perennials, which are constant friends, and though frost destroys their tops, their roots remain year after year. These plants do not demand the constant fussing with seeds, pots, and cuttings, that the others do. All the care they ask is that the roots be taken up and divided when the clumps become too large. The herbaceous perennials are propagated in different ways; by division of the root, by cuttings, and by seed, and our object is now to call attention to some of those which may be most readily raised from the seed. As a general thing these plants do not flower the year they are sown. The usual way is to sow the seed in the spring, and when the plants get strong enough, to set them where they are to remain, and they will usually flower the second year. Another method is, to sow the seeds in August or September, thin the plants well and allow them to grow in the seed bed until cold weather, when they are covered with leaves or other litter, and transplanted the following spring. That this late planting will answer with all perennials we are not prepared to state, but we have had it succeed with a large number. The seed of some of these plants is exceedingly small, and such require some care to get them up; they should be but very slightly covered with very fine soil, and the row be covered during the heat of the day with a strip of board to keep the soil from drying out. The following list comprises some of the most desirable plants of this class, but it may be very much extended by consulting the catalogues, which are annually published by the seedsmen.

Aquilegia, the Columbine; for a note on some of the varieties and species, see page 156 (May).

Campanula, the Bell-flower, which includes the old-fashioned Canterbury Bells, and many newer and beautiful ones. The blue and white *C. grandiflora*, are very handsome, as are the *C. persicifolia*, and its varieties. *C. pyramidalis* is tall and showy, while *C. Carpathica*, and others are nice dwarf plants and very free bloomers.

Catananche, an exceedingly beautiful genus of plants of the family Composite, for which there is no popular name. They are free bloomers and have brilliant Aster-like flowers with silvery scales to the involucre, which render the heads very pretty after the flowers have fallen.



Fig. 3.—VICTORIA.

The varieties *caerulea*, *bicolor*, and *alba*, are good.

Delphinium, or Larkspur, in its many species and varieties, gives us flowers from nearly white to the darkest violet, some of the blues being exceedingly pure and beautiful. *Delphinium formosum*, *Hendersoni*, *Celestium*, and *Elatum* may be mentioned as among the best.

Dodecatheon, the American Cowslip, of which there is but one species, *D. Meadia*, which is pink, and a white variety. This is a native which ought to be much more cultivated than it is, for the beauty and singularity of its flowers.

Iberis, the annual Candytuft, is well known, but a perennial species, *sempervirens*, is but little cultivated. It has flowers much like the annual one, and comes in flower very early in spring and continues for a long while.

Lupinus.—There are several garden perennial species of the Lupin. *Lupinus polyphyllus*, is one of the most showy, and our native, *Lupinus perennis* should not be forgotten.

Lychnis.—There are many showy ones in this genus, and they are of easy culture.

Oenothera, the Evening Primrose. One of the best of these is *O. macrocarpa* (sometimes called *Missouriensis*), a dwarf spreading species with enormous flowers. The much praised *Oenothera Lamarckiana*, is very large flowered, but grows tall, coarse and weedy.

Papaver.—Among the perennial Poppies we have, *Papaver baccatum*, orange crimson, *P. nudicaule*, yellow, and *P. orientale*, scarlet with large black blotches on the base of petals.

Pentstemon.—This is a fine genus of perennials, some of which are perfectly hardy and others require protection. The garden names are unfortunately so confused that we are unable to designate all the hardy ones with accuracy. A paper of mixed seeds will give a number of hardy ones.

Phloxes.—The perennial Phloxes are among the most popular garden plants, and a great number of named seedlings are sold. The seeds in the catalogues are called *Phlox hybrida*, and *Phlox decussata*, and if they can be had from a good stock, many fine and well marked seedlings may be raised.

Potentilla.—The names of garden sorts of these are very much confused, and it is as well to buy the mixed seeds.

Pyrethrum.—Very showy and free flowing plants with brilliant aster-like flowers, which continue long in bloom. Mixed seeds are best.

Verbascum.—A tall and rather showy species of Mullein, *V. pyramidalis*, for large grounds.

In this list we have merely indicated a few good perennials, and recommend our flower growing readers to turn their attention toward these plants. Many of the biennials, such as *Digitalis*, *Lunaria*, *Dianthus*, and others which we have not space to enumerate, may also be sown this month in the same manner, and make good plants for blooming next year.

Notes on Grapes and Grape Culture.

Generally this has been a discouraging year for grape growers, the crop in many cases being a total failure. The burthen of numerous letters is, "what is the matter with my grapes?" and these communications are frequently accompanied by specimens of leaves, shoots and fruit, showing some of the various troubles to which the vine is subject. One specimen was sent, in which the leaf had upon its upper sur-

face a number of rough warts the size of a small pea, each one of which contained a grub.

We have seen this upon the grape only once before, and have not been able to trace its development and find the insect in its perfect state. A number of specimens of the disease alluded to on page 251 (August), have been sent. This seems to be a rot, which appears on the young wood, soon destroying its vitality, and ultimately affecting the fruit. We know of two instances, in which this was noticed in time and its spread prevented by immediately removing all the diseased parts. The rot has made sad havoc, especially with the Catawba and Concord. A fine vineyard, which we saw last year bearing hundreds of bushels of fine Catawbas, has not a bushel of fruit this year, and similar accounts come to us from other places. Mildew has made unprecedented ravages, and in many cases has destroyed the crop. Sulphur, when applied in time, has been found to check its progress. The bellows which was figured in July has been advertised in some of the journals, and we have heard bitter complaints from those who have ordered and failed to receive them. One must be deficient in mechanical tact, if he could not fit up some contrivance to serve as a substitute. One gentleman, who procured a bellows in time, informs us that he saved some thousands of vines by the prompt application of sulphur. Each year's experience shows the importance of a proper system of training the vine. Where the vine is kept within bounds, as in the arm and spur method, with the canes and laterals properly pinched, the leaves attain a strength and a firm texture which enable them to resist mildew and those diseases caused by sudden atmospheric changes much better than do those vines that are allowed to grow nearly at random. Another benefit resulting from the arm and spur training is, the free circulation of air it affords, provided of course that the trellis is not in a confined situation. The overfruiting of young vines prevents their attaining proper vigor, and renders them less able to resist disease another year. In many cases the trouble with the vine is a wet subsoil, and the want of a proper drainage is particularly felt in such a wet season as the present has been. We have a number of letters in praise of the Delaware as a vigorous grower and abundant bearer. As this variety may be considered to have established its reputation as a first class grape in every respect, we should be glad if our correspondents would give their experience with the newer kinds. One writer states that he had Delaware vines from two sources, and that the two lots were planted in the same soil with equal care. The vines, which had much the stronger looking roots, made a growth less than a quarter of that made by the other lot, and our correspondent asks the reason. We think that the reason is to be attributed to the difference in cultivation the first year. In one case the roots had to go far for nourishment, and made long and simple roots with but few small branches, while in the other case the soil was better and the roots more

finely divided. In regard to the article in August upon the roots of vines in pot and open culture, we did not wish to be understood as saying that good vines cannot be grown in pots, for we know that they can be, but we wished to show that the bedding plan was free from the difficulties attending the use of pots when the latter was carelessly practised. The question often occurs, if vines grown through the season under glass, are likely to be as hardy as those grown partly in the open air. We think that they are if properly managed, and the propagator, who uses glass, is enabled to guard against mildew, which so often attacks and weakens young vines planted out of doors. Our advice to those who contemplate purchasing largely is, to visit the different propagating establishments while the young stock is growing, and examine the condition of the vines before the leaves have fallen; they will thus be able to see what care is used in their cultivation, and to judge something of the quality of vines.



The Horse-Nettle, a Terrible Weed.

(*Solanum Caroliniense*.)

This plant, which is a native of the South, has heretofore only been found in a few localities in the Northern States. A specimen was recently sent for a name from Ripley Co., Ind.; it is said to be spreading in that direction, and we are reminded of the necessity of illustrating the plant, in order that it may be known at once wherever it makes its appearance. The only place where we have seen this weed was near Westchester, Pa., where it was pointed out to us by the late venerable Doct. Darlington, and where we obtained the specimen from which our late friend, A. O. Moore, made the drawing for the accompanying illustration. The engraving shows the prickly character of the plant, and the shape of the leaves and flowers, though the flower cluster is usually more full and conspicuous, and the prickles, which are upon both leaves and stem, are even more abundant

and formidable than are here shown. The Solanum, or Night-shade Family, to which this plant belongs, is quite remarkable for the widely different character of its members. While on the one hand it furnishes us with the useful Potato, Tomato, and Egg-plant, it on the other hand produces the poisonous Stramonium, Henbane, and Tobacco. The plant under consideration may or may not be poisonous, but it is certainly pestiferous. Its perennial roots, when once established, are very difficult to destroy, and as its prickly stems, which grow about a foot high, keep animals of all kinds at a respectful distance, the plant soon gets possession of the soil, and forms patches where it luxuriates to the exclusion of all other vegetation. Dr. Darlington, who had some experience with it, informed us that he considered it the worst of all weeds. The plant is not without beauty, as its blue, or white flowers, as well as its round orange yellow berries, are quite showy. Let no one be deceived by the good looks of this or the Bladder Campion, noticed elsewhere, but whenever they appear, let them be thoroughly exterminated. This plant is sometimes mistaken for the Canada Thistle, but differs much from it in appearance.

The Kittatinny Blackberry.

In October last we published an engraving and some account of a new variety of blackberry, called the Kittatinny. At Mr. Williams' request we again visited the plants in the present fruiting season, and are quite satisfied that we did not, in the article referred to, overestimate its good qualities. It is very hardy, a great bearer, and ripens its fruit gradually through a period of six or eight weeks. The berries are very large, sweet, and of most excellent flavor, and possess the great merit of being ripe when they are black. If this variety proves as good elsewhere as it does in the neighborhood where it originated, it will become very popular. A plant of this variety set out last fall in the grounds of one of the editors, on Long Island, made a most promising show of fruit this season.

Cultivating the Pansy.

We have many complaints of want of success with the Pansy. The general cause of failure is owing to the fact, that when the seed is sown in the spring the plants do not get large enough to bloom before hot weather, and as they cannot endure the heat of our midsummers, unless in a favorably shaded spot, they will dwindle and give an unsatisfactory bloom, and often die out altogether. The best plan is, to take a hint from the way in which the plant sows its own seeds, which it does as soon as they are ripe. Seeds sown this month, will make strong plants before winter. At the approach of cold weather, cover them with leaves, or other light litter. Much better results may be obtained if they are transplanted to a cold frame, where they will flower very early in spring. When a choice variety is raised from seed, it is readily continued by propagating by layers or by cuttings.



Moss Roses.

Floriculture produces nothing more beautiful than a Moss-rose bud. To be in perfection the bud must be just on the point of expansion, when the swelling petals have spread apart the divisions of the calyx and show their pure rose tint in a setting of delicate green moss-like fringe. To those who really admire Moss-roses it may seem as un sentimental as to give the chemical analysis of a tear, or an anatomical and physiological account of a smile, to say that all this beauty is produced by an abnormal growth of the flower cup, and that these roses are only accidental varieties of common roses; yet such is the fact, and the lovely mossiness which we so much admire is as much a superfluity as the 'extra toe of a Dorking fowl. The Moss-rose is supposed to have been introduced into England from Holland, more than a century ago, and for a long time there was only one variety known. Of late years, however, the number of varieties have been greatly increased, and we have in the catalogues over 50, varying in color from white to dark purplish crimson. The little outgrowths of the calyx which produce the mossy appearance in these roses, are small leafy excrescences, which differ very much in size and abundance in the different varieties. On some ferns a similar phenomenon is observed, and we have the cristate, or crested, varieties of several species. Generally the "moss" of the rose is so very fine that it could not be represented in our rapidly printed pages, but there is one variety called the Crested Moss in which it is very coarse and conspicuous and this one we have had engraved. The specimen from which the drawing was taken was from a fine collection of roses presented at our strawberry show, by Wm. H. Burgess, Glen Cove, N. Y. This variety is said to have been found in Switzerland; it presents a beautiful appearance in the bud, and is one of the prized Moss-roses. It is curious to notice that in this variety, the leaf shows the same disposition to produce the abnormal mossy growth as the flower

does—a fact not to be wondered at, when we consider that the calyx lobes are leaf-like in their nature. All the varieties of the Moss-rose need a rich, light and well drained soil for their best development. Among the best varieties are: Princess Adelaide, Salet, White Moss, Capt. John Ingram, Common Blush, Crested, Glory of Mosses, Countesse de Mirinais, Duchesse d'Ystrie and Luxembourg.

Notes on Strawberry Culture.—Answers.

If there be any who think we devote an undue amount of space to the matter of small fruits, they must recollect that it is a subject that interests every one who has a piece of ground, be it a city lot, or a large farm. While the very large sums which are annually paid for small fruits, makes their culture important as a remunerative branch of industry, there is nothing that would so add to the comfort and promote the health of our farming community, as an abundant supply of strawberries, raspberries, currants, blackberries and grapes. We judge from our correspondence of the subjects our readers feel most interested in, and it is safe to say, that half of the letters of inquiry we have received this season, have been in reference to the culture of small fruits. We have now before us some 20 letters, all upon the strawberry. If we were to answer each of these in a basket item, there would be too many strawberries in one basket, so we will make a general article, treating the subject so as to answer as well as may be, the different queries. In the first place, we have three kinds of flowers among strawberries: perfect or hermaphrodite, which have both stamens and pistils; the pistillate in which the stamens are poorly developed, or wanting; and the barren, or staminate in which the pistils are imperfect. The perfect or hermaphrodite are self fertilizing, while the pistillate ones need to have perfect flowers near them to enable them to bear. Staminate, or barren flowers occur rarely and are of no use except to fertilize pistillates, an office which can as well be done by hermaphrodites. The correspondent whose "Hovey's seedling" he has in vain tried to fertilize with several other varieties, may not have the Hovey at all, as he procured his plants of a travelling peddler. Boston Piue is the kind much used with the Hovey, around Boston, and the Early Scarlet and others are also used.

In garden culture we think it best to plant in beds four feet wide, putting one row of plants in the center and a row on each side of the center one, 18 inches distant from it; the plants are to be 12 to 18 inches apart in the rows.

September is the most favorable month for autumn planting, as the young plants from runners are stronger than they are in August, and there is still a sufficiently long growing season, to enable them to get well established before winter. A bed set now, in rich and well prepared soil, will give a fair crop next year. The notion which at one time prevailed, that strawberries were injured by high culture is well nigh abandoned. An excess of coarse, crude manure is injurious, but they will do all the better for a generous supply of rich compost. Barnyard manure, well decomposed, suits them admirably. In garden culture it is best to keep all the runners clipped off. When cold weather sets in, give the beds a mulch of any kind of litter, taking care not to cover the plants too heavily. In field culture, where the work is to be done in part by the horse, the rows are three or four feet asunder and the plants set one foot

apart in the rows. In many places a kind of alternating system is practised. The rows being set as above described, the runners, as they form, are placed parallel with the rows, where they take root, and form a dense mass one or two feet wide. One crop of fruit is taken from the vines thus grown, and the space between the rows is then plowed, running the plow so as to leave the rows of vines 8 or 10 inches in width. The ground is harrowed, and the plants allowed to run as before. The plants are treated in this manner as long as they are fruitful, the number of crops depending upon the variety, and when the yield begins to decline, the space between the rows is prepared, and the runners allowed to form in it. After these are established, the original rows are plowed under, and the new ones formed by the runners cultivated as before. Another method of field culture somewhat in vogue is, to set the plants in the spring and take one crop from them the following year, then plow the plants under and commence anew.

Many complaints have come to us of the depredations of grubs and worms. Both lime and soot are said to be useful in the case of the wire worm. Where the ground is infested by the large white grub of the May-bug, we know of no help. This grub is most apt to occur in sod recently turned under. This insect lives for some three years as a grub, and is often very troublesome to the strawberry. It is some satisfaction to know that, after having abounded in a field, they will frequently disappear entirely. A small greenish worm, has been sent us from several parts of New York State, as proving very destructive to the leaves of strawberry plants. We have not been able to ascertain what the perfect state of this insect is. From the appearance of the larva we should try the effect of a dusting of white hellebore. The numerous inquiries respecting varieties are nearly all answered in previous articles. We hear some complaints that the "Agriculturist" has not made runners, but we know on the other hand that in many cases the plants have multiplied finely. There seems to be something untoward in the season, as other varieties, which usually propagate freely, have made scarcely any runners. With respect to the "Agriculturist," it was bought entirely on account of its remarkable appearance as exhibited here, and was sent to our subscribers at almost no cost to themselves, and the accounts thus far show that it has generally done well, though, as was to be expected, among the many thousands of plants sent out to widely distant places, there have been some failures. It is quite amusing to see how conspicuously some of the agricultural papers have noticed instances in which this variety for some cause has failed. Don't be jealous brethren, but look about and find something better, and we will help you introduce it. One person at the summer meeting of the Fruit Growers' Society of Western New York, indulged himself in a growl at the fact of the berry being called the "Agriculturist." Though the matter is of very little consequence, we would state that the name was applied to it not by ourselves, but by a Fruit Growers' Association which meets in this city.

GAZANIA SPLENDENS.—When this plant first came out we did not think very favorably of it, but after another year's trial we are disposed to regard it as a valuable addition to our stock of bedding plants. One great merit is the length of time its flowers continue, the same flowers opening day after day for two or three weeks.

The flower is shaped something like a common ox-eye daisy, but the rays are an inch long—, and of a bright golden, or nearly orange color. Near the bottom of each ray is a nearly black spot, with a white line, and the whole forms a very brilliant and pleasing contrast of color.

THE HOUSEHOLD.



About Capers.

Years ago, when people made fewer conundrums than they do now, it used to be asked "when is a cook like a dancing master." The answer was, "when he euts capers." It is probable that many of our readers have no idea at all of what a caper is, and would fail to see the point of the quibble. There are many trivial luxuries that are mainly confined to the large cities and the more wealthy, and without which farmer-folks can manage to live very comfortably. These include many articles used in cooking that are not food, but only serve as seasoning; for these in the aggregate, large sums are annually paid, and capers are among them. Capers come to us in odd looking, long and narrow wide-mouthed bottles, and look at a little distance like pickled peas; upon examination they will be found to be not perfectly round, but somewhat larger at one end than the other, and to have a short stem at the larger end. Ridges are seen upon the surface, and if one of these capers be carefully picked open it will be seen to be, what it really is, the bud of a flower. The plant which produces capers is *Capparis spinosa*, a low straggling shrub which grows wild in the South of Europe, where it is also largely cultivated. The engraving shows a small branch, with leaves, buds, and a flower. The buds are picked when they are about half grown, by women and children, who find it no pleasant task, on account of the prickles which are found at the base of each leaf. The picking continues throughout a good part of the year, each day's gathering being put into casks and covered with vinegar to which some salt has been added. When the season is over, the capers are assorted into several sizes by means of sieves, and put into fresh vinegar and exported in bottles or small casks. The plant is half hardy in England, and would doubtless succeed in some of our southern States. Capers have a peculiar aromatic taste and have been employed as a pickle for hundreds of years: their chief use at present is to mix with drawn butter to form a sauce for boiled mutton. The fruit of the garden Nasturtium (*Tropaeolum*) is often used as a substitute, as also is, in England, the fruit of the Caper Spurge (*Euphorbia Lathyris*). We should doubt, however, about the safety of the last mentioned substitution, as the plant belongs to a family producing many very poisonous plants.

"Tim Bunker on Curing Pickles and Eating Them."

MR. EDITOR.—"It beats all what a fuss folks are making about pickles," said Seth Twiggs, walking into our house one hot July night, and taking his seat on the settee, where he was soon lost in his favorite cloud of smoke. "One would think," he continued, "that cucumbers was a new crop just imported from China, or some other farrforeign parts, instead of bein as old as the Bible. They're havin' a run about equal to Multieaulis and Roban potato. I'm bound to say."

Speaking of Seth Twiggs' smoking, reminds me that I owe an apology to your readers perhaps, to all the anti-tobacco part of them in particular, that I have said so much about his habit. For you see the thing is mighty catching. No sooner had I got the fashion set in the *Agriculturist* than all the letter writers in the political papers took it up and every time they bring out their hero, General Grant, they must tell just how many times and how he smokes. You see the General has not made his appearance in public since he got to be a great man without his cigar. The public are supposed to be interested in knowing just the length of his cigar, whether it is a long nine or not, its color, its cost, and the particular brand the General uses. Jake Frink says, "the tobacco men have bought up the General or his letter writer, and all this fuss about his smoking is an advertising dodge to get their cigars into market. It is a mean abolishun trick to raise the price of tobacco, and he 'speets it'll git to be so high that common folks can't have a chaw except on Fourth of July, or some sich special occasion."

I think there is considerable sense in what Jake says. Hookertown don't care a rush whether the General smokes or not, whether he smokes dollar cigars or steeped cabbage leaves, whether he smokes quietly or puffs away like a locomotive. The General's business has been fighting, I take it, for the last few years, and if he had used half the tobacco the letter writers have gin him credit for, he wouldn't have had any brains left to plan a campaign. They have run the thing into the ground.

Seth Twiggs' case is different. His business is smoking. If he has any other business, nobody has been able to find it out. He cultivates a little land, works in the garden some, and tinkers round a good deal, but this is only his amusement. The solid work on which he lays himself out is smoking. Now a man who assumes "the solemn responsibility" of writing for the papers, as Mr. Spooner would say, must regard the truth of history. The fact is, the Hookertown public wouldn't know Seth Twiggs without his pipe, and I had to introduce Seth's pipe or say nothing about him.

I like to have forgot Seth on the settee. "I'll bet there is fifty ears in pickles in Hookertown, this year," he added.

"Some folks are in great trouble as to how they'll cure 'em," I remarked.

"Du tell," exclaimed Polly Frink, "I thought every body knew how to salt down cowcumberers." "Not by a jug full," said I. "It is treated as a great secret at the pickle factories, and stores, and you might as well undertake to get ile out of a Wall Street Petroleum Company, as to get any light on the curing process out of them."

"I guess you didn't go to the right place, Esq. Bunker. For when I went down to the city to market my pickles I went all over the factory."

"And what did you see," I asked. "Well I saw a lot of vats, barrels, kegs, jars, and bottles, some of 'em full and some of 'em empty." "Did you ask any questions and did you get civil answers?" "Sartainly I did, lots on em. And I found out there want any secret about the brine, for it is the same rule my grandmother used to go by, and I guess it is about the same thing every housekeeper in Hookertown uses to-day, brine strong enough to bear an egg, and the little pickles to lie in two weeks, and the big ones three, that is about the whole of it, with a little variation to suit circumstances."

"Jest so," said Mrs. Jake Frink, "that is my

rule, and I never knew it to fail. I've got pickles two years old now, and they are just as good as ever. Ye see I aller's keeps my barrel open at the top, with a round board and a stone to keep the pickles in the brine. For a barrel of pickles you want jest about a peck of coarse salt. Turk's Island is the best, dissolved in water. That will jest about float an egg. If I want to keep them a long time in the brine, I look at 'em occasionally, and add a little more salt, if I think they need it."

"And what is to be done when you want to put them into vinegar?" I enquired.

"Oh, that is easy enough. You jest seal the cucumbers in a brass kettle, and let them stand a few hours, changing the water two or three times to take the salt out. You can tell by the taste when they are fresh enough."

"What do you have a brass kettle for?"

"They say it makes 'em green. My mother always used a brass kettle."

"And how is it about the poison?"

"Well, I never heard of it's hurting any body. If you have good cider vinegar, the green pickles will be wholesome enough. Every body in Hookertown eures 'em in this way, and we are not an ailin' set of people."

Aunt Polly is right about the vessel for freshening the pickles. A good deal more depends upon the vinegar than upon the vessel, and I suspect the brass kettle with its trace of verdigris is made to answer for all the atrocious compounds they put into the vinegar. The slops of the rum shops and drinking saloons, sulphuric, and other mineral acids, are put in liberally to give sharpness to the vinegar. This must be injurious to the stomach, and I suspect it is to prevent the public from learning the composition of the vinegar, that the pickle men affect so much mystery about their business.

Farmers have no apology for using any thing but home made vinegar and pickles. They can always have the best, and plenty. A cucumber is little else than thickened water, a sort of sponge to hold vinegar. If good, it supplies the vegetable acid for which the system has so strong a craving in hot weather. The doctors tell us it regulates the bile, and for once I guess the doctors are about right. In the absence of fruits, which are not always to be had, keep pickles on your table the year round.

Hookertown, Conn., } Yours to command,
July 10th, 1865. } TIMOTHY BUNKER ESQ.

Substitute for Glass Windows.

It sometimes happens that one would be glad to close a window so as to admit light, and yet has no glazed sash that he can use, and it may be he does not consider the object worthy the expense. A simple piece of stout muslin tacked upon a frame makes a very fair substitute. It excludes the wind and insects, and admits the light. After tacking it upon the frame it may be varnished with a mixture of boiled linseed oil and copal varnish, thinned with turpentine. This will make it water tight, so that rains will not wet through, and more translucent. Where there is such a window, and no danger of violence, very thin, cheap muslin may be used. When it is tacked on, the edges should be tacked under and a tape laid over them, through which the tacks are driven quite close together.

Preserving Flowers in their Natural Form.

In the *Agriculturist* for June, 1864, page 181, was given an account of a method of drying flowers in sand which we had practised with moderate success, but as our results were not equal in beauty to the imported dried flowers, or to those prepared here by persons who make it a business, we stated that there were some details of the process that were kept secret. We find the following account in one of our European exchanges, from the *Journal of the Society of Arts*, which is said to be the process followed by those who prepare the dried flowers for sale. The sand used for the purpose should be passed through a sieve to remove the

coarse particles, then thoroughly washed until the water passes off clean, and be completely dried before adding the stearine. Stearine is the substance from which the hard or "Adamantine" candles are made, and may be had at the large drug stores, and candle manufactories, or stearine candles themselves may be used for this purpose.

"A vessel, with a movable cover is provided, and having removed the cover from it, a piece of metallic gauze of moderate fineness is fixed over it, and the cover replaced. A quantity of sand is then taken, sufficient to fill the vessel, and passed through a sieve into an iron pot, where it is heated, with the addition of a small quantity of stearine, carefully stirred, so as to thoroughly mix the ingredients. The quantity of stearine to be added is at the rate of $\frac{1}{2}$ lb. to 100 lbs. of sand. Care must be taken not to add too much, as it would sink to the bottom and injure the flowers. The vessel, with its cover on, and the gauze beneath it, is then turned upside down, and the bottom being removed, the flowers to be operated upon are carefully placed on the gauze and the sand gently poured in, so as to cover the flowers entirely, the leaves being thus prevented from touching each other. The vessel is then put in a hot place, such, for instance, as the top of a baker's oven, where it is left for 48 hours. The flowers thus become dried, and they retain their natural colors. The vessel still remaining bottom upwards, the lid is taken off, and the sand runs away through the gauze, leaving the flowers uninjured in their natural shape."

Preserving Green Corn.

There are three ways recommended for preserving green corn for winter use. The *first* and simplest is packing the husked ears, picked while in the milk, in barrels, and filling them up with good clear strong brine, (best made by first dissolving the salt, then scalding, skimming and cooling.) The *second* way is to pick corn a little older than most people prefer for eating green, and parboil; then split the rows with a sharp knife, cut or scrape the kernels off, and dry them either in the sun or some drying-room. The top of a stove in which there is little fire, a slat frame suspended high above the kitchen stove, an oven which is not hot enough to scorch, are the drying places usually employed. We prefer a well-regulated fruit-drying kiln. The corn may be spread upon plates or tins, in the small way, or on cotton cloth stretched on frames. The bulk and weight of the corn is rapidly reduced, so that the contents of two or more frames or tins may be turned together very soon. With a very little practice, one can judge quite accurately whether it is dry enough not to mold by its rattling, and by the feeling of the grains when pressed against the closed lips. When dry it may be kept indefinitely in barrels or bags, away from mice and moisture. The *third* way is by canning—a method attended with a little difficulty. The corn is apt to ferment and burst the cans, besides spoiling the corn, which has often a most distressingly corrupt odor. This is the chief trouble. It may, however, be obviated by thorough boiling, aided by the addition of a little sugar—(just enough to taste.) The corn should be scraped from the cob, after splitting each row of kernels as before specified, either after parboiling or after thoroughly boiling, as for the table. The pulp is then salted to taste, and sweetened a little, while it is cooking. A little water must be added if it is in danger of scorching on the fire, and it must be boiled till all the air is thoroughly expelled, which it requires some judgment to determine. It is then put in cans, which are closed air tight. When success attends this, it is the most satisfactory method.

To be served for the table, corn prepared by the first method must be boiled in two waters; by the second method, it must be soaked and then boiled, with the addition of milk, butter and salt, (and perhaps beans); prepared by the third method, it needs only to be heated hot in the can, turned out, and dressed with butter or cream.

Wyandot methods of Drying Corn.

BY YARAH-KOUEHTAH.

[A subscriber using the signature above given, communicates the two following recipes of the excellence of which we have no doubt. If Yarah-koueh-tah is versed in the lore of the red man's and squaw's cookery, his pale-faced brothers and sisters will be glad to hear from him again, for there are many articles of food which the redskins prepare in a way to please the most fastidious palate.—Ed.]

"**SHEHAH.**"—Take sweet corn, in the roasting ear state, cut the grains off the cob with a knife, scraping the cob clean off the pulp, put it in a mortar and pound it a little with a pestle, then grease an iron oven, and put the pulpy mass into the oven, and bake it by fire placed under the oven and on the lid. In place of cutting the corn off the cob and pounding it, it may be grated and scraped off. After it is baked, it will come out of the oven in the form of a loaf, which is excellent eaten warm with butter and honey. To be dried, this loaf is crumbled up, and dried in the sun by being spread on cloths. When wanted for use, it can be boiled in fifteen or twenty minutes, and when it is stewed down, prepared for the table by adding a little butter, salt, and sugar. The Wyandot condiments in old times, were bear's lard and maple sugar. One pint of this dried corn is enough for a meal for five or six persons.

"**YAH-NEH-TOW-EE.**"—Roast the corn on the ear, before a quick fire, shell it off the cob and spread it out to dry in the sun. This needs to be boiled five or six hours. A few beans are often added, and sometimes meat—beef, venison, chicken, or raccoon. This is improved by pounding it a little. The meal obtained by the pounding thickens the soup, which is delicious, and very nourishing to the sick. When pounded it is called "Yabneh-towee-teh,"—"teh," signifying pounded.

Self-Shutting Doors.

Sometimes doors will always swing shut when opened wide, and at other times will fly open as soon as unlatched. The reason is, that the casing on which a door is hung does not stand perpendicularly. When a door will swing open of its own weight, the casing leans the way the door swings. If it swings to, when it has been opened, the casing leans in the other direction, provided the hinges are alike and put on in the same manner. In some cases the casing leans so that the door will strike the floor or carpet before it is opened wide. By removing the lower hinge and putting on one wider by an inch or more, so that the turning point of the upper hinge will be exactly over the corresponding point of the lower hinge, the door will swing either way alike. In order to hang the door so as to shut itself, put on a still wider pair of hinges at the bottom, so as to make it rise a little as it is opened. Then the door may be opened at nearly a right angle when it will close itself. This arrangement will often be found more convenient than a system of pulleys and a weight, or a door spring. Gates may be hung in the same manner, so as to close or swing open of their own weight.

How to Carve Well.

Study your subject, and have a sharp knife. Make your investigations on the piece of meat or fowl before it is cooked; feel with your finger where the joints are you wish to strike, and where the bones are you wish to avoid; if necessary and possible, with a heavy knife or cleaver, and a hammer, open the vertebral joints, or crack any bones you know will be in the way of your operations at the table; but do this in such a manner that the piece will hold well together on the spit, and come in good shape to the platter. Then direct (unless the cook knows better than you do) how it shall be placed on the platter. As a general rule all flesh, (recognizing the distinction between fish,

flesh, and fowl,) should be cut across the grain of the muscular fibres. The exceptions to this rule are: very small animals, very young lambs, saddles of mutton and of venison, sometimes the tenderloin of beef not taken out. It is commonly desirable to take off the best cuts first, at any rate one should be able to do so. Thick, slashing slices, or big sprawly pieces, are inelegant; so also is helping too much bone with the meat. Fowls are easily carved if young, and cooked till tender, and the carver should be able (whether he exercises the ability or not) to touch any joint with the point of his knife, and easily separate from the carcass every principal bone with the flesh upon it. We may treat upon the carving of particular pieces of meat and birds, with illustrations, at some future time.

Something about Yeast.

In making bread, yeast is added to induce fermentation, for the reason that during the process very minute bubbles of carbonic acid gas are liberated, which, if the dough be baked at just the right time, expand in baking and cause the bread to have that sponginess, so prized by good housekeepers. During the fermentation, a portion of the starch of the flour is converted into sugar, and if the heat arrests the fermentation at the proper point, the bread is not only light, but sweet. Curiously enough, fermentation is accompanied by the growth of a microscopic plant, and, so far as we know, it is necessary to introduce some of this plant into the bread, in the form of yeast, or if we would make yeast, we have to procure some of the plant to start with in already made yeast. We hope at another time to give a more minute account of the yeast plant and the changes it induces; we now only briefly state the facts. There are on file a number of letters asking for directions to make yeast, and in the same file a number of recipes for producing that important article for the household, but they all require the use of yeast to start them. We give below one of these several recipes, by "Miss Hattie," who gives no address.

"Take a handful of hops, two or three potatoes, and boil in about a quart of water. When the potatoes are done, mash them and strain all on to flour enough to make a batter as thick, or thicker than for griddle cakes. If the flour does not all scald by this means, set it on to the stove a few minutes, and keep stirring from the bottom, put in a large spoonful of molasses and a half teaspoonful of ginger. When all is scalded, cool it to about the temperature of new milk, put in a half or two thirds a teacupful of good yeast, cover and set in a warm place, and in a few hours it will be very light; then mix into this, as much good corn meal as can be got in by working with the hands, the harder the better; work it into a long solid mass, as large as one's arm, then cut it off in cakes half or three quarters of an inch thick, put them on to your moulding board to dry, not flat down, but the edge of one just lapped on the other; put them in an airy place, not in the sun, nor where they will freeze. When dry on the top, turn them over, and in a day or two they will be dry enough to put into a bag; a paper one will protect them from the flies. There will be enough to last two or three months.

The next thing is, to make bread. Just before retiring, put perhaps a cake and a half of the yeast to soak in a little warm water and cover it. When it is soft, put in your mixing bowl as much flour as is needed for bread; then make a hole one side and pour in about a pint of warm water, stir it up, and stir in your yeast, cover it over with flour to keep in the gas, and prevent it drying. In the morning it will be ready to mix the first thing. Mix with warm water or milk, let it remain in the bowl to rise, as it can be kept warm better, and it will rise quicker in a mass. When light, "mould it over" and put it into pans, to rise the second time, and bake when light. Have the oven pretty hot at the beginning, and be careful to not let it burn."

Steam-Cooked Bread.—W. Pease, of LaPorte Co., Indiana, writes: "If the readers of the

Agriculturist desire to have very white and light bread, with crust no thicker than a sheet of paper, and as white and soft as the centre of the loaf, they can have such by preparing it in the usual way and placing it on some dish that will set in the steamer, and when it rises sufficient for baking, instead of putting in the oven, place it in the steamer and steam it thoroughly for about half an hour."

Chili Sauce.—This, which is an excellent relish with cold meats, etc., is thus made by Mrs. A. M. Vose, of Boston: 18 ripe tomatoes, 1 onion and 3 green peppers chopped fine, 1 cup of sugar, 2½ cups of vinegar, 2 teaspoons of salt, 1 teaspoon each of all kinds of spice. Bottle for use.

Green Corn Pudding.—Mary M. Turner, Belmont Co., Ohio, sends a recipe for this seasonable dish as follows: "Take of sweet corn 14 ears—with a knife split the grains lengthwise of the cob. Then scrape out the pulp; in this add 2 tablespoonfuls of butter, 1 of sugar, 3 of flour, 3 eggs, 1 pint rich milk, a little salt. Spice to suit taste. Bake from thirty to forty minutes.

BOYS & GIRLS' COLUMNS.

About Getting a Fire—Matches.

In 1667, Phosphorus was discovered by a German chemist, and the peculiar properties of this substance have led to an entire change in the method of kindling a fire. The burning of any substance is caused by the oxygen of the air uniting rapidly with it. Any thing for which oxygen has great attraction will take fire at a very low temperature; some substances, as the metals potassium and sodium, will ignite as soon as touched by water or even ice, for water is largely made up of oxygen. Phosphorus has a strong attraction for oxygen; a moderate degree of heat, such for instance as is caused by rubbing it, will set it on fire. In 1680, one Godfrey Hanckwitz introduced this substance into London, to be used for kindling. A small bit of it was rubbed between pieces of brown paper, until it began to burn, and then a piece of stick previously dipped in sulphur was ignited. Several other forms of using it were contrived, but the cost of phosphorus prevented their coming into general use. Another substance, chlorate of potash, when in contact with some other highly combustible substances, like sulphur, sugar, or phosphorus, makes them take fire easily and burn very fast. Many years since a gentleman in England employed this to make matches. The chlorate was mixed with sugar and other ingredients, the end of a stick was coated in the mixture, and when fire was wanted, the prepared end of the match was dipped in a small vial containing sulphuric acid. The chemical action of the acid caused it to blaze immediately. These matches at first were sold at three or four dollars per box. A very ingenious, but costly modification of this method of getting a fire was called Vesuvians. It consisted of a folded paper match, in one end of which was contained some powdered chlorate of potash and sugar, with a little piece of small glass tube, in which was sealed up a drop or two of sulphuric acid. When this end of the match was struck a smart blow, or crushed beneath the foot, the glass tube broke, allowed the acid it contained to come in contact with the powder, and a fire was immediately produced. Then came the lucifer match, coated with a mixture containing chlorate of potash, etc., which was to be drawn rapidly through a bit of sand paper furnished with each box of matches. Some inventive genius soon thought of pasting the sand paper to the bottom of the box; then another improved the composition so that the match would kindle by being rubbed on any hard substance; and finally some one else dispensed with the sulphur for the ends of the match on account of its unpleasant fumes, and made the stick light more easily by dipping it in a wax-like substance called paraffine. The very latest invention in this line, we believe, is a match that will take fire only when rubbed lightly on the bottom of the box or on specially prepared paper. It is called the safety match, and has some advantages in not being so liable to cause mischief by accident, but it is not so generally convenient as the common sort. Great improvements have been made in the machinery for getting out the splints or match sticks, which were formerly split by hand, and also in coating them with the preparation. The number of matches consumed is enormous. One manufacturer in New York is said to have used within the last 15 years, 2,225,000 feet of lumber, producing six billions, five hundred millions of matches. The total amount of matches manufactured in the United States, is estimated at 35,700,000 daily, worth \$3000 at wholesale, and this is probably less than the actual sum.

Truthfulness of a Hero.

It is related of Lord Nelson, that while walking out one morning he met a little girl crying bitterly, and upon asking her what was the matter, she replied that she had broken her pitcher with which she had been sent for milk, and was afraid she would be whipped when she returned home. Seeing that he sympathized with her, she held up the fragments and artlessly said, "Perhaps you can mend it, sir." "No, I can not do that," replied he, "but I will give you sixpence to buy another with." On looking in his purse, he found he had no change, and said, "I can not give it to you now, but if you will be here at this time to-morrow, I will meet you and give you the money." She went home comforted, and told her mother the story with such confidence that she was excused from punishment, on condition that the gentleman should keep his word. Before the time came, Lord Nelson received a letter asking him to go to a distant place to meet a person whom he greatly desired to see. He hesitated, and thought that such a trifle as giving a little girl a sixpence ought not to keep him away, but then he had given his word and the little girl had implicitly relied upon it. No, he would not disappoint her, so he sat down and wrote to his friend that "owing to a previous engagement," he should be unable to see him at that time. Such an incident adds luster to the world-wide fame of one of England's most celebrated heroes.

A Noble Example.

The Christian Register relates the following: A lawyer who was employed to examine the title to a parcel of land, found that one of the previous holders of the tract had only conveyed a lease of it, and consequently all who had taken their titles since—although they had paid a fair price—could have no lawful claim. The real owner of the land was a young man living at a distance, and who himself knew nothing of this possession. At the time the lease was given, the land was worth only a few hundred dollars, but since then a manufacturing town had been built near it, and its value had been greatly increased. The lawyer upon finding the title defective, visited the young man who was the lawful, if not the rightful owner. After making his acquaintance he determined to tell him just how the matter stood, and leave him to act as he should think proper. The young man heard the case and asked, "What do you wish me to do?" "I would like to have you give a quit claim deed for the premises."—"Have you one prepared?"—"Yes," answered the lawyer, producing the paper. After carefully reading it through, the young man immediately went with the lawyer to a Justice of the Peace, and signed the document. "Now," said he, "how much was this property worth? I did not want to know before, for fear that the value might be large enough to keep me from doing what I thought right in the matter." He was informed that the property was estimated at from fourteen to twenty thousand dollars. The young man who set such a noble example, which many we fear would find it difficult to follow, was Rev. Samuel Abbott Smith, late of West Cambridge, Mass., and his name is rightly recorded high in the catalogue of noble and honest men.

Problems and Puzzles.

Our young readers will probably miss the usual variety in this department, and we very much regret that we have so little to offer in the way of puzzles, as there is no class of readers whose good opinion we more highly value, than we do that of boys and girls. The deficiency happens at this time for the reason, that just as this paper was being made up, the gentleman who manages the Boys and Girls Columns was taken suddenly ill, and the task fell to the care of another, who rather than rummage over the papers belonging to the department, and run the risk of making some blunder, makes this explanation, which he hopes will satisfy them. He can moreover confidentially tell them, that he has seen a number of nice things, which are nearly ready, and has no doubt that their part of the paper will next month be enough better, to make up for any lack in the present one.

**B B and than
AND FOR O**

No. 173. Illustrated Rebus, which gives good advice.



No. 174. Illustrated Rebus, containing still better advice.



THE PRISONER AND HER PETS.—Engraved for the American Agriculturist.

This beautiful picture tells its own touching story of a lonely prisoner suffering for companionship and sympathy, and finding it with the little birds that she has taught by kind treatment to confide in her. "What is she shut up for?" ask the whole first class of *Agriculturist* readers, that is the little ones. We can not tell certainly. She does not look like a person who would commit any crime. In some countries men and women have been put in prison because they belonged to certain families. Those who shut them up were afraid if they lived they might become kings or queens, or get some place away from those who confined them. You will find many such accounts in the history of England, France, and other European countries. Probably the lady in the picture, if she should ever be set free, would never want to see a bird shut up in a cage; she would think of the lonely hours she herself had passed in confinement. If you have any doubts whether a bird loves liberty, just open the door of its cage, and it will soon show you how it feels. It is much pleasanter to tame the birds by feeding them. They can be made so familiar as to feed from a person's hand, if he will encourage their confidence by kind treatment day after day. If no one had ever injured the birds, they would never have had such fear of man, whom they now very justly look upon as their enemy.

The Judge's Experiment.

Many years ago it was a common practice in Europe, to torture witnesses who were suspected of concealing the truth, and particularly supposed criminals who would not confess their guilt. The following account is given of its abolishment in Portugal, the country where it was last practised: A certain judge greatly doubted whether statements extorted from sufferers by the rack, were worthy of belief, as many would be willing to confess to anything to escape from the excruciating torments. He put the matter to test in the following manner. He gave the charge of his horse to a servant, requiring him to lodge in the stable, which was kept locked. One night the judge himself unlocked the door, stole in carefully while the servant was asleep, and killed the horse. Then when the mischief was discovered, it was of course charged upon the servant. The punishment for such a crime was death, and of course the poor fellow denied all knowledge of the act. But as appearances were so

much against him, he was put to the torture to make him acknowledge the crime, and in a short time, he confessed himself guilty. Then the judge related the whole circumstances to the court, stating what were his motives. Of course the man was acquitted, and the torture was abolished from that time. Although the act was a cruel one, much suffering was thereby saved to many others.

The Inventor of the Stocking Frame.

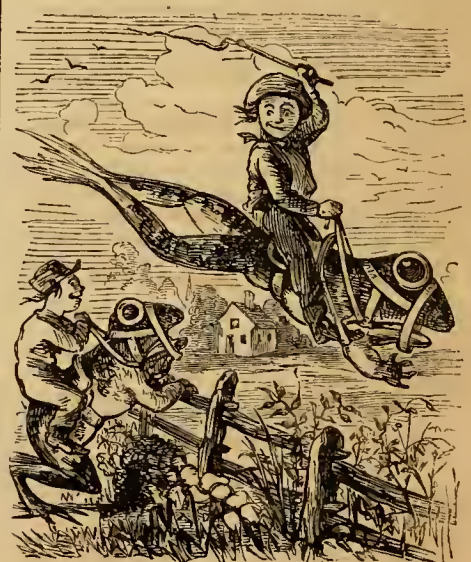
The history of William Lee, the inventor of the first stocking knitting machine, is a remarkable instance of perseverance under difficulties and final want of personal success, although he became a benefactor to his country and the world. It is related that, when a young man, he paid his addresses to a lady who did not appear to favor his attentions. Whenever he visited her she would always engage in knitting very industriously, and scarcely notice his conversation. At length he became disgusted, and declared that instead of following her whims any longer, he would invent something to do away with her favorite employment of knitting. After three years study and patient labor, he was able to produce all of the stocking except the foot, but several months more enabled him to accomplish this also. Now he thought his fortune surely made, but upon applying for a patent, it was absurdly refused on the ground that it would take away the living of many poor persons to whom knitting gave employment. Queen Elizabeth is said to have remarked, that were it a machine for making silk stockings a patent might have been granted, as that would affect but a small number of persons, but a monopoly of making stockings for the whole people, was too great a matter for any one individual. He now set himself to overcoming this obstacle, and was helped by Lord Hunsden, a cousin of the Queen, who bound his own son to him as apprentice. After another long interval of patient labor he completed a frame for making silk stockings, but even then the Queen obstinately refused to grant him a patent. Then he attempted to carry on the business of stocking making, keeping his machine a secret, and employing his own relatives as workmen. But his patron, Lord Hunsden, and also his son, the apprentice, dying about this time, he was left without capital, and almost reduced to want. Then he determined to remove to France, where he was encouraged to set up his frames

by the King, Henry IV, but just as he was about to complete extensive and favorable arrangements, the King was assassinated, and again his patron was lost, and he was left to work unaided. This entirely prostrated him, and he died of a broken heart the same year (1610). The stocking frame was finally perfected and introduced by those who had learned its construction from Lee, and thus the country received the benefits of the invention which cost the inventor a life of unrequited labor.

Rogues Outwitted.

A correspondent relates the following, which seems almost too good to be true. Ben Davis, as his neighbors call him, had a very fine melon patch. One afternoon while in the village store he overheard some boys plotting to help themselves to the fruit without being invited. Ben said nothing, but on his way home set his wits to work to head them off. As he was passing along, a large black snake crossed his path, which Ben succeeded in capturing alive. He immediately went to his garden and selecting the very finest watermelon, cut it in two very carefully, scooped out the inside, and by means of pegs on the inside fastened it together so nicely that one could scarcely detect the seam. He then plugged it, and forcing the snake in head first, made all secure, and left it in plain sight. That night of course he lay concealed near by to witness the sport. Shortly after nine o'clock, three boys came, and each selecting the finest melon he could find, started away, with Ben following at a safe distance. They proceeded to an outbuilding not far distant, struck a light, and prepared for a good time, Ben looking on through the cracks. Boy like, the largest one was taken first. "I guess its hollow," said the boy ripping through one side with his jack-knife, "we'll soon see what's in it," continued he, turning it over, and then came a scream of terror from all the boys as the snake glided out among them, and away they scrambled, leaving the other melons untouched, and it did not make them feel more comfortable to hear the uproarious laughter of Ben as they took flight. The story spread through the village, and they soon found they had paid a dear price for their free melons. For weeks, wherever the boys saw the thieves, they would set up a hiss, and the culprits would be glad to retreat out of sight to hide their shame.

This calls to mind the story of a clergyman who suspected one of his neighbors of stealing hay from his barn. One night he provided himself with a dark lantern, and watched for his coming. He saw the suspected man go to the barn, take out as much hay as he could carry on his back and start for home. The clergyman stole up softly behind him, and opening his lantern set fire to the hay behind his back. It flashed up instantly and the man dropped it and ran away in the greatest terror. A few days after the culprit came to the clergyman and confessing the theft, asked forgiveness. He said that while he was carrying away some hay the fire of God came down upon it, and he could not rest until he was pardoned. The clergyman freely forgave him, but did not for a long time tell him how the hay came to take fire.



The Race.

One of our artists has evidently been reading about the Bull-frog Show, reported to take place this month, and has given us the above funny conceit from his pencil. He must have drawn upon his imagination, for what he has shown, could not happen, unless bull-frogs were larger, or boys were smaller, than they are now-a-days.

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St. Louis, Mo., July 16th, 1865.

The Editor of The Tribune.

DEAR SIR.—I have had it in contemplation for some time, to write and tell you of the pleasure I get from the weekly perusal of the proceedings of the Farmers' Club; first I will tell you how recently I became aware of its existence. About the 1st of September, 1863, I noticed an advertisement, and a cut of the Tribune Strawberries and immediately subscribed for the Weekly Tribune, in which I found the proceedings of your Club. I have read them constantly, until they have become to me a necessity, and I look for Monday as red letter day in my calendar, and was I to be confined to one agricultural paper alone, should prefer The Tribune in anything I have yet seen. Yours, JOHN HENWOOD.

Another subscriber writes

I neglected (forgot) to renew my subscription to The Tribune, until so late that I missed the first July No. Can you help me to it? Portions of the Farmers' Club reports in that number particularly I wish to preserve. In fact, that feature of the paper constitutes one of the main reasons why I take it. And I have no doubt, that it receives a goodly share of its patronage from persons who wish it well, but would not otherwise bring themselves to the subscribing point.

Yours truly, O. A. ALEXANDER.

Waynesville, Ill., July 25.

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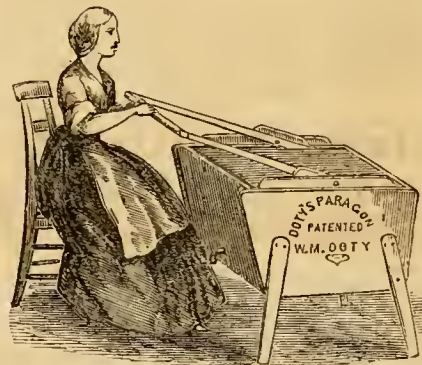
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75 cents per dozen; \$2.50 per 50.

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SAMUEL HICKS, North Hempstead, Queens Co., N. Y.

STRAWBERRIES.

A large Stock of very fine plants of Russell, Buffalo, French Seedling, Green Prolific, Lennig's White, and 50 other varieties. Great Agriculturist, delivered this Fall by the dozen only at \$1.00. Ida—This new Seedling can be strongly recommended. It is more productive than the Wilson, large and very fine, \$2.00 per doz., or \$10 per hundred. For prices of other varieties, See my advertisement in August number of the Agriculturist. Orders addressed to WM. S. CARPENTER,

156 Rensselaer-st., New-York.

Strawberry Plants.

All persons wishing the Agriculturist and all the new and leading choice varieties of Strawberry Plants are requested to send for Catalogue and Price List of THE PO'KEEPSIE SMALL-FRUIT NURSERY. The quality of plants and mode of packing are unequalled, as letters from our customers in all sections of the country amply show. EDWIN MARSHALL,

Po'keepsie, N. Y.

The New Strawberries.

The Great Agriculturist and Great Wisconsin, \$1 per doz.; the Great Buffalo, French's Seedling, Russell, Rogers Eliza, Marguerite, La Constante, Jocunda, and others, 50 cts. per dozen. Many fine sorts 25 cts. per dozen. Carefully packed in gutta percha silk, and forwarded by mail to any address. By the 100 or 1000 very low. Fried Descriptive Catalogues now ready of the best collections in the country. Agents wanted. B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

Trembley's Union Strawberry.

Orders for Plants received by R. H. ALLEN & CO.,
189 Water-st., New-York.

STRAWBERRY PLANTS.—French's Seedling,

Brooklyne Searlet, Monitor, Col. Ellsworth, Buffalo Seedling, Lennig's White, Deftford White, Green Prolific, all \$2 a hundred or sent by mail for 50 cents a dozen. Agriculturist, \$1 per dozen by mail; Russell's Prolific, \$10 per thousand; Bartlett, Triomphe de Gand, and Wilson, \$5 per thousand. We have in cultivation 100 varieties, warranted true to name. THOMAS CAVANACH, cor. of Yates Avenue, and Jamaica Road, Brooklyn, L. I., N. Y.

WELL ROOTED PLANTS of the following

named STRAWBERRIES sent post-paid upon receipt of price. New Jersey Scarlet, (best early berry,) and Agriculturist, \$1.00 for 12; \$4.50 per 100. Lennig's White, Tribune Prize Berries, Lyberry Seedling, 50 cents per 12; \$2.00 per 100; Russell's Prolific, Buffalo Seedling, 50 cents for 12; \$1.50 per 100; French's Seedling, Downer's Prolific, Cutter's Seedling, Albany Seedling, Austin, Bartlett, 50 cents for 12; \$1.00 per 100. Also orders received for the Philadelphia Raspberry, and best varieties of Blackberries for Fall or Spring delivery. JOHN S. COLLINS, Moorestown, Burlington County, N. J.

GRAPE VINES.

What is the best method of Propagation to produce the Best and Cheapest Vines?

Is the use of Pots beneficial or Detrimental?

It may be stated in general terms, that those are the best Vines which have maintained the most complete degree of health during the time of growing, and at the end of the season are best supplied with fibrous roots, radiating from a center, ramifying so as to occupy the ground fully in all directions.

Those which have few and long roots are less valuable. When pots are properly used, they tend greatly to increase the good qualities of the plants, but their use in this manner is attended with greatly increased expense.

To grow from six to ten vines in one small pot, is an abuse of them, but when it is found from years of trial, that only very poor plants can be produced in this way, it is not wise to "abandon the use of them altogether," but rather to use them in a manner calculated to produce the best plants.

In justice to my customers, I find it necessary to use them by the Hundred-Thousand, and by their use have been able the past eight years to produce Vines, which, for their early bearing, hardy vigor, and constant productiveness, have not been equalled.

For confirmation of this, I can point to Hundreds-of-Thousands of Vines disseminated during the past eight years, throughout the whole, vine-growing region of the country.

VINES GROWN IN BORDERS.

I have Vines of all the varieties on my list grown in open ground in well-prepared borders, including many thousands of the most valuable kinds, **Iona, Israella, Delaware, Allen's Hybrid, and Diana.**

I have better plants of these kinds (that have been produced at much greater cost), grown in large pots.

And also many thousands of most excellent Vines, especially of **Iona, Israella, and Allen's Hybrid**, grown by successive changes from small to larger pots, and when of proper size, transplanted into well-prepared borders, in which last position "without check" they are making a fine season's growth; thus securing in one season the advantages of Vines two years old, without any of the disadvantages of those under ordinary circumstances of that age, which suffer a severe check by removal unless prepared by *transplanting* at one year old.

In one word, these are the best Vines which have acquired the best habit for being subjected to training, and at the same time have acquired the best constitution with the greatest quantity of food stored near their center for the beginning of the next season, with the best supply of fibrous roots near the center ready to take nourishment from the soil at the opening of spring.

It is impossible to state fully the characteristics of the different kinds of plants in an advertisement, but these are clearly set forth in the "21-page Pamphlet," which is sent for a two-cent stamp, and more fully in the Descriptive Catalogue with many engravings, which is sent for ten cents.

N. B.—I would invite particular attention to the propositions for the formation of Clubs, which have advantages in price and other important considerations. The terms are very liberal.

Those with Price Lists will be sent for a two-cent stamp. **Descriptive Catalogue**, sent for.....10 cents. **Illustrated Catalogue**.....25 cents. **Manual of the Vine**, (consisting of Descriptive and Illustrated, bound together in paper) 50 cents.

Table of Contents of Descriptive Catalogue.

THIRD EDITION.

TO CORRESPONDENTS, stating the advantages and importance of the new kinds—An account of the Iona stock the present season—Proposal to sell to clubs at wholesale prices, by which plan purchasers will obtain vines at very little advance on actual cost of production, and always receive good plants in perfect condition—Extent of the Iona establishment—Method of producing best Vines.....	2
Classification of our hardy Vines cultivated, in six groups and four sub-groups, for the convenience of cultivators.....	3
A full and accurate account of the characteristics and properties which constitute the value and importance of all that are worthy of attention by cultivators.....	4
History of the seedlings Iona and Israella.....	8
Letters from Peter B. Mead, giving impressions and characteristics, with a minute analysis of the qualities of the Iona and Delaware, with their coincidences and differences, and also his opinion of the Israella.....	9
How to keep grapes in winter, with engravings showing how it may be easily and efficiently done. Some of our best kinds may be kept as easily as apples until spring, in full vinous life and flavor.....	10
The quality of vines as affected by the age of the plants and different modes of preparation, and the economy of the different kinds to purchasers, with many engravings.....	11
The value of plants according to the method of propagation, showing also how and what plants to use for clothing the trellis the first year, and obtaining an immediate production of fruit.....	16
Selection of varieties to plant for table and for family use, with the considerations which determine the proper choice.....	17
Tables of selections for different latitudes for any number of plants, from six vines for a very small yard, to hundreds for a fruit-garden for family supply.....	18

Table of selections by Mr. Mead, with the considerations which influence his choice of a selection of one hundred.....	15
Selections for vineyards for wine, and for table use, for latitude of New York, by Peter B. Mead.....	19
Is C. W. Grant influenced by interest in the recommendation of kinds?.....	19
Extracts from letters.....	19
Quality of grapes, and education of taste. By R. G. Pardee.....	20
"The Conditions of Success in Grape Culture." Extract from a lecture by Peter B. Mead.....	20
The value of plants as affected by age.....	21
Importance of transplanting and root-pruning if vines are more than one year old.....	21
How to avoid check of growth in transplanting.....	22
Are vines from single eyes, if well propagated, better than from cuttings?.....	22
Are vines made tender by propagation under glass?.....	22
Training, with many engravings.....	24
Wine, and how to make.....	25
Profits of vine culture.....	27

Address **C. W. GRANT, Iona,**
(near Peekskill) Westchester Co., N. Y.

NEW GRAPES.

We offer for Fall Sales a splendid lot of

NATIVE GRAPE VINES,

consisting largely of the newer sorts.

IONA—ADIRONDAC—ISRAELLA—DELAWARE.

Also a very fine stock of

Concord—Hartford Prolific—Diana—Rebecca, --Creveling—Allen's Hybrid—Rogers' Hybrid—Union Village—Cuyahoga, &c., &c.

Our Vines have been grown with the greatest care from **Layers and Single Eyes**, in the open air, and in large beds under glass, thus producing an abundance of well-developed, branching roots. The plants are remarkably strong and healthy, free from mildew, and can not fall to give the **Best** satisfaction.

Orders by the single plant, hundred or thousand, will receive our most careful attention.

Descriptive Catalogues and Wholesale List for the Trade sent to any address on receipt of three-cent stamp.

T. C. MAXWELL & BRO'S., Geneva, N. Y.

Mace's Grape Vines FOR SALE.

Delawares from Layers and Eyes.

Adirondac—Iona—Israella—Allen's Hybrid—Hartford Prolific, &c., &c.

The Vines have all been staked, tied from time to time as they required it, and the ground wholly free from weeds.

Send for Circular. B. H. MACE, Newburgh, N. Y.
Adjoining CHAS. DOWNING.

Sing Sing Grape Vines.

Delaware, Iona, Israella, Adirondac, Allen's Hybrid, Concord, &c., &c.

For the past two years we have been unable to fill any orders in the Spring, but having this year enlarged my Green-Houses, my stock is much larger, and in all respects of better quality than we have before offered.

Vines sold by me are warranted true to name. Prices same as last year. Send for Price List.

As the partnership of J. F. DELIOT & RYDER is dissolved, all orders should be sent to J. F. DELIOT, Sing Sing, N. Y.

Iona, Adirondac, Israella, Allen's Hybrid, and Delaware,

By the Quantity.

We offer our stock this year with increased confidence, and also offer one half of the stock grown by J. F. Deliot & Ryder, as this firm dissolves this fall. D. C. & A. L. Ryder, with whom Mr. Deliot was formerly associated, will continue the business. The facilities we possess for producing good vines at little cost are unequalled by any, and we claim for our vines a superiority over all others, and our prices are comparatively low. Send for Catalogue.

RYDER & CO., Sing Sing, N. Y.

500,000 Grape Vines.

I do not pretend to have *but* what I have, and such as I have, I offer for sale at the lowest living rates, by the single one, 100, or 1,000, consisting of Adirondac, Iona, Israella, Allen's Hybrid, Rogers' Hybrids, Creveling, Clinton, Delaware, Concord, (a few thousand fine layers), Hartford Prolific, Norton's Virginia, and many others. Price list sent free on application. Vines sent by mail when so ordered, postage paid. Correspondence solicited.

Address J. W. CONE, Vineland, N. J.

GRAPE VINES

Of all the Leading and Hardy Varieties.

I am prepared to furnish first class vines for Garden and Vineyard culture, of my own propagation. Having had six years' experience in two of the best vine-growing establishments in the country, and having grown only a limited number, giving my whole attention to them, can furnish superior vines. For Price List, Address

CHAS. H. ZUNDELL, Hempstead, L. I., N. Y.

DELAWARE VINES.

Parsons & Co.,

Offer for the autumn trade,

Delaware Grape Vines,

at the following low prices:

- No. 1. \$30 00 per 100.—\$250 00 per 1000.
\$2,000 per 10,000.
- No. 2. \$20 00 per 100.—\$150 00 per 1000.
\$1200 per 10,000.
- No. 3. \$12 00 per 100.—\$100 60 per 1000.
\$750 per 10,000.

These vines are grown from single eyes of well-matured wood.—After many years' experience in growing vines, we have for three years past discarded the pot culture, because it induces a cramped condition of the roots, from which they with difficulty recover.

Our vines are therefore grown in broad borders, where having perfect freedom, they make substantial woody roots, full of fibre eyes.

The reports returned to us of the rapid and luxuriant growth of those we have furnished in past years, enables us to recommend these with entire confidence.

For three years our stock has been exhausted in the autumn and subsequent applicants have been disappointed. Those therefore who wish them should order early.

IONA, ISRAELLA,

and

ADIRONDAC,

- No. 1, \$2.00 each; \$18.00 per doz.; \$100 per 100.
- No. 2, \$1.50 each; \$12.00 per doz.; \$30 per 100.

CONCORD VINES,

- \$12 00 per 100; \$80 00 per 1000;
- \$700 per 10,000.

We also offer fine plants of

Creveling, Allen's Hybrid, Ives' Mandelra, Diana, Hartford Prolific, Lydia, Rebecca, Rogers' Hybrids, and the other popular sorts, all at low prices.

STRAWBERRIES,

Agriculturist, \$5 per 100.

Also all the leading sorts.

ROSES,

Hybrid Perpetuals, of the best sorts, at \$30 per 100; \$175 per 1000.

These are all Remontants, upon their own roots, not budded or grafted.

For Catalogues, Address

PARSONS & CO.,

Flushing, near N. Y.

GRAPE VINES

By Mail.

All the Standard Varieties.

Great Reduction in Prices.

	1	2	3	6	12
Delaware.....	40	75	1 10	2 00	4 00
Concord.....	30	55	80	1 50	3 00
Diana.....	35	65	1 00	1 80	3 50
Rebecca.....	50	90	1 40	2 75	5 00
Creveling.....	60	1 10	1 70	3 25	6 00
Taylor.....	30	55	80	1 50	3 00
Union Village.....	60	1 10	1 70	3 25	6 00
Cuyahoga.....	60	1 10	1 70	3 25	6 00
Hartford Prolific.....	50	90	1 40	2 75	5 00

A few of most other kinds for sale at proportionate prices. Send for Catalogue, mailed free. Delaware, Concord, and Diana. The best three varieties, one each, for

ONE DOLLAR.

Raised from Single Eyes and Layers. Address J. H. FOSTER, JR., Box 660, West Newton, Westmoreland Co., Pa.

GRAPE VINES.

Delaware, Diana, Concord, and Hartford Prolific, a large stock of choice vines, all propagated from fruit bearing vines; Also Adirondac, Iona, and Israella. Price List sent post-paid to all applicants.

I. H. BABCOCK & CO., Lockport, N. Y.

75,000 Grape Vines.

The subscriber offers his large and well-grown stock of Grape Vines this fall at greatly reduced prices. Persons wishing to plant will find it to their interest to examine his stock. Send for Price List now ready.

G. E. MEISSNER, Richmond P. O., Staten Island, N. Y.

1,000 Iona Grape vines, 1 and 2 years old, strong.
10,000 Adirondac, Anna, Clara, Delaware, Diana, Rebecca, &c.

10,000 Concord.
20,000 Pear Trees, Dwarf and Standard.
20,000 Cherry Currants, Raspberries, and other small fruits. CHAS. F. ERHARD, Silverbrook Nursery, Hunter's Point, Long Island, N. Y.

10,000 ISABELLA GRAPE VINES, 2 and 3 years, at \$15 per 100. Delaware, Concord and Hartford Prolific. Strong at \$5 per doz. Packing free. Address D. CONGER, Wolcott, N. Y.

Two Acres Grape Cuttings.

Mostly Concord and Hartford Prolific.

Delaware.

One year, No. 1, \$25 per 100, or \$200 per 1000.
Two " " \$50 " 100.
Layers, " \$30 " 100.

Concord.

One year, No. 1, \$10 per 100, or \$90 per 1000.
" " " 2, \$8 " 100, or \$70 per 1000.
Two and Three years, \$25 per 100.

Hartford Prolific.

One year, No. 1, \$12 per 100.

Rogers' Hybrids.

4, 15, 19, etc.
One year, No. 1, \$6 per dozen, or \$10 per 100.

Dianas.

One year, No. 1, \$4 per dozen, or \$30 per 100.

Adirondac.

One year, No. 1, \$15 per dozen, or \$100 per 100.

Iona.

One year, No. 1, \$15 per dozen, or \$100 per 100.

Union Village.

One year, No. 1, 75 cents each, or \$6 per dozen.

GEO. SEYMOUR & CO.,
South Norwalk, Conn.

GRAPE VINES.

Concord, Delaware, Diana, Hartford Prolific; grown in open ground from layers and long cuttings from fruit bearing vines. Also a good stock of Adirondac, Iona, Israella, Allen's Hybrid, Cayahoga, Rogers' Hybrids, Rebecca, Union Village, &c., &c. Price List post-paid to all applicants.
C. L. HOAG & CO., Lockport, N. Y.

NATIVE GRAPE VINES.—Such as the Adirondac, Iona, Israella, Creveling, Allen's Hybrid, Delaware, &c. Also a large collection of hardy Everblooming Roses, on their own roots, and Standard. Also a large lot of Dwarf and Standard Pear Trees, for sale reasonable by G. MAIRC, Astoria, L.I., N. Y. Price List sent free on application. Samples of Vines can be seen at the Agriculturist Office.

STANDARD PEARS!

Extra Fine Stock for Fall Sales.

We offer for the coming Fall an extensive and superior stock of

STANDARD PEARS,

grown with the greatest care on our strong clay and gravel loam.

The best Soil in the world to Produce a Strong, healthy Tree.

FOR

Extent—Variety—Quality,

we believe our stock to be unsurpassed.

All the Leading sorts in large supply.

We have also a large and varied assortment of all the best sorts of Fruit and Ornamental Trees, Shrubs, Grape Vines, Roses, Bedding Plants, Bulbs, &c., for the Wholesale or Retail Trade.

To Nurserymen, Dealers and all purchasers either of large or small quantities, we offer the most liberal terms.

Send stamp for Catalogues or call and examine our stock.

T. C. MAXWELL & BROS.,
Geneva, N. Y.

Aug. 1st, 1865.

FROST & CO.,

Genesee Valley Nurseries,

Rochester, Y. Y.

Offer an immense stock of well grown Standard and Dwarf Fruit Trees, Small Fruits, Ornamental Trees, Shrubs, Plants, &c., for the Autumn of 1865.

Nearly FOUR HUNDRED ACRES are occupied in their cultivation. The Public are solicited to examine the following Catalogues which give full particulars of their Stock, Prices, &c., and will be mailed pre-paid to all applicants, on receipt of five cents for each.

No. 1 and 2, Descriptive Catalogue of Fruits and Ornamental Trees.

No. 4, Wholesale Catalogue for Nurserymen, Dealers and others who wish to buy in large quantities.

Address

FROST & CO., Rochester, N. Y.

100,000 Standard Apple Trees!

3, and part 4 years old, averaging 7 feet high, comprising upwards of 50 of the best Summer, Fall, and Winter varieties, remarkably vigorous, and well grown, having been scientifically pruned, they have all smooth, heavy trunks, with low—well formed open heads—favorable to early fruiting. Price \$20 per 100; \$150 per 1000; \$1000 per 10,000. Descriptive Catalogues upon application to B. L. RYDER, Proprietor, West Franklin Nurseries, London, Franklin Co., Penn.

Within two hours drive of the Railroad, by turnpike from Chambersburg, or Greencastle, Pa.

Personal examination invited, and early orders solicited, letters of inquiry promptly answered.

FRUIT & ORNAMENTAL TREES

FOR FALL OF 1865.

ELLWANGER & BARRY have the pleasure of offering their usual large and complete stock of

STANDARD AND DWARF FRUIT TREES,

GRAPES,

both Hardy and Foreign—old and new varieties.

STRAWBERRIES

and other Small Fruit—all varieties worthy of cultivation.

Ornamental Trees, Flowering Shrubs, Evergreens, &c.

ROSES,

including a fine collection of STANDARDS three to five feet high.

TREE AND HERBACEOUS PEONIES,
a great collection of new and beautiful varieties.

Bulbous Flower Roots, &c. &c.

The stock is vigorous, well-grown, and in every particular first class.

Planters, Nurserymen and Dealers are invited to inspect the stock personally, and to examine the following Catalogues, which give full particulars, and are sent prepaid to applicants who inclose stamps, as follows:

No. 1 and 2, ten cents each, No. 3, five cents, No. 4, three cents.

No. 1.—A Descriptive and Illustrated Catalogue of Fruits.
No. 2.—A Descriptive and Illustrated Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c.
No. 3.—A Catalogue of Dahlias, Verbenas, Petunias, and select new Green-House and Bedding Plants, published every April.

No. 4.—A Wholesale Catalogue or Trade List, published every autumn.

ELLWANGER & BARRY,
MOUNT HOPE NURSERIES, ROCHESTER, N. Y.

WM. PERRY & SON,
BRIDGEPORT, CONN.

OFFER A LARGE STOCK OF SUPERIOR VINES at
VERY LOW RATES.

Varieties are Concord, Delaware, Iona, Israella, Adirondac, Rogers' Hybrid's, Allen's Hybrid, Lydia, Ives' Seedling, Mottled and numerous other valuable varieties. Our vines are grown in wide borders, with plenty of room for full development of roots and cane. Vines grown by this method are far superior to pot plants. We submit a few of the many flattering letters we receive regarding our vines.

IOWA CITY, IOWA, July 20, 1865.

Messrs. Wm. Perry & Son, Gentls.
Your Price List for the fall of 1865, is at hand. Those vines you sent me last Spring were very fine, some are bearing this summer. I want this fall, 50 Iona, 25 Israella, and 25 Adirondac, No. 1 Vines. Yours Truly, L. KAUFFMAN.

GALESBURG, KNOX CO., ILL., April 17, 1865.

Messrs. Wm. Perry and Son, Gentlemen.
The box of Vines you sent me, came to hand on the 13th inst. On opening it I found the contents in fine order. Damp and moist, the Concord exceeded my most sanguine expectation. I never saw so many and such long roots on yearling Vines before. The members of the club appeared to be pleased with their Vines. Yours Truly, S. S. WHITE.

SHERLEYSBURG, Penn., March 31, 1865.

Messrs. Wm. Perry & Son, Gentlemen.
The Vines came to hand all safe, and without a doubt they are the strongest and healthiest vines ever I purchased, and I have bought of quite a number of Nurserymen, but none have compared with your vines. I am very sorry I did not purchase of you two years ago this spring.

Yours Truly, WM. A. FRAZER.

We would state that Mr. Fraker bought our second size vines. Parties purchasing this fall will get our vines at much lower rates than if they wait until spring. Catalogues sent on application. Address as above.

250,000 Pear Trees.

We have an immense stock of first quality Standard and Dwarf Pear Trees, suitable for transplanting in Orchards and Gardens.

Also an extensive Stock of 2nd and 3rd sizes suitable to transplant into Nursery Rows and grow 2 to 3 years to form fine and extra sized trees. Any of which will be sold by the 100 or 1000, at the lowest rates for the same quality.

For description and prices, Address, with stamp enclosed,

FROST & CO.,

Genesee Valley Nurseries,
Rochester, N. Y.

Cromwell's Patapose Nursery.

Anne Arundel Co., Md.

FOR SALE.

15,000 Standard and Dwarf Pears.

20,000 Peach—choice varieties.

5,000 Standard Cherries—very fine.

20,000 Delaware and other hardy Grapes.

Ornamental and Shade Trees, Evergreens, Flowering Shrubs and Roses, together with every thing usually to be found in a first class Nursery.

Catalogues and other information furnished by application to RICH'D CROMWELL, 46 & 48 Light-st., Baltimore, Md.

90,000 PEACH TREES for sale,

of which 30,000 are Hale's Early, a variety ripening two weeks earlier than any other. Also APPLES, CHERRIES, PEARS, &c., Strawberries, Grape Vines. For circular apply to ISAAC PULLEN, Hightstown, N. J.

Dutch Bulbous Flower Roots.

Sent by Mail, Post-paid, at Catalogue Prices.

B. K. BLISS,

Seedsman and Florist, Springfield, Mass.,

Offers for sale a large and well selected assortment of the above, just received from Holland, embracing the most desirable varieties of DOUBLE AND SINGLE HYACINTHS; POLYANTHUS NARCISSUS; DOUBLE AND SINGLE EARLY AND LATE TULIPS; DOUBLE AND SINGLE NARCISSUS; JONQUILS; CROCUS; CROWN IMPERIALS; 1819; SNOW-DROPS; SCILLAE; HARDY GLADIOLUS; RANUNCULUS; ANEMONES; JAPAN AND MANY OTHER LILIES. Also a fine assortment of GREEN-HOUSE BULBS, comprising CYCLOMENS, IXIAS, OXALIS, SPARAXIS, TRITOMAS, ACHIMENES, GLOXINIAS, &c., &c.

His new Illustrated Autumn Catalogue, containing an accurate description of each variety, with particular directions for culture, so that any person, however unacquainted, can not fail to succeed, will be mailed to all applicants enclosing ten cents.

The following varieties of his selection will be mailed post-paid to any address in the Union upon receipt of price affixed:

	per doz.
Hyacinths, Double or single, fine named varieties.	\$.35
Hyacinths, Double or single, fine unnamed varieties	2 00
Hyacinths, Parisian, Double and single, mixed.	1 50
Tulips, Early double, fine named varieties.	1 50
Tulips, Early double, fine mixed.	75
Tulips, Early single, fine named varieties.	1 50
Tulips, Early single, fine mixed.	75
Tulips, Parrot, Fine mixed.	1 00
Tulips, Bybloemen, Bizarres and rose, fine named	3 00
Tulips, Bybloemen, Fine mixed.	1 00
Tulips, Various sorts mixed.	75
Crocus, Mixed, Blue, White, Yellow, and Striped.	25
Crocus, Finest named varieties.	50
Polyanthus Narcissus, Finest named varieties.	2 50
Polyanthus Narcissus, Fine mixed.	1 50
Jonquils, Double.	1 50
Jonquils, Single, sweet scented.	75
Iris, English, Fine mixed varieties.	1 00
Iris, Spanish, Fine mixed varieties.	75
Ranunculus, Fine mixed varieties.	50
Anemones, Fine mixed varieties.	50
Gladiolus, Hardy, fine mixed varieties.	1 00
Snowdrops, Double.	75
Snowdrops, Single.	40
Hyacinths, Fine mixed varieties.	75
Crown Imperial, Fine mixed varieties.	5 00
Lilium Auratum, A new superb variety from Japan, each.	5 00
Japan Lily, Red and White, each 50 cts., per doz.	5 00
White Lily, (Lilium candidum).	1 50
White Lily, Double, each 50 cents, per doz.	4 00
White Lily, Striped, " 50 " "	4 00
Lily of the Valley.	2 00
Peonies, Twenty varieties.	4 00

No orders will be filled at these prices for less than the number specified. Collections containing a fine assortment of all the leading varieties of the above will also be mailed post-paid, as follows: Collection No. 1, \$20; No. 2, \$10; No. 3, \$5.00; No. 4, \$3.00. For the contents of each collection and further particulars, see Catalogue.

Address B. K. BLISS, Springfield, Mass.

Lilium Auratum.

New Golden Striped Lily from Japan.

Thus described by Dr. Lindley, in the London Gardeners Chronicle. "If ever a flower merited the name of glorious, it is this, which stands far above all other Lilies, whether we regard its size, its sweetness, or its exquisite arrangement of color. From this delicious flower there rises the perfume of Orange blossoms sufficient to fill a large room, but so delicate as to respect the weakest nerves." It is quite hardy and deserves a place in every collection. Flowering Bulbs mailed to any address upon receipt of \$5.00.

Address B. K. BLISS, Springfield, Mass.

Dutch Bulbous Roots

For the Trade.

Wholesale Prices of Bulbs may now be had by addressing

J. M. THORBURN & CO.,

15 John-st., New-York.

Retail Descriptive Catalogue ready first of September.

DUTCH BULBS.

An extra selected lot of large Sound Bulbs of Hyacinths, Tulips, Crocus, Snow Drops, Oxalis, Polyanthus, &c., &c. Send for Descriptive Priced Catalogue. HENDERSON & FLEMING, Seedsman, 67 Nassau-street, New-York.

TREES AND BUDS OF VAN BUREN'S Golden Dwarf Peach and Triumphant Apple. Send for a Circular, giving prices and description. Address MILLER & CO., Setzler's Store P. O., Chester Co., Penn.

500,000 Splendid Pear Seedlings, 1 year old, for Sale. Send for Trade Circular (price low for the quality). Address HAMMOND & NEWSON, Geneva, N. Y.

FOR SALE OR EXCHANGE FOR REAL ESTATE, 75,000 1st class 3 and 4 year old Apple Trees. J. B. WILSON, Washington, Penn.

GROVER & BAKER'S
HIGHEST PREMIUM



ELASTIC STITCH AND LOCK STITCH
SEWING MACHINES,
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Simple, Strong and Durable,
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Lock Stitch Sewing Machine,
For Families and Manufacturers.



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WHAT MATCHLESS BEAUTY

Lingers on every glossy wave and ripler of her
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IVINS' PATENT
H A I R
CRIMPERS,

For crimping and waving Ladies
hair. No heat used, and
no injury to the hair.

They are put up in beauti-
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No Lady's toilette is complete without them. For sale
throughout the country. Retailers will be supplied by any
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Specimen Sheets of Type, Cuts, &c., Six cents.

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The undersigned pay their particular attention to filling
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- DRIED FRUITS, DRIED FRUITS, & C.
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GROVESTEEN & CO., 499 Broadway, N. Y.
New, enlarged Scale Piano Fortes, with latest improvements.
Thirty years' experience, with greatly increased facilities
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unusually low price. Our instruments received the highest
award at the World's Fair, and for five successive years at
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PREMIUM CHESTER WHITE PIGS for Sale.—
Sent by Express to all parts of the United States. For
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Gum Tree, Chester Co., Pa.

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Lister's Pure Ground Bone.

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E. F. COE'S SUPERPHOSPHATE OF LIME.

Bruce's Concentrated Fertilizers.

Plaster, Poudrette, etc.

For sale in quantities to suit purchasers. **SEND IN YOUR**
ORDERS EARLY.

R. H. ALLEN & CO.,
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BONE TA-FEU !!



Has been tested by thousands of farmers and
found superior to any other manure for Fall
and Winter grain, and for a top-dressing on
lawns and meadows.
It is manufactured for and used as a substi-
tute for Peruvian guano, and judged by many
to be fully equal to it. It is sold at the low
price of \$45 per Ton.

Manufactured only by the
LODI MANUFACTURING COMPANY,
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Ammoniated Pacific Guano.

A real guano, containing from seventy to eighty per cent
of Phosphate of Lime; to which has been added by a chemi-
cal process, a large percentage of actual Ammonia, so fixed
that it can not evaporate, making it equal, if not superior, to
any other fertilizer. Price \$50 per net ton. A liberal dis-
count to the Trade.

Pamphlets with copies of analysis by Dr. Jackson, Mass.
State Assayer, and Dr. Liebig, of Baltimore, and testimonials
from scientific agriculturists, showing its value, can be
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Every Child on the Continent should have it!

The Best Children's Paper in America.



A First-Class Monthly Paper, of 16
Pages, for BOYS and GIRLS.
\$1.00 a Year in advance.
A Beautiful Premium to every subscriber.
Specimen Copy sent for Ten Cents.
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"Mr. Sewell's Paper already excels every other children's
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Mailed post-paid on receipt of Price. Catalogues of up-
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for the Voice and every Musical Instrument, will be sent free
to any one on application, by **OLIVER DITSON & CO.,**
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Now Ready. 120 1/2 mo. pages only
25 cents. Sent post-paid. Tells all
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BOOK, tells how to have fresh eggs every week
in the year. Beautifully illustrated with 70 en-
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THE HOG BREEDER'S MANUAL sent to any
address free of charge, every farmer should have it.
Address **N. P. BOYER & CO.,** Gum Tree, Chester Co., Pa.

Three different Fanny Books. Full of funny pictures.
Nothing low or immoral. Sent post-paid for 30 cents.
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THE MODEL MAGAZINE OF AMERICA.—
September No. of **DEMOREST'S MONTHLY,** with Brilliant
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\$25 CASH Given for **Original Conundrums.**
See **Merryman's Monthly,** September. A
Chance for All. How to make a Punch and Judy Show.
"Com-cher-enn." Comic life of Barnum with all his hum-
bugs, Our Sanctum, etc. Prize Puzzle and **Greenback**
Prizes every month. Rare Fun this month—be on hand.
Sold everywhere at 15 cts. sent post-paid on receipt of
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Will be sent 6 months, July to Dec., inclusive, for 60 cts.
Editors inserting above will receive copy six months.

"We suppose people must laugh. If they feel that they
must, they had better laugh over Merryman than over the
vulgar trash which frequently passes for wit."—*Philadelphia*
Presbyterian Standard.

GRACEFUL AND ECONOMICAL ARE THE
Terms which may be appropriately applied to Mme.
Demorest's Imperial Dress Elevators, for they raise the dress
in such a way that it hangs gracefully round the person and,
by lifting it from the sidewalk, the economy is apparent.
They are 75 cents, and sold at 473 Broadway.

BONE DUST.

For Pure, Fresh Bone Superphosphate of Lime, and fine
Ground Bone Dust, Wholesale or Retail.

Address **A. LISTER & BRO.,**
CERES BONE MILLS,
Newark, N. J.

AMERICAN ROOFING COMPANY.
GREEN'S PATENT.

This Company is now prepared to furnish one of the best
articles of **ROOFING** ever introduced, consisting of a **STOUT**
MATERIAL made **WATER-PROOF** by a **COMPOUND** of
INDIA RUBBER, hardened by a coat of **METALLIC PAINT,**
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The **WHOLE FABRIC** has been thoroughly tested, is entire-
ly **WATER-PROOF,** and unaffected by changes of weather.

It rolls up and unrolls like a piece of Oil Cloth.
It is designed for covering **RAILWAY CARS, STEAM-**
BOATS, DWELLINGS, BARNs and SHEDs. It can be
laid down by any sensible working man.

It is cheaper than any known roofing of equal durability.
It can be seen in use and samples had by applying at the
Office of the Company, No. 94 Wall-st., New York.

HENRY SMITH, Agent.

TO ADVERTISERS.

Merchants, Manufacturers, Inventors, Real Estate Owners, Schools, and all others who desire to reach Customers in all parts of the Country, as well as in the City, will find it to their interest to Advertise in

THE NEW-YORK TRIBUNE.

The circulation of THE TRIBUNE is larger than that of any other Newspaper, and it is read by the most enterprising, thrifty, and industrious classes. Advertisements inserted in each of the editions of THE TRIBUNE, -DAILY, SEMI-WEEKLY, and WEEKLY, will be read by nearly a million of people, and no investment pays a business man so well as the money he spends in judicious advertising.

Rates of Advertising in the New-York Daily Tribune.

Ordinary Advertisements, classified under appropriate heads, FIFTEEN CENTS per line each insertion.

(ABOUT EIGHT WORDS AVERAGE A LINE.)

THE WEEKLY TRIBUNE.

ONE DOLLAR per line each insertion.

SEMI-WEEKLY TRIBUNE.

TWENTY FIVE CENTS per line each insertion.

OPINIONS OF ADVERTISERS.

BOSTON, Dec. 10, 1863. Our experience in advertising in THE WEEKLY TRIBUNE, has satisfactorily proved to us that it is one of the best mediums for advertising in the country. We have often received what we know to be direct returns for it, and are surprised that more do not avail themselves of your wide circulation.

WALKER, WISE & CO., Publishers and Booksellers.

NEW-YORK, Dec. 11, 1863. Several years of quite constant use of the book advertising columns of THE TRIBUNE has satisfied me that through no other paper can a larger class of intelligent buyers be addressed.

I have also found THE WEEKLY, notwithstanding the apparent high rates charged for space, a most economical, as well as sure, means for reaching large numbers of energetic men, and securing their services as agents.

N. C. MILLER, Publisher of Subscription Books, New-York.

BOSTON, Dec. 9, 1863. We consider THE WEEKLY TRIBUNE one of the best mediums for advertising our publications. Notwithstanding its seemingly high charges, its very large circulation renders it one of the cheapest and best means by which to reach the public.

OLIVER DITSON & CO., EMPORIUM OF FASHIONS, No. 473 Broadway, New-York, Dec. 10, 1863.

I am disposed to speak in the most emphatic terms in reference to my appreciation of both THE DAILY and WEEKLY TRIBUNE, especially THE WEEKLY, as an advertising medium, receiving, as I do, a large number of letters each day, sometimes amounting to three or four hundred. I find a large proportion of them refer directly to THE TRIBUNE, notwithstanding my advertising embraces all the leading papers in the country. I cannot, therefore, do otherwise than attribute the increase of my business in a large degree to the publicity secured through your valuable paper.

MME. DEMOREST.

THE PROFIT OF ADVERTISING - A BUSINESS MAN'S EXPERIENCE.

We found the following letter from Mr. A. MORTON, in THE NEW-YORK TRIBUNE, a few days since. Mr. MORTON, as is well known, is the manufacturer of the celebrated Gold Pens advertised in our columns. He is one of the most extensive and judicious advertisers in the country, and we would respectfully commend his ideas on that subject to our business men. We do this in recognition of the value of THE NEW-YORK TRIBUNE as an advertising medium, and only add that we have reason to believe that in proportion to the expense required, an equally profitable result has been secured from his advertising in THE EXPRESS. We give the letter as it appeared in THE TRIBUNE. - [Rochester Express.]

MR. GREELY - My Dear Sir - You have done a great deal of work for me in the way of advertising, for which you have been paid so far as accounts current are concerned. But I owe you another obligation, which dollars and cents will not pay. Through your advice, and yours alone, I was led to advertise. For ten or eleven years I had carried on a fair business without advertising, and no man in my employ was ever out of work except as a matter of favor to him, until the commencement of the present hard time. On the very day of the first call of the President for Volunteers, having a large stock of goods on hand, I stopped my manufactory and remained idle for nine months. I tried advertising, at first in a small way, I found that paid. At the end of three months I increased the amount more than ten times, using a great many papers, many of them pretty liberally, and for the last five months have advertised more extensively than, perhaps, any other concern in the country. My men are again busily at work on full time, although since December last I have changed my system of business from six and eight months' credit to net cash. I am now making more

goods, and selling more goods, than at any time since the panic of 1857.

For all this, I am greatly your debtor, and I wish to say to you, and through you to all interested, that I now know that advertising pays. I have also learned that advertising very largely brings a much larger per centage of return than advertising in the usual way. Permit me also, in justice to you, to say that in my estimation THE NEW-YORK WEEKLY TRIBUNE is the best advertising medium on this continent, and although the amount I have expended in other papers has been vastly greater than that expended in THE WEEKLY TRIBUNE, yet were I compelled to choose between this and all other papers in which I have advertised together, I would prefer THE WEEKLY TRIBUNE, as I firmly believe that my returns from it have been greater than from them all.

I think, therefore, that any one having a good article which he can sell cheap, and which is or ought to be in universal demand, who will fairly try THE NEW-YORK WEEKLY TRIBUNE, will not be disappointed in return, except agreeably.

Very respectfully, your much indebted, A. MORTON. Address THE TRIBUNE, No. 154 Nassau-st., New-York.

AGENTS WANTED

TO SELL

SHERMAN

AND

HIS CAMPAIGNS :

BY

Col. S. M. BOWMAN, and Lt. Col. R. B. IRWIN.

1 Vol. 8vo.; 500 Pages. Cloth, \$3.50.

WITH EIGHT SPLENDID STEEL PORTRAITS, AND MAPS, PLANS, &C.

No other Official and Authentic History of this great Army will be published, for no other writers can have access to the private and official papers of the several commanders. All such information is furnished for this work exclusively.

The following letter from Gen. Sherman shows the official character of the work :

LANCASTER, Ohio, July 31, 1865.

C. B. RICHARDSON, Esq., 540 Broadway, N. Y.:

Sir, - Col. S. M. Bowman, an acquaintance of mine since 1853, and more recently in the service of the U. S., has had access to my Order and Letter Books, embracing copies of all orders made and letters written by me since the winter of 1861-2, with a view to publish a memoir of my Life and Services, and no other person has had such an opportunity to read my secret thoughts and acts. I believe him to be in possession of all authentic facts that can interest the general reader. I am, &c., W. T. SHERMAN, Major General.

The volume is illustrated with splendid STEEL PORTRAITS of Maj. Generals SHERMAN, SCHOFIELD, HOWARD, SLOCUM, LOGAN, BLAIR, DAVIS, and KILPATRICK, and with carefully prepared Maps and Diagrams, furnished by General O. M. Poe, Chief Engineer of the Army, and finely engraved on stone.

To all who have served, in any capacity, in these brilliant campaigns, the work will be invaluable; while to all who have had relatives or friends so engaged, it will be of absorbing interest and value. It is a record of brilliant achievements in which every citizen will feel a life-long pride.

The Work is sold only by Subscription.

AGENTS WANTED in every county East of the Alleghenies. Exclusive territory given, and liberal inducements offered. Agents will find the sale of the book universal, for every reading man will want a copy.

For full particulars, Address

C. B. RICHARDSON, Publisher, 540 Broadway, New-York.

Agents west of the Alleghenies will address

C. F. VENT & CO., Cincinnati, Ohio.

New England Agents will address

W. J. HOLLAND, Springfield, Mass.

THE PRAIRIE FARMER.

Published WEEKLY at Chicago, Illinois, where it has been published for a quarter of a century.

It contains more practical information on WESTERN AGRICULTURAL and HORTICULTURAL matters, than can be obtained from any dozen other periodicals in the land.

Its market intelligence and "Record of the Season" convey to the reader the general condition of the crops and markets of the country, better than any other medium.

Its articles are written by the most practical men in Agriculture, Horticulture, and Stock Raising.

Its miscellaneous department makes it a welcome visitor into the homes of both town and country people.

It will help to grow the best crops.

It will assist in obtaining the best prices for them when grown.

It will give reports of Agricultural Societies and meetings.

It will give the most reliable information about setting out and taking care of Fruit Trees, with reports of Horticultural Societies in the West.

It will give information concerning the best breeds of Stock and how to treat them when sick and well.

Western Farmers consult your interests and take the PRAIRIE FARMER.

The price is only \$2.00 per year, the same as before the war. Subscriptions may commence at any time, and club papers sent to as many different offices as desired.

A good, active Agent wanted at every Post Office, where we have not one already established, to whom full particulars will be given on application, and sample numbers sent.

Address EMERY & CO., Chicago, Illinois.

(Goodrich's) Garnet Chili Seedling Potatoes for seed, at \$5 per barrel, at R. R. Address with remittance, D. CONGER, Wolcott, N. Y.

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the Agriculturist at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to October 1st.]

Table listing various agricultural books and their prices, including titles like 'Rural Architecture', 'American Farm Book', 'The Prairie Farmer', etc.

HO! FOR 1866!**VOLUME TWENTY-FIVE!****A Quarter of a Century!****SOMETHING EXTRA FOR
Agriculturist Recruits.**

The War is over. The swords are giving place to plow-shares. Half of the million Soldiers who have saved the country, are returning to the peaceful pursuit of tilling the soil. From this time on, we suppose there will be about five million men engaged upon Uncle Samuel's Great Farm. Every man of them desires to make his work the most effectual and profitable possible. Clod-hoppers will plod on like so many oxen, getting perhaps only their daily rations for hard toil. The best thinkers, those who make the best plans, who learn most from others and thus become the most skillful, will turn their labor to the best account, and receive the largest returns. Every man of the five millions ought to be *observing, reading, and studying* about his business. A single hint may yield him many dollars. For example, we know a farmer who was sowing two ten-acre fields of wheat. When one was finished, a single hint about preparing the seed, contained in half a dozen printed lines in his Agricultural paper, gave him five extra bushels of wheat per acre on the second field, worth over sixty dollars, cash. *Reading* farmers are in the way of getting such hints, and every cultivator of a farm, or even of a garden plot, should read all he can about the best crops, and best modes of culture. Though he adopt nothing he reads, yet his mind will be kept active, and he will devise new and more profitable plans of his own.

Of the five million cultivators, only about One Hundred Thousand receive and read the *Agriculturist* regularly; and only about as many more, altogether, take and read other similar journals. What are the other four millions eight hundred thousand cultivators thinking of? We believe the two hundred thousand reading, thinking farmers make more real profit, and certainly enjoy their work more than all the other class.

What would be the effect if, for one year only, every cultivator in the land should become a reader of papers and books devoted specially to his own pursuit! Why, it would add millions upon millions to the products of the country. It would give each of them something more to think of during the hours, and days, and weeks of hard toil, and they would be so much happier. It would dignify their calling, and make it more interesting and attractive to their sons.

Can we not do something towards securing this desirable end? If every reader of this and other journals would induce at least one more brother cultivator to become a reader, that would count something towards the result. The Publisher of the *Agriculturist* has been abundantly satisfied with his own subscription list for a year past, yet in view of such grand results, he would willingly take in an extra business partner or two, and double or quadruple the steam presses, so as to provide for a quarter or a half million of subscribers. And there are several other good journals to help supply these five millions who ought to read

—all doing good service, and all of which ought to have ten times their present circulation. We hope they will all realize this during the coming year.

As for the *Agriculturist*, we will take all new subscribers that come in for 1866, and begin to take them NOW, *without extra charge!* (See below.)

By the way, our next volume, the 25th, will just complete a *quarter of a century!* Would it not be a pleasant thing to have ten thousand subscribers for each year, or 250,000 in all? That would be only one in every twenty of the five millions that ought to read such a journal. We don't ask for so many, but will take them if they come, and provide well for them. If our present readers say so many shall be secured, it will be done. As every new reader, coming in now, will be an additional helper in the work, and also as a special bonus or premium to the first recruits to our great army of peaceful workers, we make the following offer,

TO WIT:

Any new subscriber sending in this month the regular subscription price for volume 25, will receive the Agriculturist for all of 1866, and also the last three months of this year, without any extra charge therefor.

Sufficient time given after the close of this month for responses to this offer to come from the Pacific States and Territories, and other distant points.

Will our readers please make this offer known to all their friends and neighbors, and invite all to embrace it? As fast as the names arrive this month (September,) we will enter them right down in our books from Oct. 1st, 1865, to the end of 1866, or 15 months. Note that this offer is *only* for September.

(Business notices—\$1 25 per agate line of space.)

East Penn'a Agricultural School.

COLLEGE FARM, Gwynedd, Montgomery Co., Pa., affording thorough professional training in the principles and practice of Agriculture, including the Surveying and Mapping of Farms, Chemical Analyses of Soils and Fertilizers, Veterinary Practice, etc. The farm of 175 acres, which is unsurpassed in the State for beauty, salubrity, and general adaptedness to purposes of Agricultural Education, is 18 miles from Philadelphia, by the North Pennsylvania Railroad.

Autumnal Session begins Sept. 11, 1865. Applicants must be at least 16 years of age, and must possess some knowledge of both algebra and geometry. For Circulars address ALFRED L. KENNEDY, M.D., Pres. Faculty, Polytechnic College Box, Philadelphia P. O.

Adirondac Grape Vines.

1 Year, No. 1, Very strong,	each \$2.00; doz. \$18.00
1 " " 2, Strong,	" \$1.50; " \$15.00
2 " " 1, Very strong,	" \$4.00; " \$36.00
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Also, Iona, Israella, Allen's Hybrid, Concord, Hartford Prolific, Crevelling, Cuyahoga, Delaware, Diana, Maxatawny, Miles, Rebecca, Rogers' Nos. 1, 3, 4, 13, 19, 33, Sberinan, Telegraph, Union Village, Ycedo.

Superior Vines at the lowest prices. Sent securely packed, by *Mail or Express*, as desired. Send for Trade Circular and Descriptive Catalogue Address

JOHN W. BAILEY, Plattsburgh, Clinton Co., N. Y.

STANDARD PEARS, 2 to 4 years, very

strong and fine. *Good assortment of varieties.*
DWARF PEARS, 2 to 3 years. *Very stocky and strong.*
APPLES—STANDARD and DWARF, thirty.
CHERRIES, 1 and 2 years. PLUMS, 2 and 3 years.
PEACHES, 1 year.

SMALL FRUITS.—AGRICULTURIST, and other Strawberries, EVERGREENS, ORNAMENTAL TREES, SHRUBS, ROSES, &c.

We have paid special attention to the cultivation of the NEW HARDY GRAPES, and offer strong, well-grown plants of IONA, ADIRONDAC, and ISRAELLA, by the 100 or 1000 at low rates. Also, DELAWARE, CONCORD, DIANA, REBECCA, ALLEN'S HYBRID, HARTFORD PROLIFIC, ROGERS' HYBRIDS, CREVELLING, and nearly all the valuable kinds. Also a splendid lot of DELAWARE and DIANA LAYERS, many of them with 6 feet bearing wood.

Address with stamp, for Price List.

BRONSON, GRAVES & SELOVER,
Washington-st., Nursery, GENEVA, N. Y.

BOYS AND GIRLS.

A NEW CHILD'S PAPER.—We have received two copies of "The Little Corporal," a monthly paper for children, the publication of which has been commenced at Chicago, Illinois, by ALFRED L. SEWELL. Judging from these specimens, it is the cleverest thing of its kind yet realized in America. Its whole appearance is in capital taste, and there is evidence in it that its editor has rare tact in catering for the wants of the little ones. Each number contains sixteen pages of quarto size, beautifully printed. This affords room for a great deal of matter, of which an excellent variety is given in prose and poetry. The enterprise deserves to be a decided success. A specimen number will be sent on receipt of ten cents by the publisher, or the paper will be furnished a year for one dollar. A beautiful steel engraving, called "The Children's Portrait of President Lincoln," is sent as a premium to subscribers.—*Roxbury [Mass.] Journal, Aug. 5, 1865.*

Now Ready.

THE PRAISE OF ZION.

A new Collection of Music for Singing Schools, Choirs, Musical Conventions, and the Home Circle, containing a system of Musical Notation; a variety of Exercises, Songs, Glee, etc., for School and Choir Practice; an extensive Collection of Hymn Tunes, with a large assortment of Sentences, Anthems, and Chants. By SOLON WILDER and FREDERIC S. DAVENPORT.

The publishers call attention to this new work with much confidence, that it will prove one of the most attractive and practically useful works of its class, given to the public in many years. Its contents are characterized by freshness, variety, and real merit; and have been drawn from many eminent sources, American and European. The best old tunes are included with a rich collection of new music. Sent free by mail for the price \$1.50. To promote its examination and introduction, we will send a single copy to any teacher or choir-leader, on receipt of seventy-five cents.

MASON BROTHERS,
596 Broadway, New-York.

Sheffield Scientific School of Yale College.

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Contents for October, 1865.

Advice Asked and Given	310
Agricultural Department of Washington—Strategy	311
Apple—The Porter	Illustrated 315
Autumn Leaves and Fruits	315
Barnyard—How to Make Good	306
Bees—Apiary in October	299
Bones—Collecting and Grinding	306
Boot Legs—Use for Old	318
Boys and Girls' Columns—Enjoyments at Home—About Weights and Measures—Do you Know How to Read?—Evaluating High Postage Rates—Puzzles and Problems—A Stitch in Time—The Inventor of Sewing Machines—A Kind Act Rewarded—Portrait of Chief Justice Chase—Singular Features in a Landscape	4 Illustrations 319-320
Broom Corn—Breaking Down and Cutting	307
Buckwheat—Harvesting	Illustrated 310
Bulbs—Notes on Spring Flowering	2 Illustrations 316
Cabbages and Cauliflowers in Cold Frames	311
Charlock or Field Mustard—Exterminating	307
Cheese from Few Cows	313
Drains—Making with Plank	2 Illustrations 303
Embroidery—New and Beautiful	316
Exhibition—N. Y. State Agricultural Society	304
Exhibitions—Agr'l—Times and Places of Holding	301
Farm Work in October	297
Flies—To Get Rid of	318
Flower Garden and Lawn in October	299
Flower Pots and Green-Houses	Illustrated 314
Flowers— <i>Datura arborea</i>	Illustrated 313
Fruit Garden in October	299
Fruit Picking and Fruit Pickers	3 Illustrations 305
Garden Edgings—Plants for	313
Garden—Kitchen in October	298
Garden Ornament— <i>Datura arborea</i>	Illustrated 313
Glanders and Farcy—Symptoms of	Illustrated 309
Grapes and Grape Culture—Notes on	311
Grapes—Cold Grapery in October	299
Green and Hot-Houses in October	299
Green Corn—To Remove from the Cob	318
Knots—Bowline, Farmers', etc.	6 Illustrations 305
Lavender—Cultivation	Illustrated 313
Manure Pile—How to Increase	306
Market Report and Commercial Notes	309
Notes and Suggestions for October	297
Olive and Olive Oil	Illustrated 317
Orchard and Nursery in October	298
Oxen Profitable Teams	308
Painting old Wood Work	Illustrated 317
Pear Culture—Is it Profitable?	314
Potatoes—How to Dig	307
Poultry—Black Spanish Fowls	Illustrated 309
Premiums for 1865	300
Recipes, etc.—Bread at Sea—Christmas Pudding without Eggs—Hard Molasses Gingerbread—Molasses Sponge Cake—To Clean Geese—Best Method for Keeping Beef	318
Squash, New—Custard Marrow	2 Illustrations 317
Tomato—Libel on	318
Trout and other Fish—Breeding	3 Illustrations 312
Weed—The Indian Mallow	Illustrated 314
Wheat Plant—Habit of Growth	2 Illustrations 308

INDEX TO "BASKET," OR SHORTER ARTICLES.

Advertisements, Note	304
Hollyhocks, Keeping	303
Ag'l Colleges in South	303
Hog Disease in Virginia	302
Ag'l Department	302
Honey Humbug	304
Bees, Prolific Queen	302
Humbug, New	303
Blackberry Vines	301
Ill. State Fair	304
Boue Charcoal	302
Kosmos, Humbug	301
Box Substitute	303
Lard & Tobacco on Trees	302
Buckwheat Mutch	302
Lilies, 20,000	303
Bulb Catalogues	302
Live Stock Markets	304
Bushel, Contents of	303
N. E. Ag'l Fair	304
Cabbage, Large	303
N. E. Wool Growers	304
Chicken, Precocious	302
N. Y. State Fair	304
Chick, Good	304
O. Judd & Co.	301
Columbine Seeds Poison	303
Osage Orange Seed	305
Corn, Tall	303
Poultry Reports	302
Current Worms	303
Premium, Note	304
Dahlia Seed, Sowing	303
Professor Tucker	303
Death, W. J. Hooker	303
Radish Culture	303
Draining Clay Soil	302
Sec's Ag'l Societies	303
Feed, Mixing Cut	302
Soil, Renovating Barren	302
Flower Seed, Prize	303
Sorghum as Manure	302
Eucalyptus resinifera	303
Soot and Manure	303
Fruit House, Detroit	303
Stocks, Early Kind	303
Grapes, Fine Delaware	302
Stocks, Wild Cherry	302
Grapes, Preserving	302
Tree Digger, Harkness	302
Heaves, Remedy for	302
Verbenas, Seedling	303
Hellebore, White, Black	303
Veterinary College	302
Wine Making	304

Notes and Suggestions for the Month.

Grain has ripened and has been gathered by the careful husbandman, seeds of wild plants neglected by man, are matured and being scattered, ready to be covered with falling leaves, or already hidden in crevices of the soil, from which new life will awaken at the touch of Spring; insects have taken their winter-form; the birds are hastening to more genial climates, and every thing warns the provident farmer to finish what yet remains under his hand. It is not too late to save much vexatious labor next year, by cleaning up hedge rows, and clumps of weeds, which should be burned to destroy the ripened seeds. If crops are all housed, draining now where needed may give a week's start in the season of plowing.—The present prices of grain may continue, but if gold comes down as it should, and ultimately must, those who have threshed and marketed their grain early, will have most satisfactory returns.—Thanksgiving is but few weeks distant, and the best fattened poultry will bring top prices. Let our readers take the hint, and have their turkeys, chickens, geese and ducks ready. In fine "What thy hand findeth to do, do it with thy might," for the chilling storms will soon herald the approach of Winter.

Agricultural Reading.—The days are now shortening and the nights lengthening. If a farmer is diligent and ambitious, he can find at least a few hours daily, to read.

Animals.—Feed fattening animals well this month, as they will fatten much faster before cold weather comes on. Store animals of all kinds also need particular attention, feed them well and protect them from storms.

Barns.—See that no corner, or portion of the foundation rests on the ground, or is exposed to wet that will shortly cause decay. Sometimes a projecting corner stone will conduct rain inwards against the sill, and rot it in a few years.

Beans.—Read about beans in the calendar for last month, and gather all that may yet remain in the field without delay.

Beets.—Pull up all small ones where they stand nearer than six inches from center to center. They are excellent food either boiled, or pickled, and are good for milch cows.

Butter.—Now is the best time to pack butter for next winter. See that jars, or tubs are thoroughly cleansed. A spoonful of clean, white sugar to a pound of butter, put in at the last working, will improve the quality even of good butter, and cause it to bring a higher price.

Calves and Colts.—Give colts and calves good feed, access to salt and pure water daily, and a shed during cold storms. It is ruinous policy to allow young animals to grow poor in autumn.

Carrots.—When a leisure hour is available,

summon all hands to the carrot patch and pull up every weed, and thin them where they stand too thick. Carrots will grow rapidly this month, if the soil is loosened and weeds pulled.

Cows.—Milch cows will very likely need a little extra feed, or their full flow of milk may not be maintained. Let them have the benefit of the best pastures, when there is any choice. If fed four quarts of wheat bran or corn meal daily, or two quarts of the two mixed, the quantity of milk will be increased.

Corn.—Cut up the stalks at the roots, before dead ripe; but before cutting go through the field and select ears for seed, tying a red string around those ears that ripen first. If you desire to procure seed of a neighbor, now is the best time to do it. Seed corn should never be set in large stooks, nor put in cribs with other ears. As soon as fit to husk, braid it by the husks in long strings, and suspend with wire, so that mice and red squirrels can not reach it.

Draining.—Make as much under-drain this month as practicable. (See article on Draining with Planks on page 308.)

Eave-Troughs.—Put up eave-troughs on every shed and building where there are none, and see that leaves and sediment do not obstruct them.

Fences.—Repair poor, and low portions around grain fields, as animals—even when not unruly—are often tempted to get over a poor fence, if they see better feed on the other side.

Fallows.—Keep scarifiers moving on fallow ground to prevent weeds going to seed.

Grain.—If threshing is to be done before winter, have the grain in readiness to take advantage of any temporary advance in prices. A few hours' labor in putting grain through the fanning mill a second time, will sometimes increase its value 3 or 4 cents per bushel.

Granaries.—Give them a thorough cleaning before new grain is put into them.

Gypsum may be sowed in the early part of this month on winter grain, or young grass.

Hay Stacks.—See that every stack turns the rain well. If they need re-topping, procure some long straw, if possible, to cover the top. (Read about topping off stacks in Sept. number.)

Horses.—Let working horses be stabled during cold and stormy nights. They will not eat grass all night. When they work all day, turn them to grass two hours at night, and early in the morning, and they will do better, and not destroy half as much grass with their feet. One cold and stormy night in October will injure a tender horse more than a month's work.

Hogs.—Feed well with cooked meal and fruit, or vegetables. Let fattening swine and brood sows have access, at all times, to clean water, dry apartments, and a small plot of clean and dry ground. Swine are naturally much neater in their habits than horses and neat cattle.

Implements.—Have a place for every tool and implement, and let every laborer understand that his day's work is not done, till his tools are well cleaned and put in the proper place under shelter. Rust often wears out more tools than work does.

Ice Houses.—A small ice house may be made for a few dollars, in one corner of a large cellar. A double wall filled with saw dust, dry tan bark, or dry straw, well packed in, is essential. If the cellar is damp, better make the ice house in some out-building above ground, in a dry place.

Indian Corn.—Husk the ears and secure the stalks for fodder as soon as possible, after the grain is well cured. Let nothing be wasted.

Manure.—Save all manure around stables and piggeries. Horse dung, as well as droppings of swine, heats and becomes "fire-fanged" in a few days, unless it is forked over and spread out, and mingled with muck, or kept damp by applying water or liquid manure under cover.

Mustard.—Now is the time to commence the extermination of wild mustard. Read the details about Mustard or Charlock on another page.

Meadows.—Top-dress this month with any kind of fertilizing material. It is better to harrow in bone dust, guano, or home made poudrette.

Plowing.—Fall plowing heavy soils, and any kind of soil, where there are many weeds, may be done at any period before winter. Where there are Canada thistles, Ox-eye Daisies, or Quack grass, plow deep with narrow furrows. Always keep a plow in good condition, to work well.

Potatoes.—Exposure to air, sun-light, and too much heat will soon destroy the excellence of the best potatoes. If put in a dark place, they will usually keep better than in a light one.

Poultry.—Feed well while the warm weather continues, as they will fatten much faster and eat less grain than when it becomes cold.

Pumpkins.—As soon as the vines are done growing, and before hard frosts, gather them beneath open sheds, or in heaps, where they may be covered with boards. Feed the green and half-ripe ones first. Store the best ones in a dry, cool place for winter. Never break off the stems, or they soon begin to decay. Save the seed of none but the best.

Rye.—In many places it is not too late to sow this grain, where the ground is not wet. If the soil is apt to heave in winter, better not put in winter rye, but prepare for spring rye.

Sheep.—In some parts of the country, bucks and ewes may be turned together in October. Where the spring is always backward, and there are cold storms of rain and snow, better keep them separate a month longer. The period of gestation with ewes is about five months. It is not good policy to have lambs dropped until there is some grass and warm, settled weather. Make necessary preparation for improvements in sheep next season.

Sorghum.—Secure before injured by hard frost. If there are indications of it before the seed has ripened, a few of the best hills may be covered with blankets, in order to secure good seed. Cut off the seed end, and strip off the leaves, and make the juice into syrup as soon as practicable. When the stalks become mouldy, it is liable to injure the flavor of the syrup, and make it dark colored.

Swine.—Look up a good brood sow for raising pigs next year. Better pay \$50 for a good breeder than \$20 for a sow that will not bear over 3 or 5 pigs. Prolificness is one of the excellences of a breeding sow. Better fatten every hog now on hand, if the breed is not first-rate, and begin anew with a breed that will fatten more readily.

Timber.—There is no better month in all the year than October to cut timber, to insure durability, especially for fences of all kinds, and posts. Rails and stakes, cut and split this month, will last longer than if cut and split in winter, spring, or summer. The wood is well matured, and the timber becomes thoroughly seasoned before hot weather, which often cracks the surface, allowing rain to enter.

Weeds.—Mowing, pulling, plowing and hoeing weeds will be in order every leisure hour till

winter. Gather them all in large heaps when they are wet, so that the seed will not shell out. Better devote one day this fall to pulling rag weed, wild mustard, and other weeds in corn-fields than to spend a week next season exterminating those that spring from the seed now growing. It is very common for weeds to bring forth ten thousand fold. If thrown in a large pile before the seed becomes hard, all will decay and make good manure.

Work in the Orchard and Nursery.

Fortunate is he who has an abundance of fruit, for he will get good returns. Owing to the general scarcity, more than usual care should be taken with what there is. Some hints are given on page 305, which, if followed, will much facilitate the careful gathering of fruit. It is a mistake to pick late keeping varieties too soon; they should be left on as long as they continue to develop from nourishment supplied by the tree. When gathered, assort at once into barrels; do not head up until the sweating process is over, but keep in a cool, shady place; put in the cellar at the approach of cold weather. When the heads are put in place, apples should be so pressed that they will not shake by the jolting of transportation.

As far as we have observed, the season is favorable to the nurseryman and the purchaser of trees, the wood being ripened unusually early, many sorts have already (the middle of September,) shed their foliage. This early ripening prolongs the season of the nurseryman, and gives him more time to fill his orders, and it is very advantageous to the planter, as trees set early become established and are better able to endure the winter. Let all who intend to plant, do it as early as the trees can be had, observing the suggestions as to drainage, deep plowing, and manuring, heretofore given.

Cider.—The unusually early ripening of the fruit may render it necessary to make cider this month. Hints on the subject will be found in the "Basket."

Drying Fruits.—It is likely that dried fruit will bring better prices than usual, and nothing should be allowed to go to waste that can be preserved in this manner. Dry rapidly, and keep clean.

Insects.—After the leaves have fallen, clusters of eggs and cocoons may be discovered and removed. Examine trees received from the nurseries, near the root and if any borer holes are found, crush the insects with a wire, and if the bark has the scale insect upon it, wash it with strong soft soap water, or better, discard the tree altogether.

Labels.—Do not trust to labels alone, but have a map or record of the position of every tree; still labels are a great convenience, especially upon young trees, before one gets sufficiently acquainted with them to tell the variety at sight. See that all are plain, and be sure that the wires by which they are suspended are sufficiently loose.

Manure.—It is unreasonable to expect to be able to carry off a crop year after year without returning something to the land. Manuring bearing trees pays, not only in larger crops of fruit, but in the finer development of the individual specimens. The best method of applying manure is given in the article "Is Pear Culture Profitable?" on p. 314.

Shade Trees.—These, except evergreens, may be planted as soon as the leaves drop. The more carefully it is done, the better will be the future growth.

Kitchen Garden.—Harvesting the maturing crops and preparing for spring work will keep the gardener fully employed until cold weather. This is a good month in which to make drains, for which the article on page 308, will give some useful hints. If the soil be stiff, it may be greatly ameliorated by throwing it up in ridges and allowing them to remain all winter. The rules of neatness and order are often relaxed at this season, and the garden presents an unsightly accumulation of rubbish. This should never be allowed.

Artichokes.—Earth up around them and throw over a little litter, to keep out hard frost.

Asparagus.—New beds may be made, setting two

year old plants as directed in the Calendar for March, after which cover the bed with litter. Cut the tops from established beds and burn them. Give the bed a thick covering of coarse stable manure.

Beans.—Pick the late string beans and salt them. Shell and dry Limas before they are cut off by frost. If more ripen than are wanted for seed, try them in winter as baked beans, they are good.

Beets.—Pull in time, as when frosted, their sweetness is impaired. Those put in the cellar may be kept from wilting by covering with sand or earth.

Cabbages.—The late kinds may safely be left out until hard frosts. When put away for the winter, remove loose outside leaves, set the cabbages in a trench wide enough for 3 rows, packed closely together, and cover with 6 or 8 inches of earth. Dig a drain around to carry off the water, and when the earth over the cabbages is frozen, cover it with 4 or 5 inches of litter. Another way is to dig or plow a shallow trench, over which two rails are placed lengthwise; set the cabbages, head down, on the rails, put on some straw, and cover the whole carefully with earth. If the cabbages are wanted for use every few days, a supply may be put in a cool cellar, or re-planted closely in a dry place, and covered with straw and a roof of boards. To winter young plants in cold frames, see page 311.

Califlowers.—Store in the cellar before frost. Those which have not formed heads will usually do so if set out in a cellar or cold pit. Treat plants for early spring crops as directed above for cabbage.

Carrots.—Harvest and preserve as directed for beets. The tops will be much relished by cattle.

Celery.—Continue to earth up that grown in trenches, taking care that no earth enter the center of the plant. That grown in flat culture should be "haudled" to bring the stems to an upright position, if not already done, and at the end of the month commence digging and putting in trenches according to directions given in July, on page 218.

Cold Frames.—Prepare for the reception of cabbages, califlowers, etc. See page 314.

Cucumbers.—Gather for pickles as long as the vines continue to yield, and salt as heretofore directed.

Endive.—Take up with a ball of earth, and set closely together in the cellar for winter use.

Hot Beds.—When these are made in the spring it is often difficult to find soil to use in them. Much annoyance will be saved if sufficient rich earth be secured now and placed under a shed, or covered with boards, near where it will be needed.

Lettuce.—Plants may be set in a cold frame as directed for cabbage, or in very mild localities they will winter with a light covering of straw.

Onions.—Any late sown plants for wintering over, will need an inch or so of straw upon them.

Parsnips.—Dig what will be needed for use during the time the ground is frozen, and put them in the cellar and cover with sand to prevent wilting, and leave the rest in the ground.

Rhubarb.—Make new beds in highly manured soil, setting the plants 3 or 4 feet apart each way, any time before the ground is frozen. Plants are obtained by dividing old roots with a spade, so as to separate the buds with a portion of root attached. Old beds will need a liberal covering of manure.

Salsify.—Dig a part for use from time to time, and leave the rest as directed for parsnips.

Spinach.—Keep out weeds and cultivate until hard frosts, then lightly cover over with litter.

Squashes.—Be careful not to allow them to become frosted. House where they will not freeze or be subject to great changes of temperature. Use the greenest Hubbards first, as they will not keep, but are good long before they are ripe.

Sweet Potatoes.—Harvest as soon as the tops are touched by frost. Dig with great care on a warm day, and let them dry in the sun before storing them. The great secret in keeping them, is to handle carefully, and put them in a warm room, the temperature of which is uniform. They do well packed in barrels with cut straw between them.

Tomatoes.—The season may be prolonged by

keeping the early frosts from some of the most fruitful plants, by means of some kind of covering. Preserve a supply for winter in jars or bottles.

Trenching.—There are usually many days this month in which the ground can be profitably prepared for spring, by manuring and trenching.

Winter Cherries.—Gather as directed last month.

Fruit Garden.—All hardy shrubs and trees may be planted as soon as the wood is mature, and the leaves begin to fall. The earlier this is done, the better, in order that the plants may get somewhat established before winter.

Blackberries.—All the varieties fruit much better if the canes are laid down and covered with a little earth. In making a new planting, give plenty of room; six feet apart each way, or in rows 8 feet apart, with the plants 4 feet distant. The soil should be well enriched with good compost, and have a plenty of leaf mould or muck worked in.

Currants and Gooseberries.—Make cuttings as directed last month on page 282, where will also be found a description of the best varieties of currants. Transplant rooted cuttings or get plants from the nursery, setting them 5 feet apart each way.

Dwarf Fruits.—Plant dwarf apples and pears in autumn, but leave the stone fruits until spring.

Grapes.—Plant vines when the leaves have fallen. Pick as they ripen; those intended for wine-making or for keeping, need to be thoroughly ripe. Put in boxes as described last month, and keep in a uniformly cool place, where they will not freeze.

Pears.—Allow the winter sorts to hang until frost, and treat as directed for apples under Orchard.

Strawberries.—New beds may still be made, but the earlier the better. Sufficient directions for planting are given last month on page 284. The covering should not be done until late, when the ground is about to freeze, but it is well to accumulate a supply of covering material. Leaves or straw are generally used. At the West, they use cornstalks, laid lengthwise of the rows with good success. An inch of covering is sufficient.

Flower Garden and Lawn.—The glorious days of October are far more suitable for making improvements in the grounds, or laying out new ones, than the wet and uncertain weather of spring. Leveling, road-making, preparing lawns, and trenching borders can be advantageously done at this time. Such work, together with planting and taking care of tender plants, will give the gardener full occupation.

Annuals.—The hardy kinds, such as Whitlavia, Alyssum, Gillias, Larkspurs, Nemophilas, and those that are freely self sown may be sown now and will give stronger plants and an earlier bloom than if kept out of the ground until spring.

Bedding Plants.—Make cuttings if not already done, and take up such old plants as it is desired to keep over winter. Fuchsias, Lantanas, etc., do well in a cellar, if kept rather dry.

Bulbs.—Plant early, sufficient directions are given for successful management on page 316.

Chrysanthemums.—There should always be an abundance of these, as they make the garden gay when most other flowers are gone. Pot some for in-door blooming, if not already done. Keep tied up to stakes, to prevent injury from winds.

Dahlias.—Keep well tied up, and see that all are properly labelled, while they are yet in flower and can be identified. It often happens that we have a week or more of fine weather after the first frost, and if one takes the trouble to protect the plants from the first frosts by some light covering, the time of blooming may be much prolonged. When the tops are killed, allow the plants to remain a week or more in the ground to ripen.

Frames and Pits.—Have them ready to receive the plants. See article on this subject on page 314.

Gladioluses.—Cut away the stems where the flow-

ers fade, but leave the bulbs in the ground until there is danger of their being injured by freezing.

Hedges.—Deciduous plants may be set for hedges as soon as the leaves fall.

Lawns.—One great point in making a lawn is to thoroughly prepare the soil. It should be trenched, or if this is impracticable, thoroughly plowed. It should then be carefully leveled and graded. Sow the seed, either Blue-grass or Rye-grass, very thickly, putting a little winter rye with it, and roll. Give another rolling just before the ground freezes. Bad places in lawns may be improved by turfing.

Perennials.—Transplant those from seed this spring, to the places where they are to flower. Clumps of established plants need to be taken up, divided and re-set about once in every three years.

Pinks and Carnations.—Take up and pot the root-ced layers. Set them in a cold frame or dry cellar.

Pansies and Violets.—These can be had in spring, early and in abundance, by setting the plants in a cold frame. Give air freely in mild weather, and in severe, cover the glass with a mat or shutters.

Stocks and Wall-flowers.—Pot and remove them to the green-house or cold pit.

Transplanting.—All hardy trees and shrubs excepting evergreens do much better if transplanted early this month, than they will in spring. Give these the same care in planting and pruning as is given to fruit trees. If any native shrubs are to be brought into the grounds, look after them before the leaves fall, and carefully mark them.

Green and Hot Houses.—All but the very hardy plants should be in-doors, but Azaleas, Camellias and other robust things may stay out until there is danger of frost. All the pots ought to be cleaned when taken in, and the surface soil removed and replaced with fresh. Prune, train and stake the plants as may be needed, to have all in perfectly neat order. Have everything in readiness to give fire if needed. The hot house will of course need fire heat. In the green-house give all possible ventilation, but guard against sudden changes. Potting soil and pots, if not on hand, are to be secured in sufficient quantity without further delay.

The fight with insects should be opened at the beginning, and no plants badly infested ought to be brought into the house without first being completely freed from these troublesome pests.

Annuals for winter blooming are to be sowed, and bulbs of various kinds to be potted. Keep the bulbs in a dark warm place, as noted on page 316. Of annuals, Mignonette is always wanted in abundance, as it is prized in bouquets for its fragrance. Schizanthus, Sweet Alyssum, Phlox Drummondii and others will help decorate the house.

Roses for winter blooming are to be well cut back.

Hardy plants, which are to be forced, such as *Dicentra spectabilis*, *Deutzia gracilis*, the Lily of the Valley, and others, may be potted now.

Cold Grapery.—By closing the lower sashes and ventilating only by the upper ones, the temperature of the house may be somewhat increased, and this will favor the ripening of the wood. The leaves should not be stripped from the vines; when perfectly ripe and they have fulfilled their office, they will fall. In case of sudden cold weather occurring, close up the house entirely.

The Apiary for October.—Prepared by M. Quinby, by request.—Foul brood is occasionally found in sections where it was never before seen. A few days ago I received a few combs containing it from Iowa, with accompanying questions as to the proper method of eradicating it. The writer suggested that its appearance in that vicinity was caused by sudden changes in the weather, etc. My answer may be of general interest. There is but little cause for alarm. If it has been brought into his neighborhood from some infected district, he has only to take up all hives in which it was found, and that will end it. If it results from some peculiar atmospheric influence, past experience in-

dicates that it may not occur again in a number of years. If it originates in something gathered by the bees from some plant, or flower just introduced, it might prove more serious, as they would continue to gather it.

I would advise an inspection of all hives, such as have been wintered, even where the disease is unknown. A timely arrest may prevent much loss. All healthy brood will probably be hatched early this month. Brood cells, now closed, should be opened; if the bee, while in a larva state, is dark colored, it is dead. A half-dozen such should condemn the hive. The middle of the day is much the best time to inspect them. Protect the face, and use smoke of rotten wood, or rags, to drive the bees away from the combs to be examined. By perseverance in removing all affected stocks immediately, it is often, nearly, if not entirely eradicated in sections where it has prevailed for years. If all bee keepers would remove every diseased stock this month, without allowing any of the honey to be taken into healthy ones, it is doubtful if it would reappear in several years.

See that all stocks have a proper supply of honey for winter; 25 to 30 lbs. is sufficient. If a colony is deficient, feed to the required standard—not by weighing what is fed—it may be carried off by other bees—but by weighing what is stored in the hive. Feed at night, taking away in the morning what is left. Give them all they will take, until they have enough. If honey in the comb is fed, cut off the sealing of the cells; set in the top of the hive, and when robbers are excluded, it may remain through the day. It is better to take up hives that might possibly be wintered, than to undertake to keep more than can be put in proper condition. The anxiety to keep as many colonies as possible, makes bee keepers a great deal of trouble. It has been very reasonably suggested that, if all but good stocks were taken up, another year would count up a greater number than if all were kept.

When it is decided to take up a light colony, it is better economy to put it away with the contents, after taking out all the dead bees between the combs, for a swarm another year, than to break out the honey for the table. Set right side up in some dry place, where it will freeze thoroughly. Stop out mice and bees, and next season it will be just what you want for a very early, or late swarm. An early swarm put in such a hive would be likely to fill up, and send out a swarm, or if it did not, it would be ready to store surplus much sooner. Combs to be strained, should be broken and laid on the strainer while warm, as soon as possible after the bees are removed. The best combs for the table are near the top and outside of the hive. Those near the bottom and middle are tough, and contain more bee-bread. When broken to strain, they should simply be laid on the strainer, without rubbing or working over, which mixes the bee-bread with the honey. If the weather is warm, it will drain very clean through wire-cloth. A few particles of wax will rise to the top after standing a few hours, which may be skimmed off, leaving the honey perfectly clear. For the process of making methoglin, vinegar, etc., see previous numbers of the *Agriculturist*.

Catalogues, etc., Received.—Frost & Co., Genesee Valley Nurseries, Rochester, N. Y., catalogues for the Autumn of 1865 . . . J. C. Plumb, Lake Side Nursery, Madison, Wis., Fruit, Evergreen, and deciduous trees and shrubs . . . Haines & Hacker, Cheltenham (Montgomery Co., Pa.) Nurseries; illustrated catalogue of Nursery Stock . . . William Parry, Pomona Garden and Nursery, Clunaminson, Burlington Co., N. J.; general assortment of small Fruits, Peaches, etc. . . . E. Williams, Montclair, N. J., Small Fruit Nursery; small Fruits in general, and the Kittaibny Blackberry in particular . . . Descriptive list of Hardy Native Grape Vines; by George W. Campbell Delaware, Ohio, who claims to be the original disseminator of the universally popular Delaware Report of the Proceedings of the Fruit-Growers' Society of Eastern Pennsylvania, for 1863-'64, and the winter meeting of 1865 . . . Eighth Annual Report of the Board of Commissioners of Central Park, showing what has been done the past year, and contemplated improvements; from Andrew H. Green, Esq., Comptroller.

Two Months Free.

All new subscriptions now received for one year, are at once entered in our books to the close of 1866; thus all new subscribers received in October for Volume 25, that is for all of 1866, will get the Agriculturist for November and December of this year without any extra charge.

Forty Good Premiums.

Open to Everybody—An Excellent Opportunity to secure Good and Desirable Things, without Expense, and benefit others at the same time.—Every thing offered is new, and of the best quality and make.—Good Books, Good Seeds, Plants, and Grape Vines; Good Fruit Trees, Shrubs, and other Nursery Stock; Good Household and Farm Implements; Good Pianos, Melodcons, etc., etc.—Something to meet the wants of Everybody, and Everybody invited to secure one or more Premiums.

With new help and increased facilities, we have large plans for still further improving the quality and value of the Agriculturist. We mean to put so many good things into its pages, that it will be very valuable to all families in the land, no matter how many other papers they have, and no matter where they live, or what their occupation.

The expenses are so great, and the subscription price so low, that there is not profit enough to pay traveling or local agents for showing the paper, talking about it, and gathering subscriptions. But this can be done by one or more of our present readers, in every neighborhood, and many do it without reward. By the good will of manufacturers and others, who have been specially benefited by the circulation of this journal, and through advertising and other arrangements, we are able to offer a large list of fine Premium Articles, to be selected from by every person who will take the trouble to collect clubs of subscribers. Raising a club is easier than many imagine.

During a few years past, we have sent premiums to more than five thousand persons, who have collected clubs, and to their great satisfaction in almost every case. Hundreds of quite young Boys and Girls have been successful in this way. Schools, Churches and Agricultural Societies have often united their efforts and secured good articles for common use.

We offer now a larger list of articles than ever before, and invite every reader to make an effort to raise a premium club, and receive one or more of them. If several start out in the same neighborhood, and there is not room for all, they can unite their lists and own the premium in common, or make an amicable allotment of it. It will be noted, that our premiums are independent—each article is for so many names, and not the highest number. Every one thus knows just what he or she is working for; the result does not depend upon what some other unknown person is doing, or may be reported to have done.

months of this year free. (See top of previous column.) As fast as any subscriptions are obtained, send them along, that the subscribers may begin to receive the paper; and when all the names that can be obtained are forwarded, select the premium desired, and it will be promptly furnished. To save mistakes and the keeping of money accounts, send with each name, or list of names, the exact subscription money.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designated for a premium list be so marked when sent in. (Such names are credited to the sender in a separate book, as fast as received—ready for instant reference.)

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

The extra copy, usually offered to clubs of 10 or 20, will not be furnished when a premium is given.

Table of Premiums and Terms, For Volume 25. Open to all—No Competition.

Table with 4 columns: Names of Premium Articles, Price of Premiums, Names at \$100 each, Names at \$1000 each. Includes items like Good Books, Garden Seeds, Flower Seeds, Nursery Stock, etc.

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 8, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

Description of the Premiums.

N. B.—A FULL DESCRIPTIVE SHEET, DESCRIBING EACH OF THE PREMIUM ARTICLES, WITH FULL PARTICULARS, WILL BE SENT TO ANY ONE APPLYING. WE HAVE ONLY ROOM HERE FOR THE FOLLOWING GENERAL REMARKS:

Premium 1.—Good Books.—Any person sending a club of 25 or more subscribers, may select Books from the list on page 327, to the amount of 10 cents for each subscriber sent at \$1: or to the amount of 60 cents for each name at \$1 50. This offer extends only to clubs of 25 or more names.

Premium 2.—A complete assortment of Kitchen Garden Seeds, for one or more families, containing the most approved and choice sorts, in quantities to suit a Family Garden. No. 2 and 3, are put up by the well-known and reliable house of J. M. Thorburn & Co. For kind and amount, see our Descriptive Sheet. Premiums 1 to 8, may be divided among themselves by a club, if they so choose.

No. 3.—A choice collection of fine and reliable Flower Seeds, of 100 kinds—in a fall market size parcels. See No. 2.

No. 4.—Twenty Dollars worth of Fruit Trees, or any other kind of Nursery Stock that may be desired, to be selected by the recipient, from the Catalogues of either Parsons & Co., Flushing, N. Y., or F. K. Phoenix, Bloomington, Ill., as desired.

No. 5.—One Dozen of the new and promising Iona Grape

Vines. Only the best No. 1 Vines will be sent, such as are not sold for less than \$2.00 each.

No. 6.—Large, first class, No. 1 Concord Vines.

No. 7.—A selection of the best kinds to be obtained, including the "Agriculturist," if desired in whole or in part.

No. 8.—A fine assortment of the beautiful Japan Lilies. These are adapted to autumn or spring planting.

No. 9.—Downing's Landscape Gardening, etc.—A most beautiful volume, splendidly bound, and finely illustrated, new Edition.

No. 10.—Appleton's New American Cyclopaedia, a magnificent great work, of 16 large volumes, containing condensed but very full information upon every topic. It is a whole Library of itself, describing almost every subject, place, and thing, including countries, cities, all men of note who have ever lived, etc., etc. Almost every farmer could afford to sell an acre or more of his farm to purchase this work.

No. 11.—Mitchell's Large Geography, containing 84 Maps, and plans, is of high value, and may well be in every house.

No. 12.—Worcester's Great Dictionary, next to the Bible and Cyclopaedia, is the most important work for the family. The Unabridged Edition, illustrated with many engravings, describes and pronounces every word in our language.

Nos. 13 to 21.—We have stereotype plates of the Agriculturist, from volume 16 to 23, inclusive, (and Dec. 1st, will have volume 24,) from which we print from time to time any numbers needed. Any of these volumes desired can be furnished complete with index and title pages. Price \$1.50, or \$1.75, if sent by mail, as they must be pre-paid. These volumes are a valuable Agricultural Library in themselves, containing more varied information than can be obtained for twice the cost in any books. If desired bound, it will be done for 75 cents each volume, in neat style.

Nos. 22, 23, 24.—These are splendid large Steel Engravings, beautifully colored, the first two from paintings by BINGHAM, and the last by TARR, which was until recently sold at \$15. They are published by Mr. Knædler, 772 Broadway, New-York City, formerly the American Branch of the celebrated House of Messrs. Gouplé & Co., Paris.

No. 25.—Morton's celebrated Gold Pen, in convenient extension Silver Case, with pencil. We give only No. 5, of his best quality, made of coin gold and silver.

No. 26.—An excellent assortment of drawing or Draughting Steel and brass instruments, each piece neatly fitted into a Rosewood Case. For particulars see Descriptive Sheet.

Nos. 27, 28.—Very fine portable Rosewood Case, which holds all writing materials, and when opened forms a writing Desk. Very good for one's own use, or for a present to Teachers and others.

No. 29.—The Universal Clothes Wringer, with the Cog-Wheels, etc.—the best Wringer we know of—and a most valuable thing as a labor-saver and clothes-saver.

No. 30.—After nearly two years' trial, we can highly recommend this for general use. Several improvements have been recently added.

No. 31.—The Tea Set consists of six pieces, viz.: Coffee Pot, Tea Pot, Hot-water Pot, Sugar Dish, Cream Cup, and Stop Bowl, all of beautiful pattern and late style, embossed. They are of the best heavy plating, known as "Sheffield Plate," and are manufactured by the well-known Lucius Hart & Sons, No. 4 & 6 Burling Slip, (near our former Office). Mr. Hart has been in the same place upwards of 30 years; and the fact that he supplies the above premiums is, we suppose, a sufficient guarantee of their value.

Nos. 32, 33, 34.—We offer these kinds, to meet the wants of all. Nos. 32 and 33, for General Family Sewing.—No. 34, for family use, especially if heavy cloth, leather, etc., are to be sewed. Their respective advantages are given more fully in our Descriptive Sheet, noted above.

Nos. 35, 36.—An excellent instrument, as we know from six years' trial of one in our Sunday School room. Send a stamp to Geo. A. Prince & Co., Buffalo, N. Y., for an illustrated descriptive catalogue, giving sizes, prices, etc. In past years, many neighborhoods and schools have combined in raising clubs of subscribers, and secured through us these instruments for Churches, and for both Day School and Sunday School rooms.

No. 37.—Steinway & Sons' Pianos are too well known to need a word of commendation. Send to them at No. 71 & 73 East 14th-st., N. Y. City, for descriptive catalogue. The kind we offer is: "7 Octave, Rosewood case, large front Round Corners, Carved legs and Lyre; Over-strung Base, with their Agraffe Treble, and containing all modern improvements." The instruments we offer are specially prepared for us, with Curvet Legs, etc., and like all their pianos, are very desirable.—We offer this premium on extraordinary terms. It will pay a Lady for a year's work. We think there are several who by securing the aid of friends in neighboring towns, and by a thorough canvass, may readily obtain the requisite number of subscribers. There are in almost every town more than 500 families who ought to have the Agriculturist. Two or three persons (one a railroad Conductor), have each sent more than subscribers enough to obtain this magnificent premium. It would pay an enterprising man to canvass for this, and afterward sell it. We have engaged five instruments, and more if needed. Who will have the first?

Nos. 38, 39.—The Barometer is a very useful instrument, for farmers especially, as a weather guide. We know of none so good for the price, as Woodruff's Patent Mercu-rial, made by Charles Wilder, of Peterboro, N. H., who will

supply circulars and all needed information. Mr. Woodruff's improvement renders them so portable that Mr. Wilder guarantees the safe carriage of any premium instrument we give, if sent anywhere East of the Rocky Mountains. We offer two kinds, differing mainly in size and finish.

No. 40.—The Aquarius, or Water-Thrower, is an excellent portable force-pump, useful in many ways—to water the garden or plants, to wash windows, carriages, etc. One can catch up the implement, carry it to any place, and from a pail throw a considerable stream of water 20 to 30 feet or more, and thus sometimes put out an incipient fire that could not be readily reached otherwise. It has a jet-pipe, and also a rose, or sprinkler. An air-chamber attached keeps up a steady stream. Send to W. & B. Douglas, Middletown, Conn., and get a circular giving full particulars.

No. 41.—The Buckeye Mower is so widely known and approved, that we need not use space to describe it. Send to Adriance, Platt & Co., Manufacturers, 165 Green-st., New-York, for circulars, etc., giving particulars. A few farmers might unite their efforts, and readily secure subscribers enough for this premium, and own it in common. Many can raise a club of 160, alone.

No. 42.—Allen's Cylindar Plow, a successful trial of which we described in May 1861, has since been further improved, and is a meritorious implement. The one we offer is the Medium Two-Horse size, cutting a furrow 12 to 11 inches wide, and 5 to 8 inches deep. It is fitted with wheel, and a "Skim Plow," making it double, like the Michigan Plow. For descriptive circular, address R. H. Allen & Co., 191 Water-street, New-York City.

Commercial Matters—Market Prices.

In accordance with our usual custom, we herewith present in the October number a series of tables prepared expressly for the American Agriculturist, which give, in a very condensed and convenient form for study and reference, the various transactions in Breadstuffs, not only during the past month but for a series of years past. These figures are believed to be thoroughly reliable, no labor or care having been spared to make them so.

1. TRANSACTIONS AT THE NEW-YORK MARKETS. Receipts. Flour, Wheat, Corn, Rye, Barley, Oats. 21 days this m'th, 266,000 1,275,000 2,373,000 109,000 167,000 764,000 27 days last m'th, 318,000 1,397,000 1,855,000 61,000 141,000 1,975,000

SALES. Flour, Wheat, Corn, Rye, Barley. 21 days this month, 351,000 2,052,000 2,318,000 97,000 3,500 27 days last month, 314,000 1,965,000 2,149,000 103,000

2. Comparison with same period at this time last year. Receipts. Flour, Wheat, Corn, Rye, Barley, Oats. 24 days 1865.....266,000 1,275,000 2,373,000 109,000 167,000 764,000 25 days 1864.....349,500 1,213,000 1,829,000 2,000 51,000 1,354,000

SALES. Flour, Wheat, Corn, Rye, Barley. 24 days 1865..... 351,000 2,052,000 2,318,000 97,000 3,500 25 days 1864..... 437,500 1,674,000 1,421,000 5,100 1,600

3. Exports from New-York, January 1 to Sept. 10; Receipts. Flour, Wheat, Corn, Rye, Oats. 1865..... 970,967 1,616,894 1,506,368 154,214 51,673 1864..... 1,533,382 10,998,797 709,293 453 31,185 1863..... 1,832,899 11,700,101 7,293,261 409,157 116,097 1862..... 2,254,591 15,393,811 8,610,113 1,031,645 66,537

4. Exports of Breadstuffs from the United States to Great Britain and Ireland, each of 19 years, ending Sept. 1: Flour, blis. Wheat, bush. Corn, bush. 1865..... 170,109 2,089,740 1,293,404 1864..... 1,241,804 16,492,523 717,434 1863..... 1,479,413 23,167,190 10,334,356 1862..... 2,672,515 25,754,799 14,084,168 1861..... 2,561,661 25,553,370 11,705,034 1860..... 717,156 4,938,714 2,221,857 1859..... 106,457 342,013 342,013 1858..... 1,295,430 6,555,643 3,317,802 1857..... 849,690 4,749,401 4,746,278 1856..... 1,641,265 7,956,406 6,731,161 1855..... 175,209 324,427 6,679,138 1854..... 1,816,920 6,038,003 6,049,371 1853..... 1,600,449 4,923,519 1,428,278 1852..... 1,427,442 2,728,442 1,487,398 1851..... 1,559,584 1,496,355 2,205,601 1850..... 574,757 461,276 4,753,358 1849..... 1,137,556 1,140,194 12,685,260 1848..... 182,583 241,300 4,390,226 1847..... 3,155,845 4,000,359 17,157,659 Total for 19 years..... 24,895,755 142,580,581 112,326,796

5. Exports from the United States to the Continent of Europe for 11 years, each ending Sept. 1. Flour, Wheat, Corn, Rye. 1865..... 23,261 112,315 11,485 97,529 1864..... 100,511 338,819 13,269 18,965 1863..... 219,579 2,343,314 68,957 435,205 1862..... 626,672 7,617,472 329,074 1,612,926 1861..... 142,129 3,452,496 101,145 347,258 1860..... 49,243 178,031 19,358 1869..... 51,388 57,455 25,519 1858..... 303,100 390,428 16,848 13,100 1857..... 483,344 2,875,633 543,500 216,162 1856..... 748,408 2,610,079 282,083 1,973,178 1855..... 7,763 4,972 308,428 3,559 Total for 11 years..... 2,749,398 19,976,424 1,712,856 4,746,592

6. Receipts of Breadstuffs at the head of tide water at Albany, by the Erie and other New-York Canals, from the Commencement of Navigation, May 1st, to and including Sept. 9th, in the years indicated. Flour, Wheat, Corn, Rye, Barley, Oats. 1861..... 661,100 13,340,000 11,153,000 448,000 206,000 3,115,800 1862..... 886,206 16,282,800 11,721,500 531,200 381,100 2,509,400 1863..... 748,100 10,935,000 15,350,700 284,000 79,800 5,157,300 1864..... 358,300 9,838,900 5,857,200 80,900 186,100 4,979,300 1865..... 421,100 5,065,600 7,234,100 290,900 100,700 5,543,100

CURRENT WHOLESALE PRICES.

Aug. 19. Sept. 16. FLOUR—Super to Extra State \$6 00 @ 7 25 \$6 90 @ 8 10 Super to Extra Southern. 8 25 @ 13 00 9 25 @ 11 00 Extra Western..... 6 80 @ 13 50 7 70 @ 14 00 Extra Genesee..... 7 25 @ 10 00 8 20 @ 10 00 Superfine Western..... 6 65 @ 6 60 6 40 @ 7 10 RYE FLOUR..... 5 60 @ 6 00 5 60 @ 6 25 CORN MEAL..... 5 10 @ 5 50 4 75 @ 5 35 WHEAT—All kinds of White. 1 90 @ 2 25 2 10 @ 2 40 All kinds of Red and Amber. 1 40 @ 2 09 1 55 @ 2 10 CORN—Yellow..... 90 @ 92 89 @ 90 Mixed..... 89 @ 91 72 @ 89 OATS—Western..... 62 @ — 53 @ 51 State..... 96 @ 1 09 1 00 @ 1 05 BARLEY..... Nominal. 1 10 @ 1 25 COTTON—Middlings, # 40..... 42 @ 44 44 @ 45 1/2 HOPS—Crop of 1864, # 40..... 12 1/2 @ 50 15 @ 45 FEATHERS—Live Geese, # 40..... 75 @ 80 80 @ — SEED—Clover, # 40..... Nominal. 28 @ 30 Timothy, # 40..... Nominal. 5 00 @ 5 50 Flax, # 40 bushel..... 2 25 @ 2 40 2 85 @ 3 00 STEAR—Brown, # 40..... 10 1/2 @ 16 11 1/2 @ 16 1/2 MOLASSES, Cuba, # 40..... 35 @ 60 38 @ 62 1/2 COFFEE—Rio, # 40..... 17 1/2 @ 21 1/2 18 @ 22 1/2 TOBACCO, Kentucky, # 40..... 16 @ 20 6 @ 20 Seed Leaf, # 40..... 7 @ 30 7 @ 30 WOOL—Domestic Fleece, # 40..... 60 @ 77 1/2 57 1/2 @ 80 Domestic, pulled, # 40..... 60 @ 70 60 @ 72 1/2 California, unwashed..... 25 @ 43 20 @ 45 TALLOW, # 40..... 12 @ 13 15 1/2 @ 16 1/2 OIL—Coke, # 40 ton..... 47 50 @ 55 00 43 50 @ 55 00 PORK—Less, # barrel..... 30 00 @ 32 50 30 50 @ 32 50 Prime, # barrel..... 24 00 @ — 24 50 @ 25 00 BEEF—Plain mess..... 8 50 @ 12 50 8 50 @ 12 50 LARD, in barrels, # 40..... 19 1/2 @ 21 1/2 22 1/2 @ 27 1/2 BUTTER—Western, # 40..... 21 @ 29 25 @ 38 State, # 40..... 19 @ 16 11 1/2 @ 16 1/2 CHEESE..... 10 @ 16 11 1/2 @ 16 1/2 BEANS—# bushel..... 1 40 @ 1 40 1 50 @ 2 00 PEAS—Canada, # bushel..... 1 35 @ 1 40 1 35 @ 1 40 EGGS—Fresh, # dozen..... 26 @ 29 25 @ 27 POULTRY—Fowls, # 40..... — @ 36 24 @ 25 TURKEYS, # 40..... 26 @ 27 26 @ 28 POTATOES—Meyers, # bbl..... 1 50 @ 2 75 2 00 @ 2 50 Peach Blows, # barrel..... — @ — — @ — Buckeyes—New, # barrel..... 1 50 @ 2 00 1 25 @ 1 50 APPLES—# barrel..... 6 00 @ 9 00 3 00 @ 5 00

For some inexplicable reason, gold continues high, standing at 142 1/2, Sept. 16th, against 142 1/2, Aug. 18th. Business in farm products has been fair. Breadstuffs were for a time so high, as to almost preclude export; but with increased receipts, latterly, prices have tended downward. Provisions have been firmer, but closed irregularly.... Wool has been active, and prices higher.... Cotton went up, but is weaker again. The receipts have been very large. The stock at this port, Sept. 1, was 74,862 bales, against 3,810 bales the same time last year.... Hay, Hops and Tobacco have been in fair request. The current prices are given in the table.

Agricultural and other Fairs.

State and National Fairs.

- American Institute, N. Y. City, Sept. 12th to Oct. 19th; J. W. Chambers. Horticultural Exhibition Am. Inst., N. Y. City, (Greenlee Prizes), Sept. 12 to Oct. 19. Indiana, Ft. Wayne, Oct. 2 to 7; W. H. Loomis. Indiana Pomological, Ft. Wayne, Oct. 2 to 7. Michigan, Kalamazoo, National Exhibition of horses, Oct. 3 to 6; C. F. Kidder. Ohio, Dayton, National Horse Fair, Oct. 3 to 6.

County and Other Fairs

- MAINE. East Oxford Co., West Pen., Oct. 4, 5. Franklin Co., Farmington, Oct. 3 to 5; L. F. Green. West Oxford Co., Fryeburg, Oct. 10 to 12. York Co., Biddeford, Oct. 10 to 12. MASSACHUSETTS. Barnstable Co., Barnstable, Oct. 5. Bristol Co., Taunton, Oct. 3. Berkshire Co., Pittsfield, Oct. 3 to 4. Hampden Ag. So., Springfield, Oct. 3, 4; J. M. Bagg. Hampshire, Franklin, and Hampden, Northampton, Oct. 5, 6, A. P. Peck. Hampden East, Palmer, Oct. 10. Marthas Vineyard, West Tisbury, Oct. 1. Plymouth, Bridgewater, Oct. 5. Worcester South, Sturbridge, Oct. 5. NEW YORK. Broome Co., Binghamton, Oct. 3 to 5. Cayuga Co., Auburn, Oct. 3 to 6. Chautauqua Farmers and Mechanics' Union, Fredonia, Oct. 4 to 6; Jno S. Russell. Delhi Ag. and Mechanics' Association, Oct. 5, 6. Otsego Co., Cooperstown, Oct. 3 to 5. Queens Co., Flushing, Oct. 5, 6. Schoharie Co., Schoharie, Oct. 5, 6. Tompkins Co., Ithca, Oct. 27, 28. PENNSYLVANIA. Berks Co., Reading, Oct. 3 to 5. Burgettstown, Oct. 5, 6. Doylestown Co., Doylestown, Oct. 3 to 5. Franklin Co., Somerville, Oct. 2 to 5. Luzerne Co., Wyoming, Oct. 3 to 5; Steuben Jenkins. Warren Co., Belvidere, Oct. 3 to 6. ILLINOIS. Kankakee Co., Kankakee, Oct. 4 to 6; E. Cobb, Pres. Montgomery Co., Hillsboro, Oct. 11 to 13. Pike Co., Pittsfield, Oct. 3 to 6. Randolph Co., Sparta, Oct. 4 to 6; Wm. Addison. Schuyler Co., Roshville, Oct. 11 to 13. Sandwich Union, (De Kalb Co.), Oct. 3 to 5. IOWA. Madison Co., Winstead, Oct. 3, 4. Page Co., Clarinda, Oct. 5 to 7; T. T. Pendergraft. Van Buren Co., Keosauqua, Oct. 5, 6. Washington Co., Washington, Oct. 3, 4.

OHIO.

- Ashtabula Co., Jefferson, Oct. 3 to 5. Butler Co., Hamilton, Oct. 3 to 6. Coshocton Co., Coshocton, Oct. 11 to 13; W. R. Forker. Greener Co., Xenia, Oct. 4 to 6. Hancock Co., Findlay, Oct. 5 to 7. Highland Co., Hillsboro, Oct. 4 to 6. Harrison Co., Cadiz, Oct. 4 to 6. Knox Co., Mt. Vernon, Oct. 4 to 6. Meigs Co., Racine, Oct. 4 to 5; Wm. H. Lasley. Mahoning Co., Canfield, Oct. 3 to 5. Morgan Co., McConnellsville, Oct. 3 to 5. Morrow Co., Mt. Gilead, Oct. 3 to 5. Stark Co., Canton, Oct. 3 to 6. Summit Co., Akron, Oct. 4 to 6. Wayne Co., Wooster, Oct. 4 to 5. Wood Co., Bowling Green, Oct. 3, 4.

WISCONSIN.

- Adams Co., Friendship, Oct. 4, 5; G. W. Waterman. Lacrosse Co., West Salem, Oct. 4 to 6. Vernon Co., Viroqua, Oct. 4 to 6.

MICHIGAN.

- Barry Co., Hastings, Oct. 11, 12. Hillsdale Co., Hillsdale, Oct. 4 to 6. Kalamazoo Horse Show, Kalamazoo, Oct. 3 to 6. Ionia Co., Ionia, Oct. 4, 5. Oakland Co., Pontiac, Oct. 4 to 6; J. R. Bowman. Shiawassee Co., Owosso, Oct. 4 to 6. Washtenaw Co., Ann Arbor, Oct. 4 to 6.

CANADA WEST.

- Pell, Oct. 3, 4. Pickering, Oct. 10. East York, Oct. 5. West York, Oct. 11, 12. Scarsborough, Oct. 6. Whitby, Oct. 12. North York, Oct. 11. Whitechurch, Oct. 13. Toronto, Oct. 19, 20. Gore of Toronto, Oct. 18. Lambton, Sarnia, Oct. 5. Peel, Oct. 3, 4. East Durham, Port Hope, Oct. 3, 4.

Sundry Other Fairs.

- Bradford Co., Vt., Provincial Fair, Oct. 3 to 5; Windham Co., Vt., at Fayetteville, Oct. 4, 5.—Union Fair, at Woodbury, Conn., Oct. 3, 5.—Burlington Co., N. J., at Mount Holly, Oct. 3, 4.—Warren Co., Ind., at Williamsport, Oct. 10 to 13; F. Bryant, Sec.—Jefferson Co., Kan., Oct. 3, 4; Wyandotte, Kan., at Wyandotte, Oct. 5, 6.—Boone Co., Mo., at Columbia, Oct. 3 to 5; Clinton Co., Mo., at Plattsburg, Oct. 4 to 6.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

"& CO."—Our readers will notice on the first page, the addition of "& Co." to the name of the long-time Publisher and Proprietor of this journal.—Mr. LUCIUS A. CHASE, well known as a Boston Publisher, formerly of the firm of BROWN, TAGGART & CHASE, but for several years past of the firm of CHASE & NICHOLS, 43 Washington St., has disposed of his Boston business to his late partner, Mr. Sand, F. Nichols, and taken a partnership interest in the American Agriculturist, to the Business Department of which he will hereafter devote his whole energy and experience, that all its business matters, in general and in detail, may be more promptly and thoroughly attended to than ever. This arrangement, while to the advantage of the patrons of the paper, will relieve Mr. Judd somewhat in the severe double labors of Publisher and responsible Editor, that have pressed upon him for more than a dozen years past. As chief Proprietor, however, Mr. Judd will continue to constantly superintend and advise in all departments, but he will have rather more freedom to visit among our readers for observation and gathering practical information, and also give more time to the Editorial work—to the benefit of the readers doubtless. Mr. Chase, as we are happy to know, has long been recognized among his business compeers in Boston as a man of sterling Christian integrity, and of active methodical business habits, and he will be welcomed to his new field of labor by all our readers, as he is by THE ASSOCIATE EDITORS.

"Kosmos."—A small red covered pamphlet bearing this title has fallen into our hands. It is an advertising medium of the "New York Medical University." We should not notice the thing, were it not that a similarity in name might lead some to think that this had some relation to the Medical Department of the University of the City of New York, an institution which could not put out such an advertisement as this.

Killing Running Blackberry Vines.—Ira Hylan, Rockingham Co., N. H., asks how "to kill running blackberry vines?" Plow the ground deep this fall; plow it twice next June, and sow buckwheat. Harrow thoroughly between the plowings. The next year manure well, and plant Indian corn, and cultivate well. If the work is properly performed, the vines will give no more trouble. If the plowing is only half done, and the hoeing not one quarter, the vines will grow finely.

Draining Clay Soil.—"G. W. W." writes to the *Agriculturist*: "I have a clay farm and would like to know if it will pay to underdrain it?" Most certainly it will, if there is an excess of water. And there is no danger of rendering it too dry by drains, even if it were not excessively wet. "Men whom I think ought to know, have told me that water will never drain through this stiff clay into the tiles; but will remain on the surface till it evaporates." Whoever tells you so, knows nothing about draining clay soils with tiles. It is impossible for water to percolate through a heavy soil as soon as a light one; but thousands and thousands of acres of stiff clay have been drained with tiles, and in a year or two, changed from a soggy, adhesive mass, to a comparatively friable and light soil. It is fully to affirm that water will not find the bore of the tiles. We would like to see these doubting and "knowing" ones attempt to keep the water out of the tiles, by covering the joints with clay. "Please tell me also how to loosen the soil?" Read the *Agriculturist* for June, page 181.

Renovating a Barren Soil.—C. A. Carpenter, Alleghany Co., Penn., "wishes to know how to treat a clayey loam soil 12 inches deep, with impervious subsoil, which heaves greatly in winter. The ground is nearly level, cold, wet in winter, and holds water after showers. He can get stable manure for \$13 per ton, and bone dust for \$32." The first thing to be done is to drain it. It is fully to plow it or to apply barnyard manure, or bone dust, until it is relieved of the surplus water. If the water comes from springs through the subsoil, a few ditches in the right places will relieve the entire plot of surplus water; but the effect upon the soil will be nothing like so good as thorough drainage, with ditches 20 feet apart over the entire field. Then plow deep before winter. Next spring apply a half ton of bone, per acre, or a dressing of good barnyard manure. Then we will warrant a heavy crop of Indian corn.

Soot as a Manure.—"F. M. B.," has a quantity of soot and wishes to know if it will be a good manure for his flower borders. Soot is valuable as a manure, and principally on account of the ammoniacal salts it contains. It is best used in the liquid form, and it should not be applied in a too concentrated state. As soot varies a great deal, the proper strength can only be determined by experiment. Try half a peck in a barrel of water, watch its effects on the plants, and increase or diminish the quantity as may seem advisable.

Bone Charcoal.—W. S. Demaree, Montgomery Co., Ind.—Bone charcoal is made by heating bones in closed vessels, from which the products of combustion may pass off, but no air find access. These vessels are called retorts, and are similar to the retorts used at the gas works. The gases which pass off during the heating, contain carbonate of ammonia in large quantities; these are condensed in water, with acidulated sulphuric acid. The liquid is subsequently mingled with fine ground plaster, which forms, with the carbonate of ammonia, sulphate of ammonia, and carbonate of lime. The liquor is drawn off from the chalky carbonate of lime, and the ammonia salt obtained by evaporation. The bones are usually, after breaking up somewhat, re-heated to free them perfectly from volatile substances. They are then broken down to the requisite fineness, and sifted from the dusty particles. The dust may be used to make superphosphate of lime. Bone-black, after having been used till it is no longer efficient in purifying syrups, is washed clean and re-heated in vessels from which the air is excluded. Bone-charring might be very profitable at the West, and we presume it is somewhat practised.

How to Mix Cut Feed.—Always sprinkle the cut straw and hay with water, and mix it thoroughly with a shovel, scooping up the water from the bottom of the trough before the meal is put in. If dry meal be poured on wet straw, a small quantity will adhere to every piece of straw and chaff. But if the meal be mingled with the straw before the water is poured in, much of the meal will stick together, and a portion of the cut straw will have no meal at all on it. In order to induce stock to eat cut straw and hay clean, a little meal must adhere to every piece of the straw.

Hog Disease in Virginia.—A disease called hog-diphtheria is now rapidly killing out the hogs in Fairfax and adjoining counties. The animal appears well in the morning, but during the day its neck swells and by the next morning it is dead. It has been stated that no cure has been discovered for this fatal disease. Mr. Louis Brandt, Vet. Surgeon, 5th Ave. & 14th st., who has had many years' experience in managing this disease in Texas, says it can be cured, if attended to promptly. He communicates the following: "Make 6 or 8 incisions from one to two inches long, according to the size of the hog, lengthwise of the neck, through the skin, where the

swelling is the greatest. Then place in those incisions as much *Corrosive sublimate* (poison) as you can hold on the point of a pen-knife, spreading it on both sides of the cuts. This outside application counteracts the inside inflammation; an improvement is perceptible in a few minutes. The animal should be supplied with plenty of fresh water to drink. Hogs are seldom attacked the second time, or have a relapse. Yet when it does occur, the same process should be repeated. This disease will appear in various parts of the country nearly every year, and it will be a great benefit to agriculturists to have a remedy always at hand. As it is contagious, often proving fatal to entire herds, the medical aid should be given in good time, and diseased animals isolated."

Remedy for Heaves.—G. W. Hicks, Bradford Co., Penn., writes to the *Agriculturist*: "Mix equal parts of pulverized borax and saltpetre, and give a horse a tablespoonful in wet oats (or cut feed) twice a day. Every other day give a spoonful of sulphur. Give also a tablespoonful of copperas twice a week. Continue this for five or six weeks. When one kind is mingled with the feed, omit the others. I have known this to cure the worst kind of heaves." That is a large dose of copperas.

A Veterinary College.—We have long needed an institution, in which sound veterinary instruction should be given, and illustrated by clinical and hospital practice. This demand is now met by the New York College of Veterinary Surgeons, the advertisement of which is in the present number. We believe this institution to be well worthy of the confidence and patronage of the public, and sincerely hope that the time will soon come, when the demand for instruction in veterinary medicine and surgery will be so great that it cannot be supplied by any single institution, however excellent. At present, there is a great lack of well educated veterinarians. Young men of liberal education and proper talent can be more useful to the country by properly qualifying themselves as veterinary surgeons, than they can by entering the professions now already overcrowded. Those who have desired to fit themselves for this profession, have heretofore been obliged to go to Europe, and we are glad that facilities for acquiring a knowledge of veterinary medicine are offered at home.

A Poultry Report.—"Old Gray Beard," Hunterdon Co., N. J., writes: "I commenced keeping an account with my poultry Dec. 1st, having 11 hens and 1 cock. In Dec. I got 141 eggs, in Jan. 118, in Feb. 131, in March 192, in April 162, in May 136; 880 eggs in six months. At 2½ cts. a piece, the average price, 880 eggs would amount to \$22.00. I set one hen in April on 17 eggs; she hatched out 17 chickens on the 3d of May, and has them all yet. All the feed has cost me is \$3.60 for wheat screenings, at 60 cts. per bushel, and some lard scraps, valued at \$1. In Feb. I carelessly threw some fish brine into the poultry yard, and next morning one hen was dead from eating salt, another one so she could not walk. I poured sweet milk down her throat and she got well. Altogether my profits from my poultry have been over \$20 in six months. I have always wintered my poultry on corn, until last winter, and it has cost me a good deal more to winter them, and I never got near as many eggs as I did last winter, when they were fed on wheat screenings. I sometimes pound up oyster shells and bones for them, and have just a common wooden shed for them to live in in winter."

Will Hens Pay?—George Atwood, answers the question as follows: On the 1st of June 1863, I had 13 hens—value \$ 6 50
29 chickens 5 75
Eggs set per chickens 5 75
Expended for 9½ bushels corn 15 03
Wheat (refuse) 22 10
Wheat 1 50
3 bushels turnips 1 50
Making stock and consumption \$55 73
June 1, 1864, I had sold, etc., chickens \$28 49
167 dozen, 7 eggs 37 89
On hand, 20 hens 15 00
45 large chickens 22 50
54 medium 7 75
22 small 2 70
40 eggs under hens 1 35
\$115 68
Deduct cost, etc. 55 73
Net profit 1 year \$59 95

Fresh Eggs and Plenty.—Mr. J. W. Douglass, of Brooklyn, writes as follows: "I should like to give you my experience in keeping hens. Last winter I tried to see what could be done by a city man toward having fresh eggs, and selected from my brother's flock two hens and one cock of the white Leghorn variety. A space 4½ feet wide by 22½ long was fenced off, and on one end a plain house was built. About the 10th of March I added two Black Spanish hens, and on the 15th of March I received one egg. From that time till

now I have had a constant supply, in all, amounting to four hundred and twelve eggs; or an average of one hundred and three for each hen; they average six to the pound, making a total weight of 68½ lbs., or more than four times the weight of the fowls.—They have cost me for food, not to exceed \$1.50; they get the leavings of the table, with a little corn and oats, and a little scrap-cake. Twice a day (morning and evening) I allow them to run on the grass plot to pick grass, &c., which they enjoy very much. I think the whole secret in making hens lay, consists in regular feeding and good attendance."

Precocious Chicken.—D. Breed, West Attleboro, Mass., vouches for the statement of "subscriber," that a chicken 12 weeks and 1 day old laid an egg. "Subscriber" challenges the World for a parallel.

Prolific Queen Bee.—Bidwell Bros., Apriarians of Minnesota, write us that they have taken from one Italian stock of bees one comb well filled with eggs each day for 30 days. The combs measure 8x15 inches, making 240 square inches on both sides, which contain 25 to the inch, or 6,000 cells to each comb. Allowing one sixth for bee bread, the queen has laid 150,000 eggs in one month, and can lay ¼ million during the working season.

Lard and Tobacco on Trees.—E. Gaylord, Floyd Co., Iowa, used a preparation of lard and tobacco upon his pear trees, and succeeded in preventing the rabbits from barking them. Most of the trees are growing well, but as some have stopped growing, he wishes to know if these trees are injured by the application. This is a point difficult for us to decide, and one which our subscriber, with the facts before him can, by taking a little pains, settle satisfactorily by experiment. As we have no occasion to keep rabbits from our trees we have no experience to offer. Our impression is, that the mixture did not hurt the trees. The fact that some among 150 young pear trees stopped growing, is nothing unusual, and is no strong proof that the greasing was the cause. It is not an unusual thing to grease young trees where rabbits are troublesome, and we have not heard of injury from the practice. If any of our readers have used grease in this manner either with or without tobacco, will they please give the results.

Buckwheat Straw for Mulching.—Melvin L. Casler, DeKalb Co., Ill., writes: "I wish to know whether buckwheat straw is good for mulching. Father thinks it is not, because it poisons the land." We have used buckwheat straw for more than 20 years for feeding stock, making manure, bedding animals, and mulching trees and plants, and we never have met with any phenomena that led us to think there was any pernicious influence attending the use of the straw.

Fine Delaware Grapes.—Those who object to the Delaware on account of its small size, should see some now on exhibition at our office, raised by Van Wyck & Johnston, Fishkill, N. Y., and sent by T. & W. Ryer & Co., 134-6 West Washington Market. Seven bunches weighed 53 oz. The largest bunch was 8 inches long and weighed 9½ oz., and others weighed 9 oz., 8 oz., etc., down to 6 oz., which was the smallest bunch. The berries were about as large as the Dianas usually are—large enough.

Preserving Grapes.—J. C. Ashley, N. Y. In preserving grapes in a box or jar in a hole in the garden, the hole is to be covered. The grapes sold in boxes are preserved by keeping them at an even temperature, which is as low as possible and not freeze the fruit.

Wild Cherry for Stocks.—D. Drury, inquires about a small red wild cherry of New England, which is used successfully as stocks. The species alluded to is probably *Prunus* (or *Cerasus*) *Pennsylvanica*, which forms a tree 15 to 30 feet high, and is a true cherry, while the common Wild Cherry belongs to another subgenus. The tree is not rare in southern New England, and quite common in the northern portions. Doubtless some of the Maine nurserymen could collect the fruit.

Harkness' Nursery Tree Digger.—In April last we published an engraving and description of an implement, used at the West for digging trees from nursery rows. We prefaced it by the remark that eastern nurserymen do not think favorably of digging in any other way than by the spade. Our friend F. K. Phoenix, of Bloomington, Ill., who is enthusiastically in favor of the digger, writes in its defence as follows: "Why not quote eastern nurserymen that good trees can't be grown West? Why not quote some old foggy stage driver against rail-roads, or seamstress against sewing machines? The simple truth is, that here spade-digging of nursery trees is absolutely a humbug, a nuisance to buyer and seller alike,

whenever the tree-digger can be made to work fairly. No person, so far as I know, out of thousands, who have seen them work, or bought trees knowing them dug with the machine, but thinks their work *perfection* in its way."

Osage Orange Seed.—Letters continue to come asking where Osage Orange Seed may be had. We know of none for sale. Now that Texas, the principal source of it is once more open to commerce, it is possible that, a part of the crop now ripening may find its way to market. There is no doubt that the dealers will advertise it as soon as they have any in store.

Another Substitute for Box.—"Orator Alsaffi," Washington, Pa., suggests as a good plant for garden edgings, the common Chives, or Cives, *Allium Schoenoprasum*, figured and described in the *Agriculturist* for June, 1864.—He says: "It is easily cultivated, easily trimmed, and is perennial. It will grow in any soil and situation, is not subject to the attacks of any insect, is not liable to run like grass, keeps exceedingly clear of weeds, does not suffer from the extremest cold, is the very first green thing in spring, may be used as a substitute for parsley, or green onions, or both, in the absence of either, and, when in full blossom, make a very pretty show indeed. Plant in September, October, or March. Cut it close and often during the first summer, to insure its setting thickly and evenly, and after being cut once in the spring of its second year, it will produce a mass of flesh-colored blossoms, which will last a very long while."

Twenty Thousand Lilies.—Mr. Francis Brill, Newark, N. J., sent us an invitation to visit his lilies while they were in flower, remarking that "such a sight was never seen before in this country, if in any other."—We went, saw, and were convinced that Mr. Brill was quite right. Just think of over an acre of Japan Lilies, each individual flower of which is an object of perfect beauty! There were all varieties of *Lilium lancifolium*, consisting in great part of album, rubrum and punctatum. There were, in less numbers, the newer varieties, Melpomene, of a beautiful dark crimson and Monstrum, a singular variety, bearing from 30 to 50 flowers to the stalk, and others.

Bulb Catalogues.—We have received, in the order in which they are mentioned, bulb catalogues from the following dealers: J. M. Thorburn & Co., 15 John St., N. Y. City; James Vick, Rochester, N. Y. (Illustrated); Henderson & Fleming, 67 Nassau St., N. Y. City; B. K. Bliss, Springfield, Mass. (Illustrated). The prices, on account of the reduction in exchange, range much lower than those of last year. The bulbs of our city dealers (and we doubt not of those elsewhere) open in fine order, and are heavy, bright and sound.

Columbine Seeds Poisonous.—The London Gardeners' Chronicle gives an account of the poisoning of a child by eating the seeds of the common garden Columbine. The child lay in a nearly unconscious state for several hours and recovered the next day. The relatives of the Columbine: Monkshood and Larkspur, and even the common Buttercup, are all more or less acrid, but we rarely hear of evil results from them.

Prize Flower Seed.—"M. C. E.," Cleveland, O., writes to know how florists are able to offer carnation seed from "prize flowers only." We presume it really means that the seed is from the same stock with the flowers that took prizes.

Keeping Hollyhocks, etc.—E. Gaylord, Floyd Co., Iowa. Your bad success is owing to the fact that the Hollyhock is not really a perennial, and is very apt to die after flowering once. It may be continued by dividing the plants when they have done flowering, and setting out the short branches which spring from near the roots, to make separate plants. The hardy perennials generally, will probably endure your winters if they have a good covering of littery manure.

Seedling Verbenas.—We understand that Mr. Snow, the verbenafancier of Chicopee, Mass., has sold six of his new seedlings to a florist of this city for one hundred dollars. We note this as indicating that there is a ready sale for a really good novelty in flowers as well as among fruits.

Sowing Dahlia Seeds.—Several inquire what will be the result of sowing Dahlia seed. It will depend upon the "strain" the seed is from, as the florists say. Generally, many poor flowers, some tolerable ones and now and then a fine one, will be the result. From its very uncertainty, it is an interesting culture to those who have the time for it.

Eucalyptus resinifera.—B. Peters, Scott Co., Iowa. This is an Australian tree, which the Emperor of France saw during his visit to Algiers. We doubt if it has been introduced near Paris. The seeds are not to be had here, and they would be of no use in your cold climate.

Tall Corn.—B. C. Townsend, Esq., of Bay Ridge, L. I., has sent us some stalks of corn, which were raised from seed brought from Peru by the Hon. E. G. Squier. The stalks are 15 feet long, and have secondary or "brace roots" to the height of 8 feet. The variety is not early enough for our climate, as it has (Sept. 11th) but just tasseled, and shows no signs of ears.

A Fine Cabbage.—We have on our exhibition tables, from R. Criswell (sometimes called the great cabbage man of Long Island), a trimmed cabbage, weighing 22½ lbs. Mr. Criswell expects to ship 50 or 60,000 to the ex-rebels this season. He has made some discoveries in preparing and packing cabbage for shipping, which he claims will cause them to keep longer than by the usual method.

Radish Culture.—Agnes Kemp, Blair Co., Pa. If you have tried for several years without success it is likely that the soil is cold and heavy, or otherwise unsuitable. A rich, warm, somewhat sandy soil is best.

An Early Kind of Sorghum.—"W. S. D.," of Montgomery Co., Ind., writes, asking about a variety of sorghum called "Hoangho." He says: "A variety in this neighborhood, represented to be of that kind, is a much better grower than any of the other kinds, starting after planting almost equal to corn. It is said to ripen much earlier than any other variety." Does the "Hoangho" uniformly exhibit these qualities?

Currant Worms, so very destructive to the currant bushes where they abound, eating off the leaves and stripping the bushes so thoroughly, that, unless the fruit be all cut off, or stripped off and the canes cut back, the plants usually die, may be entirely destroyed by the use of White Hellebore (*Veratrum album*), in fine powder. A small particle of this falling upon the worm, will kill it at once, and if it only falls upon the upper side of leaves, upon the under sides of which the worms are feeding, they will all disappear within a few hours. A correspondent in Cazenovia has kept his bushes quite free in this way, and secured an abundance of fruit for a year or two past, while his neighbors have lost not only their fruit, but the bushes too.

White and Black Hellebore.—In some of the published accounts of the use of White Hellebore to destroy the currant worm, it has been stated that the Black Hellebore would probably answer as well. This is a mistake, as the two plants are widely different, both in their botanical relations and their medicinal effects. These plants are both natives of Europe, and the drug furnished by each is imported. It is highly probable that our native *Veratrum viride*, or American Hellebore, which is closely related to the White Hellebore botanically and medicinally, would be efficacious as a poison for the currant worm. It is common in our swamps and has a strongly plaited leaf, which, when it first appears above ground in spring, is sometimes mistaken for that of the skunk-cabbage. It is also known by the name of Indian Poke. A gentleman at Staten Island states, that he used White Hellebore upon his grape vines, and he thinks it injured the leaves. What is the experience of others?

The Death of Sir Wm. J. Hooker.—Botanists and horticulturists will be pained, though perhaps not surprised to hear of the death of Sir William Jackson Hooker, who had reached the advanced age of 80 years. He was best known to horticulturists as the director of the Royal Botanical Gardens at Kew, near London, and the long time editor of the Botanical Magazine. His botanical writings are numerous, and all working botanists are aware of their high value, which is enhanced by excellent illustrations from the facile pencil of their author. Sir William was knighted in 1836 in recognition of his valuable services to botanical science.

The Agricultural Department.—The following appears in the Washington correspondence of one of our daily papers: "Mr. J. S. Grinnell, the experienced chief clerk of the Agricultural Bureau, has been removed from that office by Commissioner Newton, and his place supplied by a Mr. Stokes, nephew of the latter. The change thus made calls out considerable criticism, and will be generally reprobated by the large number of people who are personally acquainted with the merits of Mr. Grinnell. It is stated that a large number of the leading agriculturists of the country have become so dissatisfied with the manner in which the

affairs of the Agricultural Bureau are being supervised under the conduct of the present Commissioner, that a combined expression of disapproval of his further retention in office is to be made at the agricultural fairs to be held during the present month."—This announcement will disgust, though it will not surprise, all who had any hope that the Department under its present inefficient head would be of any benefit to Agriculture. Mr. Grinnell as chief clerk was one of a few connected with the "thing," who saved it from being utterly ridiculous and contemptible, and what good came of it, was mainly done by him in spite of the "chief." We wish that the President could be induced for a while to stop hearing speeches from, and making speeches to, repentant rebels, and give loyal men a hearing. He would find close at home matters that need a deal of reconstructing. When Congress meets, we hope to see a committee appointed to investigate matters, and have them inquire of what use are the propagating gardens, except to Senators, and why an "experimental garden" is needed to furnish tomatoes and cabbages to the kitchen of the White House. They might also inquire how many subordinates are on the sick list from being kept in unhealthy apartments, and how many assistants are kept, notwithstanding those they were appointed to "assist," protested that they were utterly incapable. Let us have a general house cleaning, or shut up altogether, or, as turtles will live without a head, decapitate, and let the boys run the shop.

Secretaries of Agricultural Societies.—Will you please remember that if you put the name of your State on your show bills and premium lists, it will aid materially in letting people know whereabouts in the United States your fair is to be held. You may know perfectly well in what State your County is, but those at a distance are quite puzzled to know which among the many Washingtons, Jacksons, Hamiltons and other Counties yours is. A friend recently wrote that he expected to see us at the Rhode Island Fair, which was the first intimation we had that there was to be a fair in that State. Our friends in little Rhoy can get up a good fair when they try—but they ought to let the rest of the world know about it.

Agricultural Colleges in the South.—The Agricultural College Land Act, passed in 1862, contained the provision that all the States that wished to avail themselves of its benefits should do so within two years after its passage. There were good reasons why the Southern States could not accept and locate the land within these two years, and now that the obstacles no longer exist, the friends of agriculture at the South are looking about to see what can be done. We do not see that they can be helped, except by act of Congress, and we hope that at the proper time Congress will pass such an act, as will enable the Southern States to enjoy the benefits of the grant in common with the Northern States. Let friends of agriculture in Congress bear this in mind.

Professor Tucker—An Agricultural Editor Appreciated.—A great many of the readers of the *Agriculturist* will be gratified to learn, that which has given the fraternity of agricultural editors much pleasure, namely: that Luther H. Tucker, Esq., of the Country Gentleman, has been appointed to the Chair of Agriculture at the Rutgers College, New Brunswick, N. J., and will enter upon his duties the approaching winter.

A New Humbug.—It is gratifying, in one sense, to receive a new humbug, as so many of the old lottery schemes have accumulated that we shall be obliged to sell them for paper stock. This new Manifestation is called the Prophylactical Star, and is a vile sheet. While it condemns some vices, it panders to others, and has the editor's quack medicine as the basis of the whole. How any sensible man can be taken in by such nonsense is past our comprehension.

How many Inches in a Bushel.—The standard bushel of the United States contains 2150.4 cubic inches. The "Imperial bushel" is about 68 cubic inches larger, being 2218.192 cubic inches. Any box or measure, the contents of which are equal to 2150.4 cubic inches, will hold a bushel of grain. In measuring fruit, vegetables, coal and other similar substances, one fifth must be added. In other words, a peck-measure 5 times even full, make one bushel. The usual practice is "to heap the measure." In order to get on the fifth peck, measures must be heaped as long as what is to be measured will lie on.

A Fruit House in Detroit.—We learn that a fruit preserving house has been erected in Detroit. We have heard nothing of late of those it was proposed to build in New York.

New York Live Stock Markets.

BEEF CATTLE have averaged 5,663 head per week, of rather poor grades, until the last two markets. The latest prices stand: good to extra, 16½¢@18¢ per lb. estimated dressed weight; common to medium, 13½¢@15½¢; poor to ordinary, 9¢@12¢. . . **MILK COWS** have come in pretty freely, 129 per week. Prices are little changed, the best bringing \$85@100; and other grades, \$35@57.5. . . **VEAL CALVES** have been in higher supply, 1,567 per week. Prices for very good, 12¢@13¢ per lb., live weight; others, according to quality, 8½¢@11½¢. . . **SHEEP AND LAMBS** arrived very freely at first, and have averaged 21,332 per week. Prices range at 6½¢@7½¢ per lb., live weight; a few extras at 8¢@8½¢. Just now spring lambs sell at \$4.25@56 each. . . **LIVE HOOS** in just fair supply, now sell at 12¢@13½¢ per lb., live weight.

We invite Attention to the large and valuable List of Premiums, on page 300. Though the cost of paper, labor, etc., continues almost at the highest point yet reached, the liberal advertising enables the Publishers to set aside a considerable fund to distribute in Premiums. We are determined to make this Journal unsurpassed and unsurpassable, in the amount of useful and reliable information it shall give, and of course desire to see its circulation extend to every household. And while our friends have done, and continue to do good service in making the paper still more widely known, we hope the Premiums will lead many to increased exertions. Almost every one can do something in this way, and thus obtain a desired Premium article, for though our list of subscribers embraces nearly a Hundred Thousand names, there are still for every one of them, forty or fifty others who would doubtless be the gainers by receiving and perusing the *Agriculturist* regularly. It will be noticed also, that all new subscribers this month, receive a *bonus* of two months free.

Honey Humbug.—"Julia," Norwich, O. Man cannot make honey; no recipe for Virgin honey, or any other kind is any thing but a fraud; the article made is a fraud; and the man who sells such a thing is a cheat. His "copy-right," if he has one, covers the printed matter which contains the instructions, etc., so that no one else can use the same printed title or matter.

Don't Buy Cotton Goods Now.

Not if it can possibly be avoided. People have been economizing for a long time in the purchase and use of cotton fabrics, on account of the scarcity and high price, but it is expedient to pinch along a few weeks or months more. These fabrics must fall in price ere long, and this will be hastened by a general abstinence from purchasing. The truth is, that with the present abundance and current price of cotton in the bale, manufacturers can make good profits, and yet furnish cotton goods for little more than half the prices they now receive. They are able to keep up prices because the demand is in excess of the immediate supply. A few heavy dealers are aiding the speculation. Let people generally cease to purchase, except in small and absolutely essential quantities, and the supply will soon over-reach the demand, and the speculators will be obliged to come down to fair and honest rates.

Wine Making.

The best response we can make to inquiries upon this subject, is to give the process of Dr. J. B. Mottier of Cincinnati, Ohio, one of the most experienced and successful of American Wine Makers: "In order to make good wine, it is necessary to have a good cellar, clean casks, press, etc. First of all, have your grapes well ripened; gather them in dry weather, and pick out carefully all the unripe berries, and all the dried and damaged ones; then mash and grind them with a mill, if you have a proper mill for the purpose. Be careful not to set your mill so close as to mash the seed, for they will give a bad taste to the wine. If you wish to have wine of a rose color, let the grapes remain in a large tub a few hours, before pressing. The longer time you leave the grapes without pressing, after they are mashed, the more color the wine will have. For pressing the grapes, any press will answer, provided it is kept clean and sweet. After you have collected the must in a clean tub from the press, have it transferred into the cask in the cellar. Fill the cask within ten inches of the bung; then place one end of a siphon, made for that purpose, in the bung, and fix it air tight; the other end must be placed in a bucket containing cold water. The gas then passes off from the cask without the air coming in contact with the wine, which would destroy that fine grape flavor, which makes our Catawba so celebrated. When properly made, the must will undergo fermentation. Keep the end of the siphon that is in the water full four inches deep, so as to exclude air from the wine. When it has fermented, which will be in fifteen days, fill the cask with the same kind of wine, and bung it loosely for one week; then make it

tight. Nothing more is needed till it is clear, which if all is right, will be in January or February next. Then, if perfectly clear, rack it off into another cask, and bung it up tightly till wanted. If the wine remains in the cask till fall—about November—it will improve by racking again. Be sure to always have sweet, clean casks. Do not burn too much brimstone in the cask. I have seen much wine injured by excessive use of brimstone—generally by new beginners. For my part I make little use of it. You can make different qualities of wine with the same grape, by separating the different runs of the same pressing. The first run is the finest, if you want to make use of it the first season; but it will not keep long without losing its fine qualities. To make good, sound wine, that will improve by age, the plan is to mix all up together. The very last run will make it rough, but it will have better body and better flavor when two or three years old, and will improve for a number of years. The first run will not be good after two or three years. I have fully tested the different ways of making and keeping wine these last twenty-five years."

How to Make Good Cider.—Good, sound, and ripe apples, washed clean, are the first and indispensable requisite. Speckled and wormy apples, and those dropped from the trees before they are half ripe, and have become tough and insipid, or bitter, can never make good cider. Indeed, a few apples of this description in a bushel of good ones, will materially injure the good flavor of all the cider. Grind the apples to a fine pulp, without crushing the seed, which will impart a bitter taste to the cider. The pomace should be kept in a large vat or tub, for at least twenty-four hours before the juice is expressed. If the weather is so cool that fermentation will not start, it will be better to allow the pomace to remain four or five days. If the pomace is pressed soon after the apples are ground, the juice will often be very insipid and light colored, and always destitute of that excellent flavor and rich color which good cider possesses, when the pomace has lain a few days. In the usual way of fermenting, the cider after becoming perfect, soon becomes hard and contains more or less vinegar. This can be avoided by taking the same care with cider as with wine. Procure a tin, glass, or india-rubber tube, and fit it closely in a hole bored through a bung, which perfectly fits the barrel. The bung being placed in the bung hole, the other end of the tube is placed below the surface of water contained in a cup or other convenient vessel. If all is tight, the gas liberated in fermentation will pass through the tube, and bubble up through the water, but no air can enter the barrel as long as the end of the tube is covered by the water. When bubbles cease to appear, the fermentation is complete, and the cider may then be racked off into clean barrels and bunged tight. The fermentation should go on slowly in a cool cellar.

About our Advertisements.—How far Endorsed.—Frequent explanations are required by new readers and new advertisers. Our general rule is, to exclude all parties whom we would not ourselves patronize if we chanced to want the things they advertise, and at the prices asked. Good references are required from advertisers unknown to the editors, personally, or by their general reputation. If frequent complaints are received concerning parties we supposed to be reliable, we quietly refuse their advertisements thereafter, preferring to err on the right side where our readers are concerned. We do not undertake to always judge for our readers, but aim to shut out from the advertising as well as the reading columns everything deceptive. Hence we exclude humbugs, patent medicines, and secret remedies even for animals, except in special cases where the composition is fully explained to us, and approved. The above rules exclude one-half to three-fourths of the best paying advertisements offered to us. We do not, however, endorse every thing advertised. Thus, for example, several well-known journals, of widely different character, advertise in these columns, as the *Tribune*, *Times*, *Herald*, etc. To exclude one and admit another, would be an expression of political opinion, wholly out of place in this journal. No one is in the dark in regard to such papers. This rule also applies to various farm and household implements, fertilizers, etc. The first question concerning any advertisement is, whether the advertiser will do what he promises; and second, is it of a deceptive character? Good advertisers always like to know how large a circle of wide-awake enterprising readers they meet in this journal; hence we request every one ordering or sending for circulars, etc., to always state where an advertisement was seen.

The Illinois State Fair, held at Chicago, Sept. 5th to 9th, was remarkable for the fine show of implements. In this, probably, it was never surpassed by any fair in this country. The show of cattle

and sheep is also represented as exceedingly fine. Most unfortunately, threatening rain one day, and a drenching Northeaster the next, made an end to comfort and profits.

The New England Agricultural

Fair was held at Concord, N. H., the first week in September. The weather was fine, and the attendance consequently good. The show was very superior in cattle, horses, and sheep. The newspaper reports give the horse interest great prominence, but this department was no better sustained than the others we have named. Short Horns and Alderneys were present in good numbers, and of great excellence. Ayrshires were shown in fair numbers and of great excellence, but the show of Devons, though good, seem to indicate that the popularity of this excellent and beautiful breed is on the wane a little. New England must not neglect her Devon stock, or she will lose the fame of her red cattle, both for working oxen and for beef. Besides these, the fine Dutch cattle of Mr. Chenery, and the Kerrys of several breeders, excited deserved interest. Sheep were represented in great variety, and of good quality, and the various classes of fruits, flowers, vegetables, and farm produce were well sustained. Discussions were held in the evenings at the City Hall, presided over by Dr. Loring, the President.

The New England Wool Growers'

Association, held a meeting at Concord, N. H., at the time of the New England Fair, and propose to have a grand shearing festival next spring.

New York State Agricultural Fair.

The Great Fair of the New-York State Agricultural Society was held near Utica, the second week in September. The whole management was commendable so far as we observed, the grounds being large, dry, and well arranged, the buildings and tents commodious, and every thing was conducted with dignity, system and promptness. If in this the society is running in the ruts of old usage, we hope she may never run out of them.

The show was on the whole one of great excellence, the principal features being: an unusually full and good exhibition of horses, in their various classes; the show of sheep, including many Merinos from Vermont; the Dairy department, especially the great show of Factory-made cheese, and the magnificent display of Farm Implements of all kinds. The show of neat cattle was only moderate; that of swine good in breeds of large size; that of fruits and flowers excellent in many particulars, but not equal to that of last year. In vegetables, and garden, and farm produce, we were disappointed. In farm hardware and small tools, there was a very superior and instructive display. The show of cheese dairy furniture was a very prominent feature, and the various exhibitors competed closely in the excellence of their wares—vats, heaters, curd-straining tables, milk weighing vessels, cheese hoops, boxes, etc. We have only room for a very general report of the Fair now, but shall take early occasion to discuss the various improvements in machinery, etc., in the *Agriculturist*. During three evenings of the fair, discussions were held in the Common Council Chamber. The first evening, the subject was: Ought pastures for dairy purposes to be kept permanently in grass, or occasionally taken up and cultivated with other crops? Mr. X. A. Willard, Agricultural editor of the Utica Herald, opened the discussion favoring permanent pastures, and it was continued with much interest. On the second evening, the discussion, which was opened by Mr. J. Stanton Gould, was upon the best time for cutting grass, and the best method of making hay. The third evening's discussion was upon the cultivation of tobacco, and was a plea in favor of the crop, showing the great profits attending its cultivation, etc., and seemed based upon views which the past dozen years and an increasing knowledge of the principles of good cultivation have exploded, in the Connecticut River Valley, where the best "seed leaf" is raised. These discussions would have been much more largely attended had they been held in a room which was not close and crowded, and poorly supplied with seats. They are a valuable feature, and ought to be well sustained. The annual address was delivered by Hon. Glenn W. Scofield, of Pennsylvania, a rambling discourse on agricultural knowledge, progress, education, government aids, etc., concluding with a grand tilt against the study of Latin and Greek. Mr. S. wants to have one professor of agriculture attached to each college in the country, and says "to make room for these additional studies, the Latin and Greek languages must be dropped." True scholarship is being better and better appreciated every year in this country, and the absurdity of this proposition, considering the great interest in agricultural colleges, and the general correct views in regard to education, liberal, professional, scientific and technical, which prevail, is only matched by its boldness.



Fig. 1.—METHOD OF STAYING A LADDER.

Fruit Picking, and Fruit Pickers.

The choicest specimens of pears and apples often grow on the ends of long, slender branches, which will not support a ladder, nor a man while plucking the fruit. When long ladders are leaned against the outsides of trees, many of the small limbs and fruit-buds are broken off. Sometimes pear trees grow so tall that the

limbs are not strong enough to bear a small boy in the tree, nor on a ladder resting against it, unless it is supported with guy ropes. An orchard ladder should have its lower ends shod with iron, in the form of a wedge, to enter the ground readily, and to hold the lower end when putting it up and down. (See fig. 2.) Set the ladder nearly perpendicular, and stay it with two guy ropes from the top of the ladder fastened to trees, or stakes, or fences, as shown in fig. 1. The ropes



Fig. 2.—FOOT OF LADDER.

need not be larger than a common clothes line. A man can ascend to the very top of a long ladder secured in this way, and pluck half a bushel or more of fruit with entire safety. A large bag suspended on one shoulder, and under the arm on the opposite side, is much more convenient than a basket, as there is no danger of letting the fruit drop, as with a basket; and both hands are always free, whether the picker be in the

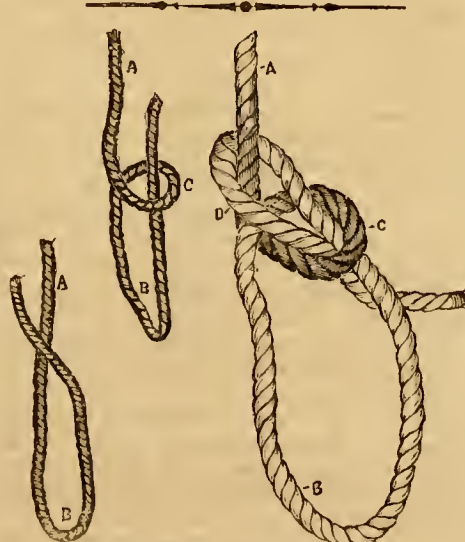


Fig. 3.—FRUIT PICKER.

tree or on a ladder. If fruit be borne upon long, slender branches, by drawing the ends inward

or downward, as represented in the illustration, all may be reached for several feet on each side of the ladder. A fruit-picker having a handle 4 or 5 feet long, will sometimes be found convenient for taking that which can not be reached otherwise. The number of styles of fruit pickers is great, and much ingenuity has been expended on more or less complicated contrivances. With this as with most other implements, the simplest is the best. We give a figure of one (fig. 3) which can be easily made, and which will accomplish the purpose as well as those which have a great deal of machinery about them. A stiff wire is bent in the form here shown, to which a bag is attached, and the whole is fastened to a handle, which may have a hook near the picker or on the other end. In bending the wire, the lip or projection to the ring should be made so narrow that a small apple

can not slip through. A similar lip is formed by the manner in which the ends of the wire are fastened, one on each side of the handle. With this picker, the ring is put over the apple, and by drawing or pushing the stem passes into one of the lips and the fruit falls into the bag.

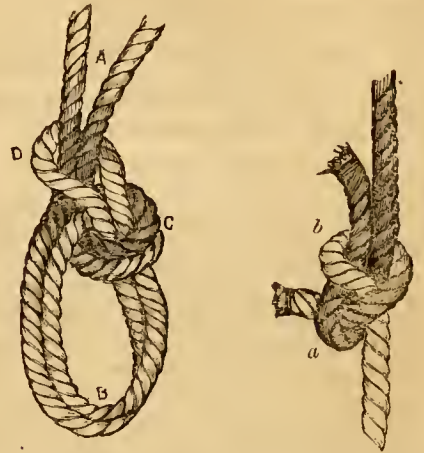


Figs. 1, 2, 3.—BOWLINE KNOT.

The Bowline Knot, Farmers Knot, etc.

One of the first things a boy learns when he goes to sea, is to tie a bowline (pronounced "bolin,") for it is the knot in most constant use, and to tie it quickly is very important. This knot will bear all the strain which can be put upon the rope, and never "jam"—that is, become so tight that it cannot be easily loosened—in fact just as easily and quickly as it can be tied. A loop in a rope is called a "bight," and the part which is fast, or not used in tying the knot, is the "standing part." To make a bow-

line knot, take the end of the rope in the right hand and lay it upon the standing part (A), which is held in the left, as shown in fig. 1;



4.—DOUBLE BOWLINE KNOT. 5.—FARMER'S KNOT.

then turn the end under A, and up through the bight (B), which, the end-part remaining straight, will cause the standing part to make a bight (C) around it, as in fig. 2. Then pass the end under the standing part, and, following its own part, back through the bight C; leave it loose, as in fig. 3. This knot is of use often where a rope is to be made fast to a post, or to another rope, or where two ropes are to be tied together temporarily, especially if they are of different sizes, a bowline knot being tied in each rope, (the bights (B) passing each through the other). A *Running Bowline* is one which is tied around the standing part of the rope, and so a slip-noose is formed. A bowline may also be tied with the *bight of a rope*, (fig. 4); that is, in the slack of a rope not using either end. The bight is taken in the hand, like the end, as above described; it is laid over the standing parts (doubled), the bights B and C are formed in the same way as with the single rope, the end being passed up through C. Now this end, which is a bight or loop, is opened and passed around the knot, so as to lie (single) under the standing parts, just like the end bight D, which is shown in fig. 3.

THE FARMER'S KNOT (fig. 5).—This is a capital knot for tying two ropes together when one

can use only very short ends, or for fastening two straps together, or a strap to a rope, or either to a chain. Two bights or loops are made, one (a) is passed through the other (b); then the end of the outer bight is put through the inner one, and all drawn tight. The end of the inner bight should come against the standing part of the outer bight and be jammed by it; thus the knot will never slip and will not jam very hard. Solon Robinson calls this the "farmer's knot," and as we do not find it described in among the seamen's knots in Mr. Fig. 6.—HALF HITCH BLUNT'S "Sheet Anchor," SEIZED FOR EYE.



the farmers may as well lay claim to the name.

A Half-Hitch, seized to make an Eye. When an eye [see page 276 (September), fig. 2] is wanted temporarily in the end of a rope, pass the end once around the standing part, and

through the bight (which makes a "half-hitch,") and then "seize," as shown in the figure. This is done by binding the end securely to the standing part by rope yarn, or a stout cord. When a strain is put upon such an eye, it comes almost altogether upon the hitch and not upon the "seizing." In case the rope is to be subjected to very heavy and continuous strains, it is well to make two half-hitches instead of one.

How to Make a Good Barnyard.

Several things are essential to render a barnyard a good one. It must be so constructed that water from any source will not accumulate in it. It must not be uncomfortably wet or disagreeably muddy for stock. The surface must also be firm, so that coarse manure will not be pressed down into the soft earth, and thus make hard pitching. These are the main requisites.

Now, the first thing is to provide for carrying off the surplus water that will be liable to find its way among the manure. Cut a good ditch entirely around the yard, not less than 30 inches deep, and fill it with tiles if they can be obtained, or with plank, as illustrated on another page. Stones will be just as good to drain the soil and carry off the water; but the drains are more liable to be filled up by rats. This drain will keep the ground dry on each side of it, and will not carry off the liquid manure. Conduct all the water by eave-troughs from the roof of the barn and sheds into this underdrain.

The next step is to grade the yard, either by hauling earth away, leveling off the knolls, or by drawing in compact earth to fill up the depressions. The surface of the yard should always descend gradually from the barn and sheds. There ought also to be buildings, or cheap sheds on every side of the yard. Excavate at the lowest part so that liquid from all parts of the yard will descend to that place, and there sink a sugar hogshead, and cover it with plank, so that nothing can fall into it. Then, set a cheap pump (see page 213, July *Agriculturist*), in this hogshead, pump up the liquid, and send it in board or bark troughs among the solid manure in any part of the yard. This will be a perfect security against its heating and becoming "fire-fanged."

The next job will be to pave the whole, or a portion of it. Stones of various sizes and forms may be used. Flat stones three or four feet square are objectionable, for heavy cattle are liable to slip on large stones so as to injure themselves. Were they to slip not more than two feet, there would be little danger of harm. Some parts may be paved with boulders of a certain size, and then those of another size may be used in another place. Large stones and small ones may be placed side by side, by excavating a little for the large ones, so that the surfaces of each will be of equal height. Stretch a line across the yard and lay the top of each row of stones even with the line. In this way there will be little or no difficulty in making the surface of the pavement even. When laying the stones, the workman needs a trowel to place sand, or fine gravel beneath thin or small stones, to raise them up to the line, and a rammer made of a billet of hard wood with an iron ring like that of a beetle on the bottom of it, to drive those stones that are too high, down even with the line.

After the paving is finished, spread sand, gravel, or finely-pulverized clay all over the pavement and work it into the interstices. This will make a barnyard that every good farmer will

be proud of. On many farms there are loose stones enough lying in the fields to pave several yards. Where stones are scarce, the surface may be covered with gravel or clay, or compact earth, instead of stones. Where timber is cheap, a yard can be paved with wood, by sawing off logs, five or six inches long, with a drag saw, and placing them on the end. This would make a pavement that could not fail to please the most incorrigible faultfinder or grumbler. Hemlock, pine, oak of all kinds, and many other kinds of wood sawed into paving blocks and well tarred on the lower ends with coal tar, would last many years, always making a very smooth and agreeable surface to work on, and not slippery for animals. It would also hold liquid manure well.

How to Increase the Manure Pile.

The soil unmanured, will often produce good crops for a year, or two, or more, and then it demands rest, in order to recuperate, and gain soluble, ash ingredients enough for another series of crops. This period of rest it was early found might be much shortened by frequently stirring the soil by the plow and harrow; and moreover, it became known that the addition of certain substances to the soil, such as the dung of animals, the ashes of trees and plants, etc., not only operated in the same way, but entirely did away with the necessity of fallowing. Thus, long in advance of the philosophy which we now recognize as accounting for these facts, farmers knew what would restore lost fertility, and what course of treatment would keep up their land. Man, indeed, does nothing without some kind of a reason, and so in old times the farmers had a philosophy which answered as well for them as ours does for us, so long as it did not conflict with known facts. Now-a-days we have so many facts, and they are so well systematized, that our philosophy must be very nearly right in the main, though still there are many points upon which the Doctors disagree.

Manures supply to the soil what the plants require as food, and that which other crops may have removed. They also cause chemical action to take place, by means of which plant-food, in the soil but not available to the plant, becomes soluble, or otherwise available. Besides, they produce other desirable effects, such as making the soil more friable, porous, absorbent of moisture, and more tenacious, or less so, etc. Good tillage without manure may produce several of these effects, especially in conjunction with the action of the air, rains, sunshine, frosts, etc., and it always greatly assists the action of manure.

In all civilized countries in which the soil has been long enough under cultivation to show a decline in fertility, manure is valued for all the reasons just enumerated. The questions of "Inquirer," of Barrysburg, Pa., whose letter we quote, are to the point. He says:

"I am anxious to know in what way to increase my manure heap. I have only some 30 acres of land, and am working every foot of it. Of straw, I have not even enough to bed my stock with. I keep five horses, two cows, and generally feed two oxen through the winter. My manure heap is nearly always smoking, being so hot, and turns gray, or looks mouldy inside. How shall I proceed to prevent it, and what shall I do for materials? Spent tan-bark I can get three miles off; sawdust none about here; I can get but a very small quantity of leaves, and for these I have to pay very high; muck I have none on my land, and have noth-

ing indeed, but gravelly soil. Will some one please give me advice as to what I am to do?"

It is now autumn, and our friend will not do well to collect much, if any, vegetable matter which can contain weed seeds in any considerable quantity. Still it is probable that a good deal of such things, potato tops, swamp grass, rushes, reeds, bogs, etc., may be obtained. His soil is gravelly; were it not for this, we would recommend him to use good loamy, or even sandy soil, for bedding for his stock. Nothing is better to bed cattle, or horses upon, than about a barrowful of soft loam, free from stones and sticks, covered with a very slight spreading of straw or other litter. The litter may be renewed daily and raked off, with the dung and the soil as often as it becomes saturated with urine, or otherwise defiled or wasted—say once a week for cows, and twice for all male animals. This will not only increase the bulk of the manure heap, and check the fire-fanging, but it will greatly improve its quality, really more than our philosophy with present data can account for. If it is possible for Inquirer to get such soil, we say by all means use it; if not, let him go out into the highways and hedges, and trim off the sods, pare off the turf, clean out the roadside ditches, pools, etc., and cart it all in to swell the manure heap. The best way to use it is, having it dry, to mingle it daily with the manure in the stall; if this cannot be done, then make the mixture when the stables are cleaned out, using uniform quantities daily in proportion to the amount of manure made. As for the heap, mouldy, heated, and fire-fanged, as it is described, the only thing to do with that is to work it all over, repiling it with uniform square sides and a flat top. It should be supported on rails, or any other contrivance for good drainage, so that water may be pumped over it and run through into a sunk hogshead, or tank of some kind. When piling up such a heap, mix in soil, muck, straw, or something of the kind, and tread it down hard on the edges, that they may not dry so much as otherwise.

Collecting and Grinding Bones.

Thousands of tons of bones are collected every year in Chicago, Buffalo, and other large cities, and forwarded to New York, and other seaports where the hardest ones are picked out to be cut into buttons, knife handles, etc., and the rest are ground and exported to Europe, to increase the productiveness of foreign soils, so that they will raise more grain and not need to buy ours. Why not apply the bones to our soil and sell them the corn? If it will pay to transport bones from our Western cities to Europe, surely those farmers near such places can make it profitable to collect, grind, and apply them to their soils, as they have no freight to pay.

Formerly the expense of dissolving bones or grinding them was so great as to deter most farmers from attempting to make any use of them as a fertilizer. But as they can now be reduced to dust at a trifling expense, every farmer should be careful to save bones and grind them, for keeping his soil in a good state of fertility. Those bones that have not been much boiled are more valuable than those which have been boiled for a long time to extract all the grease. The large bones and joints are full of marrowy, nitrogenous matter, which is valuable to apply to the soil. If therefore, farmers will grind bones themselves, or have them ground, they will be sure of a much better article of manure than can generally be obtained in market.

There are many excellent bone mills now distributed through the country for grinding grain. There is the Joice's Starr Mill, the Young Giant, and the new style of bark mill, all of which will grind bones with one horse, quite fast. We know of one farmer who has collected over 30 tons of bones and ground them with one of the Joice's Starr Mills. We have used the same kind of mill, filling the hopper with the largest bones and skulls that could be found, and they were ground rapidly and most satisfactorily.

As shin and thigh bones are full of marrow, we adjust the mill to let them through very coarse. As they come through, the large hard pieces are picked out by hand and put through the second time, and ground as fine as desirable. If the mill is adjusted to grind fine before the marrow is separated from the hard parts of the bone, the mill is liable to clog.

The mills alluded to will grind bones about as small as kernels of oats. Of course, the effect of such coarse "bone dust" will not be so apparent the first year, as if it were finer. But the fertilizing matter will be in the soil, and will promote the growth of crops for several successive seasons. There are many of the old-fashioned bark mills now in use, that will grind bones pretty well. This work might be performed in the winter, when the grinding would cost comparatively little. Our practice has been to mingle about five bushels of ground bone with the same quantity of dry muck or mould, and two bushels of gypsum. This makes a rich and most excellent top dressing.

How to Dig Potatoes.

When potatoes grow several inches below the surface of a heavy soil, digging them with a hoe, or potato hook is fatiguing labor. It is more laborious to dig with hoes than with hooks; and more than this, the edge of a hoe will wound potatoes more than a hook. We have dug with hoes, hooks, spading forks, spades and shovels, and for digging in heavy soil, we like a good fork better than anything else, particularly when the potatoes are unusually deep. The sharp corners of the tines both of forks and hooks should be filed off smooth, so that they will not break the skin of potatoes. When digging with a fork, thrust the tines into the ground perpendicularly, as close to the hill as may be, and be outside of all the potatoes. Now grasp all the tops with one hand, and pull gently upwards, as the other pries out the potatoes, tops and all. If they are not spread out much in the hill, nearly every one will come to the surface at the first thrust of the fork, when they may be shaken from the vines between two rows. A good spade, carefully handled, is almost equal to a fork for digging.

When digging with a hook, press the tines their entire length into the ground close to the hill, and with one motion, draw out the whole hill, and then remove the tops, which should never be removed until the potatoes are lifted, as the long roots often bring out a large potato that would otherwise not have been found. When digging with hoes, instead of striking the blade directly in the top of a hill, as many do, haul off the dirt gently until the potatoes are almost laid bare; then bury the blade of the hoe its whole length into the soil and draw them all out at once. When digging with hoes, it is better to pull the tops first.

The most expeditious and easiest way is to do most of the digging with a plow. Let the team travel astride of a row, and run a *large* plow

just deep enough to turn out the lowest tubers. The plow must not be run *through* the hills, but at one side as closely as possible and not leave any potatoes. By plowing around a land, 10 or 12 rows wide, there will be little danger of covering them with dirt after they have been plowed out. After a row has been thrown out with a plow, a man will haul them out with a potato hook very fast.

Exterminating Charlock, or Field Mustard.

(*Sinapis arvensis*.)

We know of no weed in the grain-growing districts of New York, that is so difficult to exterminate as this. Canada thistles, daisies and dock, can be eradicated with facility, compared with this. Field mustard is an annual plant, having leaves like the turnip, and bright yellow flowers. It starts from the seed at any time between early spring and late autumn. The plants grow rapidly, and produce a large number of seeds in a short time. In ordinary seasons, two crops will mature on the same field, but winter kills every plant. The seeds will remain in the ground a life time, without losing their vitality. We have cultivated a field sixteen successive seasons, allowing no mustard to go to seed; but deep plowing brought seed to the surface the seventeenth year, so that the ground was nearly covered with the young plants.

When wheat, rye, barley, oats, flax, and such crops are raised, if there is mustard seed in the soil, it will appear, and will ripen its seed before the crops. Much of the seed will shell out while the grain is being harvested. If it should not be covered with earth sufficiently deep to promote vegetation, it will remain until the next season, or until the moisture and heat happen to be just right to cause germination.

There are two things indispensably necessary to exterminate mustard. One is to allow no seed to mature; and the other is to cultivate such crops as will induce all the seed to vegetate, that the plants may be destroyed before they go to seed. Grain having mustard seed among it, should never be fed to stock until after it is ground into meal.

When mustard comes up very thick, harrow the ground thoroughly, as soon as the crop of grain has been removed. After a few weeks have elapsed, harrow it again. This will destroy most of the young plants in the seed bed. After this, use a cultivator instead of a harrow. These repeated scarifyings will cover the seed and bring others near the surface so that a large proportion will vegetate and die before winter. The next season harrow the ground early in the spring so as to start a new crop of the seed. Plow it soon after the time for planting Indian corn. Harrow again in about two weeks. After another fortnight, plow and sow buckwheat. As soon as the buckwheat is harvested harrow the ground again. The next season manure well, and raise a hoed crop; and allow no mustard to go to seed. Next sow a crop of winter grain. The mustard may now appear quite thick. But none of it will have time to ripen before winter, when every plant will die. A limited number of plants will appear the next season among the standing grain. When they are in full blossom, let every one be pulled. A careful, faithful man will be able to pull all the mustard in a day that will appear on several acres, after the soil has been treated in the manner recommended. After this any kind of grain may be raised. But for more than twenty years, mustard will come up every season, and

must be pulled up before it ripens. This is the only way that our cultivable fields can be rid of this pestiferous plant. Incessant vigilance from year to year will exterminate it effectually.

Breaking Down and Cutting Broom Corn.

Abram Stokes, of Ulster Co., N. Y., communicates his way of breaking down and gathering broom corn, and manner of threshing the seed. He writes: "I never break any brush down that does not lop all the wisps one way. I think it is best to break the stalks of the crooked brush between the second or third joints from the top as short as it can be without breaking it off. The rest I leave standing till a few days before it is fit to cut. Then I break the stalks toward the rising sun so that the dew will dry off in the morning. When cutting the brush, I take the stalk in the left hand close to the brush, and cut it off with a butcher's knife that is not very sharp. A knife with a keen edge will cut the leaf off, which bothers. I take all the leaves off the stalk, holding the brush in my hand till I have a handful, laying the brush of three or four rows between two rows in gavels, ready to put on a wagon to go to the drying shed.

"Brush will not grow in length after it is broken down; yet it will become coarser and continue to ripen if it is not broken entirely off. Every time the brush is handled, keep it as straight as you can conveniently, as it is a slow job to straighten it when it is tangled like hay. The stalks of each brush should be not less than four, nor more than six inches long, as six inches is the most convenient length when making brooms. If the stalks are much longer, they only increase the bulk of broom corn, and often require extra labor to cut them of convenient length before they are worked up."

HOW TO THRESH BROOM CORN.

"To thresh with a flail, lay the brush in a row on the barn floor two or three stalks deep, and place a plank on the stalks, with one edge even with the lower end of the brush. Stand on the plank while using the flail. The object of the plank is to protect the stalks from being crushed, as mashing spoils them for brooms.

"Another way of removing the seed is with a broom corn hatchel, or comb, the teeth of which are made of iron $\frac{3}{4}$ by $\frac{1}{2}$ square, and about 3 inches long. Six inches of one end should be drawn to a point. About 2 inches of the lower end should be left full size. The points should be beveled on both sides, leaving the back side the widest. The points of the teeth should be about $\frac{1}{2}$ an inch apart. The teeth are fastened on the back side of the end of a plank 2 feet 2 inches high, and one foot wide, with two bolts and a cross piece (or they may be set firmly in holes in the end of the plank). This upright plank is then spiked to another plank resting flatly on the floor. The broom corn brush is drawn through these teeth, which strips off the seed.—Another way is to thresh the corn with a cylinder driven by horse or other power. A cylinder for such a purpose should be about 2 feet long, 10 inches in diameter, driven by a pulley 6 $\frac{1}{2}$ inches in diameter. The spikes should be 3 inches long, and $\frac{1}{4}$ inch in diameter, driven 1 inch into the wood. Make marks around the cylinder $\frac{3}{4}$ of an inch apart, and set the spikes in seven different rows lengthwise of the cylinder, so that a wisp may pass between two teeth. The teeth should be bearded so that they will not fly out. The cylinder is overshot with a concave. Two men hold the handfals, and two others prepare them for threshing."

Oxen Profitable Teams.

Late in the autumn of 1864, a good farmer of our acquaintance, purchased a yoke of ordinary cattle for two hundred dollars, and used them for hauling wood, rails, and any thing else, and for doing most of the plowing for spring crops on a farm of seventy acres. In June, he sold them for beef for two hundred and sixty dollars. He thinks their labor paid well for the meal they consumed. On the same day that he drove these oxen to market, he purchased another yoke for one hundred and ninety dollars. After a few months he sold these for beef at an advance, which also paid well for the meal fed to them, and purchased another yoke at once, and commenced feeding them with meal, working them occasionally. By this system of trafficking, he made three hundred dollars in about one year, and had a good ox team constantly, receiving a good price for all grain fed them, besides making a large quantity of excellent manure. He is a good manager, always feeds his teams well, treats them kindly, and never allows them to be over-worked, or worried by disagreeable drivers, who use up more of the energies of a team by bawling at, and whipping them, than by the labor got out of them. He never purchases poor oxen, even at a cheap rate, as it requires many dollars worth of meal to get them into a fattening condition.

The Habit of the Wheat Plant.

When a kernel of wheat germinates, it remains where it is deposited in the soil, sending out a system of primary roots, fig. 1, and producing a stem. If the kernel is buried 5 or 6 inches deep, the stem and leaves will be quite slender, and the leaves will not attain that rank

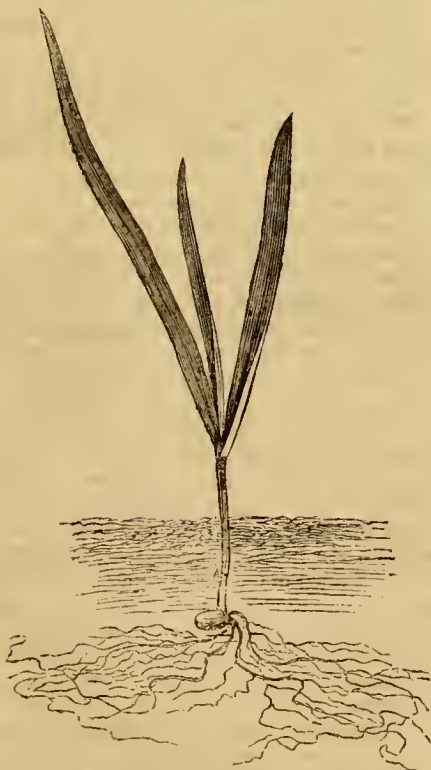


Fig. 1.—YOUNG WHEAT PLANT.

and luxuriant growth that is seen when the seed is planted from one to two inches beneath the surface. The substance which composes the kernel is transformed into the primary roots and stem. If the kernel is small, and is buried deeply, there is sometimes not enough nourishment



Fig. 2.—YOUNG WHEAT PLANT.

in it to form a stem to reach the surface of the ground. When this is the case, both roots and stem cease to grow and die before "coming up." It began to live; but, before the leaves (its lungs) were produced, it died. Sometimes there is substance enough to form the stem and a set of large leaves, before the roots begin to draw nourishment from the soil; and there are instances, in which the plant grows but little, for a long time after it has come up. This shows that it was buried too deeply.

When wheat is covered half an inch or more deep, there will be a joint of the stem just below the surface of the ground, fig. 1, a, at which point secondary roots start out on every side. But these do not make much growth the first season, unless the grain is put in early in autumn. When the seed is sowed late, there will be but few plants having more than the primary roots, as shown in fig. 1. The next season, however, all those plants, the primary roots of which are an inch or more below the surface of the ground, send out a new system of secondary roots at the joint, a, fig. 1. These all spread out horizontally, while the primary roots strike downward as far as the soil has been pulverized; and where the subsoil is not compact, the roots frequently grow from one to four feet below the stratum of soil moved by the plow. We have in mind instances where the primary roots have been traced six feet below the surface of the soil.

Figure 2, is an exact representation, as to size of stem (bent to save room), roots and leaves, of a wheat plant produced in our office from a kernel planted just 6 inches deep. In five days the first leaf appeared. In two days more, the leaves were developed as here represented. The joint at a, fig. 1, insures the formation of a system of secondary roots, the office of which is to take up nourishment for the growth and fructification of the plant. At this point also the tillering of the plant takes place, and not where the primary roots unite with the stem at the base.

This subject has a direct relation to deep and shallow seeding. The plant here illustrated is the only one among eight good kernels sowed

six inches deep, that reached the surface, and developed leaves. Most of the other kernels germinated, and sent a stem almost to the surface, but there stopped growing, and at length decayed. There was evidently not enough nutriment in the kernels to form stems to reach to the surface. We lately planted 40 kernels of good wheat, in a very favorable place in the garden, from six to seven inches deep, and only one spear appeared above ground, and that merely developed its leaves like those of fig. 2, growing little or none for more than two weeks. A few other stems discontinued to grow before they reached the surface, while many others on examining the soil, could not be found at all.

Figure 1, represents another wheat plant from the seed buried one inch deep, which is much better than a depth of six inches, for reasons already given, as well as for the one following: When the grain is deposited from one to two inches deep, the primary roots, and the secondary roots springing from the joint a, fig. 1, are so near each other, that freezing and thawing of the soil is not so liable to injure the plants during a mild winter or late spring.

Our aim is, to show by the habit of the plant, how and why there is an advantage in putting in winter grain with a good drill, over sowing broadcast and harrowing the grain in. This subject is not only interesting, but is of great practical importance to cultivators, and should be carefully studied and thoroughly understood. See an article on the advantages of "Drilling in Wheat," p. 278, Sept. *Agriculturist*.

Making Drains with Plank.

Stones suitable for forming a channel for the water in the bottom of a ditch, are often scarce, or wanting entirely, and tiles cannot be always obtained within convenient distance, but planks are comparatively cheap and easily got almost everywhere. Where the subsoil is compact, planks may be used with the assurance that they will last in the drain for 30 or 40 years, and as long as they last, they will be fully equal to tile or stone. The writer has lifted plank drains on his own farm, the wood of which had not been prepared in any way, yet, after having lain 30 years, they were in effective condition.

The best way to use planks is, to saw them all of a certain length, and lay them crosswise



Fig. 1.—PLANK DRAIN.

of the ditch. When they are thus laid, planks of all widths may be used up very economically, and make a much stronger drain, than when they are placed lengthwise. Two men with a horse-saw will easily cut up a thousand feet of plank in 10-inch pieces in less than two hours. Planks should always be well seasoned before they are put under ground, as they will last much longer than if green, and if every piece were dipped in coal tar a few weeks previous to being laid in the ditch, they would, no doubt, last one hundred years. We know of some white-wood gas-pipe,

soaked in coal tar, which showed no signs of decay at all, after it had been in the ground 22 years. When laying dry planks in the ditch, leave them temporarily about one fourth of an inch apart; they will soon swell and touch.

If there is little danger that the earth will be washed away, excavate the bottom as represented in fig. 1, with offsets on each side, laying the planks on these shoulders or offsets. The writer has laid within the last 25 years hundreds of rods of plank drains, like fig. 1, with the channel 4 to 6 inches deep, the planks 10 inches long;

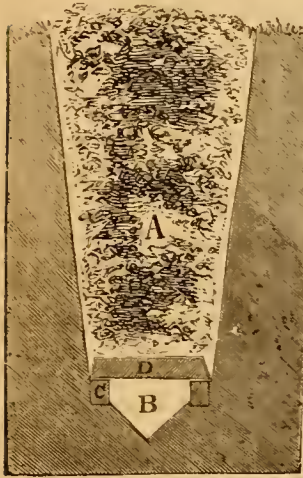


Fig. 2.—PLANK DRAIN.

and such drains give excellent satisfaction to this time. Some of them have carried for fifteen years a stream as large as a 3-inch pipe, without being obstructed in a single instance.

If the earth, where the draining is done, is so shaky and loose that the water might wash it away, it is not wise to use planks, unless the sides are protected with wood, as represented in fig. 2. After the ditch is dug, say ten inches wide on the bottom, the corners must be dressed out true, so that a scantling will lie solidly and squarely. The size of the side strips should be somewhat in proportion to the amount of water to flow in the channel. We have used strips $1\frac{1}{2} \times 2$ inches square, and 2×3 , 2×4 , and 2×6 . The bottom of the ditch should be pointed as shown in the figure, to give a current when there is but little water, and also to prevent it washing the earth from under the side pieces.

The planks should always be assorted previous to being laid. All the best ones should be placed by themselves towards the lower end of the drain. If there are any poor pieces, better burn them for fire wood, or lay them together at the upper end, or in short branches. One poor piece of plank will render a good drain useless, in a few years. If poor pieces be all kept together, when the ditch fails, they will all be decayed nearly alike. The same is true of good planks. Great care should be exercised in returning the first dirt into a ditch, lest some of the planks be displaced. Before using a plow or scraper to cover with, shovel in enough of the hard earth, to hold the planks in place. The earth that was thrown out last, should be returned first, especially if it is cold and unfertile. Every ditch should be filled heaping full, to keep surface water from washing open holes and filling the drain with earth.

Black Spanish Fowls.

We have before us the modest request of a young poultry fancier, that we would "print something about Black Spanish, Dorking, Brahmas, or any other varieties of fowls." We will.

The beautiful engraving, which we place in the next column, is the portrait of a Spanish cock, very near perfection. It is taken from Saunder's Domestic Poultry,—a good work recently published. A more beautiful bird can hardly be

imagined, one of prouder carriage, greater gallantry, or of more genuine dignity and nobility of mien. The true Castilian is of the real aristocracy of the poultry yard, and such a cock seems to feel his blood as thoroughly as a Grandee of Spain. The points which determine excellence are: 1st, purity and intensity of the blackness of the plumage, in both cocks and hens, heightened by a glossy and greenish iridescence. 2nd, the pure white face, which, including the ear-lobe, must extend distinctly from the beak, comb and wattles, back so as to surround the ear, which is that little depression on the side of the head filled with bristly hairs. 3d, the comb, large, single and perfectly erect in the cocks, and large but thin and lopping or drooping in the hens. These points, if found combined with well formed bodies, steel colored legs, and the lofty carriage, we have described, are sufficient guarantees of fine birds of the genuine Spanish breed.

They excel as layers, not being sitters. Their eggs are large, of most excellent quality, and of a most beautiful white color. The birds require warm quarters during our cold winters, and are often greatly disfigured by the freezing off of their combs. They will, no doubt, do better south than north of the latitude of New York



BLACK SPANISH COCK.

City. Still they are not very difficult to raise; they grow rapidly and mature early. The flesh is good, not quite equal to Dorkings, and they fatten easily. The chickens ought not to be hatched before about the first of June, or settled warm weather, as they do not bear cold and wet well, yet after they get a good start, they get their feathers early, and are considered no more difficult to rear than other varieties. Before young birds are in full plumage, some white feathers are often shown, and very old fowls frequently exhibit also the same peculiarity.

The great beauty and excellence of these fowls as layers will make them special favorites, so long as they are preserved pure. Though they improve the common Dunghills when crossed with them, their beauty is not perpetuated.



Look out for Glanders and Farcy now.

The attention of the whole community of horse owners ought to be especially directed to the terrible and insidious malady, which appears usually under two forms, bearing the names Glanders and Farcy. The former exhibits itself chiefly in the nasal cavities, while in the latter form it is seated in the lymphatic system, and appears in abscesses, swellings and ulcerations upon any part of the body, but chiefly upon the legs. The wicked sales by Government agents in the best horse markets all over the country, certainly in several of them, both at the East and the West, of horses infected with this fatal and incurable disorder, not only deserve reprehension and punishment, but impose upon us all the duty of knowing something about the disease, its symptoms and the appearances by which it may be recognized.

The first fact which meets us is, that the disease is contagious; the next, that it is incurable. Then we become aware, that, though in most forms it is easily recognized, in some systems it remains partially dormant, yet so active that the horse is capable of imparting the disease in its acutest form. Then we have the following, stated as facts by all the best veterinary authorities: Inoculation with the virus will produce either Glanders or Farcy, according to the constitution or condition of the patient, irrespective of the origin of the virus, whether from a glandered or farcied horse.—Infection takes place from horses drinking out of the same trough or bucket, eating out of the same crib, wearing the same bits or harness, being curried by the same comb, being harnessed in the same team, being hitched at the same post, from rubbing noses as horses always will if they can on the road or in adjoining pastures, etc., etc. Besides all these we have the appalling fact that glandered animals are liable to take the disease, which, when attacking human beings, is attended with the greatest distress and agony, before death comes to relieve the sufferer.

We have prepared an engraving, which exhibits the two prominent and certain indications of glanders, as usually observed in this country. The first symptom is like the indication of a cold with a running at the nose; but the discharge instead of being simply whit-

ish mucus, with the secretion from the eyes (through the lachrymal ducts), and coming from both nostrils, is usually from only one nostril, of a darker color, "sized," or gluey, in character, and adhering to the edges of the nostril. This appearance is distinctly appreciable, even when following or attending the usual flow during strangles, catarrh, colds, etc. It is accompanied by a discoloration of the Schneiderian membrane, that covers the *septum*, (the dividing wall between the nostrils,) which appears of a pale yellowish to brownish unhealthy color instead of the pink or reddish shade of health, or slight inflammation. At the same time, one or both of the sub-maxillary lymphatic glands (usually only one) becomes enlarged, and soon more or less callous and adherent to the bone. The locations of these glands are upon the inner sides of the lower jaw, near the spot indicated in the engraving. The condition of them must be determined by the feeling, and not by the looks. When in a healthy condition, they can be barely perceived at all. The condition of the *septum* being accurately observed, it will probably soon exhibit upon the pale, unhealthy surface, numerous or several small ulcers, which at first appear like little lumps, and then, small pinholes, or larger open sores, with light centres and dark outsides. The engraving represents a man's hand holding the nostril open, so that the *septum* with the ulcers upon it, indicated by the figure 2, may be seen. The figure 1 shows (as indicated by a small black spot) the opening of the lachrymal duct, which is the channel that conducts the tears from the eyes to the nose, and which occurring as it does in that portion of the nostril having the color of the skin at the muzzle, is not likely to be confounded with the ulcers upon the light flesh-colored, or slightly discolored portion of the dividing wall or *septum*. These appearances are easily distinguished from accidental hurts, which indeed rarely occur within the nose, for scratches or punctures present a very different appearance, and are not accompanied by the gluey mucus, and discoloration.

No person should carelessly examine a horse for the glanders. Any handling of the nostril is very apt to bring on a snorting and clearing of the nose of muco-purulent matter, which flies in every direction, and may easily inoculate a person with the virus. Proper caution requires taking a soft sponge, wet with warm castile-soap suds, thrusting it gently into the nostril and wiping it out perfectly clean, before a close examination. The hands should be free from sores, and in case the horse blows, the operator's head should be quickly averted.

When the symptoms above described, or any of them appear, the horse should be isolated from all others, and carefully watched, and as soon as there is no doubt that the disease is glanders, he should be killed and deeply buried.

Since the above was put in type, a distinguished veterinarian has given us the following full and accurate technical account of the symptoms of the disease for the *Agriculturist*:

GLANDERS.—Its symptoms are, a *continued* flow or discharge, from one or both nostrils (generally the left), which discharge is at first thin and serous; then thick and glairy, like white of egg; but after a time becomes opaque, purulent, bloody, and very offensive, retaining however its viscosity. Soon after it commences, an enlarged gland may be felt under the lower jaw adhering to the bone. The next symptom noticed is one or more depressed ulcers, having sharp edges on the Schneiderian membrane

which covers the septum; these spread widely and deeply, and lead to caries of the bone. Then the lips and eye-lids swell, the external parts of the face may become gangrenous, and the animal die in a few days with putrid fever; or he may perish more slowly, the disease spreading to the lungs. The *distinctive symptoms* are the *continuousness* of the discharge, and the adherence to the jaw of the enlarged submaxillary gland.

FARCY, which has its seat in the *lymphatic system*, begins with hard, cord-like swellings of the lymphatic vessels and glands, (called farcy buds). These slowly suppurate, and form fistulous sores, which discharge a copious thin sanious matter; farcy always leads to glanders.

Harvesting Buckwheat.

Buckwheat shells so readily, it requires great care in cutting, as well as in raking and setting it up. When cutting buckwheat with a reaper, if the gavels are raked off or thrown off with a fork, more grain will be shelled out than in any other way of harvesting. The best way to treat the gavels, when buckwheat is cut with a reaper, is to let one man walk close to the machine, and, taking hold of the tops, as often as a gavel is cut, place it on the butts. If the straw is not very heavy, perhaps he may do it more expeditiously with the aid of a good barley fork, or a large manure fork. Should the straw be very large and heavy, it may be necessary to stop the reaper every time a gavel is removed from the platform. Even should this be necessary, two men would cut and set up more with a good reaper, than with cradles and rakes, and would shell out less grain. After a few acres have been cut, let the gavels be straightened up and the tops bound, as represented by the illustration of a stook

of buckwheat herewith given. Only a few straws are necessary to bind the tops. After a gavel is bound, take hold of the stook carefully, with both hands, and raise it, and let it drop two or three times, to make it stand securely. This evening of the butts should be done also, when the gavels are raked by hand. The gavel of buckwheat, when bound at the top, becomes a stook rather than a sheaf.

When buckwheat is cradled, instead of cutting around a plot, or around the entire field, if the straw stands erect, it is better to cradle back and forth, entirely across one side of the field, so that two swaths will be laid with the tops together. By this means, a wide passage for the wagon will be prepared, between two rows of gavels, with two swaths in each row. When the stooks are arranged in rows on each side of a wagon, they can be pitched on much faster than if standing irregularly over the entire field.

Explicit directions are often given to cradlers when cutting buckwheat, to point in high, and point out as high as they point in, while the middle of the swath is cut close to the ground. The object is to leave high stubble for the buckwheat to rest upon, which will keep it up from the ground, while it is curing. There is one objection to such high stubble. The straw will settle down among it, and thus become entangled. Then, when the swaths are raked, a much

larger quantity of grain will be shelled out and lost than if the stubble were cut rather short. Swaths of buckwheat should be raked quite differently from other grain. We press the gavels of wheat and rye together with a rake to facilitate binding them; but the gavels of buckwheat should simply be rolled along, keeping one leg constantly pressing against the butts to keep them even, so that they will stand erect. Thrusting the rake into the straw, handling it roughly, and jamming the rake down on the gavels should be avoided, as all such motions will shell out more or less grain. Careless boys, or heedless men, who handle the gavels roughly, will soon shell out more than enough to pay careful men for properly performing the work. When buckwheat is handled with the greatest possible care, there will usually be enough grain shelled out to seed the ground much thicker than is necessary for a crop.

Advice Asked and Given.

A correspondent, "A. S.," writes as follows: "Will you kindly give a subscriber information as to whether it would pay for him to rent twelve acres of ground, say on Long Island, within a few miles of New York, and raise garden stuff for market, and keep one reliable man all winter, and the necessary extra assistance in busy season?"

The above is selected from a number of letters asking similar advice, the most of which are unanswerable. For instance, a perfect stranger asks, if it will pay for him to buy a place in Maryland or Delaware, to raise fruit for the northern markets; another wishes to know if we would advise him to settle in Tennessee, or Missouri, etc. A little reflection will show any one how impossible it is to give advice upon any of these points without being intimately acquainted with the writer's capabilities, experience, and means, and rather than make a guess in the dark, we are for the most part, obliged to decline answering except in the most general terms. The above letter is very easily answered—No. If the writer were an experienced gardener, he would not have asked the advice, and no experiment can be more risky than that of gardening of any kind with a view to profit, by a new hand. "But," our friend will say—"many do make market gardening pay." It is true, they do, and one great element in their success is, they work hard themselves. If we understand our correspondent, he wishes to hire both land and labor, and pocket the profits. The plan is about as feasible as to open a store of any kind and leave it in charge of a hired clerk. It might in some rare cases pay, but generally it would not. Successful culture, whether of vegetables or fruit, requires not only the personal superintendence of the proprietor, but that he should work with his own hands, and above all, that he should have a knowledge of the business. In competing with the skilful market gardeners near large cities, an inexperienced person has a poor chance. A few days in the earliness of a crop will determine its success or failure. For example, a week ago tomatoes were bringing paying prices, while at the time we write, they can hardly pay for the picking and bringing to market. A knowledge of varieties, of the best means of forwarding them so as to get early crops, and of rotating crops so as to get the most possible from the land, are all necessary to success—and are just the points wherein a novice will fail. There are two ways in which



STOOK OF BUCKWHEAT.

our friend can gain the necessary knowledge; he can go into the business and learn the way to success through the teaching of many failures, or he can engage himself actively for a year with some experienced and successful market gardener. We do not wish to discourage attempts at gardening as a business, but do wish to impress upon those who feel tempted to go into it, that success there, as in any mercantile, or mechanical operation, depends upon knowledge, skill, and unremitting industry, and especially upon personal application.

Strategy in the Department of Agriculture.

Peace as well as war hath her victories. Agriculture is a peaceful pursuit, and she finds her official embodiment in the person of the Commissioner of Agriculture, who is so great a strategist, that Grant and all the rest of our military men might study and profit by his manœuvres. Some time ago our Western friends, thinking that their part of the country had some little interest in the matter, made a strong effort to displace the present Commissioner by Mr. John H. Klippart, Sec. Ohio State Board of Agriculture. Isaac Newton saw a very ripe apple about to fall, which was himself, and he immediately set to work to overcome the laws of gravitation. It was suddenly discovered that the Department stood in need of knowledge—everybody else knew it all along—and that article not being included in the stock of that Philadelphia seed store, it was concluded to send to Europe for a fresh lot. Who of all the men in the country so fit to employ as Mr. Klippart. He was sent by the Department, and our Western friends flanked; a victory showing a generalship, which if exercised on the battlefield, might have saved a world of fighting. Trophies begin to come in as the result of this splendid strategy, in proof of which we see that Mr. Klippart contributes as *European correspondent*, to Isaac Newton's Monthly Journal, called "Monthly Report of the Agricultural Department." We are glad that Mr. K. has a foreign tour at our expense, for he is a good observer, and he can not fail to gather much that is useful. But we are very sorry to see so capable a man obliged to play the second fiddle.

Wintering Cabbages and Cauliflowers in Cold Frames.

The earliest cabbages which appear in our market are from seed sown in September, the plants being kept through the winter, until the season will allow of their being planted out. Messrs. Brill & Kumerle, of Newark, who sell large quantities of seeds to the New Jersey market gardeners, give in their fall catalogue the following practical directions:

"Sow from 10th to 15th of September thinly in open ground, and as soon as the plants are large enough to handle (usually in about five or six weeks), transplant *deeply* into cold frames, 2½ inches each way, and on the approach of cold weather put on sashes, but be particular to give plenty of air every fine day during the entire winter. Transplant *deeply* in spring, as soon as the ground will work, in *highly manured* loamy soil, 16 by 30 inches; keep well hoed and cultivated. Fall plowing is beneficial to land for garden crops, and if the ground is not in prime order, a dressing of manure at this time will be very beneficial, though heavy manuring,

with partly decomposed hot manure in spring, is essentially necessary to secure a good crop of Early Cabbage.

"N. B.—Be particular to observe the following rules. Sowing at the above time, transplant *deeply*, in cold frames, and again in open ground, so that the *entire stalk* may be below the ground, as it is here where the frost injures cabbage plants. Give plenty of air in winter, that the plants may not become drawn. Avoid much moisture. A Cold Bed or Frame is simply a frame of spruce or other lumber, one plank high on the front, and two on the back, and should face the south or east, and may be any length and width to suit your sashes. Gardeners in this section use sashes 3 by 6 feet, this being the most convenient size, letting the edges rest on sliders, to facilitate in opening and closing, to give air."

Notes on Grapes and Grape Culture.

Now that grapes are ripening, we are in the receipt of samples, sent either for a name or to get a good word in favor of somebody's seedling. We are always willing to give the name, if in our power, but there are many sent us which had better die nameless. The success of some accidental seedlings, and of others raised by careful culture, seems to have given to many the idea that the mere fact that a variety is a seedling, is something in its favor which should outweigh its "plentiful lack" of good qualities. Many of the "seedlings" are no better than wild grapes, and are not worth individual notice. A correspondent in West Macedon, N. Y., sends a small bunched, sour "seedling," that stings the mouth painfully, with the remark that it is "*early, perfectly hardy*, and was last season pronounced by good judges a superior wine grape." It certainly can not be hardier than the Delaware and Clinton, nor earlier than the Hartford Prolific, and is vastly inferior to either of them for any purpose. It is an unpleasant task to show up the defects of one's pets, as most persons take anything said against their seedlings as a personal affront. While we desire to encourage every promising new variety, it is our duty to discountenance the introduction of any variety that is not in some respect superior to well established sorts. The only seedling of any promise that we have seen thus far this season, is one sent by Mr. A. Child, of Middlesex Co., N. J. It is a seedling of the Hartford Prolific, and much exceeds it in size of berry and bunch. The first fruit of the vine was almost fully ripe August 21st, when it was cut to save it from the birds. Though not entirely ripe, we think it superior to its parent in quality, and shall look with interest for the results another year.

Adirondac.—A great many vines of this variety have been distributed over the country, and we now begin to get some definite reports from it. There are many localities in which it does not seem to succeed, where plants which have been set out several years make very little wood, and of course give no fruit. Then again, in other places, it grows and bears well, and when it does, it is a first class grape in every respect. We are glad to be able to report its success in other localities than the one in which it originated. In the grounds of Geo. H. Hite, Esq., Morrisania, near N. Y. City, the fruit began to color August 5th, and was ripe on the 22d. Isaac Pullen, Esq., of Hightstown, N. J., sent us rather over-ripe bunches on Sept. 5th, with

the remark that they had been in eating for more than two weeks. Messrs. S. B. Howell, and W. S. Hodgman, of Painted Post, N. Y., sent us fine specimens on Sept. 4th, stating that with them they are earlier than the Hartford. The last mentioned specimens were quite equal to those exhibited by Mr. Bailey. We once told Mr. B. that when we saw as good fruit of the Adirondac raised by others as that grown by himself, we should say so. Now that we have seen it, we are ready to accord to the Adirondac as a fruit, our unqualified praise. For earliness, freedom from pulp, sweetness, and great delicacy of flavor, it stands in the first rank, and we sincerely hope that the cases we have noted above, concerning its unsuccessfulness in some hands, may prove to be rare exceptions.

Rebecca.—It is rarely that one has a really fine crop of this variety, but we have seen one this season in the vineyard of Mr. C. T. Schmidt, upon the Palisades, opposite Dobb's Ferry. The amount of fruit was large, the bunches fine and perfect, and from their great beauty, will meet with a ready sale. The Delaware close along side was dropping its leaves and looking poorly.

Rogers' Hybrids.—These, as far as we have observed this year, have suffered worse than any other varieties from mildew, with the exception of No. 1, which seems to have withstood it. Last year we did not speak of these varieties in as high terms as those dealing in them thought they deserved. We observed pretty extensively, and merely recorded what we saw, and no little abuse did we get for it. Notwithstanding, we said to these gentlemen, "if you will show us any number of Rogers' Hybrids equal to the Delaware, Iona, Allen's Hybrid, or Catawba, we will cheerfully say that our judgement was made on poor specimens," the dealers accuse us of partiality in favor of other sorts, and prejudice against theirs. An advertisement has just come to our notice, which says: "For the past five years these grapes have been acknowledged (except by a few dealers interested in other kinds) to be among the earliest, hardiest, and most exquisite sorts known." Now, we have never to our recollection, sold a vine in our lives, and it would be quite as well for those interested in pushing these grapes to stick to the truth. We have no other wish than to do these varieties full justice, and regret that their very general failure by the rot and mildew will probably deprive us of an opportunity to revise our judgment.

Israella.—We have said but little about this variety heretofore, because we have not had a fair opportunity of judging of it. In a note in August "Basket" we mentioned that the vine was a good bearer, and we have now before us fruit, which being from young vines, is not as large as we saw it last year. It ripens as early as, or before the Hartford, but is vastly superior to that in quality. It is tender and very sweet, two important elements of popularity. The berries cling to the stem with remarkable tenacity, a quality which adds to its value as a market fruit.

Iona.—Last year we gave it as our opinion that this was the best American grape yet introduced. On Sept. 6th, we tested specimens which fully confirmed us in this belief. Some may prefer the Delaware for its intense sweetness, but to our taste, the high vinous flavor of the Iona, combined with sufficient sweetness, put it in advance even of the Delaware. The great beauty of the Iona is not equalled by any native variety, and perhaps not surpassed by any foreign one. Both bunch and berry are large, and covered with a fine bloom.

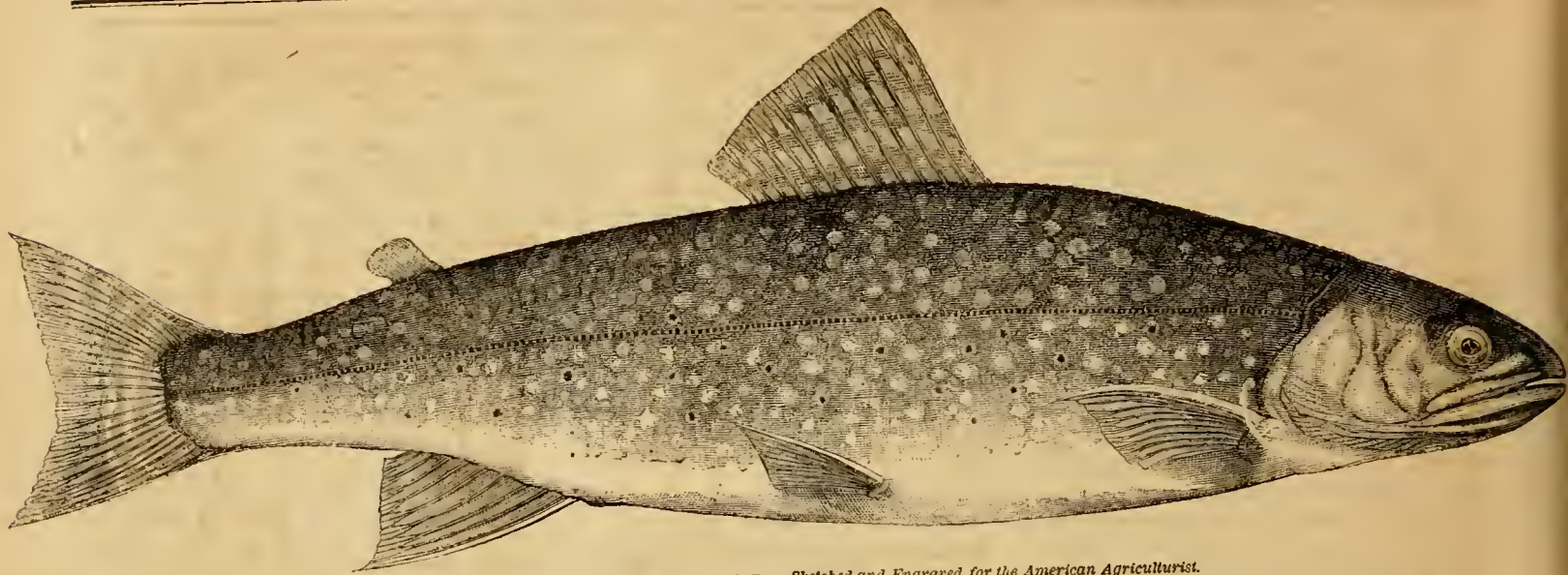


Fig. 1.—FEMALE TROUT, TWENTY MONTHS OLD.—*Sketched and Engraved for the American Agriculturist.*

Breeding Trout and other Fish.

Trout breeding is a subject which has been comparatively little discussed by the *Agriculturist*—partly for the reason that the editors have never been personally engaged in it, nor witnesses of any especial success attending it. The subject is, however, attracting attention of late, particularly on account of the wide circulation gained by some newspaper paragraphs concerning the success of a gentleman in the central part of the State of New York. This person

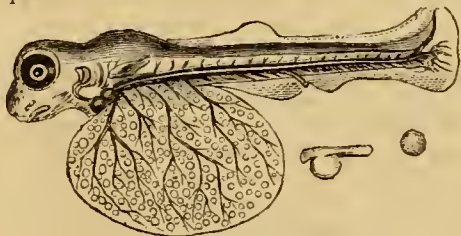


Fig. 2.—TROUT JUST HATCHED.

has a rival in the immediate vicinity of this city, whose success is very encouraging, and the facts we obtain from him are most important.

Artificial fish breeding has a history of only some 18 years, but within this time very interesting results have been accomplished. As an art it was introduced to the world of scientific utilitarians, so near perfection that few if any essential improvements have been made. The

mature trout of both sexes are confined in ponds fed by springs. Shallow ditches with still pools and gravelly bottoms are provided. From the middle to the last of October, the male fish, adorned like a bridegroom in his most brilliant colors, prepares the gravelly nest for the eggs. He then coaxes the female upon it; and it is at

the time that she begins to lay her eggs that she should be caught in a net, and her eggs very gently pressed from her into an earthen basin containing water. The fish is saved alive, and the male fish is proceeded with in the same manner. The "milt" which flows from him is stirred, gently but thoroughly, among the eggs. These eggs, at first being of a dull orange color, rapidly change as soon as impregnated, becom-

ing clearer and almost transparent. After this the eggs are placed upon clean gravel in boxes in running water—if possible, in a brook or channel fed by living springs, and in which the water is entirely under control, and not liable to floods. This should be more or less shaded, and the boxes ought to be covered—for in the natural way trout cover their eggs with gravel. Nine to twelve weeks elapse before hatching. They then appear like the magnified sketch in figure 2, adjoining which are two small outlines, showing the actual size of the egg and of the fish newly hatched. The mass attached to its belly is the yolk of the egg. This is encased in a bladder like sack, and furnishes the little fellow food for the first 30 days of his life. After this he begins to pick up animalcules which abound in shallow water and increase in numbers greatly after the warm weather of spring comes on. This is in brief the process recommended by writers on the subject, and as nearly as we recollect that followed in some of the European fish-breeding places which we have visited. The gentleman whose success we have alluded to, does not attempt the artificial impregnation of the eggs, but providing suitable breeding ditches fed by perpetual springs, he allows the fish to have their own way, make their nests, lay their eggs, impregnate them and cover with the usual gravel.

The ditches are watched, unfriendly fish, beetles, eels, etc., expelled and excluded as far

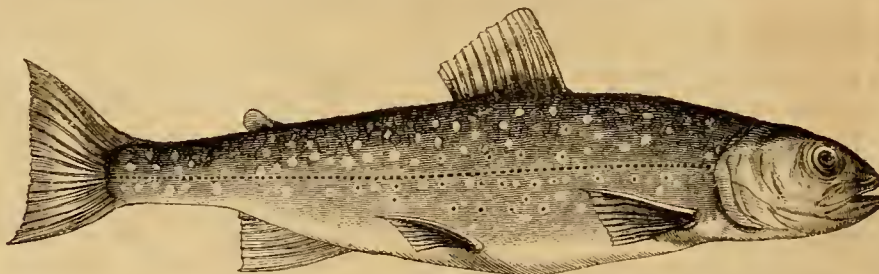


Fig. 3.—MALE TROUT, SEVEN OR EIGHT MONTHS OLD.

as possible, sediment of decaying leaves, etc., removed from the nests, if it washes on, and every effort made to keep the eggs undisturbed.

The male trout, as the breeding season approaches, not only puts on the most brilliant colors, but the projection upon his under jaw increases very much, becoming a real shovel, and with it he moves the sand and gravel about and scoops out his nest as he likes. This append-

age makes it very easy for the males to do great damage in rooting out the eggs from the nests. Our friend has found young males especially injurious in this way. They should therefore be rigidly excluded from the breeding ditches. The eggs are usually deposited, as already stated, after the 20th of October, and begin to hatch in January, the majority hatching in 9 to 12 weeks. The breeding ditches have certain pools or expansions in them where the water is very shallow. Into these the young fish soon find their way, and by the time they have absorbed their aldermanic bass drummer-like paunches, they may be seen very actively pursuing the animalcules which breed in such places. For this reason shallow basins in their breeding ditches or brooks are quite essential to success. Where the young fry are numerous, regular feeding should begin in March. Bullocks blood in small quantities has been successfully used. Lean scrap beef or mutton, thoroughly boiled to remove the grease, and then mashed very fine, has been used, and any kind of fresh meat would doubtless do as well. Such materials are everywhere attainable, but near the sea a great variety of food very well adapted to their wants may be found. Our friend uses for very young fry, Horseshoe crabs full of spawn, mashing them up, Killy-fish, or any soft-finned fish, run through a meat cutter and made very fine, etc. Any fish roes, or flesh of fish is good. As the fish grow, they may have coarser feed, and

they are extensively supplied with Killies, which are little salt water fish, abounding in the brackish water of the ditches in the salt meadows adjoining the fish ponds. They are scooped up and thrown into the ponds where they are soon taken in charge and disposed of by the active trout without distinction of age or sex.

When trout have plenty to eat they grow astonishingly fast. The fine picture at the head of these columns is of a female fish, taken from the pond above referred to, only 19 or 20 months old, that is,—hatched a year ago last winter, as our friend asserts. The smaller fish, (fig. 3,) is a male, which came from the egg last winter, and is therefore about 7 or 8 months old. We shall continue this subject hereafter.

The Garden Lavender.—*Lavandula vera*.

Of all perfumes we think that of lavender flowers the preferable; its odor suggests cleanliness, for the reason doubtless, that it is associated with freshly washed linen, it being the custom with many housekeepers to put a little bag of Lavender-flowers in the drawer where the clothing is kept. Indeed the name is derived from the Latin *lavo*, to wash, on account of its use to perfume newly washed clothing, or, according to some authors, because it was used in baths. The Lavender plant is a low, much branched shrub, from one to two feet high, with very narrow leaves of a pale green color. The flowers are borne in a spike at the end of a long slender stem, and are of a peculiar bluish color which, when imitated in dyed fabrics, is called Lavender, or Lavender-blue. The plant is a native of the South of Europe, where, as well as in England, it is extensively grown. In this country it is frequently seen in gardens, and around Philadelphia it is cultivated to considerable extent, for marketing the flowers. We were surprised to find that it endured the winters at Newburgh, N. Y., and no doubt it may be successfully grown farther North than has been generally supposed. Lavender may be



GARDEN LAVENDER.

raised from the seed sown in the spring, or from cuttings; some of the lower branches, if slipped off with a piece of root attached, will grow readily. The flowers are used in perfume bags in the manner above referred to, and are sold to the druggists and perfumers. Their value depends upon a volatile oil they contain; from 50 to 70 pounds of flowers, by distillation,

yield one pound of oil, which has their characteristic odor, and is used both in perfumery and in medicine. Large quantities of oil of Lavender are made in England, that produced in that country being preferred to any other. Dissolved in alcohol, with other aromatics and colored red, it forms the spirit of Lavender or Red Lavender of the shops, which was formerly much used as a domestic stimulant medicine. The flowers bloom here in June and July; they should be gathered before they change color, dried in the shade, and kept in close vessels. The illustration is of full size, with the stem bent to economize space. The shape of its small flowers will show it to belong to the Labiate or Mint family, all of which are generally aromatic.

A Stately Garden Ornament.

(*Datura arborea*.)

In an account of the Horse Nettle, given in the September *Agriculturist*, we mentioned that the Solanum, or Night-shade Family, to which it belongs, was remarkable for producing both nutritious and poisonous plants. It might have been added that the same family had among its members some that were highly ornamental, among the best known of which is the generally cultivated Petunia. The genus *Datura*, of this family, not only gives us the disgusting weed, *Datura Stramonium*, (figured in May, 1864,) popularly known as Thorn-apple, or Jamestown-weed, but several other annual species, which are really showy garden plants, such as *Datura meteloides*, etc. The Tree *Datura*, *Datura arborea*, is a shrubby species from Peru, which has been for more than a century in cultivation as a green-house plant, and is now frequently seen where room can be afforded for it. Were it known with what ease it can be managed by those who have no green-house, and how fine a plant it is for ornamenting the grounds, it would be much more generally cultivated. The plant appears best when trained in the tree form, with a single stem surmounted by a head of flower-bearing branches. The usual height is four or five feet, but by proper management they may be grown to the height of 8 or even 12 feet. Our engraving gives the shape of the flowers and leaves, but much reduced in size. The hanging flowers are 6 to 8 inches long, pure white, and very fragrant. A double variety, with several corollas, one within another, is sometimes cultivated, but to our taste the single one is the most pleasing. This species is propagated by cuttings containing a single eye, which in a bottom heat will strike root and grow very rapidly. The plant is a



DATURA ARBOREA.

great feeder and the young ones will need frequent changing to larger pots of rich soil. Those started early from cuttings may be planted out in the border when the weather becomes warm, and they will blossom the first year; but if a large and strong plant is desired, the best way is to pinch off the flower buds, and remove all side shoots, in order to get as great a growth of stem as possible. By removing the shoots which push along the stem and shortening those at the top, a symmetrical and compact head will be produced, from which will hang a great abundance of the large and striking flowers. At the approach of frost the plant may be taken up and set in a box with its roots covered with earth and kept in a green-house, a dry cellar, or in any other place where it will be safe from frost, until time to set it out again. Treated in this way the plant is but little more trouble than a Dahlia. The large horticultural stores have this species catalogued at 50 cents.

Plants for Garden Edgings.

BY THOMAS CAVANAUGH.

MR. EDITOR:—Noticing a "basket item" asking for information on garden edging, I will try to answer it. Nothing is a complete substitute for Box, for there is no plant which makes such a beautiful edging as that, when well taken care of and neatly trimmed every season, as it should be. But there are many plants which may be used instead: *Daphne Cneorum*, with its fragrant pink flowers, forms a very pretty edge, is quite hardy, and it is used extensively for this purpose in Europe. *Statice Armeria*, or Sea Pink, makes a tolerably good edge. A new variety of this called *Statice superba* is very pretty, with dark-green foliage, and rose-colored flowers. Probably the best plant for edges, and one that we have used for some years, is the Moss-pink, *Phlox subulata*. It is very hardy, requiring no protection in winter, of quick growth, and requires cutting at least once a year. There are white, pink, and lilac varieties, the three colors forming a very pretty combination. *Phlox stolonifera* is very beauti-

ful when in flower, and propagates very rapidly, as it throws out shoots similar to the strawberry, but it loses its foliage during winter. *Iris pumila* looks fine, with its rich purple flowers, but it loses its foliage during dry weather, and then presents a shabby appearance. The old-fashioned June-pink makes a good edge, lasting about three years in the same soil; to succeed well, it should be transplanted every spring. *Lamium maculatum*, with a prettily marked leaf, and white flowers, and a constant bloomer, will require cutting several times during the summer; it loses its leaves in winter. A Strawberry edging combines usefulness with beauty; it is troublesome to keep free from runners, but it will furnish employment for the children, and keep them out of mischief. Thyme and Sage make a very profitable edging; if the seed be sown in the spring, a good crop can be cut, which, when tied in small bunches, meets a ready sale in the market. These all form substitutes for box, but in our estimation very poor ones. If in an exposed situation, where it is likely to be killed during winter, box-edging should have the soil drawn up to its sides, and thus protected, it will stand the most severe winters. *Sedum Sieboldii* is perfectly hardy, and makes a good edging. [We thank Mr. Cavanagh for his suggestions, though as a matter of taste we disagree with him in regard to the use of Sage and Thyme. Both that and Parsley make appropriate edgings to beds in the kitchen garden, but we much prefer the others he has named in the flower garden.—Eds.]

Weeds—The Indian Mallow.

(*Abutilon Avicennae*.)

This summer we have frequently passed by a lot containing a crop which we could not recognise; there was an excellent "stand" of plants of uniform size, and growing so luxuriantly that their leaves soon hid the ground. We thought as we rode by, there is a nice crop of something, and how free of weeds it is, and were often tempted to stop and make a closer inspection of it, and find out what it was that grew so



INDIAN MALLOW.

promisingly. One day, being near the place on foot, we concluded to visit this unrecognised crop, and to our astonishment found a number of women engaged in pulling it all up, and leaving exposed rows of poor, weak, rutabagas, which had been hidden and starved by a

perfect covering of weeds. A near view of the weed showed it to be an old acquaintance—the Indian Mallow, a flowering stem of which is shown in the engraving. Its heart-shaped leaves are so soft to the touch that it is sometimes called Velvet-leaf. The small yellow flowers are succeeded by a fruit composed of a number of 2- to several-seeded pods arranged around a central stem. The fruit is bell-shaped and flat on the top, the free points of the pods of which it is made up giving it a rather pretty star-like appearance. The plant accommodates itself to circumstances, and in a poor soil flowers and fruits when only a foot or two high, while in a rich one it attains to the height of 5 or 6 feet, and is not inelegant. It is more common near the coast, but we have seen here and there a few plants at the West, which for their foreign look were tolerated as a curiosity. We give a portrait of the Oriental wanderer, that he may be known and cast out as a worthless intruder. Being an annual, the Indian Mallow is easily disposed of, if pulled before it has time to ripen and scatter its seeds.

Is Pear Culture Profitable?—Examples.

Some time ago there was a great mania for pear-culture. It was shown how many pears a dwarf tree three years planted, ought to bear, and the price which these pears would bring in the market: having these data and knowing how many trees would grow on an acre, it was easy to figure a large profit from a given space, and one only need to have a few acres in pears to be sure of a very comfortable income. Somehow the thing did not work, the trees were planted, the income was mainly an out-go, and then pear culture was voted a humbug. To be profitable, fruit culture, and for that matter, culture of any kind, must be made a business, and an intelligent head must direct industrious and careful hands. In a congenial soil and climate, the pear will, in the hands of one cultivator, produce a profitable crop, while with another it will fail. Some set out the trees and let them take their chances; the grass grows close around them, and the soil becomes exhausted, and the fruit, as a consequence, is so small and covered with blemishes that it is difficult to recognise the variety. Another cultivates his trees, but puts crops between them; he forgets to put on manure enough for the crops and the trees too, and although the orchard is cultivated, the trees fail to do well. This season we saw a market gardener growing so coarse a feeder as rhubarb, close among his pear trees, and we much doubt that the profits from the rhubarb will compensate the damage to the trees. But instead of enumerating causes of failure, it will, perhaps, be better to give an account of a successful pear orchard. We recently had the pleasure of visiting the grounds of Doct. I. M. Ward, near Newark, N. J., with whom the culture of the pear is a specialty. Dr. Ward has a favorable location, and his orchard of about six acres, is well protected from winds by evergreen and other trees. The trees, mostly standards, have the ground all to themselves, and are well fed and taken care of. Every autumn a plentiful supply of manure is spread around each tree as far as the roots extend; in the spring the ground is thoroughly cultivated, and later it is mulched with 4 to 6 inches of salt marsh hay. The mulch keeps the surface of the ground moist, and the trees do not suffer from drouth; it prevents the soil from compacting, and upon lifting it anywhere the earth beneath is found

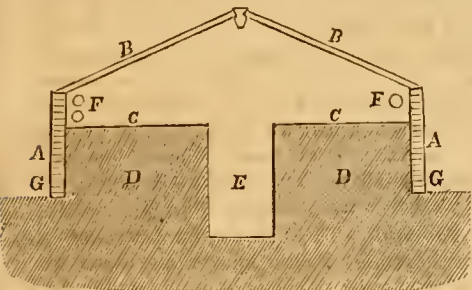
in a light pulverulent condition; weeds have no chance to grow, the few strong ones that work their way up through this mat are so small in number, that they may be readily hand-pulled. Another, and not insignificant benefit of the mulch is, that it affords a soft cushion to receive the falling fruit; in a large orchard, a considerable quantity of fruit is blown off by high winds, and it is no small item to have this free from bruises and dirt. In autumn, the mulch is made up into cocks between the trees, the annual manuring is given, and in spring it is replaced with sufficient addition of fresh material to make good the waste. A part of the orchard is not mulched, owing to the difficulty of procuring material, but the uncovered portion receives the same annual manuring, and the cultivator goes through it so frequently that the soil is kept in excellent condition and free of weeds. This is the routine of culture, and the result is an abundance of fruit of a quality that brings the best market prices. Trees so equally covered with well developed fruit, so uniform in size, we have never before seen; they are a splendid testimony to the value of abundant manure, mulching, thorough cultivation, and judicious thinning. The varieties cultivated here are Bartlett, Duchesse, Lawrence, Onondaga, Doyenne Boussock, Seckel, and some few others. We do not propose to go into a gentleman's private affairs and tell how much he makes from his orchard. Suffice it to say that he is satisfied that pear-culture is profitable.

A short time after seeing Doct. Ward's orchard, we paid a visit to that of Mr. C. T. Schmidt, which is situated on the banks of the Hudson, opposite Dobbs' Ferry, upon a high plateau between the river and the Palisades. This orchard consists mainly of dwarfs, there being about 2000 of these interspersed with something like one fourth that number of standards. Though the trees are but five years old, they for the most part are bearing very satisfactory crops. The rows of dwarf Vicars were something wonderful for the amount and beauty of the fruit with which they were loaded. Both dwarfs and standards, with the exception of a few specimens attacked by the blight, were exceedingly vigorous in appearance and all well formed. Mr. S. first directs the energies of the tree to making wood, and in order to bring it into satisfactory shape it is severely cut back when young. The dwarfs are well furnished to near the base with branches, and as well as the standards, are models in shape. Though this orchard is just beginning to make returns, from what we saw already upon the trees and their promise of future fruitfulness, we doubt not, its proprietor will also find pear-culture profitable.

Flower Pits and Green-Houses.

Every one who has a garden of much extent, finds it necessary to protect many half-hardy plants during the winter, and where there is no structure for the purpose, the plants are placed in the cellar. This treatment answers very well in many cases, but it often happens that the cellar is too dark, too damp, or too warm, when the plants will suffer in some manner. Those who cannot manage to have a greenhouse, will find the cold pit a much better substitute than the cellar. Such a structure may be made of a temporary character, but where one is permanently located it is better to build it in a substantial manner, as it will be found convenient for other purposes than wintering plants. The principal expense is in pro-

curing the sashes, which are about 6 feet long by 8½ feet wide, the same as those made for hot beds. The size of the pit will be governed by that of the sash and the number of them to be used; about twice as long as the width will be found a convenient shape. The site for the pit should be a dry one, or capable of being made so by draining. Four or five feet will be a suffi-

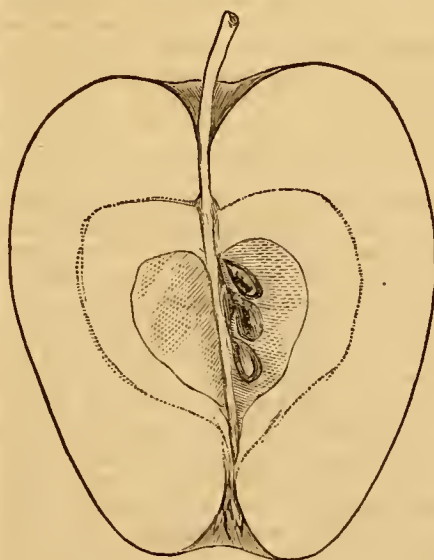
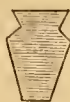


SECTION OF GREEN-HOUSE.

cient depth to dig the pit, which is then to be boarded up, or walled up with brick or stone, which should run a foot above the surface at the rear, and 9 inches above it on the front side, the top of the end walls having a regular slope from rear to front. Where brick or stone walls are used, there should be a plate of oak joist, laid in mortar upon the top of the wall, to receive the sash. Bank up the part of the wall that projects above the surface, and put a good layer of gravel or hard coal ashes in the bottom of the pit, and it is ready to receive the plants. Tender Roses, Camellias, Carnations, Azaleas, etc., will winter finely in such a pit. The plants should have all possible ventilation when the weather will allow, and be kept moderately dry though not allowed to suffer for want of water. In severe cold weather, cover the glass with shutters or mats enough to keep out hard frost.

Many who would like to have a green house are deterred from building one on account of the expensiveness of those they see upon the places of the wealthy. It is to be regretted that there is not a demand in this country, as there is in England, for portable green-houses, which can be readily put up and easily taken down for transportation in case one is a tenant and obliged to move. Small, lean-to green houses can be built very cheaply, and will answer for either growing plants, or simply protecting them from frost. Plans and all the details for the construction of them are given in the back volumes, 20 and 21 (1861-'62). The objection to lean-to green houses is, that most of the plants are too far from the light; this is not a very serious matter where the plants are at rest, but it is very essential that growing ones should be near the glass, and our most successful propagators have their houses with a very gentle pitch. Perhaps the most complete range of propagating and green houses in the country is that of Mr. Peter Henderson, of Jersey City. We recently had the pleasure of visiting this well-appointed establishment, and it struck us that the very simple plan carried out there upon so large a scale, might answer equally well for a small house. The houses of Mr. H. are 100 feet long, and in groups of three. The diagram given above is a sectional view of one of these houses, and will give a sufficiently correct idea of the structure to enable one to build after his plan. The house is 11 feet wide, with no side lights, all the ventilation being done by lifting the sash. The ground line is shown at G. The walls, A, are of brick, but may be of stone, or even a double wall of plank, filled in with non-conducting material. The

sashes, B, are 6 feet long, and supported by rafters framed into the ridge pole. The pathway, E, is 2 feet wide, and excavated below the ground level, so as to give a height of 7 feet in the clear. The benches, C, for the reception of the pots, are of earth, and are 4½ feet wide, the sides being held up by walls of brick or plank. The heating is done by hot water conducted through the pipes F. If the house is to be heated by flues, the benches, instead of being of solid earth, must be of plank, and the flues pass beneath them at D. Every other sash is capable of being lifted at the top for the purpose of ventilation. A flat iron bar, about a foot long, with two or three holes punched through it, is fastened at one end by a staple to the upper end of the sash. The sash is lifted to the required height and held in place by catching the bar, by means of its holes, upon a strong iron pin driven into the RIDGE POLE. The ridge-pole is ingeniously shaped to admit of readily lifting the sashes and secure a tight joint; the annexed cut gives a sectional view of it. The propagating houses are similar in structure, but have water tanks for supplying bottom heat. Mr. Henderson's houses are well worth a visit from those who would construct houses for propagating or growing plants. Instead of patenting every improvement, as some have done, he freely contributes the results of many years' experience to the general good.



The Porter Apple.

It is quite surprising that a fruit of such great excellence as the Porter apple is not more generally cultivated. In September we find in the New-York market, hundreds of barrels of indifferent or worthless fruit, to one of the Porter. It possesses all the elements of popularity; the tree comes early into bearing, grows rapidly, and yields abundant crops of fine and handsome fruit. The above rough outline is from the only specimen at hand, considerably under size, and somewhat less tapering than it often is. The skin, when the fruit is ripe, is of a beautiful clear yellow, often with a blush on the sunny side; the flesh is white, fine grained, crisp, tender and juicy, with an agreeable spirited and somewhat acid flavor. It is a highly prized variety in New England, where it originated, and succeeds in almost all the northern and middle States; is a good market fruit, and excellent for the table or for cooking.

Autumn Leaves and Fruits.

This month the landscape will glow with the brilliant red and yellow of the maples, which, blending with the less lively tints of other trees, make up the grand display of color peculiar to our autumn scenery. The general effect is due to the many-hued leaves of our forest trees, but whoever examines closely will observe that the details of this gorgeous tapestry are worked in by the brilliant foliage of humble shrubs and delicate climbers, and that bright berries and other fruits, and even gaily colored stems, all contribute their tints to the work of the Great Artist. In tree-planting, the autumnal effect should not be lost sight of, and there are several species that we would select expressly for the colors which succeed their verdure. Our present object, however, is to call attention to some of the shrubs and smaller trees, having beauty of foliage or fruits, late in the season.

The *Witch Hazel* will even give us flowers at this time, but that is more curious than effective. No leaves are brighter in autumn than those of our common Sumach, *Rhus glabra*, and when there is a rocky or barren spot it may find a place. The Flowering Dogwood, *Cornus florida*, turns its leaves to a rich purple, amid which its clusters of coral berries show with brilliancy. Other red-berried shrubs are, the Mountain-Ash, several varieties of the European and American species, the Bush-Cranberry or *Viburnum Opulus*, the Indian Currant or *Symphoricarpos vulgaris*. The thorns, all have showy red or yellow fruit, especially the *Pyraecantha*, which has evergreen leaves as well as red fruit, as do the Holly and Yew; nor must our common Black Alder, *Ilex verticillata*, be overlooked, even if it is common. But of all the showy deciduous shrubs, our favorite is the native *Euonymus atropurpureus*, the Burning-bush or Spindle-tree. This, when it throws off its green coat, stands arrayed in brilliant red, which in the autumn sunlight, glows as if on fire. There is a European species with rose-colored fruit, and a white fruited variety of it. The Red-osier Dogwood, *Cornus stolonifera*, gives us white berries, but is more valuable for the bright red color of its stems. The Snowberry, *Symphoricarpos racemosus*, is well known and much cultivated for its white berries. The different varieties of Privet have both white and black fruit, and the American and Japanese *Callicarpus* have an abundance of charming purple berries. Several of the climbers are fine in autumn. The Virginia Creeper, one of the best of our climbers for its green foliage, is unsurpassed by anything in the beauty of its change at the close of the season. The Moon-seed, *Menispermum Canadense*, a much neglected climber, is of two sexes. The fertile plant has clusters of black berries, to which their fine bloom gives much the appearance of frost-grapes. *Clematis Virginiana*, the Virgin's-Bower, so full of white flowers in August, is now conspicuous for the long feathery tails to its fruit, which in some places is called "Old-man's-beard." The wax-work, or Climbing Bitter-sweet, *Celastrus scandens*, figured in August, 1864, so fine at any time, is now particularly gay with its curious orange and scarlet fruit. Others might be enumerated, but this list, comprising mainly natives of our own woods and copses, is sufficient to indicate some of the plants which may readily be introduced to improve the autumn aspect of our grounds. All of those here given are worthy of culture for their beauty of leaf and flower, as well as for that of their dying foliage or ripened fruit.



Fig. 1.—GRAPE HYACINTH.

Notes on Spring Flowering Bulbs.

Those who would have their gardens bright with early spring flowers, as well as those who would enjoy their indoor blooming in winter, must look to it *now*, as this is the month in which certain bulbs go into the ground, as well as the one in which others, such as the Tiger-flower, Jacobean Lily, Gladiolus, etc., come out of it. The bulbs planted at this season for spring flowering, are known as Dutch bulbs, for the reason that they are mainly imported from Holland, where, especially around Haerlem, they are an important article of culture and of commerce. Whole farms are there devoted to bulb culture, and it is from these that vast quantities are sent to beautify the gardens of distant parts of the world. To adepts in gardening, it is not necessary to speak of the value of this class of plants, nor to describe them and their mode of culture. But there are many among our readers who are novices in flower culture, to whom a few notes upon these plants and their treatment will be acceptable. It is well to bear in mind that our liberal postal arrangements now make bulbs as well as seeds, readily accessible to those who live at a distance from cities. All of the principal seedsmen publish a bulb catalogue in the fall, which they send upon application, and forward by mail such articles as may be ordered.—It is much better to plant the bulbs in groups than to scatter them here

and there. If set in ordinary garden soil they will flower tolerably, but their much finer bloom in a properly prepared soil will well repay the trouble of fitting it for them. The soil should be light, warm, and rich, and though sufficiently retentive of moisture for the plants not to suffer in drouth, it should not be wet. If the garden soil be stiff, add sand in sufficient quantity to make it light, and an *abundance* of well decomposed cow manure—at least enough to have it form one third of the soil to the depth of 18 inches. The spot being well spaded over to that depth, it is ready for the bulbs, and the sooner they are planted the better. Where there is a sufficient number of the bulbs, a very pleasing effect may be produced by planting them in circles one within another, each circle being formed of those with flowers of the same color, the colors alternating to suit the fancy. The large bulbs require to be set deeper than the smaller ones; as a general rule the depth should be twice the length of the bulb. In spading up the earth and adding manure, the bulb bed will be raised above the general level; it is best to leave it so, as it will prevent water from settling on it. When the weather becomes cold enough to freeze the ground, cover the bed with a good coat of long manure, leaves with a little earth thrown on to hold them, or any other convenient litter, which is to be carefully removed in spring. The after treatment is given at the proper time in our monthly calendar.—Bulbs may be easily grown in pots, and they make most pleasing ornaments for the parlor; one to three of the larger bulbs, and more of the smaller kinds being planted in a pot. The soil used for potting should be similar to that for garden culture: equal parts of sand, good garden mould, and well rotted cow-dung, and, if the garden soil be not rich in vegetable matter, add some leaf mould. Provide the pots with good drainage by putting in the bottom an inch or so of fragments of pots, then fill them with the earth and plant the bulbs, leaving their crowns well above the surface of the soil. Water thoroughly and place the pots in a dark closet, or other dark and warm place, where they are to remain with occasional watering until the earth is well filled with roots. With a little care the ball of earth may be turned out of the pot and the condition of the roots inspected. When the roots appear in abundance upon the outside of the ball of earth, remove the pots to a light window. If the leaves and flower spikes have pushed in the dark, they will probably be very pale, but with a few days' exposure to the light they will take on a green color. Give plenty of water and remove the small offsets that spring up from the base of the bulb. After blooming, the plants need less water, and when the leaves fade, the bulb should be dried off altogether and removed from the earth, and kept for planting in the open ground the next fall. Bulbs may be flowered in pure sand, free from salt, or in moss—the treatment, as to keeping in the dark, etc., being the same as in pots of earth; but in these cases the bulb if wished for future use, needs to be planted in earth, after blooming, in order to mature it. Hyacinths and Tulips are frequently bloomed in water, in glasses sold for the purpose. The glasses are filled with rain water and the bulb placed so that the bottom just touches the water. Keep about two weeks in the dark, and then bring them to the light. The roots and the glass need washing, and the water to be changed about once in two weeks. If it is desired to save bulbs grown in water, they must also be transferred to earth to ripen. Having occupied so much space in

giving the general treatment of bulbs, our descriptive notes of the kinds must necessarily be brief:

Hyacinth.—This is put at the head of the list because if we could have but one, it would be this. It is both showy and fragrant and gives a great variety of color. There are double and single varieties. Plant 4 inches deep, and 8 apart.

Tulips.—There are several distinct classes of these, each presenting a great variety of color. The Early Bedding Tulips are dwarf in their growth, and flower much earlier than the others; they are also best adapted to pot-culture. Florists or Show Tulips are taller and later. Besides these, there are the Double, and the Parrot kinds. For all, except florists, the Early Dwarfs are best. They produce the most striking effect when planted in masses.

Narcissus.—This genus furnishes several pleasing spring flowers, known by different garden names, the principal of which are the Jonquil, Daffodil, and Polyanthus Narcissus. The last named is the most beautiful, but is somewhat tender, and the bulbs after planting require a good covering of litter to protect them.



Fig. 2.—SPRING SNOW FLAKE.

Crown Imperial.—A large ill-smelling bulb, which should be planted deep. In April it throws up a strong stem some three feet high, surmounted by a crown of leaves, and large and showy hanging flowers. There are several colors, double and single. The plant has a very stately air and makes a fine center for a circular bed of hyacinths and other bulbs.

Crocus.—Charming little flowers which bloom very early, often in March, if the situation is favorable. Clumps of these all of one color, produce a fine effect, either in the lawn or border.

They are much used to border beds of hyacinths, etc. Set 3 inches apart and cover 2 inches deep.

Grape Hyacinth.—The several species of *Muscari*, are perfectly hardy, with small grape-like flowers, of white, blue and purple, like those shown in fig. 1, which is somewhat under size. The bulbs may be left in the ground for years.

Lilies.—All are beautiful, from the common native wild ones to the more rare but perfectly hardy exotics from Japan. Set a foot or more apart according to the size, and four inches deep.

Scilla.—Several species of Squill are very brilliant spring flowers, among which is our Western Quamash, *Scilla Fraseri*, sometimes sold as *Camassia esculenta*. Treat same as the Crocus.

Spring Snowflake.—This is a very modest hardy bulb and is called in the catalogues *Leucojum vernum*. It has flowers of the size and shape of fig. 2, (on the preceding page,) pure white, with a green spot on each of the petals.

Snow Drop.—Smaller flowers than the Snowflake, very early, delicate and drooping. It blooms in March, often when surrounded by snow. *Galanthus nivalis* is its botanical name.

A New Squash—The Custard Marrow.

This season our attention has been called, by Messrs. Henderson & Fleming, Seedsmen, to a new variety of squash to which they give the name of Custard Marrow. It is said to be from Japan, the seeds having come to this country by the way of England. From the shape of the fruit one would suppose that it was a bush variety, and we were surprised to find it a vigorous and quite prolific runner. The fruit is somewhat variable in shape, one of the most common forms being shown below; the others vary from this in being much shorter above or below the row of scallops. The skin is



Fig. 1.—THE CUSTARD MARROW.

cream colored, or nearly white, and soon becomes very hard. The section, fig. 2, shows that the flesh is very thick and that the space occupied by the seeds and their surrounding pulp is very small. The fruit should be taken for use while the rind is still so soft as to be easily pierced by the finger-nail. It cooks more dry than the scalloped bush squashes, and has very fine and delicate flavor. Having made but a single trial of this new variety we are not able to say how it compares with other kinds, but taken by itself we were very favorably impressed with it. As the seeds were sown rather late we can not speak as to its earliness. We bring it to notice as one of the novelties, and await the trial of another season to establish its rank in the already long list of varieties.

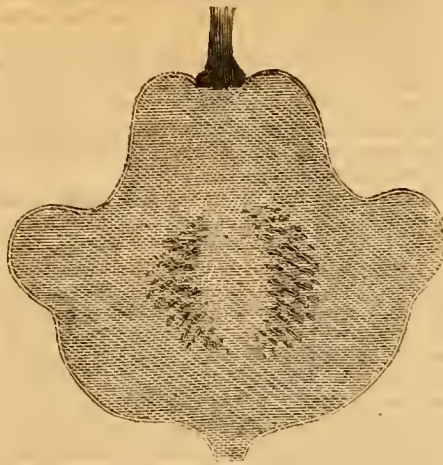


Fig. 2.—SECTION OF CUSTARD MARROW.

THE HOUSEHOLD.

Hints on Painting old Wood Work.

As soon as there have been one or two hard frosts to kill most of the flies, it will be an excellent time to paint wood work in the kitchen, or any other part of the house. Saying nothing of the economy of painting, it is an excellent practice to apply a thin coat of paint to all the wood work of the kitchen, once in 2 or 3 years. Good paint always saves much hard labor in keeping such parts of a house clean. Some doors that are used often, need painting every year, to keep them at all decent. It is not best to put on thick, heavy coats, as these are needlessly expensive, and after a few years will look bad. The same amount of paint, applied often in thin coats will look better and cost little more.

Where wood work is much soiled, especially by hands not scrupulously clean, it is sometimes difficult to make even the best of paint hold well. It will dry soon enough, but will afterwards peel off, for paint will not adhere well to a dirty, greasy surface. This is particularly the case in rooms, where washing and cooking are usually carried on.

In order to make paint stick and become about as firm as the wood itself, wash the surface thoroughly with moderately strong ley, using a short swab, then wipe it off with a cloth wrung out in fresh water. This will remove all grease and dirt that prevent the paint from taking a firm hold.

Paint for such places should be made of the best white lead, mixed to the consistence of thin cream, with two parts of the best boiled linseed oil, and one part of good laquer, or "liquid drier." Such paint will dry in one day, and become sufficiently hard to handle in a few days. A very small quantity of lamp black will make a beautiful lead color. Yellow ochre may be added until the paint is of the desired shade for floors, mop-boards, or wainscoting. Pure white lead for the body will make a much more durable paint for floors, than most other kinds. The use of zinc-white, which is much superior to white lead in some situations, as for instance in privies, is attended by a little difficulty, because it must be applied very thick to cover well, when used alone; but a second coat, not so thick, may be put on over other paint, and it will give greater brilliancy and will not tarnish from sulphurous gases frequently rising from sink-drains, etc., nor from the exclusion of light, which causes white lead paint to turn yellow.

About Olives and Olive Oil.

The Olive-tree furnishes two articles of commerce which are more or less used as food—Olives and Olive oil. The tree has been in cultivation from time immemorial, and it is difficult to trace it to its native country, though it is believed to be from Asia. In the Bible it is the earliest mentioned of any tree, save the fig; it was the branch of the Olive that the Dove bore to Noah, as a sign

that the waters of the flood had receded—and the branch has been used as the emblem of peace through many ages. The tree seldom grows more than 20 or 30 feet high, though it lives to a great age; it is an evergreen, with leaves of the shape shown in the engraving, but twice as large, and of a dull brownish green above, and very light colored beneath. This peculiar color gives to a grove of Olive trees a very sad aspect. The flowers are white and inconspicuous, borne in clusters in the axils of the leaves, and these are succeeded by a purple fruit which, in size and shape, resembles a damson plum, and contains a single nut. The fruit is remarkable for containing a large amount of oil in its fleshy portion, that being an unusual place for oil to occur. It is found to flourish in some of our Southern States and we have seen a



BRANCH OF OLIVE TREE.

fine row of the trees near San Diego, in California, where they were planted by the early Jesuit Missionaries. The green fruit is picked, steeped for a while in ley to remove a portion of the bitterness, and preserved in salt and water; in this state they are imported in casks and in bottles, and are the Olives sold in the shops. They are salt, bitterish, and have a flavor peculiar to themselves; we doubt if any one ever relished them at first trial, and yet most persons soon become very fond of them. They may be regarded wholly as a luxury for the wealthy, and are considered as useful to provoke an appetite—a purpose for which we trust our readers do not need to try them. The oil is a much more important product than the pickled olives, and is obtained by crushing and pressing the fruit. The quality of the oil depends upon the degree of maturity of the fruit, and the care used in its preparation. The finest, or "Virgin Oil," is from fruit not yet ripe; perfectly ripe fruit yields a larger quantity of an inferior oil, and a still greater amount of poor oil is obtained if the ripe fruit be allowed to ferment in heaps. The oil is imported

in variously shaped flasks and bottles, as well as in large jars and barrels. With us its use as food is mainly confined to dressing salads, etc., but in Europe, it is largely employed for most of the purposes for which we use butter and lard. The inferior kinds of oil are consumed in large quantities for burning, for oiling machinery, and for other use.

Cheese from a few Cows.

The communication from a "Farmer's Wife," upon making cheese from a few cows, published last June, seems to have met the wants of a number of our readers. Mrs. Ellen Whitcomb, of Delaware Co., Iowa, writes a pleasant account of her success, and as her ingenuity in overcoming some difficulties may be of use to others, we give the following extract from her letter:

"I quite disagree with the 'Western Boy,' in saying the *Agriculturist* is not adapted to the West. I think wherever people are, whether East or West, they may learn some thing. I have all the love for the West that any one can boast, still I have learned a great many things from the columns of your paper, indeed I could not do without it. As I was putting my cheese to press this morning, I thought I would write and tell you how much benefit your paper was to me, and perhaps my experience might help some one else; and also to express my thanks for the timely assistance in making my cheese, derived from it. This spring I said I wanted to make cheese with two cows, my neighbors, who thought they must have sixteen or twenty, laughed, and guessed I would make a large cheese with two cows, one of them being farrow, and we have a pet lamb that drinks four or five quarts a day. I did not like to give up, but never having seen a cheese made, and not liking to ask them how, I was still undecided, when the June *Agriculturist* came with those plain and sensible directions. Now, I said, I will have a cheese. My husband said he would fix a press if I would try to make one. I got a peck measure for a hoop, and the rennet from a neighbor, but then I had no linen cloth for a strainer; never mind, some old thin cloth would do for all I should make. The next difficulty was, we had no cheese basket—well, the colander would do, and now I was ready. The first cheese being too salt and rather thin, I then thought, to put three curds into one. I tried it, putting each curd into the press, and pressing lightly, so that it would not sour, then the third day I crumbled the too first with last, and pressed them all together, and a very nice cheese was the result, and you may well believe I was proud of it. Now I have three, and they all admit I can make cheese from two cows, for which I thank the paper and the lady who wrote for it."

New and Beautiful Embroidery.

The growing appreciation of elegant embroidery as a means of beautifying and enriching garments and fabrics, is an evidence of increasing refinement in taste, which all lovers of the natural, as developed in the artistic, must rejoice to see. Not a little of this interest and appreciation is owing to the new methods of accomplishing the work, rendering it infinitely more effective, as well as greatly abridging the tediousness of the process. A few years ago, embroidery was never seen excepting upon a few articles of clothing, or household adornment, belonging to the very wealthy. Ladies could not even afford to hire it done, so costly was it, on account of the length of time consumed in its production. What their own industry and skill could not achieve in the art of ornamental needle-work, they were obliged to do without; but so highly prized were the comparatively crude results of their dainty fingers, that the most valued gift a lady could bestow on her lover, was a scarf embroidered with her own hands. Could the bright eyes that grew dim during the months, and even years, that were frequently occupied in weaving solemnly grotesque roses and most alarming leaves on silk or wool,

have seen the brilliant and graceful shapes which grow into life with the rapidity of thought in these latter days, through the instrumentality of the Grover & Baker Sewing Machine, they would have looked with disgust upon what had before been a source of much satisfaction, and believed that the magic of the past had been transferred to the future, and instead of the lamp of Aladdin, found its home in the modern sewing-machine.

The facility with which the most difficult and elaborate patterns are executed by this machine, added to the exquisite beauty of the workmanship, has made it the most fashionable of decorations, not only for children's garments and morning wrappers, but for dresses of rich material, and the finest of carriage and opera cloaks. The carriage-rig of the Princess of Wales, displayed every day in her rides in Hyde Park, is embroidered in white silk, in the Grover & Baker stitch, which, according to the *Queen* and other English fashion journals, is exciting a *furor* abroad. A great advantage in embroidery is the union of strength and elasticity, for which the sewing of the Grover & Baker Machine has always been famous, and which renders it smooth, even, and perfect, without irregularity or liability to rip. Altogether, this embroidery promises to take a distinguished place in ornamental workmanship abroad as well as at home, and must greatly add to the esteem in which this favorite machine has always been held.

A Libel on the Tomato.

The following precious nonsense is going the rounds of the agricultural and other papers: "A good medical authority ascribes to the tomato the following very important medical qualifications: 1st. That the tomato is one of the most powerful aperients of the liver and other organs; where calomel is indicated, it is one of the most effective and the least harmful medical agents known to the profession. 2d. That a chemical extract will be obtained from it that will supersede the use of calomel in the cure of diseases. 3d. That he has successfully treated diarrhoea with this article alone. 4th. That when used as an article of diet, it is almost sovereign for dyspepsia and indigestion," etc.

This we regard as a sort of double-header, being a wrong to the medical profession, and a libel upon our most excellent friend the tomato. No "good medical authority" ever wrote himself down such a stupid as to accuse a tomato-vine of being an apothecary's shop, or a pair of Doctor's saddle-bags. Just think what a condition our livers must be in at the close of the tomato season, after being so powerfully "aperiented," to say nothing of the "other organs." The whole thing savors of the most arrant quackery. The tomato extract dodge was tried years ago, and we had "Tomato pills, will cure all ills," as the quack epidemic for its day. Let no lover of the delicious tomato be deterred from enjoying it for fear of taking anything bearing the slightest resemblance to calomel or any other medicine, but eat as many as he likes without thinking of his liver or the doctor.

To get Rid of Flies.—R. F. Watson contributes to the *Agriculturist* the following simple method of destroying flies without poison. Nearly fill a common tumbler with strong soap suds. Then nail a small board on the end of a pole long enough to reach the ceiling. Place the tumbler on the board and keep it in place by three nails, or pins inserted in holes around it. Then in the evening, make the room rather dark, and when the flies have settled on the ceiling, clap the tumbler over them; they will fly into the suds, and make a good breakfast for the chickens.

To Remove Green Corn from the Cob.—H. G. Bulkley writes to the *American Agriculturist*: "If you would leave as much of the hull as possible on the cob, take a piece of sheet iron, say 3 x 6 inches, and cut or file some teeth in one edge. Let the teeth be 3-16 in. in length, and a little

less distance apart. Then set the ear on end, and with the teeth scrape from top to bottom two or three times, which thoroughly splits the kernels, and with the back edge scrape it clean. This can be done with great rapidity, whether the corn is previously boiled or not. Some prefer to fasten the iron to a firm block, and then move the ear first over the teeth, and then over a smooth edge, fastened near by."

What to do with Old Boot Legs.—

"Farmer" writes to the *Agriculturist*: "Old boot legs are worth very little as mending material. The best use that I have found for them is, to cut the legs off low down, draw the legs on, put on your shoes, letting the legs come low down over the shoes. If plowing, or walking through mud, wet grass, etc., put your pants inside, and the leggings will answer about as well as a pair of boots entire, and cost about half as much."

Hints on Cooking, etc.

Bread at Sea.—A correspondent at sea, on the U. S. Steamer, Fort Jackson, inquires how to make good bread there, where no yeast can be obtained. Will some capable landswoman please inform him. The same instructions will also be welcome to several, who ask how to make yeast when one has none to start with.

Christmas Pudding without Eggs.

—1 lb. of raisins, stoned, 1 lb. of currants, washed and dried, 1 lb. of beef suet, shred very fine, 1 lb. brown sugar, 1 lb. flour, sifted, $\frac{1}{2}$ lb. candied orange peel, 6 ozs. bread crumbs, 1 teaspoonful of mixed spice, $\frac{1}{2}$ pint of milk, 1 teaspoonful salt, the outside rind of two large carrots scraped fine; all to be well mixed together, and poured into a mould and covered with thick paper, then with a good cloth and tied tight, plunged into boiling water and kept boiling six hours. To insure a pudding turning out whole, it is a good plan after taking it out of the boiling water to dip it instantly into cold.

Hard Molasses Gingerbread.—Take $2\frac{1}{2}$ cups molasses, $\frac{3}{4}$ cup of shortening, butter is preferable, fill the cup with boiling water, stir until the butter is dissolved, a tablespoonful ginger, a teaspoonful soda, stir quickly; knead with flour enough to make it hard, roll thin, bake in a quick oven twenty minutes.

Molasses Sponge Cake.—Mix 1 cup of molasses, $\frac{1}{4}$ of flour, 3 eggs, and a teaspoonful of soda. Bake in a quick oven.

To Clean Geese.—A farmer's wife says, after pulling off the feathers, put the goose in a tub, pulverize some rosin and rub a little into the down; then pour hot water upon it and rub off the down with the hand. Proceed in this way until all the down is removed.

Best Method for Keeping Beef.—

Cut up the meat in pieces as large as you desire. Pack it in a barrel, or cask. Then make a brine as follows: $1\frac{1}{2}$ lbs. salt to 1 gallon water, 1 oz. saltpetre to 100 lbs. beef, 1 tablespoonful of ground pepper to 100 lbs. beef. Put in the salt and saltpetre and heat it boiling hot, skim it, then add the pepper. Pour it on the beef boiling hot and cover closely. Your meat will be good and fresh any time. The philosophy is this—The hot brine closes the pores on the surface, preventing decay and the meat from getting too salt. Try it. If necessary seal the brine over in the spring, or put on a new brine. Farmers can in this way have fresh meat nearly all the time. The meat should be taken as soon as it is cold, before it has acquired any old taste by exposure to the atmosphere.

Another good Way to keep Meat.—

Cut it in slices ready to broil or fry for the table. Then putting down in a jar one laying of meat, sprinkle with salt and pepper, and so continue till the jar is filled, cover closely and set in the coolest part of the cellar. It will keep a long time, for I and my neighbors have tried it.—*A Country Woman.*

BOYS & GIRLS' COLUMNS.

Enjoyments at Home.

To visit one's neighbors occasionally is pleasant and profitable; the young as well as the adult should learn by practice how to behave in society, how to give as well as receive enjoyment. But it is a mistake to look away from home for the greatest pleasure. Rather try to make home the happiest place in the world. Have you plenty of fruit, apples, pears, peaches, grapes, strawberries, blackberries, currants, etc? These will add much pleasure to all in the house, and to visitors, but none will enjoy them as much as he who raises them. Almost every boy on a farm can do something at this. He can learn how to graft, and make the old orchard team with the choicest apples; plant pits of peaches, cherries, etc., and bud them, with the best varieties; take cuttings of currants, procure plants of berries, and in a few years have abundance of luscious fruit of his own raising. He will find in the *Agriculturist* from time to time, full directions for cultivation, pruning, etc., and will soon become an interested reader of the men's columns of the paper, and thus be growing manly himself. How many boys will make a beginning this month by setting out a bed of strawberries, from which, with proper attention, they may gather some fruit next summer? Then when the leaves have fallen, invest a little money in a few good grape vines, and so on as the season arrives, get the fruit enterprise into operation. The pleasure of seeing your plants grow will well repay for the trouble, and the fruit and practical knowledge obtained will be clear gain.—The girls may cultivate flowers, and themselves at the same time; making roses bloom in the yard and on their own cheeks, and thus beautifying the whole household. Then there will be the insects to watch. Most of them must be killed, but a few each year may be caught, caged, fed and reared, so that you may learn all their habits. This will be full of interest, and you may make observations which will benefit many others. Every boy has or should have a knife, with which he may whittle out many amusing and useful things; windmills for the cornfield; weather vanes for the barn; figure 4 traps for the rats, etc. Above is a plan for a very comical weathercock. Make the figure of a man say about a foot high. For arms, have two blades set like those of a windmill, and let them be fastened at the shoulders by a wire running through the body, in which it should turn freely. Place the figure on an upright wire fastened to the end of a pole, or at the top of a building. This wire should pass through a metal plate connecting the feet, and at the point where it supports the body, insert a nail, so that the whole may turn easily. Then when the wind blows, you will be amused to see the queer antics the image will perform, beating the air with his cudgels, and facing about right and left, very often at double quick time. One which the writer put up many years ago is still an object of curiosity to the passers, who frequently stop to watch its amusing pranks. With plenty of such employments which young people may find for their leisure, there need be no complaint of dullness at home, or desire to "go somewhere" to find enjoyment.



How long is a foot? "Twelve inches," is the ready answer of the girls and boys. And how long is an inch? "Three barley corns," says the arithmetic. But some kernels or corns of barley are longer than others, and if the yard measure of some storekeepers were to be made by taking these as a standard, they would certainly pick out the very shortest ones. Edward II, King of England, in 1324, made a law that the barley corns should be round and dry; this, however, was a very loose way of fixing the standard, and without doubt the length of the foot and the yard varied much with different dealers. A variation of so small a quantity as the hundredth part of an

About Weights and Measures.

inch in the measure would make much difference in the profits, where large quantities of costly goods were sold. In the years 1735 and 1742, a society of learned men in England, by comparison of the standards of measure used by different nations, both ancient and modern, and by other means, such as determining the length of a pendulum beating seconds, fixed the length of the standard yard. In 1758 and 1760, the English Parliament caused two copies of this standard to be prepared, and adopted them as the measure by which all others in the kingdom were to be regulated. These were destroyed by fire in 1834, and it was a more difficult matter than you may suppose to construct another which should be exactly like the first. There were of course thousands of copies all over the kingdom, each of them accurate enough for general purposes, but yet most of them varied very slightly from each other, and it was not easy to tell which was just right. In adjusting the one finally adopted, over 200,000 measurements were made under the microscope with the most delicate instruments. Copies of this standard were early introduced into this country, and all our measures are required by law to correspond to them.

The weights in use in England and the United States, were originally derived from the weight of kernels of grain. Henry III, enacted that an English penny should weigh 32 grains of wheat gathered out of the middle of the ear and well dried; 20 pence (pennyweights) to an ounce, and 12 ounces a pound. The pound avoirdupois contains 7000 grains. Standards for the pound Troy were made in 1758, by Mr. Bird, the same gentleman who prepared the standard yard. The standard of the gallon is a vessel containing 53,372.2 grains; the bushel contains 543,391.89 grains. Copies of these are kept at Washington, and also at the Capitals of the several States.

Do you Know how to Read?

Not many boys or girls, or even men or women have learned how to read. "But you do not mean here in the United States," says some one who is surprised that the truth-telling *Agriculturist* should make such a statement. Yes, we are thinking and writing about our own country, where schools are so plenty, and where it is thought almost disgraceful for any person to grow up ignorant of reading and writing. Not long since the writer saw a boy with a book he had taken from a library, which he seemed to be reading very industriously. He turned over page after page, and in a few hours closed the volume saying "I have read that through." "And what was it about?" we asked. "Oh about the Indians, and the Spaniards and English who first came to this country. 'What about the English?' "Oh I don't know exactly; they fought with the Indians, and got their lands away from them, and settled the country." A few more questions proved that this lad had been very patiently calling off the words in the book, but that he had received and kept very few of the thoughts which the words were meant to convey to his mind. He had gained very little knowledge, only a few scraps, which floated loosely in his memory, and which would all be gone in a few weeks at farthest. Now it is believed that more than one half of all that is called reading is done in this way; the names of the words are called, and that is all. What would be thought of a boy who should swallow chestnuts whole? How much nourishment would he have in eating them? How much nourishment would he receive from them? Now every sentence is like a shell containing an idea, and whoever merely receives the words without getting the idea, takes his mental nuts uncracked. This is one reason why so few are really fond of reading. They have not learned to feed the mind by it. He who rightly reads a book, has taken the ideas it contains and made them his own thoughts. Then he can compare them, sift out the good ones, and lay them up in his memory with other knowledge for future use. To do this requires that the mind be kept actively at work while the reading is going on. At first it may be necessary to read a page over many times before the attention can be so fixed that all the ideas can be held by the mind. But it is better to read a book six times and thus know what is in it, than to skim six books without retaining what they teach. In reading many works, especially descriptions, it will be of great help to the student to imagine just how each scene looks; to try and make a picture of it in the mind. If a representation or map showing the thing or place described can be had, it will be a great help, and should be constantly used. Those who studied the news from the war in this way, as it came day by day, have a clear idea of the great operations of our armies, and will remember them much more easily. Whoever learns to read in this way, passing over nothing which is not made clear to the understanding, and deeply impressed on the memory, will have the surest foundation for a good education. An excellent practice is to read a page or a chapter, and then try to write out the ideas in one's own language. Practice will make it easy, and the habit formed while young, will be lasting, and of incalculable benefit, especially if proper care be taken to read only

good books; and it will be found that the love of reading in this way will increase with each new volume with which the mind is fed.

Evading High Postage Rates.

It is related that at one time the poet Coleridge stopped at a country inn just as the postman brought a letter for the servant girl. She looked at it and asked "How much postage?" "One shilling" (24 cents), was the reply. Sighing deeply she handed it back saying she was too poor to pay it. Coleridge, though poor himself, immediately offered to pay it, which he did in spite of some rather surprising nods and winks from the girl to prevent his doing so. When the postman had gone, she confessed that the letter contained no writing. Owing to the very high rate of postage, this girl and her brother had contrived a set of hieroglyphics to be used on the outside of their letters, by which they communicated with each other, without paying. A few years after this, by the exertions of Sir Rowland Hill, postage was reduced to one penny per letter, and there remained no excuse for such contrivances to cheat the Post Office.

New Puzzles to be Answered.

No. 175. *Arithmetical Question*.—A and B traveled on the same road and at the same rate from Jarrettsville to Cooptown. At the 50th mile-stone from Cooptown, A overtook a drove of geese which were proceeding at the rate of 3 miles in 2 hours; and 2 hours afterwards met a stage wagon, which was moving at the rate of 9 miles in 4 hours. B overtook the same drove of geese at the 45th mile-stone, and met the same stage wagon exactly 40 minutes before he came to the 31st mile-stone. Where was B when A reached Cooptown. Please send solutions.



No. 176. *Illustrated Rebus*.—Worth remembering.

No. 177. *Charade*.—I am composed of 17 letters. My 1, 4, 8, 10, 17, 5, 13 were much needed in the late war. My 1, 2, 16, 4, 9, 13, 17 is the offspring and the babe of liberty. My 13, 2, 1, 4, 9, 10, 17 is a rare virtue, much practised by a great General. My 1, 8, 10, 7 is a general favorite who often indulges in my 14, 17, 8, 5, 13, and who never should be a 11, 2, 1, 6. My 10, 4, 3, 6 is owed by most who engage in my 3, 12, 13, 2, 9, 4, 13. My whole forms the pillars of the Republic.



No. 178. *Illustrated Rebus*.—A very serious question.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the August and September numbers. On page 255, No. 169. *Prolific Word*—Brained.... No. 176. *Illustrated Rebus*.—Beak wick tool urn the e's son switch e vents tea ch, or: Be quick to learn the lessons which events teach.... No. 172. *Illustrated Rebus*.—Sun boy in the U. S. by patient in dust tree is pre-paring hymns elf four the President C, or: Some boy in the United States by patent industry, is preparing himself for the presidency.... No. 173. *Charade*.—The American Agriculturist.... On page 287. No. 173. *Illustrated Rebus*.—Better B poor and good than rich and good for nothing.... No. 174. *Illustrated Rebus*. B under nose in four nose laver e is half so pale fool, or: Be under no sin, for no slavery is half so painful.

The following have sent in correct answers up to September 10th: Wm. H. Paine, 162, 165; Carrie Nevins, 162, 165; Charles E. Bishop, 162, 165; Jim R. Hale, 165; Daniel R. Hosterman, 161, 162, 163; Lyman H. Basset, 166; J. M. Johnson, 168; James A. Dorsey, 161, 162, 165; Sals, 165; John C. Green, 162, 165; Samuel A. Sims, 173; John G. Bundy, 162; Elma M. Taber, 172; George L. Brown, 172; Walter S. Wales, 169, 171; Lucy R. Weeks, 160, 173; Robert G. Weeks, 172, 173; "O. L. S.," 172, 173.



A STITCH IN TIME.—Engraved for the American Agriculturist.

Stitches Needed to be Taken.

This careful mother is teaching her little girl one of the most important lessons, and we give the pleasing picture that the many thousand young readers of the *Agriculturist* may have the benefit of the instruction. A stitch in time in the girl's dress will save the great rent and the many stitches needed to mend it, which would surely follow a day's play in the slightly torn garment. But that is not the most important stitch being taken; the child is learning the habit of carefulness. If permitted to go unheeded, the habit of neglect would increase day by day, not only about her clothing, but in other things, and a thriftless, untidy young woman would be the result; then it would take years of careful training to overcome the evil. There is many a small defect in the habits of young people that may be easily mended now, which will increase to a great blemish, and perhaps finally ruin the whole character if left unchecked. Those thoughtless, half profane words may grow into shocking oaths; that love of telling large stories, and small deceit in words and actions, may make the man a liar; impatience, fretfulness, and anger may increase to unbridled passion, revenge and murder. All great sins and wrongs grow from small beginnings, which may be set right almost as easily as a spark may be extinguished, but like the spark, if left unnoticed, they spread to great mischief with fearful speed. Let every girl take the stitch in time, in all her habits, and let the boys follow the good example.

The Inventor of Sewing Machines.

Elias Howe, Jr., was born in Spencer, Mass., in 1820. He was the son of a miller and farmer, and worked with his father until sixteen years old, when he found employment at Lowell, Mass. In 1837, the financial crisis threw him out of employment there, and he engaged to work with a philosophical instrument maker in Boston. While there, a knitting machine was brought to the shop for repairs, and some one looking at it, casually remarked

that whoever could invent a sewing machine, would be sure of a fortune. This remark took strong hold of Howe's thoughts, and awakened his inventive genius to attempt the undertaking. For a long time he spent his leisure in making stitches of various kinds and contriving what could be performed in this line by machinery. After many trials and repeated discouragements, in 1846 he patented his invention, and his first machine then made, the work of his own hands, may now be seen in his store window at No. 629 Broadway, in this city. It is certainly worthy to be purchased by the women of this country and sacredly kept in some public institution where future generations may be gratified in inspecting it. The sewing machine was now finished, but Howe found his troubles only commenced. The tailors were greatly prejudiced against it, fearing it would destroy their business. They threatened to mob an Irish tailor who had agreed to cut a suit of clothes for Mr. Howe, to be made up on the machine. But a Yankee was found with courage enough to undertake it, and Mr. Howe still has some of the garments then made on his machine. The invention met with so little favor at first, that Mr. Howe, who had sold his patent in England, for a small sum, went to that country to superintend the construction of machines; but he met with such poor success that he was obliged to pawn his original model, and in 1849, he returned to America, working his passage as cook. Arriving at New-York he had not money enough to take him to his family,

although he heard his wife was very ill, and he went to work as a journeyman mechanic to procure funds. Before he could earn enough to return home, his wife died. Soon he found that unprincipled persons were infringing his patent, and to secure his rights he prevailed upon his father to raise money by mortgaging his small property. Then he sacrificed half his patent to a capitalist to raise more means, and long years and immense sums of money were spent in lawsuits, to defend his invention. However, the right at last prevailed, and in 1856, the full possession of his patent was secured. Peace and prosperity now followed, but he considers even the large sums since realized a poor compensation for the terrible trials through which he was obliged to pass. The lesson of this true story is, that perseverance and energy are necessary to success, even in the most promising undertakings. It adds not a little to the luster of Mr. Howe's character, that when the rebellion broke out, he raised a regiment to aid the government at his own expense, enlisted in the ranks as a private, and did efficient service.

A Kind Act Rewarded.

A short time since a one-armed soldier entered a crowded rail-road car in the city of Chicago. He looked very weary, but none moved to give him a seat, until a neatly dressed young woman observing his empty blue sleeve, arose, and asked him to take her place. At the sound of her voice he looked up, their eyes met, and immediately they were clasped in each others arms, and she was sobbing for joy on his shoulder. The young woman was the soldier's wife, from whom he had been separated three long years. He had been wounded and taken prisoner, and his wife having lost all trace of him, had removed from their former residence to Chicago, so that when he was released, his letters failed to reach her and he could hear nothing from her. He had gone to Chicago in search of her, and thus by this kind act of hers they were so happily restored to each other.

Portrait of Chief Justice Chase.

The Evening Post relates the following amusing incident: During the recent southern tour of Chief Justice Chase, formerly Secretary of the Treasury, while at Key West, he visited a somewhat noted negro. This man is said to be strongest person in all Florida, and he possesses strength of character as well as of body. He was formerly a slave in Maryland, but by over-work purchased his freedom while yet young, removed to Key West, where he prospered, and is now the owner of a large plantation. He very politely conducted Mr. Chase over his grounds, pointed out the various fruit trees, etc., and was himself greatly pleased with his visitor. Finally, when they returned to the house and were seated on the verandah, the colored man said he would like very much to have a portrait of his guest. Mr. Chase, having no photograph, took from his pocket a one-dollar Greenback and handed to him. The negro looked first at the picture on the end, then at Mr. Chase, and at last in his surprise broke out "Why you's Old Greenbacks hisself, isn't you?" Mr. Chase greatly enjoyed the incident, and the negro equally so, for he added "If I lives fifty years, I shall always remember sure, just how you and I was sitting together."



Singular Features in a Landscape.

The girls and boys who know how to use their eyes and to find out all that a picture contains, will be pleased to discover the curious features in this landscape. We do not know that any such formation of rocks and shrubs actually exists, though it is not impossible. It is not more wonderful than the "Old Man of the Mountain," shown in our last number. Probably, however, our artist has drawn on his imagination for this scene, with a view to exercise the perceptive or investigating faculties of our young readers. Now see what you can find in the picture

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[From Forney's Philadelphia Press, August 22, 1865.]

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St. Louis, Mo., July 16th, 1865.

The Editor of The Tribune.

DEAR SIR,—I have had it in contemplation for some time, to write and tell you of the pleasure I get from the weekly perusal of the proceedings of the Farmers' Club; first I will tell you how recently I became aware of its existence. About the 1st of September, 1863, I noticed an advertisement, and a cut of the Tribune Strawberries and immediately subscribed for the Weekly Tribune, in which I found the proceedings of your Club. I have read them constantly, until they have become to me a necessity, and I look for Monday as red letter day in my calendar, and was I to be confined to one agricultural paper alone, should prefer The Tribune to anything I have yet seen. Yours, JOHN HENWOOD.

Another subscriber writes:

I neglected (forgot) to renew my subscription to The Tribune, until so late that I missed the first July No. Can you help me to it? Portions of the Farmers' Club reports in that number particularly I wish to preserve. In fact, that feature of the paper constitutes one of the main reasons why I take it. And I have no doubt, that it receives a goodly share of its patronage from persons who wish it well, but would not otherwise bring themselves to the subscribing point.

Yours truly, O. A. ALEXANDER, Waynesville, Ill., July 25.

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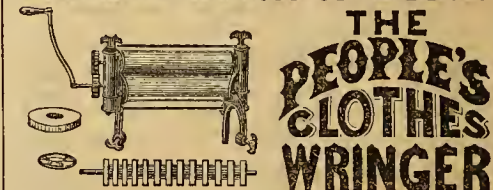


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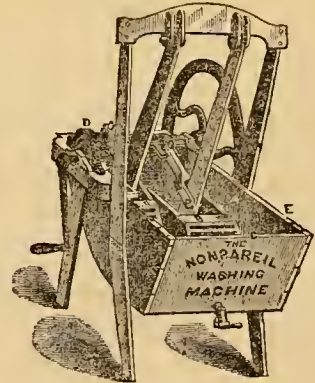
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| 6 Fine Double Tulips..... | | |
| 15 Beautiful Named Early Tulips..... | | |
| 25 Fine Mixed Crocus..... | | |
| 3 Polyanthus Narcissus..... | | |
| 4 Polyanthus Narcissus..... | | |
| 3 Bulbocodium Vernum..... | | |
| 3 Persian Iris..... | | |
| 12 Double Snowdrops..... | | |

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| 13 Fine Named Double and Single Hyacinths, for pots, glasses or open border..... | } | \$10.00 |
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| 4 Polyanthus Narcissus..... | | |
| 12 Double Narcissus..... | | |
| 3 Persian Iris..... | | |
| 3 English Iris..... | | |
| 1 Crimson Crown Imperial..... | | |
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An unusually fine lot for sale at the lowest prices. Over 30 different varieties.

CONCORD, No. 1, 25 cts. each, \$3 per dozen, \$6 per 50, \$10 per 100, \$20 per 1000.
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Of all the Leading and Hardy Varieties.

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Our No. 1 Iona, are very strong, extra plants.

CONCORD VINES,

- \$12 00 per 100; \$80 00 per 1000;
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We also offer fine plants of all the sorts of vines usually grown.

The great superiority which the growth of the last two seasons, in various sections of the country, shows our Vines to possess, is owing to the fact that they are grown in broad deep borders. The roots having thus abundance of room, become heavy, woody and substantial, with abundance of fibre eyes.—Both roots and tops become thus so thoroughly ripened that on being planted out they grow with great luxuriance.

Having for many years and with large cultivation, thoroughly tested the pot culture, giving a pot to each Vine, we at length discarded it several years since.

It has, in our opinion, been the main cause of the weak growth of a large part of the Delaware Vines, which have been sent out in years past.

The curled, twisted and matted mass, which the cramping of the pot causes, cannot possibly produce a growth to compare with that of the Vine which has luxuriated a year in a broad deep border.

We consider small vines of our culture of the last three years, more valuable than the No. 1 Vines of pot culture, and we desire that those interested should by comparison, satisfy themselves that this is true.

The DELAWARE VINE has an established reputation, and needs few words to commend it. Those who plant it are certain of a good variety both for the table and for wine.

Its hard and iron-like wood has endured winters in Iowa and Wisconsin, so severe that Catawba and Isabella were entirely killed. It is pre-eminently the grape for Canada, and Northern New England, and does equally well on the hill-sides of the South.

The general failure by rot of Catawba, and other varieties the present year, proves incontestably the great value of the Delaware. It has not only escaped the rot, but where it has been affected by the mildew, which has this year attacked nearly all varieties, the wood and fruit have not been materially injured.

The IONA is less valuable than the Delaware, only because it has been less universally tested. It is equal to the Chasselas in size and flavor, grows more rapidly than the Delaware, and is no more liable to mildew. As a table grape we have a very high opinion of its excellence, and are preparing to plant it very largely in our own vineyards. Its wine qualities are yet to be tested. As a table grape it ranks with the Delaware.

Regarding the size of the respective classes of vines, we make no "extras."

In assorting our vines of one year's growth, we make three classes.

No. 1, are the finest and largest, and are really extra. No. 2, are the next size, of which large quantities are used for vines and planting. No. 3, are valuable for nurserymen to plant out.

When the expense of preparing land for Vineyard is considered, it is economy to use No. 1 plants. There will be a year's difference in fruiting Delaware, between Nos. 1 and 3.

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Messrs. Wm. Perry & Son, Gentlemen.
Your Price List for the fall of 1865, is at hand. Those vines you sent me last Spring were very fine, some are bearing this summer. I want this fall, 50 Iona, 25 Israella, and 25 Adirondac. No. 1 Vines. Yours Truly, L. KAUFFMAN.

GALESBURG, Knox Co., Ill., April 17, 1865.

Messrs. Wm. Perry and Son, Gentlemen.
The box of Vines you sent me, came to hand on the 13th inst. On opening it I found the contents in fine order. Damp and moist, the Concord exceeded my most sanguine expectation. I never saw so many and such long roots on yearling Vines before. The members of the club appeared to be pleased with their Vines. Yours Truly, S. S. WHITE.

SHERLEYSBURG, Penn., March 31, 1865.

Messrs. Wm. Perry & Son, Gentlemen.
The Vines came to hand all safe, and without a doubt they are the strongest and healthiest vines ever I purchased, and I have bought of quite a number of Nurseries, but none have compared with your vines. I am very sorry I did not purchase of you two years ago this spring.
Yours Truly, WM. A. FRAKER.

We would state that Mr. Fraker bought our second size vines. Parties purchasing this fall will get our vines at much lower rates than if they wait until spring. Catalogues sent on application. Address as above.

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Mostly Concord and Hartford Prolific.

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- One year, No. 1, \$25 per 100, or \$300 per 1000.
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- One year, No. 1, \$15 per dozen, or \$100 per 100.

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- One year, No. 1, \$15 per dozen, or \$100 per 100.

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- One year, No. 1, 75 cents each, or \$6 per dozen.

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Such plants have given entire satisfaction wherever tried, and can therefore be recommended with confidence.

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Diana.....	35	65	1 00	1 80	3 50
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Creveling.....	60	1 10	1 70	3 25	6 00
Taylor.....	30	55	80	1 50	3 00
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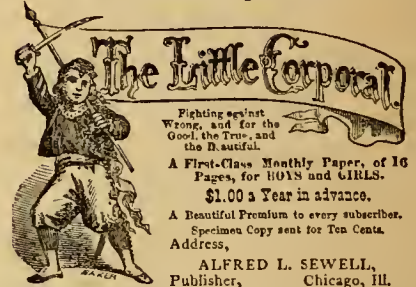
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Contents for November, 1865.

American Yew or Ground Hemlock.....	Illustrated..	345
Bene or Sesame	Illustrated..	343
Bees—Apary in November.....		331
Books for Farmers and Others.....		332
Boys and Girls' Columns—Good Premiums—About Going to School—A Lesson for all to Learn—A Chinese Story—A Frightened Workman—A Valuable Peach—Honesty the Best Policy—Problems and Puzzles—A Glorious Ride—How they Used to Telegraph.....	2 Illustrations	351, 352
Broom—Brush for Stables.....	Illustrated..	341
Buckwheat—Storing Undreshed.....		343
Butternut Shell Ornaments.....	Illustrated..	349
Cardinal Flower	Illustrated..	348
Cattle for Slaughter—Inspecting.....	Illustrated..	344
Cheese Factories.....	Illustrated..	340
Cinnamon and Cassia.....	3 Illustrations	349
Cold Grapery.....		331
Corn—How to Husk Quickly.....	Illustrated..	338
Corn Stalks—Binding Shooks.....	Illustrated..	343
Dogs—Bells to Prevent Sheep-killing.....		339
Earth Closets.....		347
Exhibitors—Hints to.....		346
Exhibition Tables at <i>Agriculturist</i> Office.....		331
Farm Work for November.....		329
Farming—Western.....		339
Flower Garden and Lawn in November.....		330
Flower Garden—Hints for.....		347
Fruit Lists—Local.....		347
Garden—Kitchen in November.....		330
Grape Vines—Pruning.....	3 Illustrations	345
Grapes—Notes on.....		346
Grass, Quack—Getting Rid of.....	Illustrated..	341
Green and Hot-Houses in November.....		350
Hogs—Killing and Scalding.....	2 Illustrations	337
House Plants—Care of.....		348
Ice—Provide for next Summer.....		350
Labor Saving—Labor Making.....		343
Market Reports and Commercial Notes.....		332
Orchard and Nursery in November.....		330
Plowing Wet Ground in Autumn	Illustrated..	341
Plows—Right and Left Hand.....		339
Potatoes Planted under Straw.....		342
Premiums offered for 1866.....		331
Roots—Burying in a Pit.....	Illustrated..	342
Sheep—Live and Dead Weight.....		339
Sheep—Preparations for Feeding.....		337
Shoes—Woolen, Clogs, Patens, etc.....	Illustrated..	350
Shovels—How to Handle.....	Illustrated..	340
Trout—Breeding.....		343
Turkeys—Fattening.....		338
Walks—Asphalt or Coal Tar.....		347
Warmth in Clothing, Houses, etc.....		350
Wheat—Amount of Seed per Acre.....		341
Yeast—How to Make at First.....		350

INDEX to "BASKET," or SHORTER ARTICLES.

Advertisem'ts—Noticing 333	Hort. Society, Pa.....	333
Advice, Good.....	Hort. Society, Mass.....	334
Apple, Sweet, Sour.....	Hort. Soc., Worcester.....	334
Bean Pods for Swine.....	House Plants, Manuring.....	334
Bone Dust for Wheat.....	Housekeeping Book.....	335
Brandy, Sorghum.....	Hunhugs, Caution.....	333
Compost Heap.....	Insect Book.....	335
Corn Crib, Measuring.....	Inspector General.....	335
Cows, Yoke for.....	Lilacs in Bloom.....	336
Cuttings in Autumn.....	Locust Killer.....	334
Death, Joseph Frost.....	Locust, Red.....	335
Drouth, Severe.....	Manure Wasted.....	334
Entomologist, Practical.....	Manuring House Plants.....	334
Exhibition Am. Inst.....	Medical Questions.....	335
Exhibition, French.....	Marl, How to Use.....	334
Fence Posts, Pres'ving.....	Mowers, Trial of.....	333
Fences, Queries.....	Mucilage and Ink.....	335
Fruit, Early Ripening.....	Nursery Book.....	336
Grape Vine, Moving.....	Patent Rights.....	335
Grass Scythes, Form.....	Planos, Premium.....	333
Hen Lice, Expelling.....	Plants Named.....	336
Horse, Tethering.....	Poultry Lice.....	334

Poultry, Roup.....	336	Smoke House.....	336
Premiums Good.....	333	Smut in Wheat.....	335
Quassia for Ants.....	335	Soap, Hardening.....	335
Root Pruning.....	336	Strawberry Runners.....	336
Salt and Lime.....	334	Tomato, Tilden.....	336
Sanitary Commission.....	335	Trees, Injured.....	335
Sawdust Manure.....	334	Turkeys, Fattening.....	336
Sheep at N. Y. S. Fair.....	335	Turnip, White French.....	335
Sheep Diarrhoea.....	334	Water, Pumping.....	335
Sheep Management.....	331	Wine Plant.....	336

Notes and Suggestions for the Month.

November work is that of preparation for the winter; fitting stock and their quarters for the cold season; finishing up the fattening of those animals destined for the market, and turning those farm crops which can be disposed of into money, or something else, which will equally contribute to happiness. November is the month of full granaries, and of thankful hearts. A good Providence has vouchsafed to this country all that we need of the fruits of the earth, and a great deal more; and though sometimes in particular sections we may have had larger harvests, yet taking the value of gold and of exchange into consideration, and the prices which are likely to rule, it is probable that we have never had a season of greater agricultural prosperity. We have poor to care for, and early and generous thoughtfulness for them will provide work for many, and comfort for many more, who in the proverbial improvidence of poverty might otherwise suffer from the necessities of life, lose health and pluck, honesty, honor and perhaps life itself. Let us not forget this, among our other November work.

Buildings.—Look well to roofs of all kinds. Stop holes and give a coat of coal tar to those from which the water is not collected for use. Stables may be made very warm by boarding up on the inside and filling straw, hay, or leaves between the inner and outer boarding. Whenever it is possible to prevent the sweep of the air under stable floors, by banking up earth against the sills of the buildings, do so, first painting the wood-work with gas tar. Look to the ditches and channels to carry water away from buildings, especially away from the cellar walls of the house or barns, so that there may be no danger, in case of heavy rains and melting snows, of the cellars getting full of water.

Butter.—The very high price of butter should lead to feeding oil-cake, carrots and other roots, corn meal, bran, pumpkins, etc., which, judiciously used, will increase the yield.

Bees fatten rapidly at this season, when the cool air gives them sharp appetites. Provide salt, and fresh water abundantly. Give them the feeds of grain (ground and cooked, or soaked) with entire regularity. Keep fattening cattle warm, and never let them worry for a meal, or for lack of regular attention. Keep the amount fed, of grain, roots, oil-cake, etc., uniform or increase it very gradually. Occasional changes of feed, to give a variety, are desirable.

Calves.—Provide shelter, and feed so that there shall be no check in their steady growth.

Cows.—Feed well so that they may be milked longer, and give this year richer milk, than usual, to take advantage of the butter market.

Cisterns.—Though rain falls on the roof of an ordinary dwelling to supply water for all purposes of the family, and a great deal more. So too the roof of a common barn turns water enough for all the stock it can cover, and all other purposes. What is needed is to have cisterns to hold and store it. They should be out of the reach of severe freezing, and conveniently situated. At this season clean out cisterns, if the water is low. Protect from leaves which might enter through the eave-spouts, and protect the pumps and pipes from freezing.

Corn.—That which is to be stored should be left in the ear, and put in narrow open cribs, or spread out on a floor in a dry loft. Feed soft corn before cold weather. Sell rather than store, except for home use, if good prices are offered.

Draining.—As long as the ground continues open, draining may go on. We believe in deep draining,—3½ to 4 feet in ordinary cases. Dig for tiles as narrow as possible; it is less work.

Fences.—Straighten up exterior fences and put them in such order, that there will be little to do in the spring. Dispense with all interior fences possible. Before the ground freezes, make an inspection to know what fencing stuff it is best to get out next winter.

Fruit.—The great value of fruit this year will lead to its careful handling. Never roll barrels of apples, always lift them, and avoid pouring them from a basket into a barrel, etc.

Grain Fields.—Guard against standing water, or floods from higher ground, which will wash the soil away, or which will bring on gravel, etc., by a good system of surface drains. Well drawn plow furrows are usually sufficient, but on spots where much water is likely to come, pile stones, or set planks so as to turn it off.

Hogs.—Cook all feed given to fattening hogs. Add occasionally a few handfuls of charcoal dust. Pork is better fattened rapidly than slowly.

Horses.—See note on horses in the last *Agriculturist*. Halter-break colts, coaxing them with sugar, never using a harsh word to them. Yearlings and 2-year-olds that have run free in pastures during the summer, will need to be handled and halter-broken, for convenience, before cold weather cuts off the pasturage.

Ice Houses.—See article in the "Household."

Manure.—Put all manurial materials into compact heaps with judicious admixtures of muck, vegetable matter or soil, bearing in mind the principle not to mix lime or unleached ashes with solid or liquid animal excrements, flesh or anything yielding ammonia in its decomposition, except perhaps leather. See "Basket."

Plowing.—The dry weather which has prevailed during the autumn, will make the ground very hard to plow in many places, but some fields may be much better plowed now than next spring. See article on plowing wet lands in this number. The benefit of the frost in winter, the fact that the teams are in better condition for work, and the greater leisure we have now than in spring, should lead us to do all the plowing possible this fall.

Poultry.—To have eggs in winter, the hens must have warm, light quarters, well ventilated, frequently cleaned out, always sweet; they must be regularly fed, never have too much, never too little, and always fresh-water. If all the hens are induced to lay in winter, there will be few or none to lay or to set in spring for May and June broods.

Sheep.—Let the rams run with ewes for March lambs, not allowing valuable animals to share their attention among too many.

Roots.—Dig and house, or cover in pits before hurt by frosts. Carrots and beets are tenderest.

Water.—If possible secure running water in the stock yard. The past months of drouth in many sections have shown the living springs and wells.

Weeds.—Rake up and destroy them all by fire.

Wood.—Dead wood, and that which having been blown down, or broken off by the winds, cumber the wood lot, may be collected and used for fuel.

Work in the Orchard and Nursery.

The operations of planting and putting the stock in the best condition for winter will continue to occupy the attention of the orchardist and nurseryman. The suggestions of last month will serve for the early part of the present one. Planting may be continued as long as the weather is suitable. If any nursery stock is received which cannot be carefully planted, heel it in, selecting a light soil in a place where water will not stand. Be careful that no spaces are left among the roots, unfilled by earth. Trees carefully heeled in, will pass the winter in perfect safety and be at hand when wanted for spring planting. Much may be done in preparing the soil for planting in spring. Manuring, plowing, and even making the holes for the trees can be continued while the weather permits.

Cider.—Those who are fortunate enough to have apples, will find directions for making good and sound cider on page 304, last month.

Cellars.—Do not close up the cellars where fruit is stored, until there is danger of freezing. Ventilation is necessary, and where the construction of the house will allow, it is a good plan to open a ventilator into a flue of the chimney.

Grafting.—Seedling stocks to be root grafted, are to be taken up and heeled in in the cellar, or where they can be taken out when needed. Cut cions after the trees are at rest, and bury in sand or light soil.

Insects.—Many of these pests may now be "nipped in the bud." The clusters of eggs and cocoons can now be readily seen on the naked trees, and the time expended in searching for and removing them will be profitably employed. So with borers: examine the trees near the roots, and if any borer holes are visible, kill the grub with a wire probe.

Labels.—See that all are in a condition to pass the winter without becoming effaced. Those on newly planted trees need looking to. The wire is often twisted on firmly at the nursery, and when growth starts, the tree may become girdled. Labels or stakes to be set in the ground, will last for many years if the lower portion be covered with gas tar.

Manuring.—Bearing trees need annual manuring if we would have the best results. Spread a coating of compost or coarse manure over the roots. See last month on page 314. In our best nurseries the young stock is manured at this season, a good compost being plowed in between the rows.

Nursery Rows.—Give them the final plowing, turning the furrows towards the rows. In large nurseries the heading back and shaping continues through the winter in mild weather.

Seedlings.—Cover the half hardy kinds with a

shelter of evergreen boughs. See that water drains away from the beds. An inch or two of sand, or dry sandy earth thrown up around the stems of seedling evergreens will help protect them.

Kitchen Garden.—As long as the ground can be worked, there is something which the gardener can do for the benefit of future crops. Manuring and plowing, or trenching is all the better done now, and drains may be laid. Stiff soils thrown into ridges will be much ameliorated by the frosts of winter. Make surface drains to carry water away from crops left out over winter. All refuse should be secured to add to the manure heap. Weeds that have gone to seed, are to be dried and burned.

Asparagus.—Make new beds as heretofore directed. Give old beds a good covering of littersy manure.

Beets and Carrots.—Hard frosts injure these, and they should be out of the way of harm. Store in a dry cellar, and cover with sand to prevent wilting.

Cabbages.—Take up and protect by some of the methods given last month. The Savoys which are better for freezing, do very well if heeled-in close together, and covered with straw with boards laid over.

Celery.—That grown in flat culture, according to the article published in July, page 218, should be taken up and put in trenches, as there directed. If the weather continues mild, that in trenches may have another earthing up. We have seen good results from plants grown on the surface and blanched by putting salt hay between them. This excludes the light, and the celery blanches and is kept clean.

Cold Frames.—Keep open if the weather is mild, but close up before night fall. Have shutters or mats, to put over in case of a cold snap.

Mice.—These do great mischief among seeds and plants. Use traps and poison. Be careful not to harbor any in the cold frames.

Parsnips and Salsify.—The principal part of the crop may be left in the ground, but dig enough for use while the earth is frozen and bury in the cellar.

Rhubarb.—It is better to make new plantings in the fall, as it starts so early in spring that the plants are apt to get too large before the ground can be worked. Divide old plants with a sharp spade, so that each crown or bud will have a portion of root attached. Set 4 feet apart each way in highly manured soil. Give old beds a heavy manuring.

Spinach.—Give a light covering of litter.

Turnips.—Allow them to grow until danger of frost; gather and store in pits or in the cellar.

Wooden Appliances.—All stakes, poles, frames and other garden conveniences of wood will last much longer if put under cover for the winter.

Fruit Garden.—Preparation of the soil, planting hardy trees and shrubs, and caring for tender ones will be in order.

Blackberries.—Set out plants as heretofore directed. All will do better if the canes can be laid down and covered with earth. Dig the earth away from one side of the stool, and then crowd it over.

Currants and Gooseberries.—These require similar treatment. Cuttings or rooted plants may be set as directed on page 281, and 282 (September). A good dressing of manure will benefit old bushes.

Dwarf Apples and Pears.—Trees may be planted if the soil is well prepared. Cut back before planting, more or less severely, according to the vigor of the tree. See article in January of this year on shaping dwarf trees.

Grape Vines.—Two years from the bud is old enough for planting in a well drained soil, worked and manured to the depth of 20 inches. Cut the vine back to within a foot of the ground at planting. Spread the roots equally, and after they are covered, make a mound of earth around the stem to protect the buds. Some notes upon pruning are given on page 345, and the manner of treating vines trained on the arm and spur system is illustrated in the *Agriculturist* for November, 1864.

Raspberries.—Plants may be set. All kinds, whether hardy or not, are better if laid down and protected in winter by a slight covering of earth.

Strawberries.—Cover at the approach of freezing weather. Straw is most used; leaves will answer if covered with a little earth to keep them in place. Do not cover the plant deeply, the object is to protect the roots from alternate freezing and thawing.

Flower Garden and Lawn.—While the unusually dry autumn has impaired the beauty of the late blooming flowers, it has been favorable for all work of construction, road making, grading and planting of deciduous trees.

Bulbs.—October is the most suitable month for planting the Dutch bulbs, but it may be done early this month. See article on page 316 (October). Take up *Gladiolus*, *Tigridias* and others planted last spring, before the ground freezes. Dry them in the sun and store them in a cool place where they will not be injured by frost, or mice. Preserve the labels with all named varieties.

Chrysanthemums.—The tall growing ones will need stakes to support the weight of flowers. When done flowering, cut away the old stems.

Dahlias.—Cut away the stems as soon as the frost has killed the leaves. Take up the roots, without breaking them, on a fine morning, and expose them for some hours to the sun. Label and store them in a cool vegetable cellar. Some pack them in dry sand. They will keep in any place that is suitable for potatoes and other vegetables.

Hedges.—Deciduous hedge plants may be set. Never make a hedge where its spreading roots will rob the soil devoted to other plants.

Frames and Pits.—These are to be opened whenever the weather is mild enough, and closed before the air becomes chilly. Protect in severe weather by shutters or mats. Give water only when the earth looks dry. Keep mice out, or they will destroy the plants.

Lawns.—The ground may be prepared by manuring, plowing, leveling, etc., but it is now too late to seed with much prospect of success. Old lawns may have a good dressing of compost and be rolled.

Perennials.—The hardiest of these will come out all the stronger in spring, if they are covered by a few forkfuls of long manure.

Roses.—If the tender sorts cannot be wintered in a pit, or cellar, bend them down and cover the branches with a few inches earth.

Shrubs.—Tender and half hardy kinds may be taken to the cellar. Set in boxes of earth, and water sparingly as needed.

Wistarias.—In places much north of New York it is necessary, in order to secure a bloom, to lay this down and cover it with a few inches of earth. Treat other tender climbers in the same manner.

Green and Hot-Houses.—The transition from the open air to the confinement of the house should be made as gradual as possible by giving ventilation whenever the outside temperature will allow. Fire will not be needed in the green-house, unless the temperature is likely to go below 45°. In the hot-house the thermometer may range from 60° to 75°. Plants at rest suffer more from an excess than from lack of water.

Annuals.—If seed has not been sown of those annuals desirable in a green-house, attend to it at once. *Mignonette*, *Nemophilas*, *Rhodanthe*, *Sweet Alyssum*, etc., are all useful.

Bulbs.—Pot a good supply of *Hyacinths*, *Tulips*, *Narcissus*, etc., for blooming in succession. Set the pots under the stage in the dark, until they are well filled with roots.

Camellias.—Give those to be flowered early plenty of light and more water than those to be retarded.

Greens.—Secure a supply of green suitable to use in bouquets, and store in the cellar. Our native *Lycopodium dendroideum* is one of the most valuable.

Insects.—Extra vigilance in the beginning of the season will save much future annoyance. Fungiga-

tion and the syringe will help to keep them down. Pick off the mealy bug when it first appears.

Propagation of Verbenas, Petunias, Cuphea, Pelargoniums, etc., may be carried on, and flowering plants be had in a short time.

Window Plants.—See article on their care, p. 349.

Cold Grapery.—Close the ventilators in damp weather, and keep the house as dry as possible. If any clusters of fruit remain upon the vines, remove those berries which are decaying.

The Apiary for November.—Prepared by M. Quinby, by request.—Very little work about the apiary, properly belongs to this month. Any thing neglected in October may be attended to now. Hives may be repainted, or unpainted ones that have been used, may receive a coat, if it is desirable, without serious injury to the bees. Some light color is preferable. When set in the apiary, two or more colors should alternate in the row, that the bees may recognize their own hive readily. If straw hives for wintering bees have been prepared, the bees and combs, may now be transferred to them, as well as later. A moderate day is better than one very chilly or unusually hot. Mice will begin their depredations now. Their presence may be known by chips, small particles of comb, on the floor of the hive. Shut them all out by strips of wire cloth, tacked over the entrance in such a way as to leave just a passage for the bees. Trap them before they look up mischief elsewhere. Hives standing out of doors through winter, should be protected in this way, to prevent any mice entering that may happen to find them during the winter. Make ready the hives for another year, especially such as are to be painted. Each person must decide for himself the kind of hive to be used. There is, of course, a difference in the profit of different kinds of hives. Some are at least three times better than others. I think that any one who fully understands what he wants in a bee hive, can not afford to do without movable comb hives of some sort.

Exhibition Tables at the Office of the American Agriculturist.

Below is a list of the articles which have been presented for Exhibition since our last report:

FRUITS.—*Gooseberries.*—English American; I. Skehan, Brooklyn, N. Y. American White; R. B. Dore, N. Y. City. Fine large berries without name; John Beadam, Brooklyn, E. D. Currants.—Red; I. G. Clark, Cornwall Landing, N. Y. Cherry; J. A. Brush, Brooklyn, N. Y. Red and White, very fine; Chas. Mandewirth, Fishkill, N. Y. Cherry, Versailles, Gloire de Sablons, White Grape, Prince Albert, Red Grape, Champagne, Short Buoched Red; E. Williams, Montclair, N. J. *Raspberries.*—Doolittle's Black Cap; Wm. Parry, Cinnaminson, N. J. Seedling—one stem 15 feet long and well fruited; A. M. Halsted, Rye, N. Y. *Blackberries.*—Wilson's Early (July 4th); J. S. Collins, Moorestown, N. J. New Rochelle; T. Tappan, Roslyn, L. I. Kittatinny; E. Williams, Munt Clair, N. J. *Strawberries.*—Agriculturist, in fruit; J. H. Brinkerhoff, English Neighborhood, N. J. Double; L. S. Wood, Brooklyn, N. Y. *Neclarines.*—Red Roman, large and fine; J. Bailey, gardener to Dr. McKay, Esq., Jersey City, N. J. *Figs.*—Oporto; Dr. Drake, East Broadway, N. Y. C. Purple; Wm. Baldwin, Clinton, N. J. *Grapes.*—Blighted Concord; Thos. Oliver, Fordham, N. Y. Seedling; A. B. Eckerson, Tappan, N. Y. Clinton and Maxatawney; Gustavus Heins, Downingtown, Pa. Excelsior; Andrew Child, Newmarket, N. J. Clinton, Adirondack and Seedling; Geo. H. Hite, Morrisania, N. Y. Isabella; Thos. Harris, Williamsburgh, N. Y. John P. Kiessell, Hudson City, N. J. Charles Starr, Coxsackie, N. Y. and Alexander Rogers, Starville, N. Y. Concord; Baily & Pearce, Fishkill, N. Y. and Mr. Staples, Newburgh, N. Y. Allen's Hybrid; A. Scarborough, Payson, Ill. Clinton, Diana and Seedling; Hugh Capner, Fleming, N. J. Peaches.—Fine Crawford; Benj. Archer, Scarsdale, N. Y. Seedling, large; Mr. Manning, Brooklyn, N. Y. Maiden's Blush, Seedling; Anna L. Abbott, Boston, Mass. Seedling; Marshall Bryson, Brooklyn, N. Y. Twin Growth; E. S. Berrian, New York. *Apples.*—Collection from Ernst & Bro., South Amboy, N. J. Seedling; T. W. Sufferin, Sufferns, N. Y. Gloria Mundi, 23½ oz.; Wm. Luf-

brows, Monmouth Co., N. J. Baldwin, large; John Smith, Ossoning, N. Y. Gloria Mundi, 24 oz.; Mr. Irwin, Westchester, N. Y., also from Julian Allen, Brooklyn, N. Y., and Robert French, Westfield, N. J. *Pears.*—A collection from Ernst & Bro., South Amboy, N. J. Vergalien, to show bad cracking; S. Jaqua, Paterson, N. J. Rostiezer & Tyson; T. B. Merrick, Orange, N. J. Samples from cutting from old Snyvesant tree; Mr. Bacon, Roxbury, Mass. Seckel and Bantlett; B. F. Sealy, South Yonkers, N. Y. Rapelyea; I. H. Rapelyea, Astoria, N. Y. Duchesse, 24½ oz.; P. L. Peauce, Brooklyn, N. Y. Louise Bonne de Jersey; Hugh Capner, Flemington, N. J. Beurre d'Amalis; J. C. F. Smith, Nyack, N. Y. Abbott; John Crane, Union, N. Y. Seckel; Dr. Duffenferfer, New Holland, Pa. 4 Duchesse, weight 4 lbs., 3 oz.; Samuel Vernon, Brooklyn, N. Y. Duchesse and Beurre Diel, Gabriel Marc, Astoria, N. Y. Rutter; Gustavus Heins, Downingtown, Pa. Sheldon, Louis Bonne de Jersey, Beurre Hardy, Beurre Bose, Seckel and Duchesse; Ellwanger and Barry, Rochester, N. Y.

FLOWERS.—Roses, a fine collection; Mr. Burgess, Astoria, L. I. Lilium auratum; J. Dingwall, Albany, N. Y. I. Buchanan, Astoria, L. I., Brill & Kumerle, Newark, N. J., Wm. Chorlton, Factoryville, Staten Island, James Hogg, Yorkville, N. Y. Clematis bicolor; Wm. S. Carpenter, Westchester Co., N. Y. Wax Plant, *Hoya carnosa*; C. S. Pell, N. Y. Orphan Asylum. Phloxes, seven distinct seedlings; I. Buchanan, Astoria, L. I. Dahlias; Seedling Pomponne, "Empress of Mexico," H. F. Krause, N. Y. City. A collection; C. S. Pell, N. Y. Orphan Asylum. Twin Dahlia; D. H. Knapp, N. Y. City. Japan Lilies; C. S. Pell, N. Y. Orphan Asylum. Bouquets and Cut-flowers; T. Cavanaugh, Brooklyn, N. Y.; and from Keyser's Island, South Norwalk, Conn. Splendid Coxcomb; Henry Oothout, Stamford, Conn. Cut Flowers; Miss M. A. Cortelyou, Staten Island.

VEGETABLES.—Turnips, sowed last week in May, very fine; W. Van Benthuyzen, Eatontown, N. J. Cucumbers, (twin); P. Vanderhoff, Long Branch, N. J. (triple); A. W. Boyce, Staten Island; Very large specimen; D. Winaut, Staten Island. Beet; Large Bassano; E. P. Tyson, Southfield, Staten Island. Cabbage, very large Drumhead; R. Crisswell, L. I. Corn; One Ear, 8 cobs; J. B. Staotou, Hudson City, N. J.; Japanese, with variegated foliage; Jas. Hogg, Yorkville, N. Y. Custard Marrow, new, from Japan; Peter Henderson, Jersey City, N. J. Squash; Sunner Crook-neck, twin; Wm. S. Carpenter, Rye, N. Y. Sweet Potato plant, curious growth; J. H. Green, Jr., Morrisania, N. Y. Purple Egg Plants and Wethersfield Red Onions; John H. Roche, Mead's Basin, N. J. Turnip Beet, 15½ lbs.; E. P. Tyson, Southfield, N. Y. Wethersfield Red Onions; George Such, South Amboy, N. J. Evergreen and Buckram Corn; J. C. Demarest, Hackensack, N. J. Cucumber, "Mills Jewess"; Wm. Chorlton, Factoryville, N. Y. Cucumber in bottle; Mrs. Wheeler, Orange, N. J. Double Cucumber; Valentine Haber, Jersey City, N. J. Purple Egg Plant, 7½ lbs.; George H. Hite, Morrisania, N. Y. Purple Egg Plant, 10 lbs.; A. M. Allerton, Somerville, N. Y. Wethersfield Red and Danvers Yellow Onions; Wm. Chorlton, Factoryville, N. Y. Cucumber; I. L. Miller, Richmond, N. Y. White Cucumber; E. Sanderson, Mott Haven, N. Y. 5 Red Globe Onions, 5½ lbs.; F. P. Benedict, Keyport, N. J. Creao Pumpkin, 93 lbs.; Alfred J. Hodson, Brooklyn, N. Y. California Gourd, 5 feet 2 in. long; C. Pabor, Harlem, N. Y. Sweet Potato, 2 lbs., 11 oz.; Rev. E. W. Adams, Staten Island Sweet Potatoes, fine; J. Hayne, Bloomfield, N. J. Fine ears 20-rowed Corn; David Walker, New Durham, N. J. Squash 91½ lbs.; T. Hardy Hubbard Squash; D. V. Brower, English Neighborhood, N. J. Fancy Gourds; A. F. Stewart, Hudson City, N. J. Purple Egg Plant, 7 lbs.; G. Huyler, Tenefly, N. J. Peruvian Corn Stalks, 14 feet high; B. C. Townsend, Bay Ridge, N. Y. Flat Dutch Cabbage, 22½ lbs.; R. Crisswell, L. I. Millet; Mrs. Schureman, Hudson City, N. J. 6 Large Egg Plants; Louis Bullinger, Egg Harbor City, N. J. Tomatoes, Fejee, Plum, and Grape; Rev. C. J. Jones, Staten Island, N. Y. Mammoth, 2½ lbs.; John Gardiner, New Brighton, N. Y. L. A. Berta, Tremont, N. Y. Thomas France, Claremont, N. Y. Mr. Votz, English Neighborhood, N. J. and Wm. Mills, Flatbush, N. Y. Fejee; S. W. Miller, Elizabeth, N. J. Yellow; F. H. Piaget, Greenwich, N. Y. Potatoes.—Garnet Chili; C. W. Dunlap, Jr., English Neighborhood, N. J., and James Holbrow, Walden, N. Y. Mercers; E. I. Keeley, Norwood, N. J., and J. Hayne, Bloomfield, N. J. Jackson White, Prince Albert and Peachblow; D. V. Brower, English Neighborhood, N. J. White Peach Blows; D. J. Youngs, Oyster Bay, N. Y.

MISCELLANEOUS.—Brahma Pouter Eggs, 6 weighing 1½ lbs.; G. B. Davis, Tompkinsville, Staten Island. Black Spanish Egg, weight, 4 ozs.; D. Pierson, Clinton Hill, N. J. Seed Pod of Cassia Braziliana; Dr. White,

Panama, N. G. Silk and Cocoons of Chinese Silk worm; Ezra Ellis, Oldham, N. J. Natural Ham, being a very curious yellow pine knot, in form and color like a small ham; I. Wild, N. Y. City. Gold-bearing Quartz; E. Lockwood, Nova Scotia. Cinnabar (Quick-silver Ore), New Almaden Mine, Cal.; J. Rogers. A large Bat; Patrolman No. 25, 1st Precinct, N. Y. Case Fruit Jars; Johnson, Patente, 8th-Avenue, N. Y. City. Marine Shells; Capt. Elias Smith, Raleigh, N. C. Double Egg; H. F. Doran, N. Y. City. Chestnuts; Mrs. C. E. Wheeler, Orange, N. J. Cotton in bloom; W. Lord, Morrisania, N. Y. Curious and Small Eggs; Mrs. G. Ostrander, Centreville, N. Y. Black Spanish Fowls' Eggs; B. Murray, Jr., Englewood, N. J.

Thirteen for Twelve.

To every new Subscriber for 1866 (Volume 25,) received in November, we will send the *Agriculturist* for December free of charge. This will give the paper **Thirteen months for the price of Twelve.**

Note, that this offer is only for November, except for names from the Pacific Coast, and other points too distant to respond by the close of the month. N. B.—The above applies to all subscribers, whether singly or in clubs, in premium lists, from Agricultural Societies, etc.

Excellent Premiums.

Open to Everybody—A First-rate Opportunity to secure Good and Desirable Things without Expense, and benefit others at the same time.—Every thing offered is new, and of the best quality and make.

—Good Books, Good Seeds, Plants, and Grape Vines; Good Fruit Trees, Shrubs, and other Nursery Stock; Good Household and Farm Implements; Good Pianos, Melodeons, etc., etc.—Something to meet the wants of Everybody, and Everybody is invited to secure one or more of these Premiums.

In the Table (next page) we offer a fine list of Premium articles to those who will take the trouble to collect and forward clubs of subscribers. We know every article is good and desirable. Thousands of persons may each obtain one or more of these premiums with very little trouble. Men and Woman, Post-masters and their Clerks, Agricultural Societies, Soldiers, Clergymen, Teachers, Widows, Farmers, Mechanics, Storekeepers, Boys, Girls, indeed almost every class may each gather names of subscribers enough to secure some one or more of the desirable articles in the list of things offered. The supply of each of these premium articles is abundant enough to give all who want them a chance, and plenty of time will be given to fill up a list, though **NOW** is the best time to begin making up a club, as extra copies are offered to every subscriber received this month, as noted above.

The Table on next page gives only the list of articles, their value, and the number of subscribers required for each, at the regular subscription rate \$1.50 a year, or at the lowest club rate when large clubs are made up (\$1 a year). But let every one thinking of securing a premium,

SEND FOR OUR DESCRIPTION LIST, WHICH GIVES FULL PARTICULARS ABOUT EACH PREMIUM, ETC. IT WILL BE FURNISHED FREE TO ALL APPLICANTS.

For brief descriptions, see October *Agriculturist*, page 300. We have not room to repeat them.

As fast as any subscriptions are obtained, send them along, that the subscribers may begin to receive the

paper; and when all the names that can be obtained are forwarded, select the premium desired, and it will be promptly furnished. To save mistakes and the keeping of money accounts, send with each name, or list of names, the exact subscription money; or send at first the full amount for a club, and receive the premium, and then forward the names as obtained.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designed for a premium list be so marked WHEN SENT IN. (Such names are credited to the sender in a separate book, as fast as received—ready for instant reference.)

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

The extra copy, usually offered to clubs of 10 or 20, will not be furnished when a premium is given.

Table of Premiums and Terms, For Volume 25.

Open to all—No Competition.

Table with 4 columns: Names at \$1.00 each, Names at \$1.50 each, Names at \$2.00 each, and Premiums. Lists various items like 'Good Books', 'Garden Seeds', 'Flower Seeds', etc., with their respective prices.

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 8, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

Premium 1.—Good Books.—Any person sending a club of 25 or more subscribers, may select Books from the list on this page, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 30 cents for each name sent at the (ten) club price of \$1.20 each; or to the amount of 60 cents for each name at \$1.50. This offer extends only to clubs of 25 or more names. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use. Several Farmers' Clubs have done so.

For Description of the other Premiums, see October number, and especially a large, full Descriptive Sheet, which will be forwarded free to any one desiring to canvass for a premium.

Specimen Numbers of the Agriculturist, Cards, and Showbills, as may be needed, will be supplied to Canvassers. These should be used carefully and economically, as each copy of the paper is costly, besides the postage (2c.), which must be pre-paid here. A large neat Showbill will be issued soon.

CLUBS can at any time be increased, by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will of course be sent to added names.

BOOKS FOR FARMERS AND OTHERS.

[Any of the following books can be obtained at the Office of the Agriculturist at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to December 1st.]

Table listing various books for farmers and others, including titles like 'Allen's (L. F.) Rural Architecture', 'Allen's (R. L.) American Farm Book', 'Allen's Diseases of Domestic Animals', etc., with their respective prices.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for a month, ending October 16th, with other interesting comparative figures.

Table showing transactions at New York markets for Flour, Wheat, Corn, Rye, and Barley. Includes sections for Receipts, Comparison with same period at this time last year, and Exports from New York, January 1 to Oct. 14.

Owing partly to speculation, and partly to a heavy demand for duties on imported goods, gold has been higher the past month, at one time touching 149. To-day it is 144 1/2 against 142 1/2 a month ago. As noted in the table below, the prices of breadstuffs are higher, affected somewhat by the gold market, but more by an active speculation at Chicago, amounting to gambling. Dealers there have even purchased largely in this market, and prices have been carried up beyond the reach of buyers for foreign markets, so much so as to almost stop export, while the Western speculation has prevented the usual supplies from coming forward. It can hardly be otherwise than that there will be trouble resulting from these gambling operations, and we shall not be surprised to see an early breakdown in prices.... Corn, Rye, Barley, and Oats are quiet and prices weaker.... Cotton has been in brisk demand, at rapidly advancing prices, under the foreign news. The receipts continue large.... Provisions have been in more demand at very irregular prices.... Hog products closed heavily; Beef, Butter, and Cheese, quite firmly.... Wool has been in good request at steady prices, but closed tamely.... Hay, Hops, and Tobacco in fair request at uniform quotations.

CURRENT WHOLESALE PRICES.

Table showing current wholesale prices for various commodities like Flour, Wheat, Corn, Rye, Barley, etc., with prices for Sept. 16 and Oct. 16.

New York Live Stock Markets.

BEAF CATTLE.—The supply for the past month has averaged 6427 head per week; previous month 5905 per week; same period last year, 6259 per week. Quality better than previous month; demand generally good, and prices ranging 1/2c@1c per lb. net, higher. Latest prices for Prime to Extra 17 1/2c@18 1/2c per lb, estimated dressed weight; Medium to Good 14 1/2c@16 1/2c; Common to Poor, 14c@16c.... MILK COWS. Average weekly receipts 121. Demand good and prices well up. First grade and Extra, \$90@\$120 each; Ordinary to Fair, \$55@\$85; In-

ferior to Poor, \$50@35 each... **VEAL CALVES.** Supply lighter, averaging 1243 per week at regular yard. Prices improved; latest sales 12c@14c per lb., live weight, for Good to Best; others 8c@11c, according to quality.... **SHEEP AND LAMBS.** Supply very large, averaging 25,302 per week, which is 3000 greater than last year. Quality ordinary. Prices 6½c@8c per lb. live weight for sheep, according to quality; Lambs, \$3@3.50 per head for the different grades.... **LIVE HOGS.** Average weekly receipt 13043, or about the same as at this time last year. Latest prices for good corn-fed 13½c@14c per lb. live weight.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

We are Sure our Readers will be pleased with the splendid assortment of excellent articles offered in the *Premium List* on page 332. These premiums, taken as a whole, are superior to any list ever before offered in this or any other journal. Every article will give satisfaction to any one receiving it. There is no clap trap about this matter. It is desirable to have one or more persons in every town in the country to attend specially to the subscription lists of the *Agriculturist*, and while there is not profit enough to allow the sending of paid canvassing agents, these premiums will amount to good pay, and where pay is not the object, as an agreeable acknowledgment on the part of the Publishers. The special good will of the manufacturers, and sundry advertising arrangements, enable us to offer these articles on far better terms than can be paid in cash, but this does not detract from the real value and good quality of the articles offered as premiums. That there may be no mistake, we repeat that every article is new from the manufactory and of first quality and make. We believe the *Agriculturist* is doing a good work, not only in conveying positive information on many topics, and practical hints and suggestions on others, but also in stimulating thought and enterprise. Very few persons can go through a volume without getting some hints, or being led into some course of thought and action that will many times repay the small subscription asked. We think there are many more than a hundred thousand individuals and families who would be really benefited by having the paper, and aside from our own interest in its diffusion, we take pleasure in pushing it into every corner of the land. Those who help in doing this will do a good work, aside from what is received as premiums.

How to get this Paper at \$1.25 a Year.—Get three others to join you—four copies for \$5.

How to get this Paper at \$1 a Year.—Make up a club of twenty or more at \$1 each.

How to get this Paper a Year for 0.—Make up a club of ten at \$1.20 each, or a club of twenty or more at \$1 each, and receive an extra copy.

“Please Notice my Advertisement.”

—Almost daily are we requested to call attention to some advertisement by an editorial item. As there are from fifty to a hundred or more advertisements in each paper, and as we would avoid invidious distinctions, we must, as a rule, decline such respectful and perfectly proper requests, though it would give us pleasure to oblige each advertiser, were it practicable. In fact, however, our readers understand that the admission of an advertisement at all, is almost equivalent to noticing it, for the Advertising Department is in charge of one of the editors who is instructed to admit only those advertisers whom he would himself patronize without hesitation, if he chanced to want what they advertise, and at the price asked. This does not of course endorse the price and utility of everything advertised, of which the reader must be a judge. Some implements, fertilizers, periodicals, etc., are admitted, which we would not recommend; but they are those about which there is a difference of opinion—as about phosphatic manures, for example. We shut out commodities believed to be deceptive; those known to be bad, or worthless; and all parties, whom we believe to be dishonest, or unreliable in their promises.

About Humbugs.—We are in constant receipt of circulars which have been addressed to our readers in various parts of the country, emanating mainly from this city, but in part from other cities, and out-of-the-way towns in Northern New England and elsewhere. These are usually turned to good account by us, generally in a quiet way—the operation being squelched, there is no occasion for our publishing the particulars.

Thus, for example, a flood of circulars came pouring in, issued by a so-called firm on Broadway. After a long hunt we found in a little upper room a man with sundry assistants, they all busy sending out “blinking” circulars, while he was occupied in opening a great pile of money letters from his dupes. His “immense stock” of watches, jewelry, etc., “bought of the many dealers failed on account of the fall in gold,” consisted of a few watches in cheap paper boxes, which from the dust on them appeared not to have been drawn upon or disturbed for several days at least. We reported the case to Mr. Acton, of the Metropolitan Police, and he had the chief swindler arrested and his establishment broken up; but his operations were so adroitly managed, that it was impossible to hold him upon any distinct charge upon the evidence we had. He is now probably “operating” under some other name and guise. Will people ever learn that “all is not gold that glitters;” that the more plausible these circulars, the more likely they are to be frauds; that no man is going to give two gold dollars for one; that in every ticket and chance scheme, there are thousands more of blanks than prizes, (where there are any of the latter, which is seldom the case,) and that every purchaser of a ticket is a thousand times more likely to draw a blank than a prize? Set it down as a fact that in all those cases where a ticket is sent, telling just what is drawn, the article specified will not be sent, or will be worthless if received, and in nine cases out of ten, nothing at all will be returned if you send money. Remember also, that in all those very plausible “private” offers to furnish a “prize,” just to get your influence or recommendation, every man in your neighborhood whose address could be got at, has received the same offer as yourself. As a rule never send a dime of money, nor even a postage stamp, to any one addressing you by circular, unless it be from a well-known reputable party, or one endorsed by the admission of his advertisement into some respectable, careful journal, that discriminates in its advertisements. The general plan is, to open a store under some name, send circulars to distant points, (never to parties residing near enough to be likely to call) carry on the humbug as long as it pays well, or until there is danger of complaint and detection, and then disappear under that name, and reappear under some other.

Trial of Mowers at Hunt's Bridge, by the American Institute.

—The Buckeye wins. On the 17th and 18th of July the American Institute had a trial of Mowing Machines, conducted by a committee of practical farmers and mechanics. We were present at the trial, and hesitate not to say that we never knew or heard of mowers being put to so severe and fair tests. They cut good grass and lodged grass, both fine and coarse, on wet places and dry, on level ground, on hill sides, swales, rough ground, etc., through dry ditches, through wet ditches, and under several inches of water. They were made to cut with the finger bars raised, and depressed, with the inner wheel on a ridge, and in the bottom of a ditch. They turned corners cutting to the right, and to the left, and went round short curves and long ones. The machines were tested by the dynamometer, and timed to see how fast and how slow they could go and cut well, and besides the mechanism of the machines as put into market was examined and had its weight with the committee. There were 11 machines entered, and but 7 went through the trial. All these did very creditably, but, of course, not equally well in all respects. The result of the trial was made known at the recent Fair of the Institute, the gold medal of the Society being awarded to the *Buckeye* (Adriance, Platt & Co.) We shall look for the report with interest, and hope it will be full and fair.

The Pennsylvania Horticultural Society.

—The autumnal exhibition of this Society opened on Sept. 27th, and continued through the week. It was held in an immense tent, which formed a pleasant and commodious hall. The great feature of the show was its magnificent display of pot plants; not only were great numbers of these entered in competition for prizes, but they were used profusely in decorating the hall. A most pleasing effect was produced near one end of the hall by means of a circular sheet of water, around the nicely turfed margin of which were placed vases of rare flowers. An island occupied the centre of the basin, made up of tall and luxuriant pot plants, so liberally employed as to conceal the musicians who occupied the island as an orchestra. A Victoria Regia in flower, and other aquatics found a genial location in the basin. The show of fruits, which was not large, was essentially helped by a fine contribution from Ellwanger & Barry, of Rochester. The display of vegetables was fine, a collection by A. L. Felton, Esq., being remarkable for its extent, as well as for its excellence. A magnificent show of potatoes by A. W. Harrison, Esq., attracted much attention. There were some 20 varieties, all of which had been treated the same in cultivation, and each had the yield per acre given upon the label. We can

not give space to enumerate all the attractions of this most interesting exhibition, the success of which must be highly gratifying to the contributors and officers, who, by their hearty cooperation and efficient labors, presented to an appreciative public so grand a horticultural exhibition. We must notice one feature worthy of imitation elsewhere; the presence each day of a committee of ladies, who received the cut flowers, made up bouquets, and in numerous ways added to the effect.

The French Exhibition.—France—that is Louis Napoleon—is to have a grand *Exposition* in Paris, the spring and summer of 1867. From the preparations already made and the interest excited in it, it bids fair to excel in magnificence and perhaps utility also, any other World's Fair. Little thanks do we owe the French government for the position it has occupied towards us during the past four years, yet it will be for our own interest to be well represented in Paris in all departments. Applications for space must be made before January 31st, 1866. Mr. J. C. Derby, 5 Spruce-st., N. Y., Commissioner appointed by the Sec'y of State, will give further information.

The Terrible Drouth.—Never within our memory has there been so severe a drouth as now prevails over some portions of our country, especially in most of New England. Our own two large cisterns have hitherto always furnished an abundant supply of water, but they are dry now. The herbage in the field, the shrubbery, flowers, and strawberry and other plants in the garden, are as dry as if growing on an ash heap. Few pastures furnish even a green picking for the animals. We hear of localities where there is hardly water enough in wells and brooks to keep the stock alive, and many have to procure it from a distance of three to ten miles. Persons who have recently travelled through Central New England say there is hardly a plot of green grass to be seen over large areas. The manufactories, paper mills, etc., depending for power upon the smaller streams, are at a dead stand-still. It was providential indeed that this drouth occurred after the growth of the main crops was secured, otherwise we should have had almost a famine. In actual loss we can well sympathize with our readers. Printing paper is more than fifty per cent higher than three months ago, mainly from the stoppage of so many mills. The printing paper for this one number alone costs us nearly \$1500 more now than it would have done in July, and the extra cost to us of the drouth, so far, would buy a good farm. We are paying within one cent a pound of the price when gold was at 250. With a multitude of our readers we would gladly hail an Elijah in these days—October 14th.—P. S., on Oct. 16.—Moderate fall of rain yesterday, but not enough.

Steinway & Sons' Pianos.—The superior quality of these instruments is universally admitted. We call attention to the particulars in their advertisement on page 354. It will also be noted that we offer some of them in our premium list, on the previous page, and on very liberal terms. Any energetic person, lady or gentleman, starting out with earnest purpose, can gather 500 subscribers in a very few weeks, often without canvassing more than a single town. But names for premiums need not be confined to one locality. The \$600 piano, to be kept or sold, would pay many persons for six months or a year's work, while ten subscribers a day for fifty days, or five a day for a hundred days, will secure the instrument. Some will average fifteen or twenty or more a day, after getting a little accustomed to the work of canvassing. The kind offered are not only of first quality, but beautiful also, viz:—“Seven-octave; Rosewood Case, Large Front, Round Corners, Carved Legs and Lyre; Overstrung Bass, with Patent Agraffe Treble, and all Modern Improvements.” The Carved Legs are an extra addition to our premium instruments, of which the lowest regular price is \$600 without this addition. We hope to have the pleasure of sending out quite a number of these fine instruments.

A Suggestion.—In not a few cases the pupils or friends of a lady can divide up the 500 subscribers, and each procure among their friends and acquaintances a portion of the number of subscribers required.

The Practical Entomologist.—Under this title the Entomological Society of Philadelphia, propose to issue an occasional Bulletin, containing information upon the insects injurious and beneficial to vegetation. It is intended to circulate this publication gratuitously, and the society ask the cooperation of all interested in the subject. Circulars setting forth the scope, etc., of the work may be obtained by addressing E. T. Cresson, Esq., Sec., 518 South 13th-St., Philadelphia.

The Barn Plans.—A large number have been received, many of them of very great excellence. We hope to give the prize plan in the January number.

Good Manure Going to the Winds.

—A subscriber in Tioga Co., has a compost heap—a mixture of “fleshings of hides, hair, lime, ashes, weeds, chip manure, etc., really, most everything.” It was piled up in a conical heap, and he recently found it “dry and very hot,” and being burned up. He wants to know what is to be done. Simply work it all over, making a new pile and mingling it with at least its own bulk of muck or peat, or sods and prings of turf, or simple soil. This will stay the destruction in a measure. The mistake was in the original mixture. There probably ought to have been a greater proportion of vegetable matter, weeds, chip manure, etc., but there ought not to have been any lime or ashes mixed with the fleshings, hair, and other animal matters. When lime and animal matter are mixed, as in some of the refuse of tanneries, the influence of the lime must be counteracted as far as possible, by the addition of muck, soil, etc. The deleterious action of lime and alkalis in such a heap is to expel the ammonia in gaseous form, which is hopelessly lost. A loss just of the same character takes place whenever manure heats and burns.

“**Marl.**”—We very often have letters asking about marl. Farmers have beds of it, or it abounds near them, etc., and they want to know how much it is worth, and how to use it. The different kinds of marl vary greatly. Some marl is chiefly minute shells, like clam or snail shells, consisting of carbonate of lime, and some is so solid that it can be burnt for lime. In other marls, the shells are mingled with sand, clay and vegetable matter. These are often very useful as applications to the soil, raw, composted, or having been exposed to frosts. When lime is beneficial, marl usually is also. The only convenient way for most persons to ascertain the value of any particular kind is to try it. Apply it liberally and sparingly upon grass land, in fall or early spring, to the corn crop, to potatoes, etc., in each case making careful record of the results, for your own and others' benefit.

Bone Dust for Wheat.—T. Lindsey, Harrison Co., Indiana, inquires “for information through the *Agriculturist*, as to the economy of paying \$30 00 per ton for bone dust for manuring wheat.” Farmers who have applied bone dust as a top-dressing to wheat, have almost invariably come to the conclusion that it does not pay. Bone dust is the great fertilizer for turnips, and usually most excellent for grass. But wheat requires a manure containing a larger proportion of nitrogenous matter. Bone dust is no doubt of some value for wheat. 500 pounds per acre is a medium quantity, although one ton is much better. There is little danger of sowing it too thickly, for it is a very valuable thing to have in the soil for other crops.

Sawdust for Manure.—“Please tell me how it is best to make manure out of sawdust?” Some stiff clays would be benefited by raw sawdust; here you have manure out of sawdust, ready-made. For a sandy soil it would, we judge, be better were it somewhat decayed, therefore it might be laid up and moistened through with warm barn-yard liquor or urine; this would soon start a heat, and it would turn brown and soft, in which state it would make a tolerable manure. It makes very good bedding for horses or cattle, being easy to manage, clean out, etc., but it heats rapidly in the manure heap. Unless it can be mixed with something else, it ought to be kept trodden down hard and wet, or composted with muck or sods.

Manuring House Plants.—“Mrs. M.,” Washington, D. C. Well rotted cow manure mixed with the potting soil is the best. Poudrette is generally unreliable, and guano apt to do more harm than good. Camellias and other hard wooded plants are very apt to be injured by the injudicious use of guano, though it may sometimes be used on herbaceous ones with good results. A teaspoonful in a quart of water may be applied once a week. A very weak infusion of cow or stable manure may be used sparingly. If the plants are lagging, it is better to report them; if no good compost is at hand, it may be procured of the florists.

A Compost Heap.—“One who wishes to be a farmer,” has a compost heap made as follows: “A foundation of muck 6 inches deep, stable manure 6 inches deep, a thin layer of cracked bones as big as hen's eggs, 6 inches muck, 6 inches stable manure, 2 inches leached ashes, 3 inches woolen rags, and the whole covered with 6 inches muck.” He asks “Shall I put in some old mortar, and shall I add lime?” The old mortar will do no harm if it is crushed fine. The lime should be kept out in all probability. We would keep an old fork handle thrust into the heap so that by drawing it out we could see how much heat was generated. If it did not heat, it should be drenched pretty freely, but not soaked with the

leachings of a manure heap, (barn-yard liquor.) The bones and leather will hardly decompose well unless the fermentation is active and the heap kept slightly moist with yard liquor. After it has heated well for a month, it should be made over, the whole being mixed and roiled with more muck, or more manure, or both, according to how hot and well decomposed it has become. If very inert, one bushel of slacked lime to 15 or 20 bushels of compost, might be added, and the whole covered up with muck for the winter, but if a brisk fermentation comes on again, this must be kept down either by working it over again, adding more muck, or keeping it quite wet with water or yard liquor, and trodden down hard.

Salt and Lime.—“C. F. C.” Perhaps no question has excited more discussion in Great Britain of late, than the use of salt as a manure, and we certainly can not answer your question without more data, in regard to your soil, etc. We have no doubt it has often increased the grass crop, and so also with grain crops. Sowed at plowing in the spring, it is said to have destroyed wire worms. For roots of all kinds it may be applied either with the other manure, or as a top dressing, 100 to 600 pounds to the acre.—The lime may be worth \$1 per cask, if you can not get it for less. Exposure to freezing often fits muck for the compost heap, manure pile, or for direct application, almost as well as composting it with lime. Both freezing and liming are useful.

Management of Sheep.—Charles B. McClure, Dauphin Co., Pa., (a lad nine years old), having 14 sheep thin in flesh, wishes to know how to manage them. Make comfortable sheds at once for them. If they are to raise lambs next season, they will not require much grain if they have hay, corn stalks, and plenty of good straw, with access to salt and water. Feed roots, or apples at least twice a week, and give them hemlock or pine boughs often in winter. If for mutton, feed them one pound each, daily, of Indian corn, or corn meal and oil meal in equal quantities. If sheep have hay in the morning, straw during the day, one pound each of meal at noon, and corn stalks at night, with a good shed, they will fatten rapidly. Peas and beans are excellent feed. Read about sheep in former numbers of the *Agriculturist*.

Diarrhoea in Sheep.—Charles Fiedler, Waukesha Co., Wis., writes: “My sheep have had the diarrhoea for about one year, and have had no lambs. Is that the reason? Can you suggest a remedy?” No doubt the disease prevented breeding. Turn the sheep into another pasture, or feed them hay once a day and a pint of wheat bran daily, and let them have access to salt. There is some weed that causes the disease, which indeed may also be in the hay of your own farm.

To Preserve Fence Posts, etc.—Milo H. Moon, of Hendricks Co., Ind., says in a communication to the *Agriculturist*: “By sprinkling salt around the posts and allowing stock to lick it, they will graze off the grass and weeds close to the ground, and smooth and pack the surface so that the water will readily run off, and licking the posts will keep lint from collecting, and add materially to their durability.”

Lice on Poultry.—A correspondent who has tried the use of Kerosene applied upon fowls to cure lice, writes to warn others against trying it. One of the two on which it was tried soon died, the other being in great pain was killed. “Their flesh looked as if seared with a hot iron.” No doubt the quantity applied was too great, it ought not to wet the skin at all. Neither should any other application to fowls, except soap and water.

Locust Killer.—The wasp-like insect left by J. H. Bloodgood, of Perth Amboy, which digs holes in the garden like big ant-hills, and stings badly, is the *Hogardia speciosus*, or locust-killer. It kills locusts (or Cicada,) lays its eggs in them and buries them, leaving the ground so smooth that they can hardly be found, and though their sting is bad, they can not be classed among injurious insects.

The Massachusetts Horticultural Society.—This pioneer association, which since its formation in 1829 has steadily progressed in prosperity and usefulness, celebrated on Sept. 16th an era in its history. The occasion was the opening of its new Hall, on Tremont-street. The building is of granite, and the architectural design is chaste and elegant. There are two spacious halls for exhibition purposes, and the necessary committee and library rooms, beside the stores upon the ground floor and basement. The President of the Society, C. M. Hovey, Esq., delivered an interesting address, and an ode was sung, etc. On the following Monday the Society held its 39th annual exhibition in its new rooms, which seemed almost as much too small for the bountiful

contributions as did the old Hall a few years ago. The show of apples was meagre, as it is every where, though there were a few fine plates, especially of Baldwin and Hubbardston Nonsuch. The exhibition of pears was great, as it always is in Boston. The largest number of varieties were from Hovey & Co., and M. P. Wilder, both interesting collections, as they contained specimens of new and rare varieties. Remarkably fine Sheldon, De Tongres, Beurre Bosc, Beurre D'Anjou and other leading sorts were shown by several exhibitors. A seedling pear by Doct. S. A. Shurtleff, of Brookline, was noticeable for its fine appearance. It bore the name of Admiral Farragut, and if it is at all like its name-ake, will perform all its promises. The show of hardy grapes was poor, as that of exotic ones was excellent. The only variety shown in any great perfection was the Catawba. We expected to see a fine show of Rogers' Hybrids, but found only some 6 or 8 numbers, which did the grapes no credit. The exhibition was weak in cut flowers, owing to the unusual dryness of the season, but the lack in this department was made up by the excellence of the pot-plants. A fine collection of these from the Cambridge Botanical Garden carried off several of the prizes. The exhibition of vegetables was very large and interesting. The growers around Boston are great on squashes, but poor on celery. We can only give the general features of this most interesting exhibition. As we passed through these elegant and spacious halls, overflowing with the products of the orchard and garden, remembering the first exhibition of this society, which we attended some 20 years ago in a small hall on Tremont Row, the contrast was striking. As a New Yorker, it was painful to think that the New York and Brooklyn Horticultural Societies had dwindled and dissolved, while in what New Yorkers call the “provincial town” of Boston, their Institution goes on with increasing prosperity.

The Worcester Co. Horticultural

Society.—It was pleasant to find in the beautiful inland town of Worcester so fine a show of fruits as was presented at the annual exhibition of this society. An ample hall is owned by the society, and this was well filled with horticultural products. Pears were of course the prominent feature in the exhibition. The show of native grapes was better than that at Boston, and included most of the standard varieties. Enormous bunches of Union Village were shown, and some finely grown and well ripened Adirondacs from G. H. Martin, of Norwich, Conn., attracted much attention. We were particularly pleased with the show of vegetables, which, considering the comparatively cool climate of Worcester, was exceedingly creditable to the exhibitors. There was a most interesting collection of potatoes, many of them seedlings. Mr. Jas. S. Pike, Worcester, exhibited 42 varieties, and Mr. S. P. Champney, Saundersville, a large number.

The Horticultural Exhibition of

the American Institute.—Liberal premiums were offered and abundant room provided, but for some reason our cultivators failed to appear in force, and the show was, as a whole, a failure. Had it not been for a collection of pears from Ellwanger & Barry, at Rochester, the show of this fruit would have been pitifully poor. There were some good specimens of grapes, but the display was not one-tenth of what it might have been, had our cultivators done themselves justice. The vegetables could have all been put in a wheel-barrow, and were not worth wheeling a great distance at that. In the way of pot plants it was better, thanks to Messrs. Buchanan, Hogg, and others. Mr. D. D. Buchanan of Reid's Nurseries made a creditable show of evergreens. We regret to be obliged to record such a state of apathy among our horticulturists, as is indicated by the meagre show at the Institute. The Greeley prizes, which it was expected would be awarded at this exhibition, are said to be still held in abeyance, but we are not yet officially informed of the actual state of the matter.

The Death of Mr. Joseph Frost.

The friends of Frost & Co., proprietors of the Genesee Valley Nurseries, at Rochester, will be pained to learn of the death of Joseph, the junior member of the firm, who died very suddenly at St. Louis, on Sept. 26th. Mr. F. possessed a gentility of manner that endeared him to all who knew him, and his loss will be felt by a large circle of friends.

Early Ripening of Fruit.

—The unusually dry autumn has caused most varieties of fruit to ripen in advance of their usual time, and the early winter sorts in many cases come into eating in autumn. The fruit grower should be on his guard against loss from this early maturity, and see that his fruit does not get beyond the proper state of ripeness for the table and market. Keep all winter fruit as cool as possible, without freezing.

The White French Turnip.—A few years ago, we were so favorably impressed with the merits of this turnip as grown in some portions of Rhode Island, that we procured a large amount of seed and distributed it free among our readers. In many cases the reports were exceedingly satisfactory, while in others from some cause it did not appear to do well, and we ceased to recommend it further. Mr. Hollowell, a large farmer in Pasquotank Co., N. C., informs us that in his region the seed received from us gave the highest satisfaction, the crop far exceeding in value any variety of the Swede or other kinds, and that they continue to cultivate it there as extensively as they can procure seed. For some reason they can not grow turnip seed well. He hopes the reopening to northern markets will enable them to procure an ample supply, if it is to be had here.

Sheep at the N. Y. State Fair.—“Gastar” merinos, with fancifully high prices, (\$200 to \$600) were present in full force from New York State and from Vermont, breeders from other States being admitted on an equal footing with those from this. The Silesian merinos of Wm. Chamberlain, of Red Hook, have a finer fleece, greasy enough, which we have no doubt will cleanse quite as heavy as the Americans. The South Downs, particularly Mr. Thorne's Yearlings, were perfect pictures. Those of Messrs. Griffing and G. H. Brown excellent. We took great satisfaction also in the fine large Shropshire Downs and Hampshire Downs, shown by Mr. Lillenthal. Middle wool sheep, South Downs, and their congeners especially, are the sheep for our eastern farmers, furnishing unsurpassed mutton and wool, for which there is a constant demand.

Vermin-free Hens' Nests.—The fowls of Thos. Lawrence, of Rockland Co., N. Y., were greatly troubled with lice. Having little soft hay for nests, Mr. L. tried some Sycamore (button ball) leaves, for one or two nests for sitting hens. In these nests no lice were to be found, though they abounded elsewhere in the house—on Sassafras roots, in the nests, and on the birds—in spite of the most diligent use of lime, ashes, etc. The nests were all changed, Sycamore leaves took the place of hay and straw, and the lice entirely disappeared, after whitewashing once or twice as usual. Now the building has gone a long time without whitewash, and still no vermin appear.

Shade Trees Injured by Horses.—J. E. Pratt, wishes to know what to do with shade trees, the bark of which has been gnawed by horses. Pare off the rough portions and cover the wound with a generous poultice of cow dung and loamy soil, to which some hair may be added to give it tenacity. The mass is kept in place by covering it with a piece of bagging or other fabric, and tying it all securely.

How to Tether out a Horse.—“T. S. J.” thus writes: “I used to tether a horse by the head in former days, but he would almost always get his feet over the tether line and hurt himself, or get down. This led me to devise some other method, and I hitched my tether line to the fore-leg, but the same evil existed in that; then I tried a third experiment. I took a piece of an old leathern tug, long enough to make a bow to go around his hind leg, made a hole in each end, put in an iron bolt of proper size and length, with a thumb-nut, attached a trace chain to it, and put it around the hind leg of my horse just above the ankle, and the other end of the chain was fastened to a post. I watched the horse for a long time, to see how the plan would work, and I soon became convinced that I had hit upon the true way of tethering. This was about ten years ago, and there has not been a year since that I have not practised this way of tethering my horses, and I never have had a horse hurt himself, get down, or in any way get tangled by means of this tether line. I use a rope or chain, as is most convenient, but a chain is preferable, because it does not injure it to get wet, as it does a rope. The strap of which I have made my bow to go around the ankle, I have used ten years, and don't know but it would last ten years more. I have often oiled it with neat's foot oil. I prefer a leather bow to wood or iron, as it never has chafed. I have used this method on young, wild colts, and never had one injured by it; it is a most excellent way of tanning them.”

Smut in Wheat—Remedies in North Carolina.—We recently met Mr. C. W. Hollowell, an old subscriber in Pasquotank Co., N. C., who, like many thousands of others, has been separated from us by the war. Among other items he informed us that the “smut” had been greatly detrimental to the wheat crop in his vicinity, and indeed throughout the State. Three years ago he sowed 120 acres of wheat, as follows: The seed

for 40 acres was soaked over night in strong old brine from pork, and then thoroughly mixed with lime by shoveling it over on the barn floor. No smut was found in the crop. For the second 40 acres, the treatment was the same as the above, except that the brine was reduced by adding an equal amount of water. This crop contained some smut. For the third 40 acres, the seed was wet with water only, but well coated with lime. The crop was full of smut. These experiments seem to prove that the lime was not the curative agent. An *effectual remedy* has been found in blue vitriol (sulphate of copper). For each 10 bushels of seed wheat, 1 lb. of the vitriol is dissolved in water enough to just cover the wheat. The vitriol dissolves quickly in hot water, but cold water may be used by giving more time and stirring it occasionally. Experiments show no difference in the effects, when the seed is simply wet and then sown, or when it is suffered to lie in a heap and soak for 8 or 10 hours. Mr. Hollowell says that during the war little blue vitriol could be got, and that it sometimes cost several dollars a pound; and that those who obtained it had so good wheat, that they could readily sell it at a high price for seed, so prevalent was the smut. His soil is a sandy loam, alluvial.

A Red Locust.—A red flowering variety of the common locust, but like that in every respect save the color of its flowers, is offered by the European nurserymen. It is called *Robinia Decaisneana*, and is said to be highly ornamental.

A New Work About Insects.—“Curious Facts in the History of Insects, including spiders and scorpions. A complete collection of the legends, superstitions, beliefs, and ominous signs, connected with insects, together with their uses in medicine, art, and as food; and a summary of their remarkable injuries and appearances. By Frank Cowan, Pa., J. B. Lippincott & Co.” pp. 326. We give the title in full, as it explains the scope of the work. It is pleasant, gossiping reading, culled from a great number of works, some of them quite rare, and shows extensive research on the part of the author, who has had the good sense to give reference to volume and page for his quotations.

“Inspector General.”—Why take an *Agricultural Paper*?—An Illinolan, whose expressive French suffers from translation and condensation, writes: “Often when I ask my neighbors to subscribe for the *Agriculturist*, they object something in this manner: ‘We know what to do, we have no time to read, we do not know whether it will be worth what it costs, and besides it is from the East, where the culture is different from that of the West, etc.’ I answer like this: ‘The great profit I have found in reading my agricultural journals is that, while they taught me many useful things, they made me love agriculture. To love our work is the only way to lighten it, and the more we love it, the more progress we shall make.’ The sad malady of not loving farm work, which has many victims among my brother farmers, has been cured in me by my reading the agricultural journals in my moments of leisure, and particularly during our fine winter evenings. These papers teach us order upon our farms, and disorder (especially on our Western farms) contributes not a little to make our farm life laborious and discouraging. They inculcate—‘a time for everything and a place for everything.’ In this respect an agricultural journal, and above all the *Agriculturist* is an *Inspector General*, who cannot come too often for the good farmer, and whose presence cannot trouble any but the negligent. It is a great loss to an intelligent agriculturist not to subscribe to an agricultural journal.”

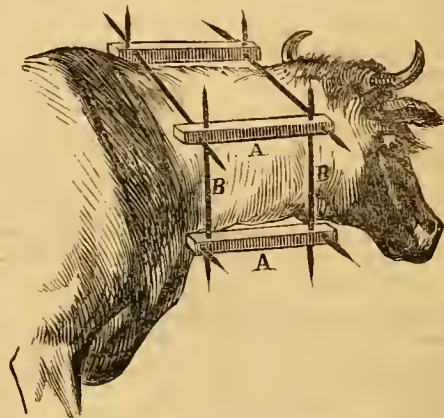
Pumping Water from a Spring.—“Annapolis” writes to the *Agriculturist*: “I have a first rate spring about 350 yards from the house, not over 30 feet lower. Could not I pump the water from it in inch pipe, without requiring any more force, than for a common well pump?” You cannot. It will require much more power to overcome the friction in a long tube than in a short one. We would not advise to attempt to draw water in this manner, as it would be very hard work for a strong man, at such a long distance and great depth.

Sanitary Commission.—The following sums have been received since our last acknowledgment: Wm. Beekman, Sacramento, Cal., 50c.; C. Bushnell, N. H. \$1.00. No further contributions are solicited on behalf of this noble organization, as will be seen by their farewell address of thanks, on page 253, August No.

To Harden Soap.—“S. M. E.” writes that soap made after the directions given in the *Agriculturist* page 83 (March No.) remained clammy or rather soft. Time is needed for it to dry and harden; the addition of salt will probably bring it right if it remains too soft.

Medical Questions.—A number of letters have been received, asking what will cure this or that disease. Those inquiries are unanswered, because we do not think that people, as a general thing, are able to determine what is the matter with themselves; and secondly, because most diseases are treated on general principles, rather than with specifics. It is only quacks who use specifics. We mentioned the use of blackberry root in diarrhoea, because in most forms of that disease astringents are beneficial, and blackberry root is a readily obtained astringent not generally known. We have also a great variety of prescriptions and remedies suggested. These we must, as a general thing, decline publishing. There is far too much dosing already, and we do not wish to contribute to its increase.

Yoke for a Self-sucking Cow.—M. Bixter and others inquire for a remedy for cows, addicted to sucking their own milk. In the *Agriculturist* for 1864, page 308, there is an illustration of a cow's tongue split at the end, to prevent her sucking, which has been reported both a success and a failure, by different indi-



viduals. This illustration represents a yoke on the neck of a cow, which we never knew to fail. Four sticks of hard wood, A, A, 10 or 12 inches long, and 1½ inches square, are held together by 8 round sticks, B, B, of tough, hard wood, about 2 feet long, 1 inch in diameter, the ends being pointed, passing through the sticks, A, A. These dimensions may be too large for a very small neck. Fasten the round sticks, B, B, in the desired place with screws ¼ of an inch long. Then the yoke can be removed, or adjusted to fit a large or small neck.

Patent Rights Conflicting with Home-made Conveniences.—G. E. Rice. We think it will seldom occur that the gates, etc., which you wish to build for your farm, will conflict with any body's patent-rights, unless they are really copied. A careful examination of the patent documents, no matter what the owner may profess, will usually disclose the fact that the real claim is for some feature with which your contrivances will not conflict at all. You have no right to make and use even your own invention, if some one else invented the same thing before you, and patented it.

Mrs. Abel's Skillful Housekeeper.—This book is worthy of a place in the hands of every housekeeper. It contains over six hundred recipes for cooking and other household operations, most of which are good common sense to say the least; but aside from these, the first 30 or 40 pages on general deportment, practical thoughts on the care of one's self and of the children, servants, etc., are alone worth far more than the cost of the book, which is \$1.00. Sent post-paid.

Mucilage and Ink.—I. C. Wildey. The mucilage put up in bottles is simply a solution of gum arabic in water. The cheaper kinds of gum are usually employed, and in this case it is necessary to use boiling water and strain the mucilage to remove impurities. We have used a small quantity of creosote to prevent ink from moulding. Essence of cloves is sometimes used for the same purpose. A few drops of *Nitrobenzole*, a liquid which smells quite like oil of bitter almond, will entirely prevent flour paste from moulding, and we have no doubt would answer for ink.

Quassia for Ants.—The celebrated fruit grower, Thomas Rivers, states that he kills ants by the use of a decoction of quassia chips. Four ounces of the chips, which may be had of the druggists, are boiled for 10 minutes in a gallon of water, and 4 ounces of soft soap added. This is used to syringe trees infested by ants, and is also poured into their holes.

Brandy from Sorghum.—A subscriber asks: "What quality and quantity of brandy can be made from Sorghum?" None at all. Sorghum would, like any other sugar, make rum or whiskey, but brandy can only be made from grapes. This manufacture is one not within the legitimate scope of this journal.

Is This Advice Good?—"Farmer," of Oakland, near Quincy, Ill., writes: "To the young farmers of the East who have capital and wish to start out in life, either as farmers or business men, the South and particularly the West, is the place to go. Missouri is destined to be one of the Golden Stars of our Union. Bounded on one side by the Mississippi, traversed by the Missouri and other navigable rivers, railroads in all directions and room for more, abounding in more natural products than any other State, central in position, with a soil adapted to the growth of every thing that will grow in a temperate climate, with the black population as laborers, and enterprising, ingenious men from the Middle or Eastern States to manage, Missouri will in a few years be the leading State of the West. The South affords rare chances for young men to make a start in life. I think it strange that men will buy or rent the stone-ribbed land of the East, when land is so cheap and plenty South and West. Let them that can't leave the East, stay there, but let the young and enterprising buy land in the West, which in a few years will double or treble in value. Let the heretofore Slave States be filled with enterprising, industrious and Union-loving people."

Is the Advice Good?—We say, yes—because, though the same thought, energy, capital and labor, expended at the East will pay just as well, or better, yet going West wakes up many an Eastern young man to ten times the energy, and, of course, ten times the success he would ever show or gain at home.

Measuring Corn Ears.—"J. M. P.," Ross Co., O., can find the cubical contents of his crib by Rules in his Arithmetic. Then by instructions on page 303, October *Agriculturist*, can ascertain the number of bushels in any crib or bin.

Grass and Cradle Scythes.—E. W. Allen, Cattanqua Co., N. Y. The edge of a grass scythe may be made of the same form of the diagram of cradle scythes in the August number of the *Agriculturist*. The edge near the heel should not be on a smaller curve, as the scythe would cut too squarely across the grass.

Smoke House.—"Mrs. A. K.," Blair Co., Pa.—Perhaps the simplest smoke house is the best. Such a one is a square box, say 6x6 or 8x8 feet on the ground, and with 7 or 8 foot posts. Put the sills on a brick or stone wall, cemented or plastered so as to be rat-proof. The roof really ought to be what is called "hipped," (that is of four slopes—a flat pyramid) one-third pitch. This will make it about 10½ feet from the floor to the rafters at the peak. The floor is the natural soil, it perfectly dry, or it may be of brick. In the middle of the room there ought to be a stone table 2 feet high. This may rest on stone posts, or wooden ones, and the fire is made under it. It serves to spread the smoke, and prevents the heat from the fire affecting the meats which hang above and are often hurt if the smoking fire chances to blaze up. Ventilators may be put near the ground on opposite sides, and one near the top. All should be furnished with fine wire gauze to keep out the flies. The door must shut very tight, and ought really to be opened only at night in the summer and autumn, to keep out flies.

Moving a Grape Vine.—G. H. Lincoln, Henry Co., Ill.—If the vine has a single cane 10 or 12 feet long, it should be cut back, whether it is moved or not. Cut it off to within 12 or 15 inches of the ground, remove as carefully as possible, protect the stem with a mound of earth, and next spring allow one, or if the vine is a strong one, two buds to grow.

Fattening Thanksgiving Turkeys.—For each turkey mix about a pint of Indian meal with one pint of unbolted wheat flour, and pour boiling water on it, stirring rapidly till it forms thin mush. Place the dish where the fowls can have access to the feed at any time. Let skimmed milk or water be given also. In two weeks they will be fat and oily as butter. They will fatten better to have their liberty in a spacious yard.

Sick Chickens—Roup.—Many letters inquire about a disease among fowls which we are confident is in many cases the roup. This is a highly infectious, and often fatal disease, but if taken in time can be cured. The premonitory symptoms are a slight hoarseness and catching of the breath, as if from cold. Soft food only, mixed with ale and chopped green vegetables should be given. Administer castor oil, say one table-spoonful, before any other medicine, but if the disease

has made much progress before discovery, and rattling in the throat (with discharges from the eyes and nostril,) has commenced, stronger remedies must be used. Tincture of iron placed in the water pans, is a strong remedy, and if the fowl will not drink some, prepare half an ounce of sulphate of iron and an ounce of Cayenne pepper in fine powders. Mix carefully a teaspoonful of these powders with butter, and divide into ten equal parts, one to be given twice a day, each morning and evening, until the complete restoration of the patient to health. Wash the eyes and inside of the mouth and nostril with vinegar. The disease runs its course rapidly. If the fowl is not better in a week, it will be dead; whole yards are often depopulated by the ravages of this scourge. Single cases occur which are overlooked, and then the disease becomes universal. Some think roup merely a neglected cold; but there is evidence to show that it is contagious. The first sufferer perhaps contaminates the water, and such is the virulence of the malady that it often runs quickly through the whole stock, and is indeed the poultry plague. Even when the fowl appears to have recovered, it must undergo a long and strict quarantine before it is restored to liberty. We do not advise this care to be given any but valuable fowls. If those of little value are attacked, the sooner they are put out of pain and hidden from sight, the better.

The "Wine Plant."—This has been so often noticed in the *Agriculturist*, that we supposed our readers knew all about it. It is nothing more than the common Rhubarb or Pie-plant. Its juice, fermented with the addition of sugar, will make a liquid containing more or less alcohol. If any wish to make this for a beverage, or other purpose, they need not pay peddlers a large price for "Wine plant," when Rhubarb can be bought cheaply at the nurseries. We cannot now discuss the question as to whether this juice may safely be substituted for wine, but whatever its merits, let it stand in its own name. We were quite surprised to find the N. Y. Tribune extravagantly puffing the thing under the name of the "Linnaeus plant which resembles the rhubarb, but is different." This article could never have been seen by the agricultural editor of the Tribune, for he knows better. The fermented juice makes a poor alcoholic liquor, which by coloring and flavoring may resemble wine, but it is a poor liquor, and no healthier than the cheapest whiskey, and we repeat, that it is not worth and can not be sold in quantity at half the price the plant peddlers claim for it.

The Sweet and Sour Apple Again.—W. F. Truesdell, Pike Co., O., says: "There has been considerable controversy in regard to what causes the variety," and asks our opinion. We only know that there are some apples which become sweeter on one side than on the other, but in several specimens have failed to see that there was anything like a dividing line separating the sweet part from the sour. External lines upon apples are not rare, and are found upon several varieties. The story of an apple half sweet and half sour having been produced by uniting a bud of the two kinds, is simply an absurd impossibility.

Lima Bean Pods Injurious to Swine.—Two or three correspondents have written that the pods of Lima beans would kill hogs. We supposed that there must be some mistake, as it can hardly be possible that the pod of this delicious bean contains anything poisonous. Mr. J. K. Eby, Harrisburgh, Penn. has explained the matter. Mr. E. lost two hogs, and a neighbor of his had seven die, after eating the pods. A careful examination was made and it was found that the sharp hard point of the shell stuck in the throat of the animal, causing an irritation which resulted in death.

Strawberry Runners.—G. H. Lincoln, Henry Co., Ill., wishes to know if the statement is true that the first two runners from a strawberry plant are the only ones that will fruit the next year. The earliest formed runners will make the strongest plants and they will usually bear a small crop the next year, but this is not confined to two plants or any particular number.

Plants Named.—P. Ritz, W. Terr. The grass is *Agrostis exarata*, a peculiarly far-western species, related to Red-top. We shall be glad to know something of its agricultural value.... E. J. Labarriere, Douglass Co., Kansas. *Apios tuberosa*, the Ground-nut or Wild Bean, common all over the country. Some years ago an attempt was made to introduce it into cultivation, as an edible root under name of Dicotah potato, but we have not heard with what success.... Adda Maynard, North Lizard. A double variety of *Achillea Ptarmica*, or Sneezewort; it is own brother to the common Yarrow, and a very pretty perennial for the garden.... M. R. A., York Co., Me. No. 1. *Lysimachia verticillata*. No. 2. *Dalibarda repens*. No. 3. *Bidens chrysanthemoides*.... A. W. Tabbutt, Columbia Falls, No. 1. *Tri-*

folium agrarium, Hop-clover, a worthless species. No. 2, some species of *Amaranthus*, but too small and too young to make out; is a bad weed, whichever it is.... Judge Woolman, Woodson Co. Kas. The seeds and drawing are those of *Cucurbita perennis*, common in the far West; the small bitter fruit is worthless. We have seen donkeys eat it in the absence of other food.... W. L. A., Venango Co., Pa. The grass is *Brixa maxima*, Quaking grass, often cultivated. There must be some mistake about its occurring in the earth thrown out from a well.... M. Crabb, Lawrence Co., Ind. No. 1. A thistle, but in too poor condition to determine. No. 2, is not a thistle, but the Wild Teasel, *Dipsacus sylvestris*. W. J. L., New Milford, Conn. *Gilia tricolor*, a very pretty California annual, now common in cultivation.

The Tilden Tomato.—This comparatively new variety is held in high esteem by the cultivators near Philadelphia. It is oval (flatwise), very smooth and solid. It is said to be of superior flavor, great bearer, and so firm when ripe as to be very good for marketing.

Work upon Nursery Culture.—J. G. Paulding and others, Barry's Fruit Garden is the best work on the cultivation of fruit trees. We know of no work solely on ornamental shrubs. Mehan's Handbook of Ornamental Trees, contains good hints on forest trees. The above are in our book list. Dubreuil's Arboriculture (in French) gives the details followed in the continental nurseries, and may be had of the foreign book-sellers.

Lilacs in September.—Two little girls have written that they picked all the leaves from their lilac bushes in August, and had blossoms in September. The lilac knows much better about the matter than our little friends do, and this unnatural treatment if continued will injure the plant. There is plenty of work that they can do to better advantage, such as trying which shall have the cleanest garden and the best flowers of their kind in the proper season.

Root Pruning.—This is practised upon dwarf trees to keep them small, and upon standards to induce them to fruit. The treatment of dwarfs was given in January last, on page 13. The operation is performed on standards that have attained a good size, but show no disposition to fruit, but the cutting is performed at a greater distance from the tree, according to its size. A tree three inches in diameter may have the roots cut at three feet from the stem. Dig out a trench all around at this distance, cut off all the roots that are met, and fill up the trench with rich compost.

Make Cuttings in Autumn.—In propagating currants, gooseberries, quinces, etc., from cuttings, a full year is gained over spring planting by planting them in autumn. During the winter the cuttings callus and are ready to strike root and grow as soon as spring opens. The directions given in September in an article on currants, page 282, will answer for other cuttings made at this season. When it is not convenient to plant them this fall, the next best thing is to tie the cuttings in bundles and dip them in mud for one third their length. The mud should be sufficiently thin to coat each cutting. Thus prepared, the bundles are set in a cool cellar and occasionally sprinkled to keep the mud from becoming very dry. In spring the cuttings will usually be well callused, ready to strike root as soon as set out.

Information Wanted about Fences.—A gentleman proposes to us a series of questions about fences, which we pass over to our readers, in the assurance that in the multitude of counsellors there is wisdom, and in the hope that we shall have many specific answers with illustrations. The information elicited will be given in the *Agriculturist*.—"What is the most substantial, tasteful and economical, farm fence, that will turn cattle, sheep, and pigs, made throughout of sawed stuff?" Please answer as to the following points: 1st. Depth of setting and shape of posts below ground, whether square, straight, tapering or enlarging below. 2d. The height above ground; and the size and the best form. 3d. The kind of timber for posts, and time to cut it. 4th. Whether to set them as they grew, or reversed. 5th. How near shall they stand to each other. 6th. Should the bottoms of the posts be charred, dipped in slacked lime, boiling tar, asphaltum, or be prepared in any other way before setting, to secure durability. 7th. The kind of lumber for boards or rails. 8th. Thickness and width of each board. 9th. How high should the fence be, and how many boards or rails will be needed in each length? 10th. Should one be placed as a cap-rail; if so should it be horizontal, or at an angle, and at what angle? 11th. How many nails in each board, what kind of nails, and put how near the ends and edges of the board? 12th. Should the boards be battened over the ends?



Fig. 1.—MANNER OF KILLING A HOG.

Killing and Scalding Hogs.

The swine interest of the United States is immense. One fond enough of figures might go into an investigation of the very inaccurate data of the census, (which indeed may give tolerably accurate averages); but this would only astonish, and really teach nothing, except, as we have said, the immenseness of this interest. People will eat pork, it is a necessity of the peculiar "civilization" of a great part of our country. The hog occupies a position in our farming, as a manure maker and utilizer of all kinds of garbage and refuse, and as one of the most profitable farm products, quite as prominent as pork, hams and bacon do upon our tables. We heartily wish it were otherwise, and that swine were banished from the pale of civilization, taking with them all the diseases they have induced and promoted. But, as hogs must be killed, they should be well killed, both for the sake of the hog himself, and that the flesh may be less hurtful to humanity who feed upon it. If a hog be well stuck, the blood will almost all flow out, thus leaving the flesh in a much better state than if the animal bleeds poorly. The diagram herewith given, shows clearly, with a few words of explanation, how this should be done.

In killing a hog, a knife is simply thrust into the throat of the animal, without making a large incision, in order not to expose the flesh to the influence of the hot water and dirt, while the carcass is being dressed. When the knife does not enter in the proper place, the animal will be a long time bleeding, and much of the blood will not flow out at all, but will settle in the shoulders, thus detracting from the value of the pork. Some butchers lay the hog on one side, and make an incision through the skin, one side of the middle of the throat, and thrusting in the knife, work the point back and forth to cut the veins and arteries near the heart. This is a very awkward way, and if the arteries are really severed, the bleeding will be imperfect, as it will also be if the heart is cut. Others place a hog on his back, and thrust in the knife nearly perpendicularly, sometimes severing the wind-pipe, and mangling the throat barbarously. Swine killed in this manner, are apt to be a long time dying, and never bleed well. A much better way is to place the animal on his back, letting a man stand astride of him, and draw his fore-legs back, as represented. Another lays one hand on his under jaw and presses it downward, so as to close his mouth, and keep his head and neck in a line with the body, and

with a good "sticking knife," about ten inches long, having a thin blade, the point in the middle, and two-edged at least two inches from the point, makes an incision about two inches long just back of the jaws, at the place where the head is cut off, (as shown in the engraving,) exactly in the middle of the throat. After the incision is made at the place indicated, he sets the point of the knife in the incision, with the edge upward, glances his eye quickly over the animal, to see if the knife stands in a line with his body, so as not to thrust it on one side of the veins, (when it would enter the shoulder,) and holds the handle, so that the blade will point directly towards the root of the tail. Then with a firm hand he thrusts the knife quickly to the handle, in the direction indicated by the dotted arrows, and withdraws it instantly. If these directions are observed to the letter, the blood will follow the knife, often spurting several feet upwards; and the animal will bleed well and die quickly. A little practice or observation will enable any one to sever the great veins near the heart every time.

For scalding hogs, even where large numbers are killed, farmers usually employ half-hogs-head tubs, and the lifting and tugging which accompanies the operation are well characterized by a correspondent, (Wm. Starling, of Peoria Co., Ill.,) as "back-breaking work." Mr. S. sends a sketch of his hog scalding apparatus, which he describes as very convenient. It is a

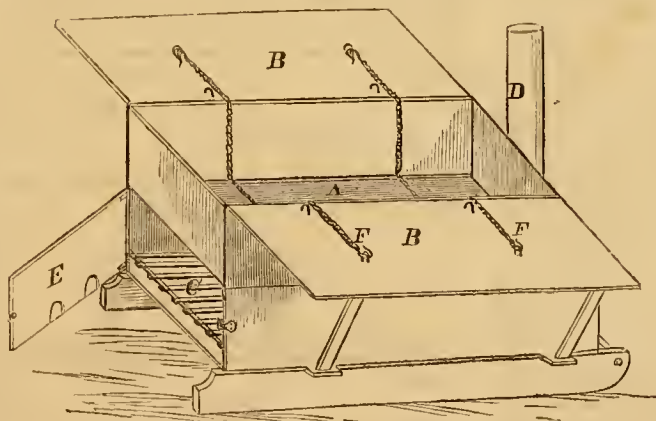


Fig. 2.—VAT FOR SCALDING HOGS.

vat or box (A) of boiler iron, 6 feet long, 3 feet wide, and 2 feet deep. In the bottom of this a frame of slats, 1½ inches thick, is placed. Below the boiler is the fire place (C), of the same width and depth as the boiler, provided with a grate, a pipe, (D), and door E, having draft holes. B, B, are lids or shutters, made of wood and hinged to each side of the vat, and supported in a nearly horizontal position, as shown. F, F', are chains provided with hooks, held in position by staples. The whole is placed upon a pair of runners to facilitate transportation.

In regard to the manner of using the scalding vat, Mr. S. says: "Close one of the covers until the water is hot, at the same time get a hog ready upon the other cover. Then open the vat; hook one end of each of the chains into

staples near the edge of the cover on which the hog lies, and lay the chains over the hog. Then take hold of the chains and roll the hog over, easing him into the vat. The carcass can be turned with the greatest ease, and when sufficiently scalded, placing the hooks on the other ends of the chains into the staples of the cover on the opposite side, by pulling upon the chains the hog may be lifted out. One man can handle the heaviest hog with ease. While one is being cleaned, another may be scalding. If the water is too hot, add cold water, if too cold, close one of the covers a few minutes. To the objection that the cost of such a vat is so much it can not be afforded, I would say that one will accommodate a neighborhood, and can be built by those interested clubbing together, or one might own the vat and others hire the use of it."

Preparations for Feeding Sheep.

When one has good hay, straw, comfortable sheds, and a supply of coarse grain, if the sheep to be fed are in good order, it is not difficult to make excellent mutton. But if a farmer has no hay for his sheep, no suitable sheds, but an abundance of coarse grain, a little forethought and good management are indispensable to render feeding sheep a paying enterprise. There are thousands of farmers who have straw and grain in sufficient abundance to fatten one hundred or more large sheep, if some man of experience could stand at their sides and give them proper details for performing the labor.

The first step is to procure the sheep. Purchase none but good ones. Dry ewes, four to eight years old, if in good condition, are worth as much as wethers. Caution is necessary to avoid buying those that will drop their lambs in winter. There is no profit in feeding such ewes. Never purchase poor sheep. Better pay one-third more for those that are now in a

growing, thrifty condition, than to get lean ones. Aim to obtain young, healthy, strong and fleshy animals, having good teeth. Old sheep, thin in flesh and having poor teeth, will be found unprofitable for mutton sheep in the winter. Such animals should be fattened in the spring and early summer. Grade animals are usually found more profitable for feeding than full blooded ones. A pretty liberal infusion of Merino blood does not prevent the sheep be-

ing fed with profit, though we much prefer grades of the South Downs or Leicesters, or a cross of South Downs upon the Leicester, or some other long wool breed. For the most part, purchasers have to accept such animals as they can get, for the reason that few farmers allow the best of their flocks to be selected, except at a price which would be greater than would be warranted for feeding. Sheep must be bought at their lowest cash value, in order that a fair margin may be left as an equivalent for the labor and feed consumed. A portion of the profit will arise from the larger quantity of wool produced by good feeding, apart from the value of the grain consumed and transformed into mutton; while a still larger proportion of the profits will accrue from the manure

made by the sheep. Sheep are fattened frequently when the feeder receives in return barely an equivalent for the fodder consumed. To some, it appears discouraging to tend a flock for six months, or more, and receive no remuneration for faithful services. The good feeder looks to the *manure* heap for his profit. He has given, perhaps, three or four hundred dollars worth of feed. The cost of the sheep and the feed, nearly equal their present value. Saving and applying judiciously all the manure that the flock is capable of making, the amount of the next crop of grain will be so much augmented by the manure, that a fair compensation will be realized for the care of the sheep. It will be difficult to make feeding mutton sheep pay, unless this plan of feeding coarse grain is adopted. If the manure is allowed to waste by evaporation, or to be carried away by rain, the most important source of profit is cut off, and feeding mutton sheep will be abandoned as unprofitable. Nevertheless, many of our most successful farmers find this branch of farm labor the most profitable manner of using the coarser products of the farm.

After the sheep have been selected, arrange them in flocks of not over one hundred each, putting those nearly equal in size and strength together. Whenever ten, or more, small or weak sheep, rather thin in flesh, can be selected, confine them in a small enclosure where they can receive extra care, otherwise the stronger animals will rob them of their allowance; and instead of fattening, they lose flesh daily, early becoming "spring poor." If no sheds have been provided and one has straw, let sides be made of two courses of rails, each course laid up like a straight fence, set two feet apart, and filled between and over head with straw. Sheep will endure intense cold if only kept dry and shielded from the winds.

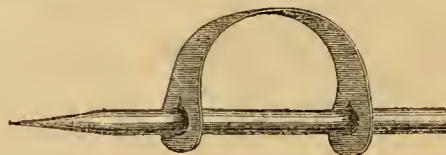
Next make straw-racks and grain-troughs. When straw is scattered on the ground, nearly one-third of it is soiled and rendered unfit for fodder. It is always better to feed a little hay and corn stalks daily, in addition to straw, than to confine a flock to only one kind of fodder; and they will eat more straw in a day, when fed a few mouthfuls only of hay or corn-stalks, than when they receive straw only, and they will consume a much larger quantity of straw when fed one pound of grain with the straw. It cannot be expected that sheep will eat straw clean as if it were hay, even when it is bright. They will reject at least one-fourth, and sometimes more than that. It is essential to provide suitable racks so that they can select the best portion of the straw. The remainder should be removed at every foddering.

Grain should be fed regularly, at stated times, and every animal should receive not less than one pound daily, which may all be fed at once, though it is better to give half the amount at two different times during the day—say the first thing in the morning, and the last at evening. Unground Indian corn and barley may be fed, though it is better to grind any kind of grain, when it is not necessary to haul it a long distance and allow too much for toll. The best feed for fattening sheep is equal quantities of Indian meal and oil meal. When unground grain is fed it will be good economy to soak it at least 24 hours previous to feeding. The most convenient way of doing this is to provide two or three tubs, each capable of containing one feeding. When a tub is emptied of grain, enough for another feeding is replaced. By this means none of the grain will be in the steep too long.

In addition to the grain, every flock should have free access to pure water, without being compelled to obtain it at a distance. Roots are also conducive to the health of sheep, that are fed upon dry straw and grain. Apples are a good substitute for roots. Pine or hemlock boughs also will sometimes be eaten with great avidity, and tend to prevent the stretches. Free access to salt is another item that should not be neglected. If all these directions be carefully observed, making mutton will furnish a paying employment for those farmers who are accustomed to do little or nothing in winter.

To Husk Indian Corn Quickly.

Husking Indian corn is an operation that requires not so much strength, as a nimble motion of the hands. It is a slow hard way to husk while standing, and to stoop down and pick up one ear at the time. Sitting in a chair is allowable only for the lame, and the lazy. The best position is the one that will bring a person nearest to his work. After the stook has been pulled down, a husker should drop on his knees, on that side of the stook, which will bring the right hand towards the butts. Then take a lapful, and settle back on his heels. A relief position, equally good, is sitting on a block, or bundle of straw, and extending the legs. Place the basket at the butts of the stook. It is desirable to keep all the husks attached to the stalks; and those that are broken off, should be gathered in among the stalks, and bound up with them. Every husk and the silk should be stripped clean from the ears, as they look slovenly if left among the corn, and furthermore silk and husks are very choice materials for mice nests. The hands and fingers of a husker should always move rapidly. While one hand is tossing an ear to the basket, the other should reach another stalk, or gather up the husks. Two twitches and a jerk, made so quickly that a bystander can not discover how the ear was husked, is all that a good husker requires to strip an ear, break it off, and put it in the basket. It is just as easy, in fact far easier, for a neat husker to keep the butts of the stalks even, and the loose husks and leaves, which make the best fodder, all gathered in the inside of the bundles, than it is to have the sheaves long and misshapen.



HUSKING PIN.

When the husks tightly enclose ears, it is necessary to tear them open. If this is done with the thumb and finger nails, the fingers often become very tender, and a laborer will not be able to husk so much by a number of bushels in a day, as he otherwise would. To obviate such a difficulty, a husking pin is employed which is here represented. It consists of a piece of hard, tough wood, or iron, about five inches long, and three-eighths of an inch in diameter, pointed, as in the figure, having a strip of leather on it, about three-fourths of an inch wide, put on when the leather is wet. Two grooves are filed in the pin, for holding the leather. The leather should be just long enough to slip over the two middle fingers. If the leather is too large, it will be constantly dropping off. We have usually made the pins of old fork tines, by filing. The point should not be left

too sharp, lest by some inadvertent motion it wound the left hand; it should extend about an inch beyond the forefinger. In using the pin, hold the ear with the left hand, and with the right hand thrust the point through the husks, at the tip, and grasp them on one side of the ear with the thumb and pin, and strip them with a quick jerk to the but. As the right hand goes down, the left thumb should pass over the tip of the ear, taking the silk and the remainder of the husks; jerk them to the but end of the ear, when the left hand should grasp the stem, and the right hand the ear, and break it off. The husks should extend above the left hand, in order to protect it, for if the corn is broken off against the bare hand, the flesh will soon become tender, blistered and sore. Some huskers wear a leather band, or glove, or mitten, with the end cut off, to give the protection which the husks thus held afford. The chief difficulty with slow huskers is, they husk without any system—in a kind of a hap-hazard way; and will often pass their hands up and down an ear several times before they get it husked. Their baskets and ears are too far from them, and while throwing an ear to the basket, and getting ready to husk another, an expert hand would have an ear or two husked. Beginners should be instructed in correct manipulation when husking. Then, if ears do not break off hard, a boy will husk as many bushels per day as a man. It is just as important to show boys how to excel in such kinds of work, as it is to teach them how to use the cradle, scythe, or plow.

For the American Agriculturist.

Fattening Turkeys.

With turkey at forty cents a pound, it is a matter of interest to the farmer to get as much of that commodity as possible into market. This used to be one of the best of farm crops when the birds were thought to be well sold at Christmas and Thanksgiving, for twelve and fourteen cents a pound. It can not be any thing else, when the price is multiplied by three. Turkey is at the top of the scale of high prices, and must be about the most profitable meat we can raise. Corn can be bought for a dollar a bushel, and it was frequently at that price when poultry was worth only a shilling a pound. Corn will make just as much flesh now as ever.

One great advantage of this kind of stock is, that they mainly take care of themselves, and do their own foraging. After the young broods are fairly started, say a month old, they shift for themselves until the cool nights of autumn come on, when the fattening process should begin. Those make a mistake who put off the feeding later. At this time their feed of grasshoppers, crickets, and other insects, which has so largely supplied their wants, begins to fall off. There is no objection to their roaming still and gathering what they can; we do not approve of shutting them up. This will do very well for ducks and geese, but the turkey is a more enterprising bird, and it chafes his restless spirit to be confined in a pen, no matter how well he may be fed. The flocks will gather a good deal from the woods and fields, all through October and November, especially if mast is abundant. What is wanted, is that they should go to their roosts every night with full crops. As the insects drop off, their other food should be increased. At first they need only be fed at night. This will not prevent their excursions in the morning. They will make for their familiar pastures as soon as they leave their perch

es. Regular feeding will encourage them to come home early, and to roost near the farm buildings where they are safest. A ton or two of turkeys is too much property in these days to have lying round loose. Encourage them to come at call and keep the flocks well in hand.

As the weather grows colder, increase the feed and improve its quality. To promote thrift, nothing perhaps is better than boiled potatoes mashed up with oat or corn meal and given warm. To prevent wasting, these should be fed in troughs made for the purpose. The bird is a gross feeder and almost any thing that ordinarily goes to the pig sty will be acceptable. He has, however, his decided tastes, and knows which side his bread is buttered as well as taller bipeds. He has an eagle eye for grain, oats, barley, buckwheat and corn, and all these may be given with decided advantage. His especial weakness is Indian corn, and his eye twinkles with delight at the sight of this golden grain. His flesh tells the story of his keeping. For the last six weeks of his life he should be plied with corn as the standard diet. There is no cheating the consumer. A lean bird is not the thing for forty cents a pound. Be honest, give him a plump corn fed fowl, and sleep with a thriving pocket and a good conscience, though the crib grows lean. CONNECTICUT.

Right and Left-hand Plows.

The question has been repeatedly raised, and is again proposed by a correspondent, who asks which plow is better, the one with "a right hand, or left hand mold board?" There is no difference at all in the operation of the two, when the mold boards are of the same model, only reversed. The correspondent alluded to writes that he likes the left-hand plow the best, "because the leader can travel in the furrow." The leader can walk equally well in the furrow of a right-hand plow. The leader is by no means in the proper place, when in the furrow, if either plow is in use. A single leader should always walk as close to the furrow as possible. Then he will draw in the same line with the rear team. Left-hand plows possess no superiority, in any respect, over right-hand plows, nor are they inferior to them. Any supposed superiority lies altogether in custom. A man who has always used a left-hand plow, is quite disposed to denounce a right-hand one, as an awkward and inconvenient implement, and *vice versa*.

Bells to Prevent Dogs Killing Sheep.

O. H. Baker inquires "If he can cure his valuable dog of a propensity to chase sheep, and kill them?" Buckle a good sized bell under his neck, and he will never attempt to chase sheep. He will soon learn that, when he trots along, the tongue of the bell will make no noise. But, as soon as he starts on a run, his bell rings such a loud alarm as to make him desist from chasing sheep. A dog disposed to kill sheep moves still and slyly, and a dog can not catch a sheep while moving on a trot. Another effectual way is to buckle a strap around the dog's neck with a light chain attached, long enough to reach to his hind feet, where it is fastened to a round billet of hard wood, about four inches in diameter, and 18 inches long. It is impossible for him to run with such a clog at his heels, while it will give him all the liberty that a dog needs ordinarily around the house or barn. Bells are sometimes attached to the necks of sheep to frighten dogs. This will be found effectual if cow bells be used instead

of little tinkling ones that can scarcely be heard when a flock of sheep is running rapidly. There should be not less than ten bells in a flock of one hundred sheep; and the feeble sheep—not the horned bucks and strong wethers—should wear the bells, as dogs seldom attack such sheep. The feeble ones being left behind in the chase, would soon be overtaken by their pursuers, and fall an easy prey, if the strong and swift-footed carry the alarms.

Western Farming.

We have heard again from our La Salle County, (Ill.) correspondent, "Western Boy," and are sorry not to have room for his whole letter, instead of selecting those portions only which give a little light on Western Farming, and may therefore be useful to our readers.—He says:

"The editor seems to think that because our soil is rich, if it is only half tilled it yields most bountifully, but in this he is mistaken. Crops here need cultivation just as much as they do in the East, and though we do not have to hoe our corn, it is because we know enough to harrow it just before it comes up, and then we give it three to five plowings, according to whether a man is lazy or not. (This is sometimes the case with eastern men, who will not plow their corn because it is not weedy.) Do not think because we raise big crops, we have no weeds, for there are fields here so overrun with weeds that it is impossible to raise even a middling good crop on them, and all along the roads and fences, and around our buildings it is nothing but weeds. I have seen weeds that came up after harvest, cut down with a machine in the fall before the land could be plowed. Some men can hardly hire a man to husk their corn, because it is so weedy. We do not [any longer?] move our stables to get away from the manure as you may suppose, but haul it all out on our land. The pasturage of our cattle is defined by a fence in some places already, but men do not think anything of driving cattle 100 or 200 miles, to the prairie. A man who cannot cultivate more than 30 acres here is called a lazy scamp.—'C. S. W.,' Scott County, Iowa, thinks we do not make anything on our crops. Now I would like to ask him, how men who have come West since the rise in the price of land, could have bought and paid for farms, if they did not make something on their crops; although land was \$20 per acre, when corn was 15 cents per bushel, and some places even as low as 5 cents? And how does a man support a family of eight or ten children on 40 acres of land, if he does not make something on his crops? He says we need information on as many, though not the same, points as Eastern men. Now why don't he give us information on those points? He says we try to cultivate too much land; but I think there are few who do, and those are mostly eastern men who think all they have to do out West to make money, is to plant their crops, no matter how it is done, and that they will grow whether they get any cultivation or not."

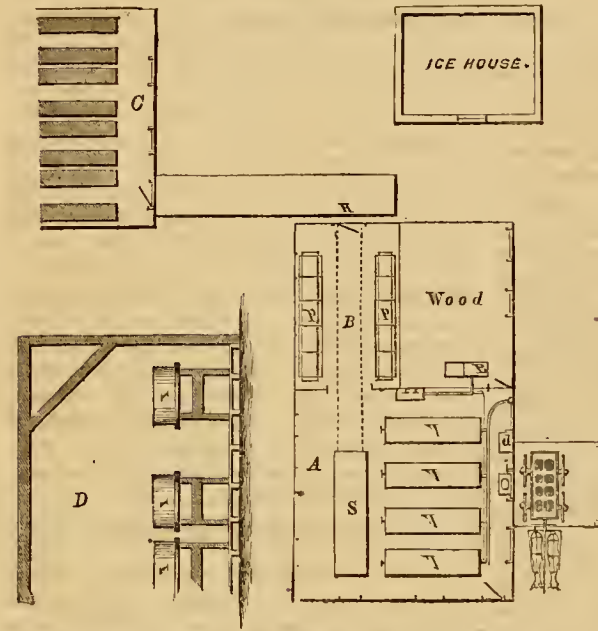
Another letter on Western Farming comes to us from Scott Co., Iowa. It thus proceeds:

"In the August number of the *Agriculturist* 'C. S. W.' gives his ideas, to which we take not the slightest exception, unless it be as regards the brag and boast, and exaggeration of the two sections, East and West. To our mind, they are both right and both wrong in their apparent regard, each of the other, as a sort of semi-humbly—'good enough for those that like it.' Most assuredly each section understands itself,

and exaggeration of any nature will not ultimately avail anything. The West has much of which to boast, but it is a homely fact, that it does not invariably sustain its boastings in truth and practice. The East has but little, but much the longer end of the lever in fulfilment of its promises. Hence occasional hard times in the West; invariable good markets in the East; for many mouths make the market, while many bushels and railroads combine to make crops a drug. That the West, in soil, is immeasurably superior, no one in sanity will attempt to deny; nor will any one pretend to say aught against the fact of the better eastern farming, care and economy in every detail. Those of the East call us slovenly, extravagant, etc., because we do not rake our stubble, house our stock and implements, and often turn our hogs and cattle into the standing corn. And we of the West think it small business to grub around rocks and stumps, cut hay in fence corners, and measure out oats and corn to the horses. Truly 'circumstances alter cases.' Give us as many men as we have acres, and you as many acres as you have men, and we will show you a balance sheet. We can learn, too, from the East many things that we should know, while the East can learn nothing save novelty and machinery from us, neither of practical benefit.

"And this fact, 'Western Boy,' does not seem to appreciate, for in the latitude of La Salle, Ill., he does not care for the *Agriculturist*, therefore he argues, that it will not do 'for the whole American continent.' There are places, both in and out of Illinois, and we chance to know of several, that have not arrived at that envious distinction—that utopian sphere, in which men need know no more—characteristic of his vicinity, if judged by his representations. There are places in the West, where plain, old fashioned people, in primitive ignorance, heed the teachings of the *Agriculturist*. There are sections, in which men do farm, instead of scratch the ground, where the best method of loading manure, weaning calves, drawing hay, stacking grain, fattening hogs, housing stock, etc., do not come amiss to back nor pocket. The West need only take the advice needed by it, and we know that even 'W. B.' has taken hints and ideas from the *Agriculturist*, of more than infinitesimal value to himself. A lively picture and a true one is his, of driving home the cattle in the fall, rolling fat. He might have shown you the same cattle in winter, snowed up, shivering in the lee of straw-stacks, eating snow, or drinking water from ice holes, or white with sleet, picking their hay from out the mud and mire. The writer has seen cattle lying in their feed lot, completely covered with snow. Nature was more kind to them than the owner. Did the *Agriculturist* never say anything about warm quarters for stock, good breeds, or economical feeding? Did it never tell you how to make any simple little implement, or contrivance to save labor or money? Did it never tell you of 'humbly,' describe grains, grasses, weeds, or insects, and did it never feed you from any of its 219 recipes for corn bread, etc.? I guess it did, Western Boy, and I guess it will, and does, do for other places, besides 'alongside stone walls, amongst stumps, ditches,' etc.—Respectfully, K."

LIVE AND DEAD WEIGHT OF SHEEP.—We see it stated that the following English rule is tolerably accurate for sheep in fair order, not very fat. The weight of each (dressed) quarter is one seventh of the live weight. *e. g.* If a sheep weighs 140 lbs., the carcass will weigh 80 lbs.



The Associated Dairy or Cheese Factory System.

We have long sought an opportunity to visit, so as to inspect somewhat minutely, some of the cheese districts where the Factory system has met with so much favor, and have recently had the satisfaction of so doing. The cheese factories exist chiefly in the central counties in New York, in those of Northern Ohio, and to a considerable extent in Canada. We visited establishments in Lake County, O., a year or more ago, and recently in Onondaga and Oneida Counties in this State, and add our testimony to that of others in regard to the general satisfaction which the system gives, as at present conducted. The farmers we conversed with at the State Fair and elsewhere, are agreed that a great saving of labor to themselves and their families is effected, and that they realize larger and surer profits. The dairymen are well satisfied with their remuneration, which is from 1c to 1½ cts. per pound of cheese made, weighed at the time of sale. They are able to pay good wages to their employees. The course usually pursued is briefly as follows: The factory is owned by the dairyman; he provides the labor—usually that of men and women in about equal proportions, including his own. He owns also all the dairy furniture, vats, hoops, presses, etc., etc. Those who furnish the milk, provide all those articles that are consumed in the using, rennet, salt, bandages, boxes, firewood, etc. These are bought by the dairyman, and the accounts audited by a committee of the "patrons." The milk is weighed when received, and each patron credited with what he furnishes. Suspected samples are tested by taste, color, and by the hydrometer and cream measurer. When the cheese is ready for market it is usually sold by a committee of the patrons, and this is done

repeatedly during the season. We find a great similarity in the construction of the factories, though in some cases old buildings have been adapted to their present use, and are nevertheless quite convenient. The plan we give is drawn with some modifications from one which has done service in the Agricultural Transactions of New York and Maine, and represents with sufficient accuracy the general arrangements of many of the smaller establishments which are scattered over the central counties of this State. A good location must of necessity be conveniently situated in relation to the farms from which the milk is to come; and it must have a good supply of running water, the colder the better, (for if sufficiently cold the ice house is often dispensed with.)

The necessary buildings, or apartments, for they may all be under one roof, are the *factory* (A) in which are the curd vats, with a press-room (B) attached, and a curing house (C). Besides these, we usually find an ice house, an engine room, a woodshed, and hog pens. The vats (V) are usually about 15 feet long by 3½ in width, and are arranged conveniently near a window on one side of the factory, to which the milk wagons can approach upon a raised roadway. At this window is a large can upon a platform scales. The wagons must stand high enough for the milk to flow easily into this can, when it is weighed and then drawn off into the vats. The weigher's desk (d) stands by the side of the scale.

The vats are arranged so as to allow a stream of cold water to flow around each, which keeps the night's milk cool until morning, and after the addition of the morning's milk, the cold water being shut off, the steam is let on, which rapidly raises the temperature of the water on the outside of the vats, and of the milk itself to the point deemed most desirable for the addition of the rennet. In very hot weather blocks of ice are put into the night's milk to keep the temperature low enough to prevent cream from rising, and to keep the milk sweet. The water flows off from the opposite ends of the vats, near the centre of the room, and the whey is drawn off here also, and that from the vats, from the "sink," (S), and from the presses, all flows off in a channel beneath the floor to the whey vats, which should be such a distance from the building that the odor of the sour whey is not perceived. The floors should also be so constructed that water will flow to the centre or to some scupper-holes, so that they may easily be kept sweet and clean. The "sink" in which the curd is strained, worked and salted, is on wheels, and rolls in a track to the presses. The press-room is connected by a platform with the curing house, so that the cheeses may be moved on a truck from the presses to the "racks." We show a perpendicular section of one story of the curing house, showing the cheeses on the racks or "ranges," which are arranged as shown in the plan (C). A shed to cover the milk wagons in case of rain, is shown

both in the plan of the factory (A) and in the elevation of the same. The whey is in part fed to hogs upon the ground, and in part removed by the farmers, each one being allowed to take a certain quantity, in proportion to the milk he furnishes, or to keep a certain number of hogs at the factory. The former practice is better, for the hogs fed at home get a greater variety of food, and make much better pork.

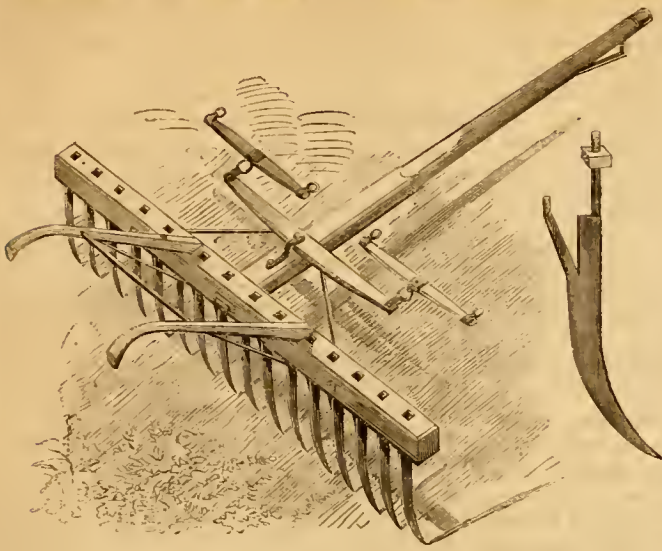
How to Handle Shovels.

Few men, comparatively, understand how to use a shovel having either a long, or a short handle, without producing great fatigue in a short period of time. When a man thrusts his shovel into a heap of earth, by a violent swing of his body and arms, the fatigue produced by the exercise of the muscles, which are used in such a movement, will be greater than the exhaustion resulting from the expenditure of strength required to raise the earth after the blade of the shovel has been thrust in. The engraving will furnish a correct idea of the best way to use a short-handled shovel, in order to thrust it into the material to be shoveled, with the least fatigue. The hand holding the hilt is placed against the side of one knee, when, by simply throwing the body forward without moving either foot, the blade will be driven its entire length into the dirt. This motion of the body will produce very little fatigue, when compared with the other mode just alluded to. Still, we do not recommend working with a short handle shovel; it can be done with a long-handled shovel with far less fatigue. When using a shovel with a long handle, the fatigue of the muscles that do the shoveling, is greater than of those moving the body. On the contrary, when a shovel with a short handle is



used, the muscles of the body are fatigued. Thus the strength expended in using a short handled shovel, is not economically laid out, for it is an established rule that labor performed should produce the fatigue, and not the wielding of the tool. Our artist has given the workman much too short a shovel, but it illustrates well enough the point we would impress.

Frost, even if very slight, injures squashes and pumpkins. Carrots are damaged seriously by a frost that freezes the ground. Beets and rutabagas will bear but little more, losing especially in sweetness. Cabbages, celery and turnips may be exposed when water will freeze 1½ inch thick and not be injured unless they are thawed out rapidly by the warm sun.



Getting Rid of Couch or Quack Grass.
(*Triticum repens*.)

L. S. Phillips, Onondaga Co., N. Y., inquires of the *Agriculturist*: "How can I best subdue an acre now filled with Quack grass?" By "Quack-grass" our correspondent undoubtedly means Couch-grass, *Triticum repens*. The common name accepted by European and American authorities is Couch-grass, and though in some localities it is called by other names, such as Quack, Quick, Quitch, and Twitch, we prefer to adhere to the established name, Couch-grass. If the grass has taken complete possession of the soil—as it usually does in a few years—thus forming a tough, thick and dense mass of large roots, the quickest way of exterminating it is the following: Plow the land ten inches deep, in late autumn, with a strong plow that will turn a deep and wide furrow.—The plow should run beneath most of the roots, in order to turn up the entire mass to the influences of winter. If the ground is plowed with a Michigan sod plow, or any other plow having a "skim plow" on the same beam—like Allen's Cylinder plow—a strong team will be required, as any plow will draw heavily when the share runs through, and not below the roots. The plow should have a sharp share, and a long coulter, with a sharp point and edge. Otherwise it will be impracticable to plow ground well that is full of the tough roots. If the plowing is not well performed, it may as well not be done at all, because, no poor plowing will ever exterminate Couch-grass. If there are stones or other obstructions in the soil to throw out the plow, thus making balks, the plowman must back and break them all up.

As soon as the young grass begins to give a green appearance to the field, the next spring, take a good cultivator, having sharp teeth, and cultivate the ground well every two weeks, until it is time to sow buckwheat, when three pecks per acre should be put in. It will be of little use to harrow the ground, as harrow teeth will not cut off the young grass. As soon as the buckwheat is cut and set up in stooks, cultivate the ground twice, thoroughly, and continue to do so as often as the grass grows 3 or 4 inches high, till winter. The stooks of buckwheat may best be removed from the cultivated ground in order to keep the grass subdued while the buckwheat is curing.

The next season, if much yet remains in the soil, summer fallow the ground, and rake out the roots with a couch-grass rake, represent-

ed by the accompanying illustration. The head is made of a piece of hard wood, 4 or 5 feet long, by 4 inches square; in this is set a tongue, braced with two strong iron rods to hold it firmly, as represented. Some old worn out plow will furnish a set of handles, the lower ends of which should be beveled and bolted to the upper side of the head; fasten an iron brace on the under side of each. The teeth are made of the best Swedish iron, $1\frac{1}{2}$ inches wide, by $\frac{3}{4}$ of an inch thick, drawn to a point, and hammered to a coulter edge on the forward side. The upper ends are made with a strong nut and shoulder-brace, as represented by the enlarged figure of a tooth, at the right hand side of the engraving. The teeth are about ten inches long below the head. The holes for the shank should be bored $\frac{3}{4}$ of an inch from the forward side of the head, and the holes to receive the rounded end of the tooth brace should be only 1 inch deep, so that the ends of the braces will extend to the bottom against the solid wood. If there are roots of trees and stumps, or fast stones in a field, the teeth may be made heavier; although with careful usage, the size designated will make the rake heavy enough and sufficiently strong. The hilts of the handles should be so low that a man can stand erect and just grasp them with his hands, when the teeth are in the ground and the end of the tongue as high as the neck-yoke. If the handles are too high, it will be much harder work to hold the rake and to lift it, when the mass of roots is to be dropped.

Before using such a rake, the ground must be plowed as directed, in order to allow the sod sufficient time to decay. Let the roots be dropped in windrows, and then raked in large bunches. They contain much starch and are excellent hog feed, and may be so used, or hauled together in big heaps to rot for manure, instead of dropping them in the highway. Where the ground can not be reached, near stumps, etc., with the horse rake, it should be spaded, and the roots hauled out with potato hooks. If the soil is mellow and the sod well rotted, a wheel hay rake, with iron teeth will operate well, though not as effectually as the rake made for the purpose, as here described.

Amount of Seed Wheat for an Acre.

Every wheat plant requires for its fair development an area of about 16 square inches, or a piece of ground 4 inches square. There are in an acre of land 43,560 square feet. Each square foot contains 9 of these 4-inch squares, hence is capable of sustaining 9 wheat plants; and so we have 392,040 as the number of wheat plants that will grow advantageously on an acre of good land. In a bushel of wheat with kernels of fair size, there are about 650,000 grains. If these be uniformly distributed over one acre, there will be about 15 kernels on every square foot, or a fraction more than 9 square inches, or an area of 3 inches square, for each kernel. Did the wheat plant produce only one stalk and head, this would not be too thick. But, as we may expect every plant to tiller that is, produce

from 1 to 5, 10, or more stems, if all these kernels should grow, the straw would be so thick that the ears of wheat would be short and small, and the grain also of a diminutive size. But, in practice, we find that there is a failure somewhere; for if we use no more seed, the grain will not stand thick enough on the ground. What then becomes of the seed?—and how much must we use? Much depends on the size of the kernels, the number that will vegetate, the condition of the soil, and the manner of putting in the seed. Some kernels often are nearly twice as large as others. When kernels are small, of course less seed is required, and *vice versa*. If the grain has been threshed with a machine which has bruised the kernels, more seed is necessary than if threshed with a flail or whipped out, which is the best way to thresh for seed. When it is put in with a good drill, less seed will be required than if sowed broadcast. When the soil is rich, an acre will require less seed than if the ground is in a poor state of fertility, for the richer the soil is, the more the plants will tiller. One bushel of good seed per acre, well put into a rich soil, is enough. Making suitable allowances for imperfections alluded to, it is advisable to increase the amount sometimes to $2\frac{1}{2}$ bushels per acre. Usually about 2 bushels is the advisable quantity. If plants have room to tiller when the soil is fertile, thin seeding will yield as much as thick.

The Stable Brush Broom.

Every man who has a stable and who values neatness, should have a good brush broom for sweeping the floor, after the bulk of the manure has been removed with a fork. The engraving accompanying this article will furnish the reader with a correct notion of such a broom.

The head piece should be about 16 inches long, and $1\frac{1}{2}$ inches square, with a rake or other handle set in it. Holes, bored alternately in two rows, pass through the head, as shown, and into each some sprigs of straight bush are crowded, and fastened with shingle nails driven through the head. The brush of birch or beech trees, or of iron-wood, or small sprouts from apple trees, will make an excellent broom, which will be found very convenient for many other purposes. Instead of the brush, pieces of small rattan may be used. When the brush is worn out, the stubs can be driven out, and new pieces inserted.



BRUSH BROOM.

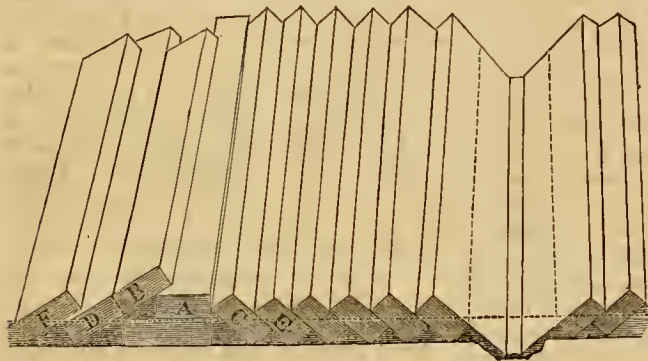
How to Plow Wet Ground in Autumn.

All wet ground ought to be underdrained; then it can be plowed and worked at any desirable time. Through lack of labor and means, it is seldom practicable to do in one season all the draining that should be done, and many fields must be plowed and cultivated where the soil is decidedly too wet. It is well to know in what manner to best plow such wet fields.

When the surface is nearly level, cut the furrows in the direction for carrying off the surface water most readily, or up and down the greatest descent. But when there is so much slope that the water will form gullies by its rapid flow, the furrows should always be made along the side of the slope, instead of up and down, in order to carry off the water slowly, and thus avoid washing away soil with it.

When wet ground is plowed, as it often is, without reference to the points alluded to, and with wide lands, without opening the middle furrows, the soil often becomes so thoroughly saturated with water that it runs together before spring, like sand and lime in mortar, frequently settling firmer than before it was plowed. Thus all the efficacy of the fall plowing is lost.

The representation of the manner of plowing wet ground in late autumn, which accompanies this article, is designed to show how to turn the ridges, and the way of finishing the middle fur-



METHOD OF PLOWING WET GROUND.

rows, at a small outlay of labor, so as to effect partial drainage. When the ground is covered with sod, the first furrow-slice (A) must necessarily be turned flat. Beneath it, the soil cannot be broken up. The second furrow-slice (B) may be turned like the first, though it is better to run the plow so closely to A, that the slice B will lap over A, as represented. Now, in order to make the next slice (C) fall against A, at the proper inclination, it must be about half as deep as it is wide. The same is true of the slice D. Both of these must be shallow furrows. After they are both turned, as indicated, run the plow again in the same furrows, in order to make them as deep as the ground is to be plowed. The ridge is now laid out, and the furrow is prepared to receive the slices (E, F) of full size, at about the inclination and lap shown. Now adjust the plow to cut half as deep as the width of the slices. This size of slice will turn well. The ridges should be formed from 15 to 20 feet wide; and when the lands are marked out, the distance should be measured with a pole, at both ends, so that the plot will "finish up" evenly, without some furrow-slices running out, which would prevent doing the work neatly.

In finishing a land, leave a strip of unplowed ground about nine inches wide, the entire length of the middle furrow. Then remove the gauge wheel, and adjust the plow to run an inch deeper than usual. Always turn this last furrow-slice when the team travels down the slope, as it will roll over much more readily when the plow is going down hill. The same is true of the slice B, which is more difficult to turn than A. If a plowman desires to make a neat job, he must observe these apparently unimportant rules.

After the lands are finished, run the plow two, three, or more times, as needed, in each dead furrow, turning the earth towards the ridges, for the purpose of deepening the chan-

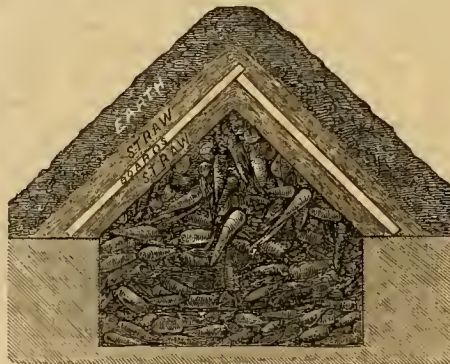
nel for carrying off the water. After the plowing is finished, shovel out the loose earth, scattering it over the ridges on each side, like a top-dressing. These dead furrows should be kept open until the next spring; and if the ground should be plowed again, plow lengthwise of the ridges. If the sod is not thoroughly rotted, use the cultivator only, without attempting to plow the ground. By keeping these dead furrows well shoveled out, so that the water will settle into them and run off quickly, wet ground may be tilled much earlier in spring, and cultivated in a much more satisfactory manner, than if plowed in the usual way.

Burying Roots in a Pit.

The most convenient way to secure turnips, carrots, and potatoes during winter is, to make an excavation near a good underdrain, or on some dry knoll, where no water will stand, even

at those seasons of the year when the ground is very wet, and after filling the pit, and heaping the roots up in a sharp ridge, to cover the whole with straw, boards and earth. The excavation should be about 4 or 5 feet wide, from one to two feet deep, according to the drainage, and of the needed length. Our practice has been to make the pit parallel, and close to a tile drain, which will carry away all the water. The pit may be directly over a tile drain; but, if the drain is made with stones, the pit should be so far from the drain, that rats and mice can not dig upwards from the drain into the pit, and haul down earth so as to obstruct the watercourse. If a drain is 2½ feet deep, the pit may be dug 2 feet deep.

The illustration represents a transverse section of a pit of carrots, piled as steeply as they



PIT FOR BURYING ROOTS.

will lie conveniently. A layer of straw about 4 inches deep has been spread evenly over the roots, and then the whole covered with boards, as shown. Another layer of straw and a thin covering of earth are put on to secure them till the ground freezes, after which the earth should be increased to not less than 6 inches deep over the entire pit, to keep the roots from freezing in our latitude. In some localities, the earth should be not less than one foot deep. If animals of any kind disturb the earth on the pit, cover it with pieces of old rails, etc. We cut the boards, nailing them at the top as indicated by the figure, so that all the roots may be removed at one end of the pit, one load at a time, in winter, without exposing those that remain to the frost. We formerly

placed ventilators 6 feet apart, in the tops of long pits, and also made pits without ventilators, but were never able to perceive any difference in the vegetables when taken out.

Potatoes Planted under Straw, in both Autumn and Spring.—The Crop doubled.

In a letter containing many good hints for us and our readers, Mr. Isidor Plaquet, of Madison Co., Ill., makes some very interesting statements about his method of raising potatoes, which we translate from the French, in which our correspondent writes most conveniently:

"I have devoted myself," he goes on to say, "to the culture of potatoes for the past ten years, and for the past three years have grown them only under straw and with great success. We in the West have a great deal of straw which we have been accustomed to burn, and I have found this means of using it profitable. I plant a part of my potatoes late in autumn, in November if possible, and the rest in spring. When I thresh my wheat, I do not stack the straw, for the moister it is the better, even if decayed, and draw it near the place where I shall plant potatoes. Those planted in autumn and those planted in spring are side by side, separated sufficiently to allow a wagon to pass between. I never burn straw. When I plant in autumn, I have only to draw the old straw to one side; if it is too rotten, I plow it in, as it is good manure. When there is not sufficient old straw, I add new. In autumn I cover the potatoes 2 to 4 inches deep, never less than 2, and I place over them two feet of straw, well trodden down; then some sticks are put here and there upon the straw to keep high winds from blowing it away.

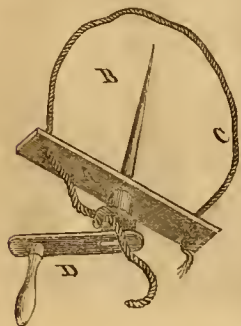
"Planting in spring, I cover the potatoes about an inch, and put on one foot of straw, as is done by H. Holbrook, whose report was given in the *Agriculturist* for January, 1865. I choose for my potatoes a field with a gentle inclination, so that they will not rot, and a southern exposure, if possible, for those planted in autumn. I plant in beds only 3 or 4 yards wide, the beds separated sufficiently to allow a cart to pass between them. This is in order not to be obliged to pass over them with teams, as that is very injurious to potatoes planted under straw. I pulverize the earth thoroughly, and then plow furrows as close as I can and not have them interfere. I drop the potatoes about 6 inches apart and cover with the hoe. It is not well to delay putting on the straw; a rain may come and harden the soil, and the lighter this is kept the better for the potatoes. In autumn we only lift the straw with a fork and fill the baskets.

"What are the advantages of this method? Quantity and quality vary with me as well as with those who follow the old method, but to say I get regularly about as much again as by the old plan, is not an exaggeration. In times of drouth one is certain to have a crop, if he has not been too sparing of the straw. Last year (1864) almost all my neighbors who did not plant under straw had no potatoes on account of the drouth, while upon about half an acre (a part of which were planted in November, 1863, and the others in the spring of 1864) I harvested 80 bushels of the finest potatoes, not counting those which had been used for the table, from the middle of June until autumn. Those of this year (1865) are doing well, notwithstanding the rain. In fall planting there are two causes of failure: under an insufficiency of straw the potatoes will freeze, and they will rot if planted in low ground. Last fall I made an

experiment, using one foot of straw at one end of my field. The potatoes were almost all frozen, while those escaped which were covered with two feet of straw. The preceding autumn I used only a foot of straw and the potatoes were not frozen, but the straw was fine, having been used before, and the abundant snow kept the cold from penetrating. There is no risk in using 2 feet of straw well trodden down (old straw is preferable). Make a good furrow on each side of the field to carry off the water, and connect the furrows across at the upper part of the field. There is no danger if the earth is dry when you plant, and is not too much trodden. They are more difficult to dig than those planted in spring, but there are more of them."

Binding the Shocks of Corn Fodder.

After the ears have been husked, and the stalks bound in sheaves, and set up in round shocks, it is difficult to bind them as tightly as the tops should be to turn rain well. To facilitate this operation, we have been accustomed to use a shock binder, represented by the figure. This consists of a strip of hard wood (A), 20 inches long, 1 inch thick, and 4 inches wide. At each end of A, an inch hole is bored for a rope (C), about 11 feet long, and $\frac{3}{4}$ of an inch in diameter. A knot in one end prevents it slipping through the hole. A windlass (B) is made of a piece of hard and tough wood, $2\frac{1}{2}$ feet long, turned or shaved round, and pointed, as represented by the figure. The largest part of the tapered portion



of the windlass should be $1\frac{1}{2}$ inches in diameter, made to turn easily, but fitting closely in a hole in the middle of the piece A; the crank should be about one foot long. In use, put the piece, A, against the side of the shock where it is to be bound. Thrust the windlass through the hole in the same, and horizontally into the stalks. Then carry the end of the rope around the shock, put it through the hole in the end of A, wrap it around the end of the crank and wind it up until tight enough. Fasten the crank with a cord to the end of A, and bind the shock with a straw band, which will hold the stalks after the rope is removed, although it would not be strong enough to draw them up as tightly as the rope will. Two or three other bands should then be put on above this, which can be drawn up sufficiently tight without the windlass.

Storing Unthreshed Buckwheat.

Sometimes buckwheat cannot all be secured before the middle of November, or even later. The weather is so unfavorable that it is impracticable for some farmers, with their limited helpers, to thresh more than a small portion of their crop, before long storms of rain, and sometimes snow, will interrupt threshing in the field. When there is an abundance of barn room, as soon as the straw is sufficiently cured and dry, a good way is, to get in, in one day, much more than can be threshed, to put it in a mow, or hay loft, and let it remain there till a cold, freezing day in winter, when the grain will thresh

perfectly well. Should there be a few bunches which are not cured sufficiently to be put in a large mow, they should be pitched on a scaffold over-head, where they will cure without injuring the grain. The better way, however, is, to sort the stooks or bunches in the field, leaving those that are not thoroughly cured for the top of the mow, or one load may be put in on poles, or timbers resting on the large beams of the barn. As there is a much larger quantity of succulent matter in buckwheat straw than in the straw of other grain, the middle of the bunches must be examined carefully to see that the straw is well cured, or the mow will heat and spoil the grain. When there is not barn room, buckwheat may be stored in long stacks, say 10 to 12 feet wide, covered with a roof of boards slanting only in one direction. When a mow or stack is more than ten feet wide, if there is any apprehension that the straw will heat, a number of ventilating holes should be made in various parts of the mow. This may be done by placing barrels where ventilators are required, which may be drawn upwards half their length, as often as the surface of the mow is even with the top end of the barrels. Should the mow rest on a tight floor, a board may be taken up, a hole sawed through it, or several 2-inch holes bored, through which a current of air may rise in the ventilators, and thus carry away the dampness that would accumulate in the middle of the mow.

Breeding Trout.

The article on trout breeding last month, in which our artist and engraver did themselves so much credit by the beautiful portraits, was, as it happened, brought to a very sudden termination. Nevertheless, it must have served to awaken interest in many minds in this, which bids fair, in good locations, to become a very profitable industry. The observations which form the basis of the article in the last number, and of this, were made at an establishment of comparatively recent date, but yet the success of which warrants all we have said. We may add, that the ponds are well adapted to the sport of fly fishing, and this privilege is let to a Waltonian Club, for a very handsome sum annually—the amount of fish which may be taken monthly being limited to a reasonable number, and the sportsmen required to fish only in certain parts of the pond, and we believe restricted to fly-fishing. The income received not only covers all current expenses and improvements, but has already gone far towards reimbursing the original outlay. This fact is mentioned that it may encourage private action, by the anticipation of a good income from this source, and also that clubs may take the matter in hand and secure for their members and friends an agreeable and exciting sport, to say nothing of the hundreds of pounds of this most delicious fish that might find their way to market at 40 cts. per pound, which is the present price in this city.

A particular description of the trout is unnecessary. All fish of the genus *Salmo*, of which the noble Salmon (*Salmo salar*) is the type, may be readily distinguished by the soft, fleshy, rayless fin between the dorsal or back fin and the tail. They are without exception excellent table fish, but in this respect none, not even the salmon, excels the brook trout (*Salmo fontinalis*) which is, in our opinion, the best of all fish.

We ought to say something of the enemies of the trout and of the trout breeder. First, poach-

ers—these must be summarily dealt with, and if the law can not be brought to bear to check depredations, then with dogs, man-traps, etc., every man has a right to protect himself. Next, muskrats often do great mischief to the dams, embankments, and probably also to the fish, sluggish and benumbed by the cold in winter. Aquatic fowls of all kinds—ducks, and all the waders, snipe, herons, etc.—must be entirely excluded from the breeding ditches. This at the ponds referred to, is done by covering the ditches with brush; lattice-work of laths answers a good purpose, and both afford that great desideratum, partial shade and seclusion during the breeding season. Eels are very destructive of the spawn and young fry, and they must be excluded from the ponds and reserves at all hazards. Doubtless, also, catfish, mudpouts or bullheads, as they are variously called, would be almost equally injurious. Mr. F. has found that certain water beetles catch and devour many young fish, and they are assisted by the larvæ of the dragon flies, and perhaps other insects which are common in clear streams.

We may perhaps learn as well from our friend's mistakes as from his successes. It is quite important that there should be natural shade upon the brooks and ponds during the summer, otherwise the water becomes warm and uncongenial to the fish, and a certain rank vegetation, called Frogspittle, springs up in the shallow and warm parts. The most agreeable shade is that of forest trees, but unfortunately Mr. F. cut these all off in clearing up and grading about his ponds, so that now he is temporarily supplying shade by means of white water lilies, planted in the shallow parts, and near the edges. By these he will probably gain both ends—viz.: shade and a cooler temperature, with the expulsion of the frogspittle and similar plants.

Labor Saving—Labor Making.

Labor saving implements were once thought to be destructive to the interests of the working man, just in proportion as they saved the drudgery of labor. This seems reasonable at first, but a little thought will correct the error. How then do the farm laborers, thrown out of work by the introduction of improved implements, ultimately find work? Plainly by the increased amount of tillage which horse power, machinery and tools make possible in the country. In a section where all the soil is under cultivation of some kind, it will lead to more thorough systems of farming. In the case of our own country, it leads to the faster extension of civilization westward, the rapid subjugation of wild lands, and the better cultivation of that already under the plow. For instance, the Western grain grower, who now devotes 75 to 150 acres to corn and other grain crops, with the meager facilities of thirty years ago, could not have managed one-fourth part that amount in a similar manner. This increase of agriculture, not only keeps good the original number of farm laborers, but creates a new demand for laborers in every other field of industry. More ships and railroads are required for transportation, more manufacturing establishments, more mechanics to construct these, and men to manage them, more miners, machinists, etc. In fact, the whole body politic thus receives vital refreshment from every really labor-saving invention. This is a forcible illustration of the fact that whatever fairly advances the interests of one class, becomes a benefit to all classes in the community.



EXAMINING ANIMALS ARRIVING AT MARKET.—Engraved for the American Agriculturist.

Inspection of Animals Destined for Slaughter.

The spirited engraving which we here present is of a scene which occurs nowhere in this country. It represents a quay in London, where cattle from the crowded barges in the river are being landed, and each one, as it arrives upon the dock, undergoes the careful examination of the veterinary inspector. The prevalence of the cattle plague excites interest in this subject in the public mind, and so the Illustrated London News, from which we copy the picture, takes this opportunity to show its readers what the system of inspection is and how it works. To us in America it serves as a reminder that here we have nothing of the kind, except the vague fear of punishment for committing certain very illy defined crimes, provided they be proved to have been wilfully committed, which it is very hard to do.

We have no doubt, indeed we have the knowledge, that cattle, sheep and swine exhausted by cruel treatment, lack of water or food, hard driving, etc., or sick from any cause, and likely to die, are killed, and, if the blood will only flow, their flesh is sold in the open market. To the dishonest butcher or drover, while life remains there is hope, and this hope is not always extinguished by the (un)natural death of the poor famished, heated exhausted beast, for there is many a low meat store in this city where fresh meat, full of blood, and fairly oozing disease at

every pore, may be seen offered for sale. Nor is it only in our large cities that this great wrong exists, for where hogs are driven in on foot from the country surrounding some of the great packing houses at the West, wagons follow the drove, and the weak are picked up, the dying killed and taken up also, and the dead undergo the farce of throat cutting, etc., and are cared for in the same way. No doubt, also, all, in the shape of extra or prime mess pork, are finally eaten—with what consequences no one can accurately determine.

The need of well educated veterinarians is becoming daily more urgent, that when public opinion is educated up to demanding the thorough inspection of animals destined for slaughter, the men may be upon the ground. This gives us another opportunity to commend the profession of the veterinary surgeon to young men who are making choice of an employment, for which a course of study is essential, and where honor and profit will reward application.

Well-bred Animals.

One of the advantages of thorough-bred stock is, that it furnishes the breeder a foundation so to speak, upon which he can gradually build up a flock or herd to his own ideal of usefulness. In thorough-bred animals certain prevailing characteristics have become so strongly developed and thoroughly confirmed, that

the transmission of them to their posterity becomes almost an absolute certainty. There is no danger therefore, in their case, of losing these general excellences, while the undesirable qualities are being slowly but surely bred out by a judicious pairing of animals. The principles of good breeding depend upon the simple law "that like begets like." The same peculiarity existing in both parents, will almost certainly exhibit itself in the offspring, perhaps still more conspicuously. If the parents possess diverse or opposite qualities, other things being equal, the offspring may be expected to represent the mean. By the use of these simple principles, wonderful changes can be wrought in any kind of stock, without going outside of its own variety, or even family. In this manner, the Spanish sheep have been changed in their many essential features by breeders in this country. By a similar process we know that Bakewell, of England, gave to the Leicesters their peculiar merit as mutton sheep, and in like manner, cattle, hogs, poultry, and other kinds of domestic animals have been bred so as to form varieties with fixed characteristics. On the other hand, let the attempt be made with mongrels, and the breeder can not be sure that the characteristics of either parent will appear in the offspring; or that the increase of different years will bear any great resemblance to each other. All hopes therefore, of establishing a desirable uniformity in stock in this case, are at an end, or at least very difficult of realization.

The American Yew, or Ground Hemlock.
Taxus baccata, var. Canadensis.

The European Yew in its different varieties is well known to all lovers of Evergreens. In Europe it is one of the best known trees, remarkable for its longevity, and the value of its strong and elastic wood. We have in this country a Yew, which by some botanists has been considered a distinct species and called *Taxus Canadensis*, but which is now conceded to be only a remarkable variety of the European *Taxus baccata*. The American Yew is not rare in the Northern States, and along the Alleghanies it extends into the Southern States. It is found in woods as a low shrub, and from its resemblance in its foliage to the Hemlock-tree it is commonly called Ground-hemlock. The trunk is prostrate upon the ground, or just below the surface, and the branches alone appear above the surface, which rise to the height of only about two feet and form a mass of bright green foliage. The engraving shows a branch (of the natural size,) with leaves and berries. The barren and fertile flowers are usually borne on different plants, the fertile ones being remarkable for their simplicity of structure. In most plants we have a regular pistil which encloses the ovules, and after fertilization the pistil becomes some kind of a fruit, while the ovules, which before were little green pulpy bodies, ripen into seeds. In the Pine-family generally—to which the Yew belongs—the undeveloped seeds, or ovules, are placed at the base of woody scales, which together form some kind of a cone and protect the ripening seeds. The ovules of the Yew are without even the protection of a scale, but are borne naked at the end of a small stem. After the ovule is fertilized it begins to grow, and, and as it increases in size, a little cup grows up around its base, and when the seed is still green it appears very much like a little acorn. By the time the seed is quite mature, this cup has grown so large as to quite enclose it, though it is not in contact with it, while the cup itself becomes soft and pulpy and takes on a brilliant scarlet color. The partly grown fruit, as well as that which is mature, are shown in the engraving, of the natural size, while at the right hand is given an enlarged fruit, cut through the cup and exposing the seed. The plant when in fruit is quite showy, the scarlet berries appearing in brilliant contrast to the green of the leaves. The American Yew is valuable as an ornamental shrub, from the fact that it will grow readily beneath other trees. We do not find the plant in the catalogues of our principal nurseries, but

presume that they would grow it if there was a demand for it. Like the European varieties, it may be raised from cuttings or from seeds. The seeds should be planted without being allowed to dry, when a portion will germinate

Pruning the Grape Vine.

When the leaves have fallen and the vine is at rest, it may be pruned. Those who have vineyards, have given thought to the manner in which they will treat them, and have fixed upon a system of training and pruning; such will not need any suggestions from us. But there are many who will this autumn cut a vine for the first time in their lives, and it will be interesting to such to know how to prune and why to do it at all. The management of a young vine is a very simple matter, as also is that of an older one, which has been started in and kept to some particular system. But the most common cases in which we are asked advice is, where a vine has been allowed to ramble about at will, and having become over-grown and filled with wood, out of all proportion to the amount of fruit it bears, the owner is desirous to know what to do with it. He knows that vines are benefited by pruning, and he would cut away at his if he only knew how to do it. In many cases it would be best to discard the old vine altogether, and either graft it at the root, as described in another article, or dig it up and put in a better variety. If the vine is of a good sort, canes may be found which can be layered and thus young vines obtained; after these are well established, the old one may be removed. Still there will be many instances in which it may be desirable to retain an old vine as a screen, or for some other reason, and the possessor wishes to make the most of it. As each individual vine will present peculiarities of its own, the best we can do to meet such cases is to give some general notions on pruning, and leave the reader to apply them as he best can to his own particular case. Many have not noticed that the fruit of the vine is *always borne upon the young wood*, i. e. upon the shoot which pushes from the bud in spring. One who understands this fact, will appreciate the necessity of pruning judiciously, as the buds which have been formed during the past summer are what he is to look to for his next year's fruit.



THE AMERICAN YEW.

the first year, and the remainder the year after. While the berries of the yew are harmless and may be eaten, the leaves of the European trees are poisonous to human beings as well as horses and cattle, and it is probable that our variety has deleterious properties, but upon this point we have no positive information. The plant varies in this respect in different parts of Europe, in some localities it being so harmless as to be fed to animals, and in others very poisonous, and the same may be the case with it here.

Figure 1, next page, shows a young vine, or a branch of an old one; the leaves have fallen, and we have at each joint of the stem, just above the scar left by each leaf, a bud. The upper and latest formed buds are the largest and most vigorous, and if a stem of this kind be allowed to take its own course next year, the upper buds will push first in spring, and getting the start of the lower ones, will keep the advantage they have gained, so that at the end of the next year we will have a vine like fig. 2,

where all the strongest branches, or canes, are above; those below are weaker, and some of the lower buds, being robbed by the upper ones of their nutriment, may not start at all. These branches in fig. 2 are just the repetition of fig. 1, and each have their strongest buds at the top, which will in turn push first, and thus, if the vine is neglected, its best buds and consequently most vigorous growth will be made each year farther and farther from the ground. Upon such a vine, when old enough, more or less fruit would be borne, but the wood produced each year would be excessive, and the vine at length become the tangled thicket we so often



Fig. 3.

Fig. 2.

Fig. 1.

find. Now supposing that fig. 1, instead of having its own way, be cut back to two buds, as shown by the cross-line. At the end of the next season it will be something like fig. 2, with two canes of about equal size, which, if the vine were old enough, would have borne fruit. These canes again may be cut back the next year, or be shortened and laid down as horizontal arms, in which case the buds will break more evenly than when the vine grows upright and the shoots from them will be more likely to fruit. A neglected vine will be a mass of branches, having more or less resemblance to fig. 2, and it should be taken in hand, bearing in mind what we have above stated with regard to the general manner of growth. Some of the branches may need removal altogether, while the wood of last season's growth will all need shortening. Recollecting that each good bud will produce a strong shoot, one can judge how well covered the arbor or trellis will be, and avoid crowding. Sometimes one and sometimes two shoots may be accommodated, and one or two buds are to be left to produce them, observing to leave one more bud than is needed, to guard against the chances of the cut end of the cane being killed during the winter; this extra bud is to be cut away in February, or March, after the severest weather is over: For the methods of treating well trained vines, as well as for starting a young vine in a proper manner, see articles in the *Agriculturist* for April of last year, and for November 1863.

Notes on Grapes.

We continue our notes on the varieties as we have seen them in various places, or have received them through the kindness of friends. The past season seems to have upset all former conclusions as to the value of varieties—some kinds heretofore considered reliable, having failed in particular localities, while a few miles distant the same sort gave a satisfactory crop. Many who have fixed upon the Delaware, the Concord, or some other, as *the* grape, have had their faith shaken by the rot and mildew of the past season, and have come to the conclusion that there is no such thing as infallibility in any variety. From the number of fox grapes sent to us for an opinion, it would seem that there are many who have never tasted a good grape. That peculiar flavor and odor belonging to the large native grapes, known as foxiness, is detrimental to any variety, and no grape having a considerable amount of this can be expected to rank beyond second class, even if it possess many good qualities. Hence the Concord and Hartford, which have a trace of foxiness—only a trace to be sure, when they are well grown—are excluded from the first rank. It is true that we recommend these grapes, as they are a great step in advance of the uncertain Isabella, and one who has a vine of either of these will be quite sure to have a plenty of fair fruit which will give him a taste for something better. Their ease of propagation and free growth, are great recommendations with the general public; but as finer varieties have their qualities and capabilities thoroughly tested by amateurs, we hope to see these supplant all inferior kinds.

There are three classes of persons who grow grapes: those who raise them for market; those who grow them for home consumption, and regard quantity rather than quality; and those who look for high excellence only. Each of these classes read what is said upon grapes with different views, and in recommending varieties for planting, one must know something of the object the planter has in view. Setting aside differences in locality we still think, if we were to plant for immediate profit in the present state of our markets, we should put in the Hartford, Concord and Delaware. And to those who would be likely to treat their vines as they usually are served, which is to neglect them, we should say plant the Hartford and Concord, as they will give some fruit even under neglect. Those who will treat a vine as it should be treated, have a choice list in the Iona, Delaware, Isabella, Adirondac, Rebecca and others. Of course where the Catawba will flourish, it will take a high rank as a grape for market or any other purpose, but such localities are so few that we leave it out of the list, and the same may be said of the Isabella.

We wish that every one could be induced to plant the choicer varieties and take proper care of them, and hope that the time will come when every farmer will understand how to give the vine that care which it so abundantly repays.

Isabella.—From specimens we have since seen, we think that our notes of last month hardly did this variety justice. Three bunches grown by Charles Downing, Esq., weighed over three pounds. The berries were of good size, and the bunches very compact. The fruit is very sweet, and of a delicate, though not high flavor.

Adirondac.—At Worcester, we saw and tasted specimens raised at Norwich, Conn., which were quite equal in excellence to any of this kind we have seen elsewhere.

Alvey.—This variety is not much grown, and has the reputation of being tender. In the garden of our friend "Horticola," at Hoboken, it flourishes finely, and is highly prolific. Those who like a sprightly, vinous fruit, should try the Alvey. Farther south, it is a great favorite.

Rogers' No. 1.—A large and extremely handsome fruit, of a rich amber color, but it has a thick skin, a tough pulp, and is slightly acid. Its size and great beauty would make it popular as a market grape, should it prove to be as good a bearer as it promises to be.

Concord.—The finest specimens we have seen this year were raised by Mr. Fuller, upon trellises, and closely trained by the arm and spur system. There is a disposition in some quarters to ridicule the trellis as an "iron bedstead" upon which the vine is to be cramped, and there is a great deal of nonsense about not being able to restrain the Hail Columbia propensities of the free American grape vine. This spread-eagle talk may please some, but our observation shows that the best grapes grow on the best trained and most restricted vines.

Hints to Exhibitors.

At the various horticultural exhibitions we have attended this season, we have seen much to admire, and some things which might have been better had the exhibitors in some cases taken more, and in others less pains with their articles. These exhibitions have their uses to the cultivators, as under the stimulus of prizes, a pleasant rivalry is engendered, which results beneficially in many ways to practical horticulturists. But they have another use, and one which we consider quite as important: they create among the people who visit them, a taste for the beautiful and the good, and serve to instruct the public in horticultural matters. These shows should be so managed, as not only to benefit those who contribute, but those who go to see the articles, and this is a matter over which the managers have but little control, but one in which each exhibitor can aid. A collection of rare green-house plants is always attractive; the visitor who is not a florist, is struck by the appearance of some specimen, and wishes to know its name, and looks around for a label. In the majority of cases he will see nothing to indicate what the plant is, but if he perseveres he may find a bit of weather-worn wood stuck in the earth of the pot; upon this are a few characters in pencil, which are all that remains of what was once a label. Every plant should be so labeled that the visitor can find the name without a search, and it should be in plain and unmistakable characters. At the Pennsylvania exhibition, we noticed that very general attention was given to this point, and that there were some notable specimens of careful labeling. Displays of miscellaneous cut flowers seldom have labels for each, but they would be much more instructive if they did, yet these should be so arranged as not to mislead the unskilled observer. In one place, we saw in racks of cut flowers, the leaves of one plant placed in the same phial with the flowers of an entirely different one. A display of vegetables which, for extent and variety, was the finest we ever saw, including as it did many unusual things, lost much of its usefulness from the absence of labels. Fruit should be so arranged that one in looking at a plate can get a distinct view of the form and color. A dozen Louise Bonne pears may make a better show with the red cheeks all turned up, but the true character of the fruit

is better shown if some expose the shady side. At one exhibition a collection of pears was arranged in a most ludicrous manner; there were six specimens of each, upon plates much too small, and every pear was carefully placed with the calyx end out, and the stem end of the fruit entirely concealed. This arrangement, while it prevented the observer from seeing the true form of the varieties, gave the collection the appearance of a miniature arsenal in which bomb-shells were piled up ready for use. We mention this as an illustration of worse than useless pains-taking. Another, is the practice, less common than formerly, but still too frequent, of rubbing up the fruit. This polishing of pears and apples is well enough for the stand of the huckster, but upon the table of a horticultural society it is in very bad taste.

Local Fruit Lists.

Some years ago, before horticultural societies were as numerous or as active as they are at present, we obtained and published over seventy lists of apples. These were from cultivators living in all parts of the country, each one giving his selection of the twelve varieties best suited to his section. These lists will be found in the *Agriculturist* for April, May and June, 1861. Though in some cases newer or more thoroughly tested varieties may be substituted for some of those in the lists, they are still of great value to whoever would make selections of fruit. Of late years the different horticultural and pomological societies are doing good service in gathering and publishing similar statistics. Every one who grows fruit to any extent should be a member of his County or State Society, and while he adds his experience, avail himself of that of others. The lists by States are not, however, unerring guides, as most of the States present a great diversity of soil and climate, and it will be impossible to fix upon a dozen varieties which will be best for a whole State; and while lists of this kind serve as a general guide, one should take pains to gather all possible local information, and find out what has been the experience of his neighbors. To answer several inquiries, we give the following list for Iowa:

Summer: Carolina Red June, Kirkbridge White, Red Astrachan; *s.* High Top.—*Autumn*: Maiden's Blush, Lowell, Rambo, McLellan; *s.* Pumpkin Sweet.—*Winter*: Raule's Janet, White Winter Pearmain, Roman Stem, White Pippin; *s.* Sweet Romanite.

An experienced cultivator in Wisconsin sends the following as his selection: *Summer*: Red Astrachan, Early Joe, Keswick Codlin; *s.* High Top.—*Autumn*: Fameuse, Autumn Strawberry, Duchess of Oldenburgh, Fall Orange; *s.* Munson Sweeting.—*Winter*: Golden Russet, King of Tompkins Co., W. Seek-no-further, Yellow Bellflower, Lady Apple; *s.* Talman Sweeting.

The Ohio Pomological Society made an attempt to ascertain the best twelve varieties of apples for market. They publish the replies from persons in different parts of the State, but the selections were so unlike in different localities that it would appear that no decision was reached. The following varieties obtained the greatest number of votes: Fallwater, Baldwin, R. I. Greening, Northern Spy, Peck's Pleasant, Smith's Cider, White Pippin, Red Canada, Westfield Seek-no-further, Roxbury Russet.

The Fruit Growers' Society of Eastern Pennsylvania, publish as the results of two years careful comparison of reports, a selection of the best twelve apples for Eastern Penn. *Summer*:

Red Astrachan, Sine Qua Non, Early Harvest.—*Autumn*: Maiden's Blush, Porter, Smokehouse.—*Winter*: Baldwin, Smith's Cider, Fornwalder (or Fallwater), Northern Spy, R. I. Greening, Hubbardston Nonsuch.

Their list of pears for Standards is: *Summer*: Doyenne D'Ete, Dearborn's Seedling, Manning's Elizabeth.—*Autumn*: Seckel, Bartlett, Belle Lucrative, Flemish Beauty, Beurre Diel, Beurre D'Anjou.—*Winter*: Lawrence, Easter Beurre, Reading. For dwarfs: *Summer*: Beurre Giffard, Doyenne D'Ete, Osband's Summer.—*Autumn*: Louise Bonne de Jersey, Duchesse D'Angouleme, Belle Lucrative, Beurre D'Anjou, Beurre Diel, Buffum.—*Winter*: Lawrence, Glout Moreceau, Vicar of Winkfield. The Massachusetts Agricultural Society have given the following as their list of the best six pears: Bartlett, Louise Bonne de Jersey, Urbaniste, Beurre D'Anjou, Sheldon, Seckel, and for twelve add: Onondaga, Merriam, Doyenne Boussock, Vicar of Winkfield, Paradise D'Automne and Fulton.

Hints for the Flower Garden.

It is a common practice to cut out oval beds by the walks in the lawn, and to fill them with flowering plants. Some persons fill these beds with roses, which look well in Spring and early Summer, but later in the season they become tall and spindling, difficult to be trained handsomely, and the leaves on the lower branches turn brown and continually drop. In our own grounds, we have found it a great improvement to remove the roses to the flower garden proper, and to fill the beds on the lawn with verbenas, and other similar plants. These just peep above the grass level of the lawn, and their nodding heads of scarlet and white and blue, ever smiling and gay, are a continual feast of beauty from early summer to November.

In another part of the grounds, we devoted an old rose bed last season, to Drummond's Phlox. Seeds of eight different varieties were sown in boxes in the house the first of April, and the plants set out one foot apart early in May. They soon became established, and were in bloom nearly all summer. Indeed they came into full and abundant flower sooner than the verbenas, and for the months of June and July, were the finer spectacle of the two. But they could not endure the drouth of August, and then the verbenas eclipsed them. It is not known to all what great improvements have lately been made in these phloxes. We now have scarlet with white eye, crimson with ditto, rose color ditto, white with dark eye, and then the marbled and purple, and several other shades. As flowers for massing on the lawn, both verbenas and Drummond's Phlox, can hardly be surpassed.

Another lesson we have lately learned, is, never to set choice flowers on the south side of a hedge and near to it. The early bulbs, such as crocus, snow-drop and hyacinth, will do very well here, because the ground keeps moist during the usual period of their blooming. But in mid-Summer, between the concentrated heat and the exhaustion of the moisture by the roots of the hedge, all choice plants will droop and perhaps die a lingering death.

If anything besides the early bulbs is to be set here, let it be the hardiest perennial plants, or low shrubs. Indeed we question whether fences should not be substituted for hedges in places near the flower borders. Fences have no hungry roots, and though hedges are more ornamental they occupy more soil than can be spared.

Asphalt or Coal Tar Walks.

Last year we gave an account of the method of making garden walks of coal tar and sand. In towns in the interior of New York State, a somewhat similar process is employed in making street walks, which a gentleman residing there thus describes to the *American Agriculturist*:

"When lumber could be bought at a fair price, plank-walks were about the best that could be made for the streets of country villages. Quickly built, they were also pleasant to the feet. But they did not prove durable, and are now too expensive. Good gravel is not to be had now in sufficient quantity for the public demand, and, as commonly used, even gravel walks wear out. Some one has suggested the use of coal gas tar and water-lime, mixed with gravel and sand, to form a concrete bed for walks. The experiment has now been in course of trial for several years, and thus far works well.

The ground is excavated for the walk to the depth of three and-a-half inches, and as wide as the path is desired. Hemlock scantling, two inches by four, are then laid down on each side of the track, and fastened by stakes driven into the ground, which are sawed off flush with the surface of the scantling. In the walk between, a layer two inches thick of coarse gravel or small stones is spread, the stones to be no larger than hens' eggs. This layer is now saturated with a mixture of gas tar and water lime. While this is yet moist, a layer of fine gravel two inches thick is spread over it, the gravel having been previously sifted. This, too, is saturated with tar and water lime. A final coat of sand is now spread over this, raising the surface an inch or more higher than the scantlings on each side. The walk is now to be made compact and hard by passing a heavy roller over it until it settles to a level with the scantlings. It is desirable that the walk be made a little higher in the center than at the sides, so as to shed water effectually. After a few days, it will be hard enough to use.

The cost of such a walk is from 40 to 60 cents a square yard, according to the price of materials in different localities. Walks of this description have been in use at Elmira in this State, for several years, at Syracuse, Palmyra, Waterloo, and Lyons, for three and five years, and in all cases they prove durable, cheaper than stone flagging, and pleasanter to the feet. It was predicted at first that the frost would heave and break them up, but this does not prove to be the fact. The only practical objection we have heard of is, that occasionally in hot weather they emit the odor of gas tar, which is offensive to some persons."

EARTH CLOSETS.—The English agricultural and horticultural journals contain advertisements of "earth closets." From the brief description given, it seems that they are intended to replace water closets, and that they are so constructed that instead of washing away and wasting the deposit, it is covered by a quantity of dry earth, sufficient to absorb all gases. A practicable apparatus of this kind, if it could be generally introduced, would be of great benefit in saving for our farms and gardens much valuable manure, that is now lost. From another source we learn that the earth used may be dried and used again a number of times (five to seven), with equal effect, and without offense. Some of our inventors should turn their attention to this matter, and when an efficient apparatus is devised, we shall be glad to note it.



The Cardinal Flower—*Lobelia Cardinalis*.

From mid-summer until early autumn, there may be found along the banks of streams, and in wet places, a native flower of so rich a deep red color, that it usually arrests the attention even of those who do not ordinarily notice plants. It is the Cardinal-flower—but no Cardinal ever wore as the sign of his office a hat of so intense a scarlet as wears this wild flower. We have attempted in the engraving to give the shape of the flower, which together with its remarkable color will enable it to be identified. The plant is a perennial, forming clumps of herbaceous stems two to four feet high, each one of which bears a long raceme of flowers of the size and shape here shown. The flower cluster is often more one-sided and usually longer than in the engraving. If the flower be ex-

amined closely, its structure will be found to be rather unusual. The corolla at first sight appears as if the plant belonged to the Mint-family, it being somewhat 2-lipped, the lower lip with three spreading divisions, and the upper with two somewhat erect ones; but a further examination will show that the corolla is split down its whole length at a point between the two upper lobes or divisions. Moreover, the stamens are curiously united for their whole length, anthers and all, into a tube much longer than the corolla, and which encloses the long and slender pistil. The pod contains many very small seeds. These are characters which are not found in the Mint-family, but which distinguish the Lobelia family. The genus is named *Lobelia*, after Lobel. The specific name is in reference to the red hat worn by the Cardinals of the church of Rome. Though this plant naturally inhabits swampy ground, it does very well in rich garden soil, and a clump of it is not excelled in beauty by any of the exotics. The roots should be removed as the leaves begin to wither in autumn, or the spot carefully marked so that they can be dug up in spring. We once saw in the Botanical Garden, at Cambridge, Mass., a white variety, and Doctor Gray records a rose colored one as having been found in that State. As the plant seems to have a tendency to sport in its wild state, it is probable that a pains-taking florist might produce some striking varieties from the seed. Besides this, there are several exotic species cultivated in the garden and Green-house, which are valued for their delicacy and beauty, rather than for the showiness of their flowers. We have a large blue-flowered, native species, *Lobelia syphilitica*, the Great Lobelia, which has flowers of a fine color, but the plant is rather coarse and weedy in appearance. There are about ten other native species, but none of them as striking as those we have mentioned. One of these, *Lobelia inflata*, is an annual, with very small flowers; it is called *inflata* on account of its bladder-like seed pod. The popular name of this is "Indian Tobacco;" it is possessed of violent emetic and narcotic properties, and has frequently proved fatal in the hands of quacks. These persons, who know as little about names as they do about medicine, call this *Low-belia*, and distinguish the Cardinal flower, which they also sometimes employ in their mal-practice, as *High-belia*.

The Benne or Sesame.

In the catalogues we find among the seeds of "medicinal herbs," Benne seed, and the plant is frequently grown in gardens because it is "good in case of sickness." The readers of the *Agriculturist* will bear witness that we do not advocate herb—or any other kind of popular physic, and this notice of the Benne will not be an exception to the usual course, for, as we shall show presently, the plant belongs to that class of safe remedies which "will do no hurt if it does no good." We notice the plant because we have had inquiries about it, and seeing it growing in the garden of Mr. Sampson Gordon, of Staten Island, we have had a figure of it engraved, which will give a sufficiently good idea of its appearance. Benne or Sesame is a native of Asia and Africa, and our cold climate does not allow it to reach its full development. The engraving gives the size of the leaves, etc., as it appears with us, where the plant, which is an annual, only grows about two feet high, while in tropical countries it is 5 or 6 feet high, and robust in proportion; nor does it

usually ripen its seeds at the North. The botanical name of the plant is *Sesamum Indicum*, and it is closely related to the Trumpet Creeper and the Martynia of the gardens. The seeds are small and yellowish and contain a great deal of oil. They are used considerably for food, in the same manner as the grains in oriental countries, and by the negroes at the South. In the old story of the Forty Thieves, the case which contained the treasures of the robbers would only open at the proper word; the poor cobbler who discovered the place tried "open barley," and other grains, but the case remained closed until he said "open sesame." Probably many of our readers use the term "open sesame" without knowing that it refers in any way to the plant under notice. The oil obtained from the seeds is of an excellent quality and is used for the same purposes as olive oil. We have seen large fields of the plant in Mexico, where it is grown for oil making.

A remarkable peculiarity of the plant is the amount of mucilage contained in its leaves. If one or two fresh leaves be placed in a tumbler of cold water the liquid will in a few minutes become thick and ropy, like a thin mucilage of gum arabic, and remain perfectly transparent. The leaves are used in this way to make a mucilaginous drink for those sick with inflammatory diseases of the bowels, etc. It is probably



BENNE OR SESAME.

quite inert medicinally, but answers as a substitute for gum arabic, slippery elm, marsh mallow, and similar bland articles, and may be advantageously employed where a pure and tasteless mucilaginous drink is required. The seeds are rather slow in germinating: they are sown in rows eighteen inches apart, and the plants are thinned to a foot in the row.

The Care of House Plants.

The change from the open air to quarters within the house is often fatal to the health of plants, and although the owner gives them, as he thinks, every care, their foliage takes on a sickly look or drops. This especially is the case when plants are removed late in the season to save them from an apprehended frost, and taken to a close, and it may be heated room. The change from free air to the house should be gradual, and plants will do much better if they are at first removed to a room without a fire, to which air can be freely admitted on every mild day, and thus gradually accustomed to the new condition of things. Those plants which are merely brought in-doors for protection, and are not expected to grow and bloom will do well in a room without a fire, except in very severe weather. The best place for such plants, however, is a light and dry cellar that is protected from frost. In either place, the plants need but little water. Plants in sitting rooms need to have plenty of light; ventilation whenever the external temperature renders it practicable; water according to the needs of the particular kind of plants; and particularly, what is so often neglected, they should have a frequent washing of the foliage to free it of dust and insects.

As we were writing this article, there came to hand a letter from Mr. C. H. Spooner, of Philadelphia, who removed from the country where he had a green-house, and brought his plants to the city where he had no proper structure for them. The experience of Mr. S. in keeping plants in an unfavorable locality, will doubtless be useful to many, and his directions for general treatment are such as may be safely followed.

"My home in the City is on the north side of the street, and the back room in which I keep my plants never receives a ray of sunshine from November until March; it is also heated with hot air from kitchen range, yet even under these, the worst of circumstances, some of the plants did much better than could have been expected. Azaleas flowered finely toward spring, when a little sunshine crept in for an hour or two. Epiphyllum Jenkinsonii, Grahamii, and speciosa, also flowered superbly. The whole Cactus family are well adapted for room culture, making no litter, standing much bad treatment, except an excess of water while at rest (during winter), and profuse in flowering. Habrothamnus elegans was a miracle of beauty during the winter, the plant was about three feet high, and had been pinched in so as to form a bushy, yet umbrella shaped head, before being allowed to flower. It had as many as fifty trusses in bloom at one time. Ardisia crenulata, looked pretty, until severe cold weather, when the thermometer fell sometimes one or two degrees below freezing point, causing it to cast its fruit. Camellias lost their buds, and looked badly. Lily of the Nile, bloomed finely. Geraniums wanted sunshine to make them bloom. Harc's-foot-Silver striped, and other green-house Ferns did pretty well, as did the common Lycopodium. To sum up with a few brief hints to those not acquainted with the culture of plants in rooms: Never water your plant until the earth looks rather light and dry, then give a good soaking with water, not too cold. If any plant gets infested with insects, take it to the bath tub or hydrant, lay it on its side, and if you have no garden syringe, put a finger under the mouth of the faucet, and spray the water with gentle force over and under the leaves. If you can sprinkle your plants every day (when the air in

the room is not too cold), it will be of much benefit. Discard hot-house plants as a general thing, as to keep them in a temperature sufficiently warm, would induce a corresponding dryness in the atmosphere, which that kind of plants can not endure. Azaleas, Cactus, Geraniums, Habrothamnus, Cestrum, Dwarf Orange, Daphne (flowered finely with me), Yellow Jasmine (excellent), Beloperone oblongata, Rhynchospermum jasminoides, Bramble rose, and if you have sunshine, the different varieties of Oxalis are very pretty. Never open the window in cold or windy weather, as all sudden changes are detrimental."

THE HOUSEHOLD.



Fig. 1.

About Cinnamon and Cassia.

Under the name of Cinnamon we have in general use a spice which is universally popular, but which is not Cinnamon at all. The true spice of this name is the product of *Cinnamomum Zeylanicum*, a tree which is a native of Ceylon, but is now cultivated in several neighboring countries. The tree is about 30 feet high, has thick, pale green, shining and strongly three-veined leaves, and clusters of small flowers. The shape of the leaves, but reduced in size, is shown in the illustration, fig. 1. All parts of the plant are aromatic, but the bark of the young branches is the portion used for its flavor. Branches three years old are removed from the tree and peeled, and the outer layer of the bark, or skin, is scraped off. The bark in drying, curls up lengthwise so as to form an imperfect cylinder, and while yet flexible, eight or ten



Fig. 2.

Fig. 3.

of those pieces or "quills" are placed one within another so as to form rolls about a yard long, which when thoroughly dry are put up in bales. The true cinnamon is quite costly, and is seldom found in any shops except those of the druggists. It is readily distinguished by being very thin,

scarcely thicker than ordinary brown paper, and by its light yellowish brown color, and peculiar taste. Being an expensive article it is not in general use, but those who are particular about flavors will buy it, notwithstanding its high price, in preference to the article commonly sold as cinnamon, which is Cassia. Cassia is the product of another, and perhaps more than one other species of *Cinnamomum*, and comes from China and several of the East Indian ports. The bark is much thicker than the true cinnamon, is of a redder brown color, and the pieces, instead of being rolled one within another, are single, or only two or three together. It is imported in small bales made of matting which contain two or more pound rolls of the bark. The figures 2 and 3, show the difference in the appearance of the two barks, the Cassia bark, fig. 2, being much thicker than that of the Cinnamon, fig. 3. Besides these differences, there is a marked one in the taste which can not be well described, but which is readily recognized by any one who has compared the two. The flavors are similar but very distinct, and although the Cassia is the stronger of the two, the Cinnamon is far more agreeable and delicate. The Cassia then, is the bark which we use under the name of Cinnamon, and this when purchased in the powdered form is very likely to be adulterated, by various cheap substances which are ground up with it. With this, as with other spices, the only way to be sure of a pure article is to procure it in the unmanufactured state and powder or grind it at home.

A Neat and Inexpensive Ornament.

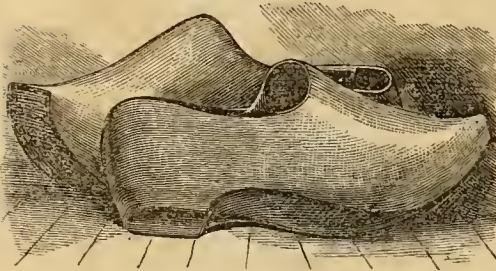
Recently a new style of ornamental work has appeared for sale, which at first looks like beautifully carved rustic work. A close examination, however, shows that the fine effect is produced with a very common material, only butternut shells, cut in thin slices across the grain, and fastened together at the edges with glue. The illustration represents a small fancy bracket made in this manner, to be hung upon the wall to support an ornamental vase, image, or other article. The same material is worked into picture frames, card baskets, work boxes and other similar things. The butternut is easily sawed into slices by holding it in the end of a stick hollowed out to receive it, and having cuts made partially through the stick at proper distances apart, to guide the saw, as in a mitre box. Strong, thick glue is needed to hold the slices together, and



BUTTERNUT BRACKET.

the work looks nicer if the pieces be smoothed with a file and sand-paper, before putting them together. We have seen a very pretty shawl pin made of a single slice of butternut shell, mounted with silver, and very beautiful bracelets, made

by stringing several on elastic cords. When new nuts are made use of, the work is apt to crack in a dry atmosphere, hence old ones are preferable. It will be pleasant work for winter evenings to ornament the parlor with specimens of this work.



Wooden Shoes, Clogs, Patens, etc.

Wooden shoes have never been an American "institution;" and to the mind of an American they suggest only the clumsy economy and barbarism of the uncultured peasantry who live and labor, without the wish or ability to rise, in the full glare of European civilization. In fact it would seem to many quite as reasonable to suggest to an Indian to change his moccasins for "clogs," such as we give a picture of, as to commend their use or manufacture to the readers of the *Agriculturist*. We have long been awake to certain advantages which they possess over shoes of any other material, and have recently ascertained that a large business is done in them in this city. We have seen with no little satisfaction that a good many young girls and women, who have to live and go about in the damp alleys and cellars of this city, and whose feet otherwise would surely be wet and cold in winter, wear these shoes, and so have warm, dry feet at all times. This then is one of the advantages of wooden shoes; another is, they are very cheap, and another, they wear a great while. Offset against these merits, that they are not handsome, and make a noise when the wearer goes upon a hard walk, or floor. These demerits weigh very little against their use, by both men and women about the house, grounds and out-buildings. For men they are most excellent to wear while working in the stables, or for going about in wet and thawing weather. For women, nothing that they can wear will so effectually protect their feet against the cold and dampness of wet floors or cellars, or cold or wet feet under any circumstances. The German felt shoes, or those which the Germans make out of carpeting, or of rag-carpet materials, are very good to keep the feet warm in dry places, but wet through very easily, and are then useless until dried.

We do not thus commend wooden shoes, in order to favor any manufacturer, for we know of no place where they can be bought at wholesale on this side of the Atlantic. We think, however, that the manufacture of the article might be conducted with great profit, for among the Germans and French at least, of our naturalized citizens, there would be a ready market from the regard they had for them at home, and their comfortable recollections of warm feet there, and cold ones here, very likely. No shoe of leather, unless it be fur-lined, can be made so warm. And it seems to us that sensible Americans would soon adopt them for the reasons above enumerated. The shoes may be made of white pine, white-wood, bass-wood, or probably any light strong wood. Even the largest sizes of the pattern we sketch, weigh only a pound each.

About Keeping Warm.

Warm Clothing.—Wearing fabrics are warm in proportion as they are loose in texture, yet close enough, and of fine, elastic materials. Silk, firm, close, non-elastic, as usually woven, is almost impervious to air, as may be tested by trying to blow through it, and silk garments have little warmth. Flannels are elastic and loose, and they are warm; if made of fine wool, they are very warm; they

offer little resistance to the breath. The hands will freeze in kid gloves in winter, yet one, by blowing into them, can hardly force any air through, while woolen mittens, or buckskin gloves however, tightly sewed, may be blown through very easily. This is very simple, yet it seems surprising to most people that clothing which will let the cold air through so easily, will afford the best protection against the cold. The reason of this is, that the fine loose fabrics enclose air within them, and this air being more or less entangled by the fine shreds and particles of the fabric, becomes as it were, part of the clothing, and thus the body is wrapped in a covering of air, which is one of the best non-conductors of heat (or, popularly, of cold) known.

Underclothing may be of such loosely woven stuff as to be quite unfit for external wear, both by reason of its frailty, and because the wind would blow through it too easily, and the rain would dash through; but being protected by closer and firmer outside garments, it is all the better on account of its light, loose character, to confine the natural heat and keep the body warm.

Warm Houses.—The same principles which apply to clothing are equally applicable to building materials. Who would ever think of being comfortable in an iron house, if it could not be furred and filled-in so as to make a warm house inside of the cold one. Yet, iron will much more effectually exclude the outer air than wood or brick, or any thing made with mortar. All these are quite porous substances, and it is this very porosity, more perhaps than any thing else, that makes the walls poor conductors of heat. In the article on Ice Houses, we describe the warmest cheap walls that we can build, for, to keep ice from melting, we must shut the heat out, and this takes just as warm a wall, so to speak, as to keep the heat in. Warm houses have a close external wall for defense against the weather, to turn both rain and wind, but with-in some arrangement for virtually keeping a coating of air close to the wall on the inside. This, as we all know, is done by furring-out, and filling in with bricks loosely laid in mortar, or with a grouting of a mud mortar and stones, which answers equally well, and lathing and plastering for a finish.

It requires much besides good walls to make a warm house, and the discussion of this and of some of the other arts of keeping warm must be deferred to another month.

How to Make First Yeast.

In answer to an inquiry in a previous number of the *Agriculturist*, "How to make yeast without having any to commence with," "Young Badger," Appleton, Wis., sends the following directions: "In an earthen vessel, as a bowl or pitcher, holding 1 quart, put 1 pint of milkwarm water, 1 even teaspoonful of salt, and stir in flour enough to make it as thick as ordinary pancake batter. Place the dish in a kettle of milkwarm water, and keep it at as even temperature as possible from 4 to 6 hours. After it rises, take 4 quarts of milkwarm water, mix with it as much flour, with the prepared yeast, as can be stirred handily with a spoon, let it stand an hour at the same heat as the yeast, then add flour and knead into loaves. Let it stand in a warm place until it rises, from $\frac{1}{2}$ to 1 hour, then bake."

Another Recipe.—Contributed by J. S. Smith, Port Hope, Canada: On Monday morning boil 2 ounces of fresh hops, in 4 quarts of water, for $\frac{1}{2}$ an hour. Strain it—throw away the hops, and let the liquor cool down to the warmth or temperature of new milk. Put in a tablespoonful of salt and $\frac{1}{4}$ a pound of brown sugar. Take 1 pound of best flour, and beat it up in a bowl, with enough of the liquor to make a soft paste or batter, then pour the batter and the rest of the liquor together into a large earthen vessel, and stir them well together. Let it stand in a moderately warm place, and stir it every 2 hours until Wednesday morning. Then add 3 pounds of boiled potatoes mashed fine. Stand it in the same place, and stir it as before, until Thursday morning, or until it ceases to ferment.

Then pass it through a sieve, and bottle it. It is now ready for use, and in a cool place will keep for several weeks. Shake the bottle before using. 1 tablespoonful is enough for an ordinary sized loaf.

Have Ice Next Summer.

Housewives, shall you need ice next summer? Will you not be very glad to have the means at hand to keep fresh meat several days, to keep cream sweet, and to preserve many perishable articles of food? Do you not wish to see hard butter on the table, and to have cool water in the pitcher, and to be able, now and then, to offer ice cream and other icy luxuries to your friends? Then *insist* upon having an ice house built and filled this winter, and you may enjoy all we suggest; should the head of the family plead ignorance, that he does not know how to build the ice house, you must know, and show him.

First, the ground selected must be dry, and out of the way of floods, if near a stream, for if water stands in contact with the ice, it will melt away, almost "like the morning cloud." It is well to have the ice house on the north side of a hill, or of a house or big tree. If close to the house and a cool-room can be made between it and the house, that will be found very convenient, and the ice house wall next the cool-room need not be made so thick as on the other sides, in fact, a double boarding, with an inch of space between, is enough. It is well to dig out the ground so as to set the house a little lower than the general level, and it may be several feet lower if convenient. The bottom ought to slope to the middle or to one side, and to be grouted, that is, laid with broken stones which are covered with hydraulic cement mortar, poured over and in among them, and smoothed off even on the surface. The inclination of the bottom should lead to a sealed drain, so protected that it can not be stopped up by accident, or by sawdust. It is important that the drainage of an ice house, whether the bottom be cemented as we have described or not, should be perfect, and that a circulation of air should not take place through the drain. This is easily affected by having the end of the drain, (a round tile,) rise 2 or 3 inches in a cemented depression, or basin, and turning over it a common flower pot with the hole stopped.

A house 10x10, or 12x12 feet, and 8 feet from the bottom to the eaves, with a half-pitch roof, is about what is wanted on an ordinary farm, and will hold and keep more ice than is usually needed. The sides should be 10 inches thick, the frame being of 8-inch uprights, of 2-inch plank, set 4 on a side, (the end ones being a foot from the outside corners,) upon sills of the same width. The inside boarding should be of cheap inch stuff. The outside may be clapboarded, or boarded up and down and battened. Dry sawdust, planing-mill shavings, or dry spent tan-bark, may be used to fill in between the outer and inner boarding, and the filling should be settled down solid. The plates may be of 2 inch plank; the rafters 4 on each side, of 2-inch plank, 6 inches wide. They should be boarded outside and inside, and the space filled with shavings. The roof should be thatched or shingled, and the gable ends double boarded and filled like the sides. The door should be in one of the ends, 4 to 6 feet from the ground, and 4 feet high; and close to the peak there should be a sliding shutter for a ventilator. There should be a flooring not nailed down but laid firmly, to support the ice.

The sides may rest on the grouting, or on a stone under-pinning. When they are laid, they should have a coat of coal tar all over, and when the house is done, sawdust stirred up with coal tar should be filled into all the crevices and holes near the ground outside and inside, and earth heaped up around the sides and trodden down. Paint the sides with tar as high as the earth comes. How to fill an ice house will be a subject for our December number.

STRAW ICE HOUSES.—Where there is a great abundance of straw, ice may be preserved throughout the year, if packed in a compact mass and well covered with straw, perfect drainage being secured.

BOYS & GIRLS' COLUMNS.

Good Premiums—Which One for You?

How many Boys and Girls are trying, or going to try for a premium this autumn and winter? There are several things you would like, offered in the list on another page. A great many very young people, little boys and girls even, have obtained the Great Dictionaries, the Drawing Instruments, etc., etc. We always take peculiar pleasure in sending premiums to young people. They make good and successful canvassers, and they thus learn business habits. The one who shows the paper to a few people, even, gains at least a little knowledge of business.

About Going to School.

Seed time and harvest, on the farm, are over for this year, but as autumn advances, the boys and girls' spring time comes on—the season for attending school and putting in seed for the thought crop. Fifteen or twenty years from now, the children of the present day will be the active men and women, and the fruits they bear, their success in life, as well as the condition of the world, will depend on how they improve their opportunities.

There are a few particulars which every scholar will find most important, and we trust all the young readers of the *Agriculturist* will bear them in mind this winter. *Be Punctual.*—The ancients represented Time by the figure of an Old Man having only one lock of hair, and that on his forehead, signifying that the right moment is to be seized, or opportunity is lost. The unpunctual are always just too far behind for taking hold, and so time keeps ahead despite all their endeavors. *Be Regular.*—A man who eats three meals one day, half a one the next, and then omits a day or two altogether, will not grow fat; neither will the mind thrive if fed irregularly. No trifle should prevent attendance at school. Each day's study is worth at least five dollars in cash; if any doubt this let them read the proof in figures which do not lie, in the December *Agriculturist*, of 1860. (Vol. XVIII, page 372) *Be Obedient.*—Rules are for the benefit of the pupils. Without them order and improvement would be at an end. Few teachers will require anything unreasonable: what appears so to you will usually be found all right after a few years of experience. The man at the mast head of a ship can see further than the sailor on deck; the teacher has climbed higher in life and can judge what is best, more certainly than those who are younger. *Be Thoughtful.*—Do not be satisfied with repeating the words of a lesson, or getting the answer to a problem. Learn the meaning of every word and sentence, and discover the reason for the rules in arithmetic. Such exercise will make the brains grow and enable the pupil to make rules, and perhaps write books for himself. Whoever has brain power will succeed best in any vocation, and it can be gained only by thinking. Finally, remember that learning is a possession of which a man can not be robbed, which will bring more enjoyment than wealth, and strive to gain your share.

A Lesson for All to Learn.

Selfishness is rebuked by every thing in nature. Animals, plants, clouds, brooks and stones—all give something for the benefit of the world around them. The tree is nourished by the earth, moisture, air, and sunlight. It gives shade and fruit to man and animals, sustenance to countless insects, purity to the air, stores up light and heat derived from the sun, to impart them again when used for fuel, and repays to earth nourishment for future vegetation, in the decaying leaves which it sheds in autumn. Springs are fed with water from the clouds; they carry fertility along their banks, furnish a home for myriads of living creatures, give power for the use of man, unite to bear his ships to the ocean, and are constantly returning to the air the moisture received from it. Animals return to the earth and air all the matter they receive, besides giving support or comfort to others.

A Chinese Story.

Two short-sighted men, Ching and Chang, were always quarreling as to which of them could see best; and as they heard there was to be a tablet erected at the gate of a neighboring temple they determined to visit it together on a given day and put the visual powers of each to the test. But each desiring to take advantage of the other, Ching went immediately to the temple, and looking quite close to the tablet saw an inscription with the words, "To the great man of the past and the future." Chang also went prying yet closer, and in addition to the inscription, "To the great man of the past and the future," read from smaller characters, "Erected by the family of Ling in honor of the great man." On the day appointed, standing at a distance from which neither could read, Ching exclaimed, "The inscription is, 'To the great

man of the past and the future.'" "True," said Chang, "but you have left out a part of the inscription, which I can read but you can not, and which is written in small characters: 'Erected by the family of Ling in honor of the great man.'" "There is no such inscription," said Ching. "There is," said Chang. So they waxed wroth, and, after abusing one another, agreed to refer the matter to the high-priest of the temple. He heard their story, and quietly said, "Gentlemen, there is no tablet to read; it was taken into the interior of the temple yesterday."

A Frightened Workman.

Dr. Buckland, a celebrated English Geologist, was accustomed to closely watch the masons engaged in repairing any public buildings in which he was interested, to see that no defective or unsuitable materials were used. On one occasion workmen were repairing a tower of Christ's Church, Oxford, and the Doctor had reason to suspect that all was not done properly, but he could not climb by the slender scaffolding to the high turrets; so he stationed himself at a neighboring window with a good telescope, which he had used to examine distant geological sections. At last the mason working, as he thought, far above the observation of man, put in a faulty bit of stone; the learned Doctor on the lookout below, detected it through the telescope, and going to the foot of the tower, frightened the man half out of his wits by ordering him to "bring down directly that bad bit of stone he had just built into the turret."

A Valuable Peach.

The writer recently saw a single peach sold for \$42.50. It was of good but not extraordinary size, nor was the flavor better than that of many peaches in the market. It occurred thus: A Sunday School were holding a Missionary meeting. After the usual speeches and collection, a young gentleman, one of the scholars, stated that he had something to say about a peach. He then related how a lady had planted a peach pit five years before, and after properly caring for the tree, had this year gathered the first fruits, of which he had one. Then, after some very pertinent remarks on the reasonableness of expecting good fruit from children as well as from trees on which much pains had been bestowed, he presented the peach to the Missionary Society. A gentleman immediately offered a dollar for it; the male Bible class offered \$5, and receiving it, presented it again to the Society. It was then bought and presented to the Society twice at \$1 each time, then for \$5 twice, and finally the teacher of the female Bible class offered \$5 for it on condition that he might divide it among his pupils, and keep the pit himself to plant, promising to give the first fruits to the same Society. The male Bible class again made a higher offer; the other teacher responded, and after a friendly contest it was awarded to him for \$25.50, or \$42.50 in all, and if the pit should produce fruit, it will no doubt bring a still further income.

Honesty the Best Policy.

A friend recently related the following little incident illustrating the above proverb. A gentleman of his acquaintance took passage on the steamer from Boston to New-York, and upon applying for a state room, was told that all were engaged. He was much disappointed, and requested the captain to take his name, so that if any room should happen to be left vacant, he could take it. Late in the evening he called at the captain's office and was told that he could not be accommodated. He then paid for a berth in the common cabin, but on receiving his change found he had twenty five cents too much, which he immediately returned. The captain looked at the money, then at him, and after a little thought said, "Mr. M., I'll try and accommodate you," and gave him a berth in his own, one of the best in the whole boat.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the October number, page 319. No. 175. *Arithmetical Question*, has not been answered by any, and is left over for another month. No. 176. *Illustrated Rebus*.—Ape pole light address gives ez axe s two awls o's cye et; or, A polite address gives easy access to all society. No. 177. *Charade*.—Liberty and justice. No. 178.—*Illustrated Rebus*.—Hook can measure awl the miss chief once in will caws? or, Who can measure all the mischief one sin will cause?—Aug. No., page 256, and October No., page 320, turn the pictures half round, and see the faces clearly shown.

A Long Puzzle.

In the next column we present a Hieroglyphical letter for the young folks to puzzle out during this month. This occupies so much room that no more problems can be inserted; but it will probably last for some time.





HAVING A GOOD TIME.—Engraved for the American Agriculturist.

A Glorious Ride.

Here is a joyous ride! No millionaire on Fifth Avenue with his prancing blood horses and splendid carriage can have half so good a time as these happy children are enjoying on their log pony in the western woods. No horse can travel so swiftly as they "play" their horse is going, and all the fine places they visit, and the adventures they meet in imagination bring them equal or more pleasure than they will find in after years if they should chance to become travelers. Without knowing it they have the key which unlocks one of the richest stores of earthly happiness, that is an active imagination. It can build houses, lay out farms, cross oceans, climb mountains, conquer cities, rule kingdoms, make gold from stones, and change the rudest things into the costliest treasures. But this same faculty of mind which brings so much pleasure often needs watching and restraining. Like a spirited horse it may run away with its owner. When a young person pictures to himself all the pleasures of wealth, "makes believe" that in some way he will have them without working, by the death of some unknown rich relative, or finding a full pocket book, or drawing a prize in a lottery, then his imagination is preparing him for discontent with his present situation, aversion to labor, vain wishes, restlessness and unhappiness. Still worse than this is the habit of allowing the fancy to sketch pictures of forbidden pleasure; it is a long step toward outbreking sin. He who commands his thoughts and keeps them pure, will have little difficulty in resisting other temptations. "Keep thy heart, for out of it are the issues of life," said the wisest of men.

A Trustworthy Dog.—A gentleman in England, relates the following anecdote of his dog. It appears that

for a year or two foxes had been very plenty in that neighborhood, and had made great havoc among the poultry and their eggs. One hen seemed determined to secure the safety of her treasures, for day by day she marched boldly into the dog's kennel, and deposited an egg in the corner. The dog was not affronted by this liberty taken with his house, but seemed to understand all about the matter, for as each egg was laid, he carefully took it up in his mouth, carried it as far toward the house as his chain would permit him to go, where it was taken in charge by the housekeeper, who always regularly rewarded him for his attention and honesty.

How they Used to Telegraph.

Telegraphing by various methods was known long before Professor Morse invented the way of sending messages by lightning. The shepherds among the mountains of Montenegro, in Turkey, communicated news very rapidly by shouting it from peak to peak. It is related that when one of them felt lonely, he set up a peculiar cry which could be heard at a great distance, signifying thereby that he wished to talk with some one. It was usually soon heard by somebody in the neighborhood, and a conversation was at once commenced, which was often joined by others, who chanced to be near enough to hear, and thus the news of the day became generally known. A traveler says that at one time he wanted his mule which was some ten miles distant. Accordingly he yelled out, "Ho! ho! you people there in the village of Brellizu! Iigh up in the mountains of Glenbotich, by the great beech tree, with the withered boughs, my little lad Yonko is keeping my white-footed mule. Let him know that he is to come down with it as fast as he can." Immediately some living echo took up his words,

repeating them exactly; and so the message went until it reached the boy, and the mule was soon brought to him.

Beacon fires were the ancient mode of telegraphy in Great Britain, and in an act of the Scottish Parliament, of 1445, it is directed that "One bale or faggot shall be the warning of the approach of the English in any manner, two bales that they are coming *indeed*, and four bales blazing beside each other, that the enemy are in great force." Subsequently there was introduced a system of telegraphing by signals made with an apparatus having large arms somewhat like a windmill, called a semaphore. The different positions of the arms represented letters of the alphabet and words. Numbers of these were erected on elevations as far apart as could be seen with a telescope, and thus news could be sent from Dover to London, in ten minutes. The semaphore was of use only in clear weather. Occasionally curious incidents occurred, owing to the sudden stoppage of its working. When the Duke of Wellington was fighting the French, in Spain, every body was anxiously looking for news. One day the semaphore transmitted to London, the alarming message, "Wellington defeated." At once there was great commotion; rumors spread that there had been great losses of men and artillery; stocks went down rapidly, and the Government were quite bewildered. It turned out however, that just as the word "defeated" had passed along, a sudden mist had come on at some part of the line, and prevented sending the remainder of the message—when it cleared, the whole news read, "Wellington defeated the French."

Other similar methods have been used in different countries. On ship-board flags are used to make signals for communicating with distant vessels. At another time we may speak of signals used in the army during the war.

American Musical Instruments.

The inventive genius of the American people is ever active, never resting; it embraces in its grasp the merest trifles and the mightiest conceptions, from a toy to point a lead pencil, to a lever to raise a pyramid. That whatever has been done can be improved on, and whatever is needed for the good of the human family can be produced, are American dogmas. They are so purely indigenous to the soil, that all who seek asylum here find new springs of action, new incentives to ambition, and a broadening of the mind which had been dwarfed by the cramping influences of small nationalities.

Inventive genius has not merely been directed to the physical needs of the people; the necessities of our life have had their champions, and the intellectual luxuries, which are at once its solace and its ornament, have been fostered and developed to a degree that shames the experience of the old world. In the short space of thirty years we have become manufacturers of our own musical instruments; in this we ask nothing of Europe now; we have learned all she knows, and something more besides, and we have changed the course of trade which was always from East to West, to from West to East.

There is scarcely a musical instrument which we do not make, and with scarcely an exception, our manufacture equals, and in some cases surpasses the workmanship of the European models. Our flutes already rival those of the English, while they surpass in richness of tone and elegance of workmanship the finest made in Germany. Our harps, in all points, tone, elegance, finish and mechanical appliances are altogether unsurpassed. Our Brass instruments in their variety and excellence are fully equal to those of France, while our Guitars in all points of workmanship, and in durability in this climate, are preferred to the finest specimens from Spain or Italy. In the manufacture of Violins we have made rapid strides toward excellence, and although very far behind the great old makers whose names have a world wide fame, we can claim a fair equality with most of the modern European violins. In Reed Instruments, such as Melodeons and Parlor Organs, America has no equal in the world. These instruments were literally created here, their superiority is everywhere acknowledged, and we are satisfied that when some enlightened community shall decide to spend \$60,000 or \$70,000 upon the building of a great organ, and shall give the contract at home and not abroad, we shall have an organ equal in every respect to any of foreign make, and superior in some points, especially in wood which will stand the climate.

The instrument, however, in which the most important improvements have been made, is the piano-forte—the instrument which is most popular throughout the world.

The piano-forte was, of course, invented somewhere, although it was more properly a gradual improvement from one thing to another than an invention in its present form. There are two claimants for the honor of creating the original instrument, and both have strong supporters. By one party it is attributed to Christofali, a Paduan; by the other to Schroeder of Dresden, Saxony. We need not stop to discuss the rival claims. The date of the invention is said to be 1711, but the piano really rose but little above the dignity of a Harpsichord until half a century later, when the genius of Erard,

followed by Pleyel, Broadwood and Collard developed its resources and powers, which, until then, were undreamed of. But these great makers did not exhaust its powers. There was something left for America to do—some art gift from us to the old world, to be purchased by deep thought and laborious experiment, or won by the inspiration of a fortuitous moment.

This one point, which has revolutionized the manufacture of piano-fortes nearly all over the world, and has added so greatly to the power and the capacity of the instrument, is the system of overstringing the bass, the principle of which was established, developed and perfected, by Steinway & Sons of New York. An instrument of this class, overstrung, and with two bridges in the bass, was exhibited by the Steinways in 1855 at the Crystal Palace, New York. There was a great competition, many of the best makers exhibiting, but the full, richly sonorous tone, and extraordinary power of the Steinway piano gained, by the unanimous judgment of the jury, the first premium gold medal. Public opinion coincided perfectly with this verdict, and the reputation of the Steinways was a settled fact from that day, and their business increased with a rapidity altogether unprecedented, rising in twelve years from the very humble beginning of one piano a week, to a grand total of 12,000 pianos, grand, square and upright, averaging now over 2,300 per annum. In 1855, at the Metropolitan Fair in Washington City, they received two first prize medals; in November of the same year, the first prize gold medals at the American Institute, New York; in 1856 the first prize gold medal of the Maryland Institute at Baltimore, and the American Institute at the Crystal Palace in New York, and in 1857, the first premium gold medal of the Maryland Institute again. Altogether in two years they have received no less than twenty-six first premiums in the shape of gold and silver medals, at the various fairs and exhibitions in Cincinnati, St. Louis, Chicago and elsewhere.

Such repeated successes, chronicled by the press and justified by their constantly increasing business, attracted the attention of the whole trade, and in a short time nearly every piano in the United States was made upon the overstrung principle.

In 1862, at the International Exhibition of London, the Steinway pianos secured the greatest victory yet obtained by them. There were 269 pianos on exhibition, from the manufactures of nearly all the celebrated makers on the continent and in England. The jury appointed was of the highest character, embracing such names as Sterndale Bennett, musical director, Professor at Cambridge; L. R. Black, M. D.; Fetis, of Belgium; Ernst Pauer, of Austria; Sir F. Gore Ouseley, Professor of music at Oxford; I. Schiedmayer, instrument maker; Zollverein; the Earl of Wilton; Henry Wilde, musical director, and others of note and position. The most thorough examination was made of all the instruments exhibited, and the Steinways were awarded a first-class prize medal, "For powerful, clear brilliant tone, and excellent workmanship, as shown in grand and square piano-fortes."

This was unquestionably a great triumph for the firm, and justified the expressed opinion on this side of the Atlantic of such artists as Mills, Mason, Heller, Pattison, Timm, Marezek, Anschutz, Eisfield and many others, who, in their open certificates, enumerate among the chief points of excellence presented by these pianos, "The greatest possible depth, richness and volume of tone, combined with a rare brilliancy, clearness, and perfect evenness throughout the entire scale, and above all, a surprising duration of sound, the pure and sympathetic quality of which never changes under the most delicate

or the most powerful touch," and who declare that they prefer them above all others for their own use, whenever accessible. One of the consequences of the exhibition of their pianos in London, as above stated, is the adoption of their system of manufacture by many of the European makers, who announce as a recommendation of their own instruments, "That they now make pianos upon the same plan as the celebrated Steinway & Sons of New York." The eminent European artists, Alfred Jaell, Hans Von Bulow and Gustave Satter also testify to the splendid qualities of the Steinway pianos. The foreign press, *The London Times*, *The London Illustrated News*, *The Paris Constitutionnel*, *The Presse Musicale* and other papers in Great Britain, France, Germany and Italy, pay the highest tributes to their superior excellence, while the Vienna press, considered the highest musical authority, extolled in the warmest terms, not only the full round tone and mechanical excellence, particularly the overstringing of the bass in both grand and square pianos, exemplified by the Steinways, but in an æsthetic point of view the great capacity for development shown in their peculiar method.

The firm of Steinway & Sons, consisting of father and four sons, came to America in the year 1850. Mr. Henry Steinway, the father, had, previous to his arrival in this country, successfully carried on a piano factory in Brunswick, Germany, for nearly a quarter of a century. With that adaptability which distinguishes true merit, before embarking in business for themselves in the New World, the Steinways thought it prudent to become conversant with the business customs of the American people, and therefore did not inaugurate their house until 1853, when they commenced operations in their own name. From that day to the present, their career has been one continuous success. How they have risen from very small beginnings to a business colossal in its proportions we have already stated. Their enterprise, energy, broad business views, and skill, have placed them upon the topmost rung of fortune's ladder, and they stand to-day the most successful and extensive manufacturers of piano-fortes in the world. Independent of their extensive home business, the firm is now shipping instruments not only to every portion of the American continent, but to the capitals of Europe and the East, thus inaugurating a new and valuable branch of export trade.

The factory which they have erected, at a cost of one hundred and fifty thousand dollars, stands upon an entire block of ground, bounded by Fourth and Lexington aves. and Fifty-second and Fifty-third sts. It is five stories high, and is fitted up with all the modern appliances for manufacture; labor-saving machinery, miles of hot-air pipes, private telegraph to their downtown salesrooms—in short, all the furniture necessary to make a perfect factory. In it are employed four hundred and fifty of the best workmen at the highest wages. About 1,000 pianos are constantly in process of manufacture, including every variety of Grand, Square, and Upright. The stock of material on hand is seldom less than half a million dollars in value—a large amount of non-interest paying capital, but inevitable from the necessity of securing thoroughly seasoned material.

Beside their costly factory, they have recently erected a splendid white marble five-story building in Fourteenth-st., between Fourth ave. and the Academy of Music. This they use exclusively for salesrooms, with separate apartments for the Grands, the Squares and the Uprights. The front is rich and elegant in design, and is an ornament to the city.

The Steinways own the ground through to Fifteenth-st., the lot being one hundred feet wide on Fifteenth-st. On this they propose to erect a National Concert Hall and a Conservatory of Music, which, carried out in the right spirit will prove a boon to the community at large, and will reflect honor upon their enterprise, zeal and judgment; and it will be a crowning evidence of their high-toned liberality and honorable to the country, and will carry down the name of Steinway with the progress of musical art and manufacture in America.—*New-York Tribune*.

(Advertisements \$1 per line of Agate space.)

THE IONA AND ISRAELLA GRAPES.

Two years ago I first had the pleasure of offering the Iona and Israella Vines, and the public and those who bought them, did so chiefly from my own representations of their excellence...

Let us glance at their history during the two years; Many thousands of plants were then sold and not one purchaser has expressed regret for having bought, but there has been a general expression of regret for having bought so few and thousands are expressing regret for not having obtained any.

Last season I was able by pretty extensive dissemination of specimens of the fruit of the IONA, to have its quality tested by many hundreds of those who were able to appreciate high excellence of quality. Through these individuals and by the voice of various Committees the reputation of the Iona especially became widely known and established in public estimation...

One of the events by which its surpassing merits were most clearly exhibited, was its subjection to the severest possible test before the Committee for the award of the Greeley prize of One Hundred Dollars.

The requirements of Mr. Greeley's offer were not merely that the successful competitor should be better than any other Native grape, but that it should possess the qualities which constitute the distinctive excellence of the best European kinds...

I had claimed these high qualities for the Iona. Others also had claimed great excellence for different varieties. Mr. Greeley says in proposing the premium (Sept. 1864): "It is time these claims were tested and passed upon by disinterested and capable judges."

The Committee in giving their decision at the conclusion of their interesting report on the subject say: "The Iona is the only grape now before the public that meets the requirements of the Greeley prize, and we accordingly award it."

The Committee consisted of Mr. Peter B. Mead, Mr. R. G. Pardee, and Mr. Francis Brill. No one who is acquainted with these gentlemen or has read their report, will affirm that a Committee more capable or better qualified for the purpose has ever presented a report upon grapes.

The notice given necessarily allowed but a short time to competitors for preparation. Some of the friends of a celebrated variety strenuously asserted their belief that their variety could have taken the prize if sufficient notice for preparation had been given. I at once re-opened the case in favor of any better grape that should be offered during the current season, or for the whole year.

Adverse interests have been most active in seeking for cause to invalidate any of my claims for these varieties. Questions as to their earliness and hardness were raised, but settled in a way not to permit of their being again raised—at least in the same manner.

I again open the case for competition on the same terms as before for any time within three years. At present the reputation of the Iona does not stand upon any opinion that I or any person may advance concerning it. It has always sought for every trial that may test its true merit, and will continue to do so.

A short account of some of the awards will be instructive showing that the quality of true grapes is now understood and appreciated. The first is from the St. Louis, Mo., Hort. Society, of which Mr. L. H. Tice was chairman.

"The Committee beg leave to report that they found the Iona a most luscious grape, almost pulpless, of a rich, vinous flavor, and differing from all other grapes in being sweet to the center, and without any acidity. The pulp, if so it may be called, has so little tenacity that the least pressure in crushing ejects the seed. Your committee have no hesitation in placing this grape at the head of all native grapes, even above the Delaware. Your Committee and the members of the Society were very fortunate in having the large bunches of Delaware, delicious in flavor, to compare with the Iona, and between these acknowledged competitors for precedence we believe the judgment of the members as well as that of the committee to have been unequivocally in favor of the IONA."

At the Fair of the Indiana Hort. Society, the committee of which Dr. Warder was chairman, with J. J. Thomas, author of American Fruit Book, and Thomas Meacham, Editor of Gardener's Monthly, associates, unanimously awarded the premium for the best variety of native grapes to the IONA. The Cincinnati Hort. Soc. awarded first premiums to IONA. Pennsylvania State Fair awarded first premium to IONA. Michigan State Fair awarded first premium for our best varieties to IONA, ISRAELLA, DELAWARE.

At the great exhibition at Sandusky, where it came in competition with all of the best grapes grown at Kelly's Island, and the whole south shore of Lake Erie, First premium to Iona "for 12 bunches best variety, quality to rule."

At Utica, N. Y., alone it was placed second to Delaware. Of its success at New England Fair, Ohio, Wisconsin, Iowa, New Jersey, Vermont, Rhode Island, etc., there is not space to speak. The concurring opinions of the select committees of so many widely different localities is fully convincing as to the very great superiority of the Iona, to all others. But this season has afforded demonstration which carries irresistible weight because it is the voice of the now educated taste of the public which is in full harmony with the decisions of the eminent judges who so generally constituted the committees the present season.

Many thousands of discriminating judgment, conscious of the vast interest that centers in the Iona, have tested its merits by careful immediate comparison with the best of all other kinds, and the award of this vast committee is so unanimous that even strong interests as well as inveterate predilection have been obliged to yield to the Iona, and to acquiesce over all others, including the Delaware, which was its only near competitor when at actual trial. The friends of the Catawba, (at Sandusky, especially its most palmy region,) having long enjoyed its richness and animating spirit, were often confident of its equality in flavor before trial, but always yielded gracefully to its testing.

The veteran Mottlet, with his just perception of the excellence of the heretofore unequalled Delaware, is compelled to concede the superiority of the Iona, in quality.

The earliness, hardness, and productiveness of the Iona, are points of prime importance, which the present most trying season has done more to settle satisfactorily than the whole seven preceding seasons of its fruiting, six of which have not been favorable to grapes, in all of which the Iona has manifested a degree of certainty and perfection of ripening its abundant crops, unequalled by any other kind. Hardness is conceded to the Concord, but in numerous and extensive districts where that has failed partially, or entirely

from rot, the Iona has maintained an increase of excellence and earliness in ripening, according to its advance in age, which is characteristic of it. For several years as the vines gain in maturity the period of ripening advances nearly a week yearly, while in nearly the same proportion the quality of the fruit improves in spirit and richness. The best Iona vines in the country have not yet reached their highest point of excellence.

I will illustrate by two distinguished examples. The first is from Mr. CHAS. DOWNING. The past two seasons the Iona, being the first years of fruiting in me, ripened little later than the Delaware, but this season a week earlier. The Israella ripened as early as the Hartford Prolific, or before it, beginning to color about one week earlier. Both Iona and Israella have so far proved hardy and vigorous, and their foliage has been much less injured by mildew than that of DELAWARE, CONCORD, AND MOST OTHER KINDS."

From Mr. MARIE, a most intelligent foreigner and a distinguished cultivator of foreign and native grapes. "The Delaware, my great favorite which has not suffered before, will fall to ripen one third of its crop from loss of leaves; Catawba entirely gone; Concord, very much injured in the fruit, not nearly half a crop; Allen's Hybrid has done very well, giving most excellent fruit, the Hartford Prolific is one of those that have suffered least."

Now, last, but not least, the Iona has gone through this most trying season triumphantly, mildew being very little, if at all, more than the Hartford Prolific; and at the present time I have a trellis seventy-five feet long by eight feet high covered with plenty of large and full, ripe bunches, which, to my taste, are the best flavored native grapes that I have ever eaten. This fully meets my requirement for a perfect grape. Allow me to congratulate you upon the success of the Iona. I shall plant nothing else in the ground that I am now preparing—certainly not until we get something far better than is now before the public."

The advance of the time of ripening with the advance of age and maturity of the Iona vines is a fact that should be noted. Each year has made a difference of more than a week, or perhaps two weeks, with mine."

Yours, very truly, (Signed) C. MARIE. From the foregoing survey, which touches but few of the important points which will be clearly seen that we have in the Iona a grape not only that stands out above all others, but one that is able to make ours a country of the vine in the most extensive and excellent sense of the term, for the Iona is equally eminent for the table and for wine, and for keeping through winter in full spirit and flavor it is also unequalled. Like the most celebrated Pinon of France, it is suited for any latitude in which any good grapes will thrive, but unlike the Pinon, which is black and small, and consequently lacking in beauty for the table. The table grape of France is of exceeding beauty, but only of second quality.

Some of thriving disposition, and others of moderate means will be glad to know that the buds to be taken at fall pruning from the Iona vines planted last spring, are now selling for the price of the vines, and that for cuttings along the Iona and Israella will for many years be a very profitable investment.

A new edition (5th) of the 2-page pamphlet, fully treating the matters here briefly touched upon, accompanied with price lists, and answering in a clear and satisfactory manner most of the questions, that those who contemplate purchasing desire to ask, is now ready and will be sent for two cent stamp. C. W. GRANT, Iona, (near Peekskill,) Westchester Co., N. Y.

"No matter with how much flourish and puffing other magazines are thrust before the public, the high-toned Home Magazine continues a favorite as of old, and increases in worth every month."—Waterville (N. Y.) Times.

ARTHUR'S HOME MAGAZINE For 1866.

It is with pleasure we are able to announce a much larger circulation for the Home Magazine during the year 1865 than it has ever before attained; and also a more hearty expressed approval, by subscribers and the press, of its tone and character. During the next year we shall bring into its pages a still MORE VIGOROUS LITERARY LIFE—A HIGH-LEVEL EXCELLENCE—A BROADER SPIRIT, and a more earnest advocacy of ALL THINGS Pure and Noble.

As heretofore, our aim will be to produce A Magazine for American Homes, not too didactic and heavy, but cheerful, animated, and social—a friend, dropping in upon us, with something always pleasant and profitable to say.

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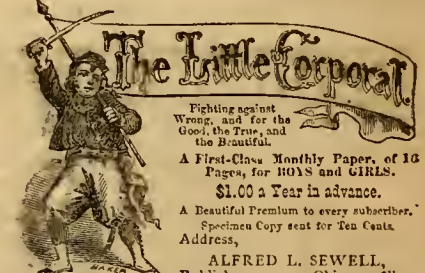
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Contents for December, 1865.

Apple Sauce Always Ready.....	352
Barn Door Fastening.....	Illustrated. 369
Bees—Apiary in December.....	362
Boots and Shoes—Greasing.....	352
Boys and Girls' Columns: The Last Day of the Year —Signaling in the Army—Lively Out-door Games— Holiday In-door Games—Problems and Puzzles— The Christmas Tree—Force of Habit—Patting with an Old Friend—Premiums for Boys and Girls— Puzzles for the Tongue.....	5 Illustrations. 352-354
Braising Meat.....	352
Bread—Pictorial History.....	Illustrated. 376
Carving—Instructions in.....	Illustrated. 381
Chestnuts Improved by Cultivation.....	Illustrated. 377
Codfish—How to Cook.....	352
Coleus Verschaffeltii.....	377
Corn Bread—Good.....	351
Corn Stalks—Cutting for Fodder.....	371
Education Good Enough for Farmers.....	374
Farm Work in December.....	361
Fish Markets of New York.....	370
Flower Garden and Lawn in December.....	362
Fountains at Cazenovia.....	Illustrated. 373
Fruit Garden in December.....	362
Garden—Kitchen in December.....	362
Genesee Farmer United with this Journal.....	364
Grape Vines—Method of Grafting.....	379
Grapes—Cold Grapery in December.....	362
Grapes—Knox's Experience.....	378
Grapes—Notes on Culture, etc.....	379
Green and Hot-Houses in December.....	370
Hogs—Care of in Winter.....	370
Jack Screws—Various Uses.....	Illustrated. 371
Knox's Fruit Farm and Grape Festival.....	378
Market Report and Commercial Notes.....	363
Movements of Plants.....	Illustrated. 350
Mutton the Meat for the Million.....	369
Orchard and Nursery in December.....	362
Park with Five Acres of Land.....	374
Potato Culture—Experiments.....	375
Premiums for 1865.....	363
Premiums—Special of Prize Pigs, etc.....	363
Publishers' Special Notice to Subscribers.....	368
Pudding Sauce—Cheap and Good.....	352
Pulley—Uses on the Farm.....	Illustrated. 373
Rye—Sowing Late in the Season.....	371
Sheep Racks and Foddering.....	3 Illustrations. 369
Sheep—Selection for Breeding.....	370
Snow—Tools for Clearing Paths.....	4 Illustrations. 372
Solanum—Climbing.....	Illustrated. 350
Stable Forks—Wooden.....	Illustrated. 369
Strawberry—Notes on the "Agriculturist".....	358
Tapioca—How Prepared for Food.....	Illustrated. 381
Timber—How to Fell.....	Illustrated. 372
Trailing Arbutus (<i>Epigaea repens</i>).....	Illustrated. 377
Tuberose—Cultivation.....	3 Illustrations. 378
Unseasonable Growth in Trees, etc.....	375
Venus's Fly Trap.....	Illustrated. 350
Warmth in Houses.....	382
Water—Useful and Ornamental.....	Illustrated. 373
Western Agriculture.....	374
Wood—Holder for Splitting.....	Illustrated. 372

INDEX TO "BASKET," OR SHORTER ARTICLES.

Animal Traps.....	365
Basket, Talk about.....	364
Book, "Great West".....	367
Book, S. S. Lessons.....	367
Book, Zoology.....	367
Cabbages, Trouble with.....	367
Catalogues Received.....	365
Canker Worms.....	366
Cider, Keeping Sweet.....	367
Clergymen, Hint to.....	364
Colts, Feeding.....	396
Cow, Alderney.....	366
Cows, Stripping.....	366
Granberries, Fine.....	367
Death of Prof. Lindley.....	365
Draining Hard Pan.....	366
Fair, Am. Institute.....	366
Feeding too Heavy.....	366
Fence Posts, Charring.....	367
Fence Questions.....	365
Fruit in Minnesota.....	365
Gas Line.....	366
Gift Repeated.....	364
Glanders in Horses.....	364
Golden Censer.....	365
Hens, Sickly.....	366
Horses, Slabbering.....	366
Inquiries, Sundry.....	367
Lambs, Early.....	366
Laurel Poisoning.....	366
Leaky Roofs.....	367
Marl for Fruit Trees.....	367
Medicines, Quack.....	367
Mulberry, Everbearing.....	365
Musical Instruments.....	365
Paper, Price of.....	364

Pom. Society, Ohio.....	365
P. O. Money Orders.....	367
Potatoes, Exhibition.....	365
Poultry, Marketing.....	365
Protecting Plants.....	365
Quinces, Fine.....	367
Receipts not Given.....	364
Rev. Edward Wilson.....	367
Rust, Removing.....	367
Selling Produce.....	366
Songs of Seven.....	365
Southern Region.....	366
Squashes, Large.....	367
Squashes, Mixing.....	367
Stanchions vs. Chains.....	366
Steel Plows, Care of.....	367
Strawberries, Late.....	365
Tile Machines.....	366
Tan Bark, etc.....	366
Turnips for Horses.....	365
Veterinary College.....	365
Vineyard.....	365
Violet, Ever-blooming.....	367
Volumes Bound.....	364
Wine Making.....	365
Woolens, High Price.....	367

Notes and Suggestions for the Month.

This is the month of cold when it is most piercing, of winds when they are harshest, of hunger when it is most distressing—of firesides when most cheerful, of snug warm houses when most agreeable, and of good fare when it is most satisfactory. If the cattle of any well-to-do farmer are shivering under the lea of the corn-stack, if his sheep are shrinking away from the gale in the fence corners, and if the youngstock are gnawing frozen sods or cornstalks for a living, we would be glad to have their lowings and bleatings so constantly in his ears that he could take no comfort of his own pleasant things till he had made his stock as comfortable as possible. The President invites us to solemnize the seventh day of this month in thanksgiving to God for all his mercies and blessings, both private and national. Let us do so heartily and practically. Man shows his thankfulness to the All-giver for His bounties, by thoughtful care for the comfort of His creatures. What are thanksgivings of the lips but solemn mockeries, if unaccompanied by deeds of kindness! The lessons of the happy Christmas time, and of the closing year have their application in the farmhouse and in the stock-yard, as well as in the church and in the class room.

Accounts.—Devote sufficient time to a thorough going over of all accounts, and begin the new year with a clear statement of your debts and dues.

Animals.—In our latitude, the present is a trying month for animals of all kinds. In many places they are passing from grass to fodder. Every animal, from the work horses down to late chickens, should receive special attention. What every animal needs at this season of the year is, enough to eat and protection from storms. When cold weather first comes on, young animals in particular often suffer much more than after their systems have become used to it.

Ashes.—Leached or unleached, wood, or coal (if free from slate and clinker,) are excellent for top-dressing lawns, meadows and pastures; and the more there are scattered around fruit trees of all kinds, the better will be the fruit. Instead of collecting them in heaps, scatter where they are needed, as soon as convenient quantities accumulate. Ashes heaped up against young trees will often destroy the bark and kill them.

Barns.—If not already attended to, delay not to put every building in order for winter. Loose

shingles and boards should be nailed; the large cracks between ridge boards need closing up with long nails; and the siding should sometimes be taken off, jointed and replaced, to exclude snow and keep rain from rotting the timbers. Wherever the ground descends towards the foundation walls, a few loads of earth should be hauled in, to turn the surface water off before the ground freezes, as the expansion of the earth will often crowd walls inwards, after freezing a few times. If the ground descends from the wall, the water will be carried away and the expansion will be less forcible against the wall. Make a little mortar and stop all crevices, not only in the walls, but between the sills and foundation, to exclude cold air from the apartments of animals.

Barn-yards.—Before the ground freezes, scrape all the fine manure into heaps and haul it to meadows, or pastures for a top-dressing. It will act as a mulch to the grass roots. Clean out all surface ditches near the yards, and cut shallow channels where they are needed to prevent surface water from flowing into any part of the yard. Remove all stones and sticks liable to be covered with manure and hinder pitching.

Beans.—Dry and shell all that are unripe before freezing, as they will make good feed for sheep; freezing before they are ripe, spoils them.

Bees.—Bullocks or dry cows should be confined a large proportion of the time in close yards, or spacious stalls, well littered. Feed with hay, corn meal and some pumpkins, or roots. Better feed bountifully and fatten rapidly, than to give a small allowance and fatten slowly. Bear in mind that it is estimated to cost to maintain the animal heat of a bullock during one cold night in the open air, not less than one pound of the best meat.

Calves and Colts.—Do not fail to provide comfortable winter quarters for these young animals, lest they lose flesh, run down, get off their feed, and become what is called spring poor.

Cows.—Beef is scarce and the price high, and for this reason we consider it bad policy to sell good cows for beef, as many people did last season, because they commanded a high price. Better hold on to good cows for breeding.

Corn.—Spread all soft ears on a floor in an airy place, where it will shortly be dry enough to grind for feed. Save best ears for seed.

Drains.—Clear the outlets of under-drains by shoveling out all sediment that will obstruct the flow of water from the drains during winter, and protect them against being entered by mice.

Eaves Troughs.—Before freezing weather, remove leaves and all other sediment which settle in the eaves troughs. When cistern water is not used for drink, for culinary purposes, or for stock, it is a good plan to paint the troughs over with gas or coal tar, applied hot after boiling it an hour; it is a good preservative.

Fodder.—Vary the fodder of all kinds of stock as much as possible within reasonable limits. It is better to change it on different days, or even at different meals, than to make too great mixtures. Hay and straw may be mixed; ground grains, bran, oil meal, etc., may be mixed with hay, straw, stalks or roots. Feed different kinds of roots separately.

Fuel.—Begin early to look out for next season's supply from the wood-lot. It is poor economy to burn green wood; better to let it stand in a hot place, or lie in the stove oven to dry well. Water put upon the fire only tends to put it out.

Grain Fields.—It is a rare thing when grain fields are not more or less damaged by "feeding off" in the autumn. Sometimes it seems useful, but is risky.

Horses.—Keep brood mares in loose boxes, 10 feet square, and when possible give each one a sunny yard to go to at pleasure in all weathers, when it is not too slippery. Be careful of their slipping on the ice. Keep all work horses well shod and sharp caulked, but do not let horses play together if shod.

Implements.—If there is no room in the sheds for implements, pack them together and improvise a roof of boards tacked together; by no means leave them exposed to the weather to be rotted.

Manure.—Save every particle of liquid manure. If short of litter in the stables, use soil or muck as an absorbent. See that no water runs into the barnyard. Keep the manure in one or more compact, well formed heaps, so placed that the leachings may be pumped over it.

Meadows.—Avoid feeding off the meadows too close, let no heavy animals go on the grass land at all in soft weather, when they will poach up and injure the sod. Turn water from the high-ways or uplands upon the meadows and pastures, where it will deposit much manurial matter.

Oxen.—Keep them in sheltered sheds, or better, in good warm stables, well fed and carded frequently. Spring poor oxen, or young cattle, are a disgrace to any farmer. Do not neglect shoeing in frozen weather.

Poultry.—Fill a box before the snow covers the ground, with a bushel or two of clean gravel, but if this cannot be found, pound up some large stones, best sand stones. Give pounded bones and other animal food with the grain, and see that they all have sheltered roosting places. If in warm houses well lighted, they will lay if well fed.

Sheep.—December is the most important month in the year, in this latitude, to effect anything in improving sheep. Read remarks on another page. Good protection from storms, and regular feeding are most important. It is better to commence now feeding lambs and all kinds of sheep a little grain daily, than to wait until they begin to lose flesh.

Swine.—Keep fattening hogs in comfortable apartments and feed regularly. So long as swine will increase in weight half of one per cent. daily, they are doing well. When they eat little and do not increase in weight, the sooner they are slaughtered the better. Platform scales, with an extra platform for a hog to stand on, are convenient for weighing fattening swine, to know how fast they gain.

Water.—See that water does not stand on winter grain, nor for a long time on grass ground. A few hours' work with spade and shovel will often release numerous small ponds, which would materially injure vegetation. Surface water frequently settles and remains a long time in low places near fruit trees, vines, or bushes, to their great injury.

Work in the Orchard and Nursery.

In December the Calendar is usually much abbreviated, owing to the crowd of other matter at the close of the year. It is usually such an uncertain month that either nearly nothing can be done in the way of out-door work, or it is like a continuation of November, in which case the operations noted in the Calendar for that month may be performed. Every day's work that can be done now in preparing the soil, draining, staking out the ground, and even making the holes for planting trees is worth putting in, as spring work is always

crowded, no matter how favorable the season may be for operating, or how much help we may have.

Cions.—Cut from vigorous growth of the past season, tie each sort in a bundle, with a plain label, and bury in the cellar, or put them in a box of sandy loam, in some place where they will not dry.

Fruit.—Keep at as low a temperature as possible without freezing. The more uniformly it can be maintained at 34° or 36°, the longer and better it will keep. Send choice apples and pears to market just before the holidays, as the prices are then high.

Manure.—Continue to apply to bearing trees a liberal dressing, as recommended in October.

Mice and Rabbits.—Mice do the most mischief to young trees when they can work under the shelter of rubbish or light snow. Keep litter away from contact with the trunk, and pack the snow solid with the foot. Among the many things proposed to keep rabbits away, blood seems to be the most successful. Rubbing the trunks with liver or bloody meat makes the bark offensive to them.

Nursery.—Stocks for root-grafting may still be taken up in mild weather, when the roots will not be frozen. Make surface drains to carry water away from seedlings and other young trees. Look out for stakes and see that every row can be identified by some means. See that all heeled-in stock is sufficiently covered and drained. Prepare stakes, tags, and all packing appliances that will be needed when spring trade opens. Head back and shape young trees in mild weather, taking care not to cut so close to a bud that it will be killed.

Pruning.—Such pruning as can be done with a knife may be attended to at any convenient time.

Kitchen Garden.—A good gardener, like the sailor, keeps a "bright look out ahead." He who shuts up his garden gate at the first hard frost and does no more work until spring opens, is always behind hand. There are frequently, even in December, many days in which the plow and spade may be profitably kept at work in preparing land for spring planting. Clean up all neglected rubbish and save so much time in spring. At odd times lay in a stock of all kinds of stakes, poles and brush that are likely to be needed. See that fences are tight and that gates will shut and stay so.

Celery.—Protect the tops by means of leaves or litter. For a small quantity a shelter of old boards may be put over, with straw or marsh hay beneath.

Cold Frames.—The chief point in successful wintering of cabbage and other plants, is to give all the ventilation possible, without exposing the plants to too great cold. Mice are often destructive and must be trapped or poisoned. Have mats or shutters at hand to use in severe weather.

Compost.—Winter is the great season for accumulating a supply of fertilizers. The piggery, horse and cow stables, and privy, are all to be made the most of. Muck, or in lack of that, black earth should be at hand to absorb all liquids. Look about for other supplies, and see what material may be had from breweries, distilleries, slaughter houses, and various manufactories, not forgetting street sweepings. There is in every neighborhood something going to waste that the soil should have.

Hot-beds.—One who is handy with tools may make, paint, and glaze his own sash and prepare frames.

Seeds.—Have the home raised stock well cared for. Clean out all of doubtful quality or identity. Ascertain what is to be bought and be ready to purchase as soon as seedsmen offer their stock.

Tools.—Repair while there is leisure. If there is no place set apart for tools, make a room in the barn or some building and have a place for everything, so that the absence of any implement can be detected at a glance. Grease iron and steel tools.

Fruit Garden.—General work of preparation may be done, as directed under Orchard and Nursery. If the pruning of currants and gooseberries was not done last month, do it now. If it is desired to use the cuttings of the new wood for propagation, tie them in bundles and treat them as

directed last month. If dwarf trees are liable to be injured from accumulations of snow in the branches, shake it out before it gets compact. Borers may be probed out by means of a wire. Manure trees and shrubs, as directed under orchard. Grape vines should have been pruned last month, but it may be done now in mild weather. We have heretofore given the method to be followed in certain systems of training, and presume that all who have many vines, have some reliable treatise upon this subject. If the wood removed in trimming is to be used for propagation, keep it where it will not dry. As soon as the ground is slightly frozen, give strawberry plants a covering of straw or leaves.

Flower Garden and Lawn.—If proper winter protection has been given and all rubbish cleared up, there will be but little out of door work to be done. Hardy climbing roses will come out all the better in the spring, if they can be detached from their trellises and laid upon the ground. The perpetuals and less hardy sorts may be bent down and covered with earth. Lawns may have a good top-dressing of compost. Save all the leaves for hot-bed and other uses. If snow collects in evergreens and clumps of shrubbery, shake it off before it becomes icy. Much may be done in the way of planning improvements to be carried out when the weather permits. Materials for rustic work may be brought from the woods, and seats, vases, etc., may be made up from seasoned material.

Green and Hot-Houses.—Temperature, moisture and ventilation are the three essentials to be regarded. The amount of heat will depend upon the kind of plants, but in any case sudden changes are to be avoided. In green-houses, where plants are merely kept over, they will do well if the temperature is not allowed to sink below 40°, but there are few things that flower well if kept less than 60°.

Bulbs.—Bring the pots forward, a few at a time, gradually to the warmth and light. Remove the flower stalk as soon as out or bloom, but allow the leaves to remain to perfect the bulb.

Camellias.—Use the syringe freely. A dry, warm atmosphere causes the buds to drop. Those in dwelling houses need to have the foliage sponged.

Carnations.—Keep rather cool, with plenty of light, and do not over-water.

Cacti.—Most of these need rest and but little water, except the Epiphyllums, which are winter blooming, need warmth and sufficient water.

Fuchsias.—Keep the young plants growing rapidly, and train to good shape by pinching.

Pelargoniums.—These to grow and flower well, need to be as near as possible to the glass. Judicious pruning and tying will make shapely specimens.

Cold Grapery.—Prune vines and prepare them for their winter sleep. Chorlton, in his Grape-Grower's Guide, recommends covering the canes with the following mixture, to destroy larvæ and eggs of insects: Whale-oil soap $\frac{1}{2}$ lb., sulphur 4 lbs., tobacco $\frac{1}{4}$ lb., powdered nux vomica 1 oz. Pour over these 1 gallon of boiling water and stir well together, and apply with a paint brush. To lay the vine down, tie it to the wire at about two feet from the ground, and then bend the portion above this point to a horizontal position, cover about three inches thick with straw and tie it on, or put up boards in front of the vines and cover with forest leaves. Keep the house cool by opening ventilators on clear days; close at night, and on cloudy and severe days.

Apiary in December.—Prepared by M. Quinby, by request.—When all the fine days, in which the bees can fly, have passed, it is time to put them into winter quarters. Those who have but few, and cannot afford to prepare special depositories, should select only the best stocks. Any that are deficient in supplies and numbers of bees, had better be taken up even now, than consume

honey a long time, and then die. Second and third race stocks can only be wintered successfully in a room containing near one hundred hives. Strong stocks generate heat, warm the whole room, and benefit the weak ones. A few stocks may be safely buried in the ground, in a dry place, the hives surrounded by straw to absorb all the moisture. Good stocks in the open air, in hives properly ventilated and protected, are quite sure to pass the winter safely. Probably there is no way that bees can be wintered so comfortably and with so little superintendence as on the summer stand, in the straw hive, already described in the American Agriculturist for October, 1863, page 301. Those who have prepared their hives as recommended, will find the early part of this month a good time to transfer bees to the new hives.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the American Agriculturist, show at a glance the transactions for a month ending November 17th, with other interesting comparative figures.

1. TRANSACTIONS AT THE NEW-YORK MARKETS. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 27 days this mth, 414,000 617,000 3,163,000 137,000 1,329,000 1,175,000 24 days last mth, 357,000 441,000 2,719,000 61,000 636,000 957,000

SALES. Flour, Wheat, Corn, Rye, Barley. 27 days this month, 317,000 1,616,000 2,629,000 141,000 888,000 24 days last month, 367,000 1,789,000 1,984,000 63,000 385,000

2. Comparison with same period at this time last year. RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats. 27 days 1865, 414,000 617,000 3,163,000 137,000 1,329,000 1,175,000 27 days 1864, 481,000 1,287,000 988,000 239,000 861,000 2,534,000

SALES. Flour, Wheat, Corn, Rye, Barley. 27 days 1865, 317,000 1,616,000 2,629,000 141,000 888,000 27 days 1864, 458,000 1,411,000 1,732,000 174,500 613,000

3. Exports from New-York, January 1 to Nov. 17. 1865, 1,214,378 1,947,424 3,276,163 170,691 69,631 1864, 1,764,342 11,982,576 8,146,693 453 39,643 1863, 2,278,535 14,199,528 7,496,825 415,249 123,996 1862, 2,683,086 23,216,517 10,542,556 1,888,790 144,165

CURRENT WHOLESALE PRICES. Oct. 16, Nov. 1. FLOUR—Super to Extra State \$7.90 @ 8.90 \$7.70 @ 8.40 SHEET TO EXTRA SOUTHERN 9.60 @ 16.00 9.50 @ 16.25 EXTRA WESTERN 8.50 @ 16.00 8.20 @ 16.00 EXTRA GENESSEE 9.00 @ 12.75 8.50 @ 12.25 SUPERFINE WESTERN 7.90 @ 8.40 7.50 @ 8.00 RYE FLOUR 6.25 @ 7.25 6.25 @ 7.00 CORN MEAL 4.75 @ 5.25 4.40 @ 4.85 WHEAT—All kinds of White 2.40 @ 2.85 2.45 @ 2.90 All kinds of Red and Amber 1.72 @ 2.42 1.70 @ 2.45 CORN—Yellow 92 @ 95 1.00 @ 1.05 Mixed 78 @ 92 90 @ 97 OATS—Western 58 @ 62 60 @ 62 State 63 @ 63 61 @ 62 RYE 1.18 @ 1.18 1.15 @ 1.20 BARLEY 1.60 @ 1.25 1.10 @ 1.28 COTTON—Middleline 58 @ 60 51 @ 53 HOPS—Crop of 1864 10 @ 45 10 @ 45 FEATHERS—Live Geese 88 @ 1.00 90 @ 95 SEED—Clover 13 @ 15 13 @ 14 Timothy 3.75 @ 4.25 3.30 @ 3.90 Flax 2.30 @ 3.00 2.85 @ 3.19 STEAR—Brown 50 @ 55 45 @ 50 MOLASSES, Cuba 18 @ 22 18 @ 21 COFFEE—Rio 6 @ 20 6 @ 30 TOBACCO, Kentucky, &c. 7 @ 20 7 @ 30 Seed Leaf 58 @ 80 55 @ 82 WOOL—Domestic Fleece 58 @ 67 45 @ 63 Domestic, pulled 18 @ 46 25 @ 43 California, unwashed 14 @ 14 14 1/2 @ 14 1/2 TALLOW 50 @ 55 50 @ 53 OIL CAKE—Bon ton 34.75 @ 35.87 31.75 @ 33.00 Pork—Mess, 3/4 barrel 30.00 @ 30.50 — @ 28.50 BEEF—Plain mess, 10.50 @ 11.50 11.00 @ 14.00 LARD, in barrels 21 @ 23 21 @ 23 1/2 BUTTER—Western 32 @ 42 30 @ 42 State 40 @ 55 38 @ 45 CHEESE 14 @ 18 14 @ 19 BEANS—1/2 bushel 1.50 @ 2.25 1.50 @ 1.75 PEAS—Canada 1.55 @ 1.40 1.30 @ 1.22 EGGS—Fresh 38 @ 36 37 @ 41 POULTRY—Fowls 18 @ 21 16 @ 18 Turkeys 19 @ 20 19 @ 20 POTATOES—Mercers 2.25 @ 2.50 2.50 @ 3.00 Peach Blows, 3/4 barrel 2.00 @ 2.25 2.35 @ 2.50 Buckeyes—New, 3/4 barrel 1.50 @ 1.75 2.50 @ 3.00 APPLES—3/4 barrel 3.00 @ 6.50 2.50 @ 6.00

Gold has advanced to 147 1/2 (Nov 17) or 2 1/2 per cent, since the date of our last (Oct. 16), chiefly under an active demand for coin to pay Custom duties on the heavy imports of foreign goods. Breadstuffs have been unsettled in price during the month. The demand has been more active, partly for export. Flour has been freely offered and has declined, closing in favor of buyers. Sound lots of Grain, especially of Wheat, Corn, and Oats, have been in very moderate supply, and held with much firmness. Unsound lots have been quite plenty and much pressed. The bulk of the current receipts of Corn and Oats is heated and damaged. There has been less disposition to speculate, in view of the stringency in money. Most of the recent purchases of Flour and Wheat on speculation have been made on Western account. The stocks on hand here are fair, but not large for the season, and holders do not seem to be very eager to realize. Cotton has been much more abundant and

prices have declined materially, closing, however, with rather more steadiness, under an improved export demand. Provisions have been more freely dealt in at irregular prices. Hog products close heavily; Beef, Butter, and Cheese firmly. Hay, Hops, and Tobacco have been in fair demand at steady rates. Wool has been in less demand, and except for the choicest grades, which have been scarce and firm, prices have tended downward, under efforts to realize on accumulating supplies.

New York Live Stock Markets.— BEEF CATTLE.—Average supply per week for the past month has been 6,866 head; for the previous month, 6,427; same month last year, 6,559. The quality has been very variable, scarcely an average. Prices of same grades have not materially changed. The general selling prices for extra grades, 18 @ 18 1/2 c per lb., for estimated dressed weight; medium to prime, 15 @ 17 1/2 c; poor to common, 8 @ 14 c. At last quotations, a very few choice lots sold as high as 18 1/2 @ 20 c per lb., net. MILK COWS.—Average weekly supply, 109. The demand has been active and prices high; extra milkers, \$100 @ \$130; ordinary to medium, \$60 @ \$90; poor to common, \$40 @ \$55. VEAL CALVES.—Average supply, 1,132 per week. Latest prices, 11 @ 14 c per lb., live weight, for medium grades upward. Inferior qualities, 6 @ 9 c. SHEEP AND LAMBS.—Receipts large, the weekly average amounting to 25,883. The quality has improved, and prices have advanced a little, standing now at 7 1/2 @ 8 1/2 c per lb., live weight. Lambs of fair to extra quality, 8 @ 11 c per lb. LIVE HOGS.—Weekly receipts, 16,092. Latest prices for corn-fed, 13 @ 13 1/2 c per lb., live weight.

Excellent Premiums.

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In the next column we offer a fine list of Premium articles to those who will take the trouble to collect and forward clubs of subscribers. We know every article is good and desirable. Thousands of persons may each obtain one or more of these premiums with very little trouble. Men and Women, Postmasters and their Clerks, Agricultural Societies, Soldiers, Clergymen, Teachers, Widows, Farmers, Mechanics, Storekeepers, Boys, Girls, indeed almost every class may each gather names of subscribers enough to secure some one or more of the desirable articles in the list of things offered. The supply of each of these premium articles is abundant enough to give all who want them a chance, and plenty of time will be given to fill up a list, though now is the best time to begin making up a club.

The Table on next column gives only the list of articles, their value, and the number of subscribers required for each, at the regular subscription rate \$1.50 a year, or at the lowest club rate when large clubs are made up (\$1). But let every one thinking of securing a premium.

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To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designated for a premium list be so marked WHEN sent in. (Such names are credited to the sender in a separate book, as fast as received—ready for instant reference.)

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

The extra copy, usually offered to clubs of 10 or 20, will not be furnished when a premium is given.

Table of Premiums and Terms, For Volume 25. Open to all—No Competition.

Table with 4 columns: Name of Premium Article, Price of Premiums, Names at \$1.00 each, Names at \$1.00 each. 1—Good Books—See terms below... 2—Garden Seeds for a Family (30 kinds)... 3—Flower Seeds for a Family (100 kinds)... 4—Nursery Stock (any kinds desired)... 5—Iona Grape Vines (12 of No. 1)... 6—Concord Grape Vines (100 of No. 1)... 7—Strawberry Plants (100 of good kinds)... 8—Japan Lilies (12 Bulbs)... 9—Downing's Landscape Gardening... 10—American Cyclopaedia... 11—Mitchell's New General Atlas... 12—Worcester's Great Illustrated Dictionary... 13—Any back Volume Agriculturist... 14—Any Two back Volumes do... 15—Any Three do do do... 16—Any Four do do do... 17—Any Five do do do... 18—Any Six do do do... 19—Any Seven do do do... 20—Any Eight do do do... 21—Vols. XVI to XXIV do... 22—Stump Speech—Steel Plate Colored... 23—The County Election do do... 24—Fruit in the Woods do do... 25—Morton's best No. 5 Gold Pen, Silver Case... 26—Case of Drawing Instruments... 27—Lady's Rosewood Writing Desk... 28—Gentleman's do do do... 29—Best Family Clothes Wringer... 30—Daly's Washing Machine... 31—Tea Set (Best Silver Plated)... 32—Sewing Machine (Wheeler & Wilson)... 33—Sewing Machine (Wileox & Gibbs)... 34—Sewing Machine for Tailor Work... 35—Melodeon (Best Four Octave)... 36—Melodeon (Best Five Octave)... 37—Piano, 7 Octave (Steinway & Sons)... 38—Barometer (Woodruff's Mercurial)... 39—Barometer (Woodruff's Mercurial)... 40—The Aquarius, or Water Thrower... 41—Buckeye Mowing Machine No. 2... 42—Allen's Patent Cylinder Plow...

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 8, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

Premium 1.—Good Books.—Any person sending a club of 25 or more subscribers, may select Books from the List of our publications accompanying this month's paper, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 30 cents for each name sent at the (ten) club price of \$1.30 each; or to the amount of 60 cents for each name at \$1.50. This offer extends only to clubs of 25 or more names. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use. Several Farmers' Clubs have done so.

For Description of the other Premiums, see October number, and especially a large, full Descriptive Sheet, which will be forwarded free to any one desiring to canvass for a premium.

Three Special Premiums.

We did not intend to make any additions to our annual list of premiums for 1866, but here comes a generous offer which we cannot refuse. Messrs. A. P. BOYER & Co., of Gum Tree, Chester Co., Penn., write us that "they so highly esteem the American Agriculturist they want to do something to increase its circulation among farmers." They offer three separate premiums at their own expense, viz: First. A pair of their first choice PREMIUM CHESTER WHITE PIGS (value \$50), carefully boxed with trough and feed, and shipped free of charge. The pigs will not be akin, and they came from stocks that have taken State and United States Premiums.—Second. ONE PIG, either Boar or Sow, of the same stock, and shipped as above; (Value \$25).—Third. A pair of splendid pure WHITE GUINEA FOWLS (value \$10), recommended as good layers, and easily raised. Mr. Boyer says.

"We have had them to lay nearly all the time regularly." The above premiums will be given as follows: The Pair of Pigs to the first applicant sending 80 subscribers at \$1.50 each.—The single pig to the first applicant sending 40 subscribers at \$1.50 each.—The Guinea Fowls to the first applicant sending 18 subscribers at \$1.50 each. In this special case, as there is only one of each premium, we are obliged to limit the offer to the first applicant presenting the subscribers and money.

Specimen Numbers of the *Agriculturist*. Cards, and Showbills, as may be needed, will be supplied to Canvassers. These should be used carefully and economically, as each copy of the paper is costly, besides the postage (2c.), which must be pre-paid here. A large neat Showbill will be forwarded to any one who can use or post it up advantageously.

CLUBS can at any time be increased, by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will of course be sent to added names.

Important New Arrangement—A Valuable Addition to the American Agriculturist—The Genesee Farmer.

It is the constant aim of the publishers of this journal to secure the best editorial aid in the country, withholding no expense that will increase the value of its columns. Although one editor could easily fill each successive number with excellent reading matter, yet the policy pursued is to have several competent, practical men engaged in furnishing information gathered from their own knowledge and experience, and in examining, pruning and condensing into the reading columns the best materials collected from other sources. These columns thus contain the result of a large amount of work. Not unfrequently a few lines give what has cost much labor and thought—the gist of what otherwise might fill a page. On the other hand, many hours of investigation often cause the rejection of matter, which without this care might have been inserted. Indeed the *Agriculturist* is perhaps as valuable and as much distinguished for what it leaves out, as for what it prints.

The editorial force connected with the *Agriculturist* is a very large one, consisting of gentlemen of widely recognized scientific and practical ability, and sterling common sense. They have been repeatedly named in our columns, and with them and their labors we have been more than satisfied. That a discerning public has appreciated our efforts, and theirs, is shown by the circulation of 100,000 copies of the *American Agriculturist*. Nevertheless, we are ever ready to improve, to enlarge our facilities, to increase our force, whenever and wherever we can do so to the advantage of our readers.

We have for years past admired the character of the "Genesee Farmer," edited and published by JOSEPH HARRIS, including the editor's "Walks and Talks on the Farm," for Mr. Harris not only wields the pen of a ready writer, but holds the plow and drives and thrives, on his 300-acre farm, six miles west of Rochester; and we have long sought to secure something of the same practical, excellent character for these columns, and for the benefit of our half a million readers. Well, it is done. We are now to have Mr. HARRIS himself as an associate editor, and our readers will enjoy many a "Walk and Talk" with him in the future, for he will remain upon the farm, and being released from the severe labors of a publisher, he will be able to do even more effective service for the public, through the *Agriculturist*, than he has hitherto had time to accomplish in the *Genesee Farmer*.

Hearing Mr. HARRIS express a desire to find some one competent to relieve him of all publishing work, and thus leave him more time for his farm, and for gathering information, and preparing it for the public, we made him a liberal offer for the entire establishment of the *Genesee Farmer*, and for his editorial labors upon the *Agriculturist*. Willing to enter upon a still wider field, and yet be able to provide well for his old patrons, he accepted our proposition in full, and the *Genesee Farmer* will now be united with the *Agriculturist*, which will thus contain the chief excellence of both journals.

We doubt not that all Mr. HARRIS' readers will gladly accompany him to his new field of labor, where in addition to enjoying his writings much as heretofore, they will also meet several other "good men and true," who will spare no effort to interest and to instruct them.

Mr. Harris has provided to have the *Agriculturist* sent to such of his subscribers as have paid in advance, for the full term paid for, without any extra charge to them; and we will cheerfully welcome to the great *Agriculturist Family*, ALL the readers of the *Farmer*. As

our paper is twice the size of the *Farmer*, and more extensively prepared and illustrated, the terms are necessarily a trifle higher, though still kept very low, owing to the large circulation.

The Rural Annual, a valuable work issued for ten years past in connection with the *Genesee Farmer*, will hereafter be published at the *Agriculturist* office. We have the stereotype plates of the *Farmer*, and of the *Annual*, together with a supply of the past volumes of each, the former bound and unbound, which will be furnished at the usual rates.

ORANGE JUDD & CO.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Yes!—To several Inquirers. Clubs of subscribers may be increased at the same rates—or better. Thus, for example, any one sending 10 subscribers for \$12, may afterward add 10 names more for \$8, that is, 20 subscribers for \$20, and so of other club terms. Members of the same club may receive the paper at different Post-Offices and in different Towns. In Premium clubs are included all the names sent by the same person at different times, for the same volume of the paper, if each list of names is marked "for premium," when sent in.

Receipts for Subscriptions Not Given.—It would be an immense work to send receipts for a hundred thousand subscribers. The paper is only sent so long as subscribed for, and its receipt is an acknowledgment that it is paid for. Those subscribing at the office desk, will receive receipts when desired. Any one sending a subscription by mail, if particularly desiring it, can have a receipt returned, by enclosing a ready directed post-paid envelope, to forward the receipt in. A three-cent letter stamp is required on such envelopes.

A Hint to Clergymen.—In three successive Mondays in October, a pastor of a church in a small town on Staten Island, made up a full club for our Tenth Premium, and received as his reward the sixteen large volumes of the *Cyclopedia*—an invaluable addition to his library. In about the same time a German Pastor of a church near Buffalo, N. Y., made up a full list for Premium 36, and received a five-octave Melodeon. So, also, another clergyman in Oswego Co., N. Y., completed lists for both of the above premiums, and received both *Cyclopedia* and Melodeon. Other Ministers in different parts of the country are rapidly forwarding subscribers for different premiums. We suppose in each of these cases the members of their churches willingly aid in the work, not only for the benefit they themselves will derive from the reading of the *Agriculturist*, but also to help their Pastors in securing articles they need and desire, or to obtain instruments for their Churches, Sabbath Schools, or Families. A multitude of other clergymen may do the same thing successfully. It is an easy way to secure desired articles, and is useful to all parties concerned. Young Men and Boys have already received many different articles from our premium list, including quite a number of fine Gold Pens, which will last a long time if no accident happens to them. The securing of the few subscribers necessary to obtain these prizes, is an easy work.

A Talk About the "Basket."—To many the "basket" columns are the most interesting part of the paper. As we look back through the file for the year, we feel no little satisfaction at contemplating the great number of concise bits of information they contain, upon a wide range of topics, and we feel that a word of thanks is due to those who have contributed items, as well as to the larger class, whose questions have called forth items. But what shall we say to the writers of a large number of unanswered basket letters? If we thank them, too, it perhaps will not satisfy them. We sometimes wish the paper was all "basket," and we could then please everybody. As the space is limited, some are necessarily left out and they must take it good naturedly. There are some hints we would ask our correspondents to observe: If business matters, and communications intended for the editors are in the same letter, put them on separate pieces of paper, or on different halves of the same sheet, so that they can be torn apart. All letters wholly or in part on business, go first to the clerks' desk, and it is often the case that before they go through the hands of subscription clerks, prem-

ium clerks, etc., the other matter gets to the editors too late to be of use. Recollect that the paper is made up about the 10th of the previous month, and a letter written on the 15th of December can not be answered "without fail" in the January number. Do not crowd too many questions or items on quite different subjects, into one letter. We have several different editorial departments, and if you write about fruits, flowers, pigs, plows, poultry and pickles, all on one sheet, please separate the subjects by a space, so that the manuscript may be divided up. If your letter is not answered by name, do not think it is unnoticed. Articles are frequently written to meet a number of different inquirers in the same direction, and answers are often given in the "Notes and Suggestions for the month," to such questions as may be properly replied to there. Some questions are from their very nature unanswerable. Others, such as those about advertising "doctors," and advertised medicines, we refrain from replying to, upon principles we have already set forth. Another class of queries, as to the best place to get nursery stock, seeds, etc., are already answered in the advertising columns. Then, again, many letters are upon matters quite obscure, upon topics not yet well understood, and such are held for consideration. We have said that our pile of unanswered letters was large. It is not so in comparison with the whole number received, and we are glad to find that the year shows us so nearly square with our correspondents. We hope that our friends will continue their favors, and we shall try to disappoint as few as possible.

Price of Printing Paper.—The drouth now happily over, kept many mills idle so long, that the reduction in the stock of paper has enabled the manufacturers to obtain any price they choose to ask—27 to 30 cents per pound for paper they gladly furnished at 10@12 cents formerly, and only last July at 18@19 cents. This makes a fearful difference on the nine tons we use in this single number. We must stand it now, Messrs. Manufacturers, but our turn will come soon—see if it don't.

A Gift Often Repeated.—Many this month send some token of regard to a son, brother, relative, friend, or neighbor. Will not the 25th Volume of the *Agriculturist* often be a most acceptable Gift? While appreciated at first, each successive number, as it comes through the year, will remind the recipient of the giver, and we are sure the volume will contain many things that will be pleasing as well as useful. In all such cases, when desired, we will enclose in the first number forwarded, a subscription Receipt, noting on it the name of the one who paid it, as well as the name of the one to receive the paper for the year.

Bound Volumes—Covers for Binding.—As soon as this number is mailed, we shall bind up a supply of copies of this volume (24th), ready for those desiring them. They are bound in neat black cloth covers, with gilt title, complete index, etc., all in our regular uniform style. Price per volume \$2, or \$2.50 if to be sent by mail. Any of the previous eight volumes (16 to 23) furnished at the same rate. The volumes are supplied unbound for \$1.50, and 24 cents extra if to be sent by mail. Any single numbers, from No. 120 to No. 227 (Vols. 16 to 24, inclusive) supplied at 15 cents each. We print clean, new numbers, as needed, from our stereotype plates of these volumes.—Volumes sent to the office are bound in our regular style for 75 cents each, and missing numbers supplied at 12 cents each.—We have the regular form of ready-made Binding Covers for the above volumes, into which any book-binder can easily insert the numbers, and bind them at small cost. Price of covers 45 cents each. They can not be sent by mail.

More About the Glanders.—We presume the Government has disposed of the last of the War Department's glandered horses, as we see no sales advertised. It becomes now somebody's duty, and we propose it to Secretary Stanton as his, to ascertain by whose wicked, blundering work this great, immeasurable calamity has befallen the country. The following communication gives a slight idea of what damage may have been, and doubtless in many cases has been done, and will be done by this disease wherever these glandered horses go:

Davenport, Iowa, October, 1865.

"Before I saw in the *Agriculturist* the picture and article about glanders, I had bought of the United States, at Chicago, sixteen mules. They were warranted against glanders and farcy, if discovered before taken from the ground, but no opportunity was given for examination until the mules were paid for. Mine had no sign of glanders, but at the close of the sales two were offered for sale, that had it. I asked if they had been in contact with the others, and was told they had not. I

brought mine to this place, examined them carefully, saw no sign of disease, and put all but two in a pasture with a mare and colt. I set two to work, and in six days the glanders broke out on them in its worst form. This was in ten days after I bought them. If an individual were to do such an act as this, he would be liable to indictment and punishment. Can the government be tolerated in selling animals with a contagious and incurable disease, to its own people, and sowing death and destruction to animals of private people all over the land. In England, the whole administration is engaged in finding preventives and remedies for the cattle plague. Will the people of this country allow their government to do just the reverse, and put the price of fraud in the public treasury? In my case, I have ten thousand dollars worth of thorough bred and trotting horses, which I may lose by the contagion brought to them through government perfidy. Myself and my laborers are liable to contract this disease from the care and handling of these glandered mules. Hundreds less able, I fear, to bear the loss than I am, have been cheated in the same way.

Your obt' serv't,

JAS. GRANT.

Animal Traps of All Kinds.—Descriptions of rat traps, squirrel traps; traps for muskrats, minks, moles, martins, gophers, foxes, wolves, any and all animals which go under the denomination of vermin, are wanted. We have constant inquiries for them, especially gopher, mole and muskrat traps, and would gladly respond to them, by presenting in our columns quite an array of traps of various kinds. Some time since, two friends of the *Agriculturist* at the West, sent us two different gopher traps, and both good. The drawings were given over to the draughtsman and engraver, but the manuscript accompanying each has disappeared—neither do we remember the names of the writers. If they will re-write their letters, we can tell their story, and show our readers their traps.

N. Y. College of Veterinary Surgeons.—The opening exercises of this institution were held at the College, No. 179 4th Avenue, on the 6th of November. The school opens with an encouraging number of students, and the public exercises on the occasion were attended by many of the prominent Physicians, Professors in the Medical Colleges, and the elite of New York, both gentlemen and ladies. An address was delivered by Prof. Copeman, from which we make a brief extract, after which the guests with the officers, the faculty and founders of the institution, partook of a collation, enlivened by congratulatory speeches and toasts for the success of the college, and to the honor of its founders, first among whom is Prof. John Busted, M. D., the President of the college.

EXTRACT FROM THE ADDRESS OF PROF. COPEMAN.

"The science of veterinary medicine, as it is now beginning to be understood, is a science that has a far wider application and a far nobler mission than the limited duty of leading the sick animal back to health. In the present day, more than at any previous period in the history of our country, domestic animals are brought together in immense numbers, under a variety of conditions powerfully and variously affecting their health. Hundreds of cattle and thousands of hogs are closely congregated at distilleries. Cows may be counted by the hundred in thousands of dairies. Armies of horses encamp and move about in enormous masses. The great problem of veterinary medicine is not so much how to cure a particular case of pneumonia or of fever, but how to prevent the outbreak of pestilence, to discover and to avert all the causes of epizootic and enzootic disease; in a word, how to preserve the health of domestic animals and thereby increase the wealth of the nation. Regarded in this light, the veterinary profession acquires an importance which it has never yet challenged in America. There never was a period in the history of our country which so much required the establishment of veterinary schools as the present. Threatened from abroad with two diseases, the cholera, which is already said to be on our shores, and the rinderpest or cattle plague of Russia, a low form of typhus, which is now making such sad havoc among cattle on the European continent, and the milch cows of England, I regret to announce the reappearance amongst horses at Troy, in this State, and its rapid extension along the Erie, Chenango and Black River canals, of a highly contagious disease, commonly known as "black tongue." As one of the consequences of the war, we have also to contend against that most loathsome and incurable disease, glanders, the seeds of which have been sown broadcast, by the public sale of diseased army horses. Surely, then, there never was a time when the aid of judicious advice of well educated veterinarians was more needed. Sanitary commissioners and boards of health must ere long be organized or appointed by competent authority in every State, and by the general government to protect us from the pending epidemics and epizooties. And this gives rise to the most important question, of whom or

what class of persons should the board of health be composed. I answer without hesitation, of such professional gentlemen as I have the honor of being surrounded by, of our first physicians, of the best veterinarians in the country, of which there are, it is to be regretted, but very few to be found, owing, doubtless to our want of veterinary schools; the mayor and other head executive officer of each city or town, and the police; a board composed of such material would not only be one of the surest, but the best means of protecting the public health, and the public funds. I am not an alarmist, on the contrary, while I recommend care and prudence, I would guard against excitement and fear."

The Death of Prof. Lindley.—Just as we go to press, the announcement reaches us from England, of the death of Doct. John Lindley, at the age of 66. He had a wide reputation as a botanist and horticulturist, and left numerous works to commemorate his talent and industry. His *Theory of Horticulture* was one of the earliest attempts to explain the operations of horticulture according to the teachings of vegetable physiology, and is still a valuable work. Doct. Lindley was the long time horticultural editor of the *London Gardener's Chronicle*, though ill health had for some years past prevented him from active labor. The last article in that paper which we recognized as his, was a lengthy notice of the life of Sir William Hooker.

The Ohio Pomological Society.—The 13th annual meeting will be held at Cincinnati on Wednesday, Dec. 6. They invite specimens, and the attendance of all amateur and professional fruit growers.

Fruit in Minnesota.—Col. D. A. Robertson, of Saint Paul, is endeavoring to collect the fruit statistics of Minnesota. He desires cultivators to inform him when their trees were planted, where from, and which have done well, together with particulars of soil, aspect, and treatment. When names are lost, he will identify specimens if sent by mail. As the object is to collect information to be published for the benefit of all, fruit growers in Minnesota are requested to aid.

Catalogues, etc., Received.—Hovey & Co., Boston, catalogue of Autumn Bulbs, illustrated. Frost & Co's Rochester, autumn catalogue of Fruit and Ornamental Trees. Bridgeman's, 878 Broadway, N. Y., catalogue of Bulbous and Tuberous Roots. E. Y. Teas, Richmond, Ind., Trade catalogue. G. E. Meissner, Richmond, Staten Island, N. Y., price list of Grape Vines. Adolphus Bornemann, Dayton, Ohio, descriptive catalogue of Bulbous Flower Roots. Vilmorin, Andrieux & Co., Paris, catalogues of Bulbs and Seeds for fall sowing. F. K. Phoenix's, Bloomington, Ill., Descriptive Nursery List. D. M. Dewey, Rochester, N. Y., catalogue of colored plates of Fruits, Flowers, etc. Waite, Burnell & Co., London, Eng., catalogue of Seeds.

Mottier on Wine Making.—In October we gave Mr. Mottier's process for wine making, but omitted to state, as we should have done, that the article originally appeared in the *Horticulturist* in 1862. We do not so much regret this, as it gives an opportunity to say that we are glad to learn, that the *Horticulturist* has met with a success this year that is very satisfactory to its proprietors, who spare no pains to make it acceptable.

Vineland.—We have been there—so several papers say, and without due authority they have promised a report from us. We did not propose to say much about it, unless we found something specially noteworthy. Some people will go there and do well. Some will stay there and do well. Some will go there and come away, or not go at all, and do better. The chief advantages of the place are, not in cheap land, not in agricultural and market facilities, not in water power, but in the steady, industrious, intelligent and moral population which, without these advantages, has been drawn together there, and established schools, churches and good laws.

Preparing Poultry for Market.—It is too often done thus: The birds are caught, their necks are wrung by holding them by the head and swinging them around once or twice, they are then thrown on the ground to "flop" and bruise themselves until dead; then are plunged into hot water and the feathers stripped off, the skin being often torn, the fat scalded and looking oily, and the whole bird presenting a very uninviting appearance. They are sometimes drawn and mangled in the operation; and there are parties who give them a good feeding of corn just before killing, so as to sell a little corn at 15 to 20 cents per pound. They are not bled; they are often packed warm; they come to the market in poor condition, and sell at the lowest prices. The fowls should be plump and fat, with empty crops.

Catch them quietly; hold a bird by both wings and tie them; then tie the legs together and hang them one after another on a pole. As soon as hung up in this way take a sharp knife and cut the heads off, cutting close to the head, and let them hang until all the blood is out of them. While still warm pluck them dry, removing all the feathers, a few at a time, pulling with a slight jerk the way the feathers lie. Thus the skin will not be torn. The birds should now be hung till cold, and then be wiped off with a damp cloth and packed in tight boxes, with clean bright straw next the box all round. If the lot is extra fine, pull the skin back, cut off an inch of the neck, tie the skin over it, trim off the edges and wash off the blood. If the poultry is not to be packed, and shipped to market by rail or otherwise, they may be dipped in scalding water for not over 5 seconds. This shrinks the skin a little, and makes them look plumper; it melts the fat on the surface and gives the birds a clean, yellow look, which is attractive. Fowls thus plumped, will not keep nor bear packing so well as those plucked dry.

Long Subscription Letters are not necessary or desirable. Here is a convenient form:

WASHINGTON, JOHNSON CO., IOWA, Dec. 1, 1865.

Messrs. Orange Judd & Co., New York City:

Enclosed are Five Dollars for the *American Agriculturist* for four subscribers, to begin January 1st, 1866, viz.:

John Doe, Washington, Johnson Co., Iowa.

Richard Roe, do, do.

Peter Smith, Webster, do, do.

S. J. Karl, Freeport, Sioux Co., Wis. (German).

Yours, respectfully, JOHN DOE.

Seal tightly, and address plainly to *Orange Judd & Co., 41 Park Row, New York City.*—Let all matters referring to the reading columns only, such as information given, notes, queries, etc., (which are always welcomed,) be on a separate piece of paper, marked "for Editors," and containing also the date, name and residence of the writer.

Protecting Plants.—O. Moffet, Wapello Co., Iowa: Your plan for protecting young plants from insects and frost by means of wooden boxes or frames is not new, but has been often advised in the *Agriculturist*. We know that it will "succeed," for we have tried it for several years; so go ahead and make your frames, and you will find them very handy to have in the garden.

More Potatoes.—The exhibition of potatoes at our office has for the past month attracted much attention. Besides those exhibited by Mr. Harrison and noticed on page 375, Mr. E. Williams of Montclair, N. J., shows quite as many sorts. There are some kinds in the collection of each not contained in the other, and the two together make a very interesting display.

Songs of Seven.—In the collection of chaste and beautiful poems by Jean Ingelow, which two or three years ago surprised lovers of poetry, and caused us to recognize a new star in the small constellation of real poets, was one in seven parts, called "Songs of Seven." The song of a child of 7 years, of a girl of 14, of a maiden of 21; of four times seven, a mother; of five times seven, a widow; of six times seven, and of seven times seven. This poem has been most beautifully illustrated by English and American artists and engravers, and printed and bound in the most sumptuous style of the book-makers' art, at the University Press, Cambridge, and published by Roberts Brothers, Boston, at \$5.00. The steel portrait of the author is alone worth the price. The volume makes one of the most tasteful and beautiful gifts that can be found. [It may be had at the *Agriculturist* office, or will be sent by mail, post-paid.]

Bradbury's Golden Censer, is a most excellent work. Our own Sabbath School have "sung through" most of Mr. B.'s "Golden Chain," and "Golden Shower," and the "Golden Censer" is, if possible, better than either of its predecessors, judging from the fifteen or twenty times we have so far tried. If we had had such books when a boy, we should have been a much better singer now, perhaps a greater lover of children's singing—through this could hardly be possible.

Estey's Musical Instruments.—Seventeen years ago we bought one of Estey's large melodeons, and used it a year, when, at the urgent solicitation of a Church Choir, we sold it to them, but could not get another. Sundry improvements have since been made in tone, power, and structure, and we judge from an examination of the assortment advertised by Mr. Saxe, the general agent, that they are excellent instruments.

The Fence Questions.—There have not been as many answers received to the questions about fences in the *Agriculturist* for November (page 336), as we had anticipated. In the course of the month we hope many will respond. The subject is of general interest,

Feeding Colts.—John B. Turner, Cayuga Co., N. Y. Make a comfortable shed for your colt, so that he can go out and in at pleasure, and give him a part of a sheaf of oats daily, chopped to inch bits. Let him have access to good straw, and give one or two fair sized carrots or turnips daily, and he will grow finely all winter. Give him salt, and all the water he will drink.

Turnips for Horses.—"T. S. L.," of Onondaga Co., N. Y., inquires as to the best way to feed turnips to horses, and the quantity at each feeding. We have always washed them clean and fed them whole. For neat cattle and sheep, they should be cut or mashed. Horses can bite them without difficulty, as they have incisor teeth in both jaws, horned stock only in the lower jaw. About four quarts daily is enough for one horse, besides grain or meal, provided he is worked most of the time. It is better to feed turnips and carrots in connection with other food, than separately.

Stanchions or Chains for Cattle.—L. E. Bower, Onondaga Co., N. Y., inquires "Which is the best, chains, ropes, or stanchions for cattle?" We answer by asking which he would prefer, a rope around his own neck while in bed, or to have his neck confined between two balusters in the bedstead? When cattle sleep they usually turn the head around on one side. Ropes or chains allow them more liberty to move about and lick their sides. Still, there is no disputing the fact that cattle do well in stanchions, and that this is the most economical way. Next to stanchions, neck chains are the cheapest fastening, and are nearly as easy to the animal as ropes. For our own use we certainly prefer chains somewhat like those figured on page 12, Vol. XXI.

Remedy for Slabbering.—E. L. Brevoort, Elkhart Co., Ind., writes to the *Agriculturist*: "Please give me a remedy for slabbers in horses, induced by eating white clover, which, in this region, kills out all other kinds of pasture." Let each horse have four quarts of wheat bran twice daily. As soon as the white clover appears, plow the ground, raise two or three crops of grain, and seed with Timothy or Kentucky blue grass, and Orchard grass seed. Horses never slabber when fed with these grasses.

Cows long in Stripping are a nuisance. —J. E. Blake, of Putnam Co., Ill., writes: "I have kept cows and milked with my own hands for over 30 years, and now confess I do not know how to milk. I mean—how to prevent cows getting into the habit (for I believe it is one) of requiring long stripping, even while rather fresh. Is it best to milk two teats clean except the stripping, and then to take the others in hand, or to change teats as often as the milk does not come freely? Perhaps some of your readers will tell me through the *Agriculturist*." Many of our readers know how to milk, we hope some one will give the results of his experience.

An Alderney Cow.—"P. E. L.," of New Rochelle, N. Y., states that he imported an Alderney cow six years since. From March 1st, 1864, to March 1st, 1865, her record is as follows. She raised her calf, produced 351 lbs. butter, 78 quarts milk sold, and 447 quarts used in the family. There was no extra effort made, her only food during the grazing season was grass, and in winter half a bushel of coarse bran per day, besides coarse fodder. No roots were fed.

The Canker Worms.—In the August number of the *Agriculturist* we offered some observations in regard to the canker worm, which made such devastation in New England, last summer, and will again next. Great efforts have been made to prevent their ascending the trees, and many persons who suppose their trees to be well protected, will be surprised to find them alive with worms as soon as warm weather comes. The wingless moths began to ascend to lay their eggs long before people thought they would, and though the troughs around the tree trunks were filled early, yet it was not early enough. We fear injury will come to the trees from the use of rosin-oil and petroleum, in the troughs. Cobwebs and straws lead it by capillary attraction over the edge, and running down upon the body of the tree near the roots there is danger of harm. A patent appliance, consisting of a sheet of mica (sing-glass) encircling the trunk of the tree at a distance of one inch, and suspended by a band of cotton cloth, a few inches wide, altogether a tent-like affair, has been largely employed. We are sorry to inform our readers on excellent authority, that the wingless female moths will go over it—with some difficulty indeed, but nevertheless, in some cases they do succeed. Mr. David Lyman, of Middlesex Co., Conn., has watched them very closely, and seen them pass over this tent with the mica rim. So he oiled the rim, using a mixture of equal parts

kerosene and castor oil. This retains the odor of kerosene and the fluidity of castor oil for a long time, and no insect has yet been seen to go over. Should one succeed, it would be oiled somewhat, and as the least oil quickly spreads over its whole body, it would soon die. Tin will of course do just as well as mica, and may be made thus: Ascertain the diameter of the tree (say 12 inches); add 2 inches to it (14 inches); get a piece of tin three times as long (43 inches), and 3 inches wide; have the tin turn a fold on one edge, as he does for lapping

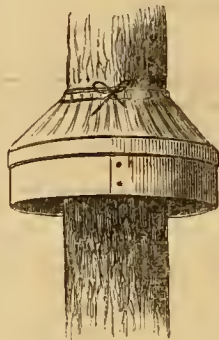


Fig. 2.

two sheets together, like fig. 1. Take a piece of cotton cloth with a wide hem on one edge, through which to run a cord; then slip the other edge under the fold in the tin, and hammering it down close, the cloth will be firmly held. By passing this around the tree, fastening the ends of the tin by a rivet or two, drawing the cord tightly and adjusting the cloth, and sewing a few stitches at the lap, nothing can pass through, like fig. 2. Then after smearing the tin with Mr. Lyman's castor oil and kerosene mixture, we believe the tree will be perfectly protected, except as the oil may need renewing once in a week, perhaps. Mr. Lyman says the trunks below his tent-protectors were covered with eggs the first week in November.

Very Early Lambs.—A few days previous to yearning time, confine the ewes in a box stall, or apartment where they will be protected from cold and storms. Feed with good hay and corn stalks, and let them have access to salt and water. Grain and roots previous to parturition tend to induce garget. As soon as lambs appear thrifty and strong, and take all the milk, one pound of roots and half a pound of meal daily, for each ewe, will make the lambs grow like weeds.

Laurel-poisoned Sheep.—In a former notice of the Sheep-laurel or Lamb-kill, we mentioned some of the proposed antidotes. A correspondent takes us to task for making so light of the decoction of muskrat's tail, and asserts that he has known it to cure. Others have sent "certain remedies" to be used in cases of poisoning by laurel, among which are, placing an onion under the fore-leg of the animal and forcing a ball made of soft soap and corn meal, down its throat. From the remedies said to answer, it seems that the poison is not virulent.

Hens with the Dumps.—"They are taken with a weakness in their legs; they hobble around for a week or two until they have not strength to stand; appetite fails; they linger three or four weeks and die." That's what's the matter with H. Mansfield's fowls, (New Haven Co., Conn.) They probably do not have range and wild foraging enough, and perhaps they lack regular feeding with grass or vegetables. Give them these, and put some Tincture of Chloride of iron, enough to be distinctly tasted, into their water; also feed them well twice a day with bread soaked in ale.

What Ailed the Chickens.—A subscriber of the *Agriculturist*, says that he lost several valuable chickens in a mysterious manner. One after another drooped and died. Their rumps appeared much inflamed, and a post-mortem examination disclosed the cause. The chickens had swallowed kernels of Indian corn, which had swollen so large that they could not pass off. The obstruction of this passage caused inflammation and death. Young chickens cannot mash kernels of grain in their gizzards. Their feed should be fine.

A Fine Region in the South.—From a private letter received from D. Redmond, Esq., of Augusta, Ga., editor of the Southern Cultivator, (the only Southern Agricultural journal, we believe, which outlived the war), we make the following extract.... "There is, however, in our middle and upland country a wide field for the enterprising and industrious emigrant from the North, or from Europe. Striking a line from Raleigh, N. C., to Montgomery, Ala., we have a belt of midland country 50 to 100 miles wide, which for salubrity of climate and variety of production, is scarcely excelled on the globe. Here we can raise successfully all the grasses and grains of the North, and here Pomona holds her court and reigns perpetually. Looking from the window at which I write [Augusta,] I see the fig of



Fig. 1.

the tropics growing hardily and vigorously—bearing two and sometimes three crops a year—close beside the sturdy apple of more temperate climes; while our poor old 'worn out' hillsides, too barren for either cotton or corn, produce the finest peaches and grapes in the known world. Indeed there can be no doubt that Nature intended the greater part of this Middle Country for orchards and vineyards, as the soil and climate are both so favorable that trees and vines can be cultivated and brought into bearing with half the time and labor required in less genial climes. Throughout all this region land is cheap and easily obtained, and for men of limited means, I do not know of any other country presenting so many attractions and advantages." [Admitting all that Mr. Redmond claims, the only drawback would seem to be the lack of market facilities for disposing of the probable fruit products to advantage, should the region be filled up with fruit cultivators.—Ed.]

Too Heavy Feeding, Bad.—Poor animals do not always consume large quantities of feed profitably. Better increase their daily amount gradually, as they appear to improve in flesh, than to commence feeding larger quantities than they can assimilate. An excellent rule in fattening all kinds of stock is, to feed moderately until they show improvement in flesh, then increase the amount gradually, according to the capacity of the animal. Never feed so much that they will not eat it clean, and appear to want a little more. This rule followed, secures good appetite and digestion.

Gas Lime, if applied to grass land too freely, is injurious. We know a good farmer, who hauls many tons over two miles every spring, and sows it on his meadows, regarding it an excellent fertilizer. It should be sowed with a machine that will crush the lumps, and distribute the lime so evenly that there will not be enough in any one mass to injure the vegetation.

Tan-bark, Sumac, etc.—A Subscriber of Wilmington, Del., asks if Sumac leaves, the refuse of a morocco factory, are good as manure. They would doubtless make an excellent mulch, like tan-bark, but would probably decay more rapidly. We have never tried the article, but have found spent tan bark an excellent mulch and manure on a rather stiff soil. Collect and utilize all such wastes. See if there are not leather scraps, fleshings, or lining waste at the morocco factory, where the sumac is used, that you can get.

Sell when you can get a Fair Price.—Says a Western farmer of several years' experience in that country, "The *Agriculturist* has saved me many dollars the past year by the advice to sell as soon as a reasonable price is offered, while those who pretended to know so much about markets and who kept their wheat, oats, etc., and had to take them to market by such bad roads as we have in the West, have paid dearly for waiting. For myself, I think the *Agriculturist* must be at least as useful for the West as for the East."

Drain tile Machines and Kilns.—Good machines can be bought for \$200, perhaps \$150. They have been greatly improved and simplified of late years. Where there is good clay (no sand is needed) one machine would make tiles enough for a circuit of several miles. The tiles must be burnt in a kiln. We would like to hear from any of our readers who have experience in regard to the best form of kilns, and the best way to arrange the tiles for burning. This knowledge would promote the sale of tile machines and use of tile drains.

Underdraining a Hardpan.—The formation of "hardpan" is the first step in the progress of soils toward becoming a sandstone rock. "A Subscriber," of Blair Co., Pa., wants to know if it will do any good to put underdrains down into the hardpan. Certainly—it is the only way to arrest its further hardening and give the plants a chance to work into it, and the roots air and water. Except in cases of very close hardpans, drains 3 or 4 feet deep and 25 to 30 feet apart will after a few years break them up, especially if the plow and subsoiler are run a little deeper each year.

The Fair of the American Institute.—This fair, which was kept open over a month, was, we are assured, a pecuniary success. Our notice of the Horticultural portion has already been given. Since the close of the fair there has been a general "pitching into" the management, and many sharp and some hard things have been said. There was much that might have been better, but take the exhibition as it was, it was a great deal better than none, and no intelligent observer could go there without receiving the value of the entrance fee in amusement and instruction. Now, instead of railing at the Institute for having done no better, we prefer to suggest how they may improve upon the lesson

of the past. If the Institute proposes to hold a fair next year, or the year after, let them begin now to prepare for it. Organize departments, offer premiums, and even select judges. The greatest trouble at the last fair, was, lack of organization and lack of workers, and the next greatest, was the want of publicity, in making the matter known sufficiently before hand. One to build a steam engine, or grow a geranium, should have at least six month's notice. It is very easy to get together a collection of advertising exhibitors, but let us for once have a real "exposition," as the French say, of American arts and manufactures, and to do this it is necessary to begin at least a year before hand. Gentlemen of the Institute—let us have something corresponding to your broad title of "American."

Charring Fence Posts hastens their decay. The writer has tried the experiment, and found that charred posts rotted off 4 to 6 years sooner than those not charred. There is a thin portion of wood between the charcoal and the unburned wood. If the thin coating of charcoal would exclude the moisture from the unburned timber, it would preserve posts from speedy decay, but it usually does not.

A Bundle of Inquiries.—William H. Wood, Winebago Co., Ill., asks the following questions: "Is buckwheat straw injurious to cattle and sheep, and will it give sheep the itch?" No. When properly cured it is an excellent fodder.—Are pumpkin seeds when fed with the pumpkins, injurious to milch cows? Will they tend to dry up the milk? The fact that pumpkin seeds are a diuretic of considerable power, being sometimes administered by physicians as such, led us to believe the popular notion was not without foundation. However, we know of cases where the experiment has been tried and no drying up followed.—Is there any preparation for keeping plows from rusting? Apply a thin coat of any kind of varnish, or boiled linseed oil, or lard and rosin melted together, to the polished surface.—When a plow is rusty what is the quickest way of taking it (the rust) off, so as to make it bright? Scour it with a piece of grindstone and water, or with a soft brick, or piece of wood and sand, keeping the surface wet.

Marl for Fruit Trees.—"E. D.," Rondout, N. Y. The term marl is applied very indefinitely. If it is shell marl, it would undoubtedly be beneficial on a soil deficient in lime, and all the better if the marl is of a kind that can be burned to form quick lime.

Removing Rust from Saws.—Procure as some drug store, a piece of pumice stone as large as a hen's egg, grind one side flat on a grindstone, then scour off the rust with the pumice stone and soapsuds. Cover the surface with lard in which there is no salt.

Care of Steel Plows.—Wash them clean and as soon as dry, apply a thin coat of any kind of varnish, or boiled linseed oil, or lard melted with a little rosin, which is good. This will keep the polished surface from rusting during winter, and will slip off readily as soon as the plow runs a few rods in the soil.

The Mixing of Squashes.—F. Brooks, Winona Co., Minn. The fertilizing of one kind of squash or pumpkins by the pollen of another, probably depends entirely upon its being carried from one flower to another by bees and other insects. Where there are many kinds in the same neighborhood, the only way to insure purity is to fertilize the flowers artificially before the bees get at them. The pistillate flowers must be taken just as they are about to open, when the parts will separate by a slight force, and apply pollen from a staminate flower. Tie a bit of muslin over the flower thus treated, to keep the bees out, and let it remain until the fruit begins to swell.

Large and Quickly Grown Squashes.—A fine specimen of squash upon our tables bears the name of J. W. Somarindyck, Glen Cove, L. I. Its weight is 145 lbs., but its twin brother on the same vine weighed 170 lbs. The blossoms dropped September 5th, and the fruit was taken off Oct. 23d. One day this squash increased its circumference 5 inches in 24 hours, and it did the same at the rate of $4\frac{1}{2}$ inches each day for 7 days.

The P. O. Money Orders, are proving a great convenience. At any established Money Order Office one can by simply paying in a sum of money, have it paid at any other Order Office, to any person indicated. As no one else can get it, and duplicated orders are issued if the first one is lost, it is a perfectly safe mode of transmitting money by mail, and the return of the receipt is positive evidence of the payment of money. The charge is 10 cents for a sum under \$10; 15 cents for \$10 to \$20; and 20 cents for \$20 to \$30. For over \$30 more orders

can be purchased, thus, for \$44.50, buy one order of \$30 and another of \$14.50. Many of our club subscriptions are forwarded in this way. A Draft on a New York City Bank, payable to the order of the Publishers, is equally safe and convenient, and usually costs but little more, if there is a bank near by.—We append an alphabetical list of the new Money Order Offices, established since our published list in the *Agriculturist* for last August:

Maine: Winterport....*New York:* Rome....*New Jersey:* Bordentown, Flemington, Salem....*Pennsylvania:* Bethlehem, Clearfield, Mauch Chunk, Titusville....*Virginia:* Petersburg, Richmond....*North Carolina:* Wilmington....*South Carolina:* Charleston....*Georgia:* Savannah....*Alabama:* Mobile....*Mississippi:* Natchez....*Arkansas:* Little Rock....*Tennessee:* Knoxville....*Ohio:* Bryan, Chagrin Falls, Garrettsville, Ontville....*Indiana:* Anderson....*Illinois:* Aledo, Carlyle, Monmouth, Weona....*Michigan:* Bay City, Newaygo, Marita....*Wisconsin:* Beaver Dam, Chippewa Falls, Janesville, Mineral Point, Richland, Watertown....*Iowa:* Tipton....*Missouri:* Columbia, Gallatin, Washington....*Kansas:* Fort Scott....*California:* Denver, Los Angeles, Marysville, Mountain City, Nevada City, Sacramento, San Francisco, San Jose, Senora, Stockton....*Oregon:* Portland....*Utah:* Salt Lake City....*Nevada:* Virgin City.

Fine Quinces.—Mr. F. Scholer, Brooklyn, exhibited upon our tables large and fair quinces, a sample of 108 from a tree which has yielded about the same number for years in succession. Why are not more quinces grown? At present prices they must pay well. Nothing is finer to look at than a tree loaded with this golden fruit, and then for preserves there is, to the writer's notion, nothing else half so good.

Keeping Cider Sweet.—M. M. Hester, Huron Co., Ohio, gives the following as his method of treating cider: "In gathering apples, avoid getting in leaves or rotten apples, and before making, thoroughly wash the vat, press, receiving tub, etc. Have clean barrels, fill them with cider as soon as it runs from the press, avoiding much exposure to air. Place the barrels in a position to draw from, and let stand until it settles, say 24 hours. Make a strong brimstone match by dipping a piece of cloth 2 inches wide, and 1 inch long, in melted sulphur. This is to be fastened to a piece of wire about 3 feet long, having a small hook on the end. Set the sulphur on fire, put it in the empty barrel half way down, raising it up gradually till the match burns out, then draw off the clear cider and put it in with the smoke. Bung it up tight and keep it in a cool place. When treated in this way it has always kept sweet with us, without any sharp or unpleasant taste."

"Rev. Edward Wilson."—This man keeps on advertising, and of course gets patronage to pay for it. If any of our readers patronize him after the repeated notices he has had in this journal, they deserve what they get. Those who want to see his recipe will find it in the *Agriculturist* for July, 1859. He then advertised himself as a member of the New Haven Methodist Conference, but on being told in the *Agriculturist* that there was no such Conference, he transferred his "church relationship" to the "New England Conference." Will he please tell how he got in or out? As he appears to be poorly read up in church matters, we will kindly inform him that his present professed residence is in the bounds of the New York East Conference.

Medicines.—"K. L. C." and others: We cannot answer about these advertised things in any other than the general terms often repeated. We would not take any of them, nor advise others to do so.

Fine Cranberries.—Our office has been ornamented for some weeks by a hanging basket filled with cranberry vines, loaded with large and finely colored fruit. This very beautiful specimen came from Dr. B. H. Stevens, Essex, Conn., who has experimented very successfully in the cultivation of the cranberry.

An Ever-blooming Violet.—At the Philadelphia exhibition was a stand of violets which diffused a most delicious fragrance, and attracted much attention. It is called the Schenbrunn Violet, and is said by the exhibitor, Mr. J. Gerney of Philadelphia, to be ever-blooming, affording flowers even in mid-summer.

Trouble with Cabbages.—C. V. Bradey, Clearfield Co., Pa., writes to know "the cause of my cabbage leaves rotting and sprouts coming out between the ground and the head." What is said on page 375, with regard to horse-chestnut and other trees, will apply to cabbages. The peculiar season caused them to ripen prematurely. Weather favorable to growth followed, and as the terminal bud (or head) was mature and could grow no more, the axillary buds on the stump, which usu-

ally remain dormant, started. We know no other remedy than to take them up as soon as they cease to grow.

Leaks from Water Running down the Sides of Chimneys.—Cut out the mortar an inch or more deep, between two courses of the bricks, insert a strip of sheet iron 4 inches wide, and fill the joint again with good mortar. The iron strips will carry rain, which flows down its sides, away from the chimney.

High Price of Woolen Fabrics.—"Subscriber," of Sidney, O., writes approvingly of our advice in October (page 304), not to buy cotton fabrics now, and suggests the same course with reference to woolens. Doubtless it would help reduce the present exorbitant and uncalled-for high prices of almost all commodities, especially manufactured goods, if people would generally economize as far as possible in their use. Cotton goods are especially to be let alone, when possible, because one-fourth to one-half of the present prices goes into the hands of a few individuals who manage to control the market, owing to the limited supply of manufactured stock on hand. The operatives receive only fair wages. At the present price of raw cotton, which is abundant, the manufactured goods could be made and sold at a profit, for little more than half the prices charged for them. This is not quite the case with woolens, and their use is less easily dispensed with, especially at this season of the year. Still we agree with "Subscriber," that we should all strike for a reduction in prices by purchasing the least possible amount, until there is such an accumulation of stock that a large reduction in price will become necessary in order to effect sales.

Double Doors for Cellars.—Two sets of sash with glass in them to each window, will admit light into cellars, and exclude the cold nearly as well as if stopped with the bark or other material. Doors hung one on each side of the casing, if made to fit closely, will prevent vegetables freezing in most cellars, without filling the passage with straw.

"The Great West."—Edward H. Hall has written a book (published by Appleton, price \$1.00) with the above title. It is a guide and handbook to the States and Territories west of the Mississippi, not including Arkansas, Louisiana or Texas. We have so many inquiries about these countries and the inducements to emigrate, that we are glad to be able to refer our readers to a book containing so much that is valuable, and apparently edited with conscientious care. We can supply it.

A New Work on Natural History.—A work on Zoology, that branch of natural history which treats on animals, by Prof. Tenney of the Vassar Female College, is just published by Charles Scribner & Co., N. Y. Though we have had several more or less good works upon zoology, they had the fault that their illustrations were mainly, if not altogether drawn from foreign animals. Prof. Tenney gives us a work, in which the illustrations are in good part those of American species. The fault, or rather misfortune, of the work is that with such a multitude of objects the notice of each one must be very brief. This volume giving us the general outlines of classification and a catalogue of the species, especially of quadrupeds and birds, will go far towards supplying a long felt want. It is a handsome and clearly printed work of 540 pages, with over 500 illustrations. As we consider it will be useful to those of our readers, who wish to know about the animals of our country, we place it on our book list.

No. 4 of Lessons for Every Sunday in the Year, is completed. This finishes up this series which originated with the senior editor of the *Agriculturist*. No. 1 includes the period from the birth of Christ to the end of the Acts of the Apostles; No. 2, the rest of the New Testament; No. 3 from Adam to Elijah, and No. 4 from Elijah to Christ. Each book contains 52 lessons, embracing this number of leading topics in the order of time, with a running Connecting History, which gives an epitome of the whole Bible History embraced by each book. The books are non-sectarian, and are used about equally by all Christian Denominations. That they meet a want is evident from the fact that about 200,000 copies of No. 1 have already been called for. In this, Mr. Judd retained no copy-right interest, but gave it away to the first publisher who asked for it.—the lessons having been prepared at first wholly for his own Sabbath School. Editions of all four of the books are now prepared for and issued at the *Agriculturist* office, where they are supplied at 15 cents each; \$1.50 per dozen; or \$12 per 100. If to be sent by mail, prepaid postage must be added, which is 3 cents per copy when 10 or more go together, or 4 cents each when less than 10 are sent. Four sample copies (Nos. 1, 2, 3 and 4,) mailed post-paid for 65 cents.

The Publishers' Special Notice To All Subscribers.

This paper fills out the subscription of a large number of our readers. Several had previously paid for some time beyond this date, and many thousands have recently subscribed for next year. Supposing that each one will remember the time his subscription ends, we do not incur the (now) very heavy expense of sending individual notices of expiration. We believe that our past and future efforts to interest and instruct our readers will meet with a generous confidence, and that all will deem it profitable, and a pleasure, to renew their subscriptions for another year, and

We ask as a special favor that every one will attend to the matter promptly—now. We greatly desire to get the names all entered and regularly arranged on the different Mail books, ready to write the wrappers in advance, preparatory to sending out the next number before the beginning of the year. To do this carefully is a great work, and we desire to have as much as possible of it done by our old experienced clerks, who are familiar with the books, Post Offices, and names. It would greatly facilitate our work if the names could all come in at the beginning of the month, and it will usually be just as convenient to the subscriber to renew when he reads this, as to defer it for a day, or a week, except when clubs are making up, and even then, additions to a club can be sent at any time afterward at the same rates. Will not each reader deem it a pleasure to forward another name or two with his own? The new readers thus secured will doubtless be benefited, and we shall feel obliged by the act. Those not members of other Clubs can reduce the cost to themselves by making up a Club of four for \$5; or, ten for \$12, etc.

Never before have we dared, or been able, to promise so much for a future volume, as we can now promise for the *Agriculturist* for 1866—the 25th volume. We mean to make this Quarter-Century Volume one unequalled in value. Our advertising patronage is now so large that we are able to pay for the best help, the best information, the best engravings, etc., that can be obtained in the country. We expect to expend about \$1000 for every number of the paper on the reading matter alone, before it goes to the printers' hands—in collecting, sifting, condensing, and preparing information, engravings, etc. The editorial force already engaged will equal in ability and number that of half a dozen or more other good journals. Elsewhere we announce a valuable addition to our editorial force. The business is all systematized, and two heads instead of one will be employed in overseeing it, leaving the long-time Editor and Publisher much more leisure than in the past five years to devote to the editorial columns. Every subscriber will actually receive back what costs as much as his subscription money, that is, we shall expend in preparing and issuing the paper all the money received for subscriptions. We know the next volume will be an exceedingly valuable and interesting one, and we invite all our present readers not only to renew their subscriptions now, but also to make known its character and prospects to their friends and neighbors, and invite them to become readers.

Respectfully, ORANGE JUDD & CO.

Save the Index—Stitch the Numbers.—Every copy of this month's paper contains a loose, four-page sheet, which gives a *Title Page* to the Volume, and a full Table of the Contents. We put in this extra sheet at a large expense (at present cost of paper), to save trenching upon the reading pages, which are thus left as full as ever. It is inserted unstitched, so as to be conveniently removed, and placed at the beginning of the volume, in binding or stitching, and should be carefully preserved, or it may get lost. Those who do not bind the volumes, may preserve the numbers in

a convenient form for reference, by laying them together in order, and after making a hole through the backs with an awl, or any sharp point, fasten them with strong thread, put through several times. Pieces of paste-board, or of any thick paper, may be used for a cover, if desired. A few moments work will fix up a valuable volume for reference, and prevent the loose numbers from being lost, or being used by Biddy for "kindlings."

See Publishers' other Notices on page 364.

Useful Books.—Since writing the above, we concluded to insert with the index a list of some of our good books, to which we invite attention. Farmers can not read too much about their business. If a book furnishes a single hint that saves an animal, that increases the product of a whole field by only a bushel or two per acre, that saves ten dollars in building, or otherwise, of course it is a good investment, and there are few books that will not do so much. Besides, it adds to one's satisfaction, and lightens his toil, if by reading he acquires more information, and a larger store of thoughts. He thus sees more in the rocks, the stones, the soil, and the plants he works among. Let the young people see and read books and papers on the business of the farm, and they will esteem it higher, and be more contented at home. Gifts for the Holidays may well be selected from these books.

Two Excellent Annuals.—We are happy to announce in press, and to be published this month, two very valuable ANNUALS, both of which are worthy of a place in the hands of every cultivator in the country, viz: *The Register of Rural Affairs*, by John J. Thomas, Associate Editor of the Country Gentleman, and the *Rural Annual*, by Joseph Harris, hitherto Editor of the *Genesee Farmer*, but henceforth on the *American Agriculturist*, (as noticed on page 364). The two works are entirely different, and are both filled with excellent practical matter. Editions of each are issued at the *Agriculturist* Office. *Rural Register*, 30 cents; *Rural Annual*, 25 cents. Sent by mail post-paid at the same prices.

The Agriculturist Strawberry.

In sending out many tens of thousands of a new plant to as many different people, it was to be expected that some would be disappointed, either through their own want of skill, or from causes entirely beyond the control of any one. As some would never succeed with any kind of a plant, their failures are not surprising, but there are instances in which the plants sent out failed this year to multiply, and these deserve notice. We have for some time kept a file of all the favorable and unfavorable reports concerning the strawberry, and are glad to know that it has generally done so well. The following is selected as a specimen of the complaints: "My strawberry plant was received about the middle of May, and it has grown to a large plant, covering nearly the space of a half bushel, but no runners have appeared." And of course the writer wishes to know what is the matter. Strawberries make two kinds of branches, short branches arising erect from the main stock, and long slender ones which lie upon the ground. In the first case the plant forms "stools," and in the second, "runners." Plants do not generally do both largely, and to induce them to stool, we clip off the runners. The "Agriculturist" has a remarkable tendency to form large stools, and though it usually makes abundant runners, there seems to have been some peculiarity about the past season which directed its energies, in many places, to multiplying its upright rather than its running branches—to stool rather than to run. We ascribe this to season rather than to soil, for the reason that plants on the same ground where they ran abundantly last year, have done nothing but stool. We know of no help in these cases but good culture and patience. That they are the exceptions, and not the general rule even this season, we are convinced. We give now some instances in which the plant has multiplied abundantly: Mr. E. W. Clark called to say that he had one plant last fall, which produced 426 young ones, and in running covered a bed 4 feet by 22 feet, almost entirely. Mr. G. Herbert, a strawberry grower of Peekskill, N. Y., says: "I consider it the most vigorous plant I ever saw." H. G. Sabin, Milwaukee, Wis., put out two plants last spring, and on Sept. 11th he writes: "they have now increased to 132, and before winter I think I shall have double the number." Mr. G. L. Brunton, Centralia, Ill., set out one plant May 1st, and Sept. 10th had 140 young plants. Mr. Wm. Parry, of Cinnaminson, N. J., well known as a gentleman of large experience in fruit culture, writes as follows: "The first plant we had was rather dry and unpromising when it arrived, and in order to promote a rapid growth, it was treated to a double dose of guano, which completed the work, and the plant failed to make

a start. Another lot of 300 were obtained in bad order, many of them having but little, if any, vitality when set out; less than one-third of them survived, but those that lived are now making a fine growth and spreading well on heavy loam land. Another lot of 500 were received from Mr. Carpenter in good order, and planted on light sandy soil, four feet apart, in rows six feet from each other, allowing 24 square feet for each plant. The whole surface is now literally covered, so as to make it difficult to walk among them without treading on the plants. It far surpasses in vigorous growth any other strawberry we have similarly treated, except its parent, the Green Prolific. It promises to be well adapted to our light sandy land, where most of the large fruited varieties, such as *Triomphe de Gand* and others, proved worthless.... H. Johnson, Windham Co., Conn., reports 250 plants from one plant received and set in open ground, Sept. 3d, 1864. Last spring 37 berries set on the original plant. Its crown (No. 6), started new flowers and fruit, one berry as large as a walnut.... Others report similar results, and we have received from different persons a number of specimens of autumnal fruit, the result doubtless of the warm, dry season.

History of a Loaf of Bread. (PAGE 376.)

We have the gratification of presenting to our readers the final picture of the series which we have named the "Pictorial history of a loaf of bread." Such a picture is the product of the combined talent and skill of artist, engraver, and printer, each of whom owes to the others, we may say, *everything* of success. The artist, Mr. Granville Perkins, faithfully studied his theme in all its details, conceived the beautiful scene which he makes the centre piece, placed it upon the boxwood block, surrounding it by the frame work of appropriate vignettes, which illustrates the eventful history. He has managed his lights and shades so as not only to bring out the general features of the scene, but to impress every one with the cheerful warmth of the sun-shine, the coolness of the shadowy recesses of the brook, and the babbling, dancing lightness of the liberated waters, which have done their work and are free to play. This is what is called "feeling" in a picture; it is a reflex of the soul of the artist, and is by no means a purely mechanical art.

The engraver takes the block, and he must catch the feeling of the artist; he must know the style of engraving which the paper will bear, how to produce his effects with such lines as will print well, and with the very considerable rapidity necessary for us. Had he failed to catch the feeling, though he might have taken great pains, and placed his own name, as he has done on the cut, Mr. Perkins would very wisely have insisted that the initials "G. P." should be taken off. Finally, the printer has to study every picture, to see which parts are intended to print heavy, and which light, and by what is called *over-laying*, so to regulate the pressure that more or less ink will be taken up by the different parts, that the lines shall not be hard and black, nor faint and imperfect, and so that the drawing, delicate shading, and the pervading feeling shall be preserved and placed upon the paper.

In the October picture we left the corn threshed and in bags. If a grist is sent to mill direct from the farm, the good housewife may soon be kneading and moulding her white loaves from the new wheat; but the bread which most people eat takes a longer course. There is an immense inland commerce which exists in a great measure solely to convey the western wheat to eastern markets. This is shown in the upper right-hand corner; while in the opposite corner, the great foreign commerce in bread-stuffs is indicated, where the floating transfer Elevator is taking the cargo of a canal boat and placing it on board the ship at the wharf. All the various transferences, storages, cleanings, kiln-dryings, etc., are managed by thousands of merchants, who employ millions of capital, and for their convenience, in the great cities, they associate themselves in so called produce exchange boards. In New York, they meet daily in the fine building on Whitehall-st., known as the Produce Exchange, represented on the right side of the page. Here transactions amounting to millions of dollars in a single day are made, the corn (wheat, barley, oats and Indian corn), flour, etc., being sold by sample. On the opposite side of the picture, we see some of the great flour and grain stores, and below this, we look in upon the two floors of a city bakery. The point which is of especial interest to the printer, (who may be at the extreme end of this chain of events, the farmer being at the other,) is quaintly indicated by the youthful Franklin in Philadelphia, trudging along with his two loaves, taking his first breakfast in the Quaker City. Our artist appropriately crowns his picture with a group of fancy and substantial sorts of bread, twists, rolls, pretzels, hard-bread, cake, etc., besides the queenly, frosted and ornamented bride's cake. The picture in all its details furnishes a pleasing and instructive subject to study.

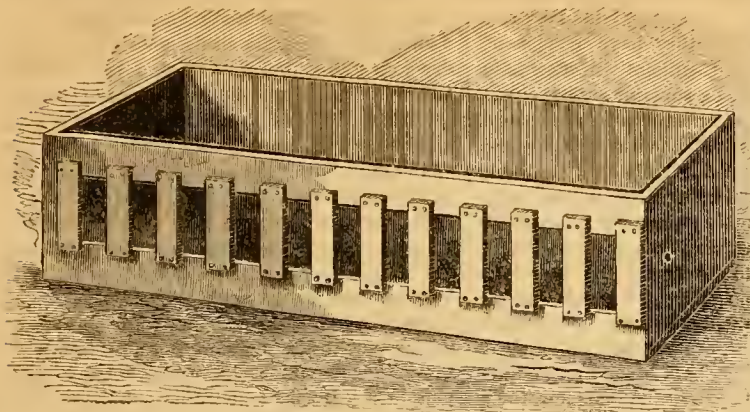


Fig. 1.—SHEEP FODDERING RACK.

Sheep Racks and Sheep Foddering.

It is usually a bad practice to fodder sheep by throwing their food on the ground. When the forage is spread on a grass plot, if the earth is frozen or covered with clean snow, they will waste but little. But when it is scattered in soft places, as sheep always rush at once upon the large forkfuls, much of it will be soiled so badly that no animal will eat it. The fodder thus wasted often amounts to several hundreds of pounds to every ton fed, that may be saved.

Standing side by side feeding at a rack, sheep usually occupy about one foot each in breadth. A feeding rack 20 feet long, will accommodate about 20 sheep. As sheep are apt to crowd each other, it becomes necessary to employ some means of preventing it when they are eating

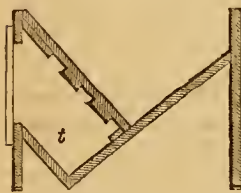


Fig. 2.—GRAIN TROUGH.

either hay or grain. As partitions would involve much expense and occupy too much room, it is only necessary to provide feeding racks with openings one foot apart, and sufficiently large to admit a sheep's head.—Mr. N. B. Pearsall, of Otsego Co., N. Y., communicates for the *Agriculturist*, a sketch, fig. 1, of a sheep rack. It is a combined hay and grain rack, and so constructed that it is almost impossible for sheep to waste any hay by drawing it out of the manger beneath their feet. The illustration is of a rack to be placed on the side of a yard. If desirable, it may be made double, so that a flock can feed on each side, the rack forming a division between two apartments. The rack figured is about 2 feet 6 inches wide, and 2 feet 9 inches high. The bottom board is about 12 inches wide; the top one 8 inches or more in width. The slats nailed from the bottom to the top boards are 4 to 6 inches wide, and 12 inches from cen-

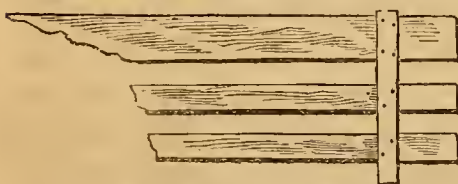


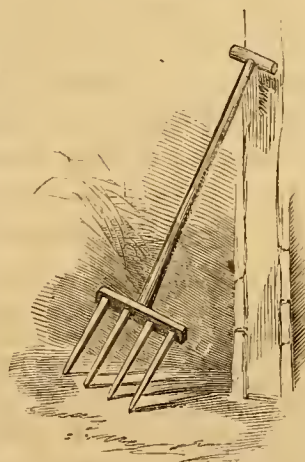
Fig. 3.—SLATS OVER THE GRAIN TROUGH.

ter to center. Ordinary sheep will thrust their heads between slats 6 inches apart at the edges. If boards are rough, they should be planed to prevent tearing the wool. The space between the bottom and top boards should be not less than 12 inches. If the sheep are large and tall, the space may be 16 inches between the top and

bottom boards. Figure 2, represents a transverse section of the rack, showing the grain trough (t), which forms the bottom. The narrow board of the trough is about 6 or 7 inches wide, nailed to the wide portion. To keep the hay out of the trough and to prevent hay and seed falling down into the wool, a loose partition, fig. 3, is placed in the rack; the end is seen in fig. 2. This partition is made with one wide board at the top, and one or two narrow ones at the bottom, having spaces between them about 3 inches wide, through which the sheep draw the hay. If it should be drawn through faster than the sheep eat it, the grain trough receives all that drops, and prevents it from being scattered under their feet. The lower end of the partition is kept in place by cleats nailed to the bottom board. When it is desirable to clean the trough the partition may be turned to the other side or removed. This style of rack will be found convenient for feeding turnips, carrots, or cut feed to sheep, as there is sufficient room for their heads inside of the slats. With this kind of rack, every sheep can remain at his place while feeding, and be certain of receiving an allowance, as it is difficult for one to crowd another away after the flock all come to the rack.

Wooden Stable Forks.

Manure forks with sharp steel tines are unsuitable tools to be used when spreading, or gathering up the bedding behind and under horses, as an inadvertent movement may inflict a serious wound, and especially when there is not sufficient light in stables to enable one to see distinctly. We have known a careless boy, when cleaning out a stable, to badly wound the legs of a horse by a heedless motion of the fork, so that he was disabled for several weeks. To avoid any injury from this source, let wooden forks be made, like the engraving, having a head about one foot long, one and a half inches square, with a light handle and four wooden tines about eight inches long. The large end of the tines should be about five-eighths of an inch in diameter, and they should have a *true* taper to a diameter of one quarter of an inch at the small end, which should be filed round and smooth. Round tines enter straw more easily than square ones, and are withdrawn with less

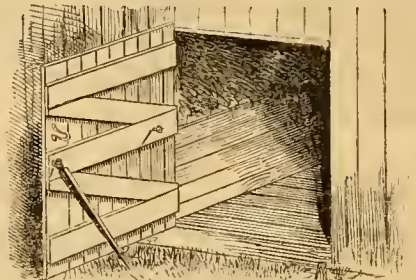


WOODEN STABLE FORK.

force. Such forks should be made of the hardest and toughest wood available, and should be used only to spread the bedding, and not to pitch manure. The points of manure fork tines cut off and ground or filed round, will enter straw easily, and not wound the horses.

Barn Door Fastenings.

Every barn and stable door swinging on hinges, should be provided with some contrivance to prevent its being slammed by the wind. One of the best arrangements for this purpose is here shown. It consists of a spar of wood, about as large as a fork handle, having one end fastened to the door with an iron eye and staple, or with a strap of leather, and the lower end sharpened to hold in the ground, or armed with a spike to prevent its slipping on ice. When the wind blows furiously, it is often hazardous



BARN DOOR FASTENING.

for even a strong man to attempt to open, or close a large barn door, which swings on hinges without the aid of something to prevent the wind slamming it violently, and sometimes blowing it off the hinges, or splitting or breaking some part of it. But with such a help as this, a boy can manage it without danger to the door or himself, by moving the lower end along a short distance at once. When the fastening is not in use, the lower end is hung up to a staple on the door with a hook and strap.

Mutton the Meat for the Million.

Mutton is the best meat we can eat,—best, as being the healthiest—best, as being the most delicious, if well cooked. We do not mean the woolly, greasy mutton of the Merinos and Saxones, nor the coarse, stringy, tallowy, though very economical mutton of the Leicesters, Cotswolds, and other long wool sheep. When we say mutton is the most delicious of domestic meats, we have the flesh of the middle wools in mind—that is, of South-downs, *par excellence*, and Cheviots, Hampshire-downs, Shropshire-downs, and others of their kindred in a less degree. Mutton is made more economically, and is used up more advantageously, than pork or beef. A farmer can seldom have fresh beef unless he has so large a number of hands that they can consume a quarter before it will spoil. More grain is required to make a pound of pork than a pound of mutton. It is more healthful food than pork; fat mutton will keep longer, and a family of ordinary size can dispose of a small sheep before the mutton will spoil, even in quite warm weather. Besides, if a farmer is on friendly terms with his neighbors, he can easily sell, or lend one or two quarters. By a system of exchanging fresh meats, several families may be supplied with that of most excellent quality at all seasons of the year, at a very cheap rate. Mutton is more nutritious and will consequently give a laborer more strength than pork; people of studious habits, and chil-

dren in particular, will feel better, accomplish more, and be more healthy when they eat mutton than if they eat much pork or even beef.

Convenience is an important consideration at all times, on the farm or elsewhere. When fresh mutton is wanted, one man can dress a sheep or lamb in a few minutes; while much longer time is required to butcher a beef or a hog. Nothing is lost in making mutton, and it costs comparatively nothing. The wool will usually cover all the cost of keep during a year, and often that of fattening too. Taking this view, which is a fair one, no one can fail to perceive that mutton is the cheapest meat that can be raised. Small families can salt and dry one or both hind quarters, or cook a quarter and eat it cold. A quarter of lamb after it has been cooked, may be kept ten or twelve days, and still be good. Farmers should learn to prepare their own meat, and not sell their animals to butchers, who sell them the meats for their own tables at exorbitant prices. Furthermore, a great many people who have only a garden or small farm, can often fatten a few sheep during the winter, and thus have better meat, at a much cheaper rate than if they purchase it.

Selection of Breeding Sheep.

Persons who have not made a business or study of keeping sheep, are often in doubt what rams to select for the stocks; and many times crafty men will impose on the credulity of those who ought to know better, and induce them to use grade animals. Grade animals and bulls will not transmit their good points to their progeny, with any degree of certainty. Whether it is desirable to select a South Down, a Leicester, or Merino, it is important to choose a full blooded animal, in order to secure the greatest improvement in the increase of the flock.

The progeny of a full-blooded sire and ewes of ordinary quality, is almost always better than anticipated; while that of a grade sire with such ewes will almost invariably be inferior to their dams. Most farmers are influenced greatly by the present cost of a good ram, rather than by the prospective profits accruing from the certain improvement in their flocks, by procuring full-blooded animals. If a farmer has a hundred good ewes, it will be more profitable, whether his object is wool or mutton, to pay \$50 or \$100 for a ram which will be a sure getter of excellent stock, than \$20 for a grade animal of equally good form, whose stock will in all probability not be equal to himself.

Breeders differs in opinion with regard to the most judicious and profitable crosses, not only for the production of wool, but for both wool and mutton. But, if mutton is the primary object, in a flock showing a large infusion of Long-wool blood, a South Down cross will make as profitable mutton sheep as can reasonably be expected, and at the same time they will show a marked improvement in the quantity of wool. Should the ewes be of a mongrel breed of fair size and thrift, and the object be to improve the fleece, it will be best to use a full blooded American or Silesian Merino ram. If the choice is early lambs for market, a South Down, Shropshire Down, Cotswold, or Leicester ram should be selected. If the ewes are properly kept during the foddering season, the lambs will be large and strong, and be ready for market very early. Should they be desired for mutton, when 3 or 4 years old, they will be found to yield quite as large a profit, including the produce of wool, lambs and carcass, as any other class of sheep.

Flocks of sheep may be more rapidly improved by the use of good rams than by any other means, provided they have good care, but neglect and wrong treatment will effectually neutralize all the good a superior animal might do a flock. A mature ram should never run with more than 50 ewes in this season, but the number may be doubled if he is kept confined. According to the common practice, the rams are very well fed with grass, and have grain daily for several days, or weeks perhaps, before their introduction to the flock; but after that they often receive no grain at all, and sharing the close pasturage with the ewes, get nothing else. Such treatment, every sensible man must know, is most injurious both to the ram and his progeny. Instead of feeding the rams less, their feed should be increased, and such a variety should be presented that they will be induced to fill themselves and pass several hours ruminating. The ram ought to have all the good hay, corn stalks and grass he can eat, with not less grain than is equivalent to a pound of corn meal, mingled with an equal quantity of unbolted wheat flour daily. In addition to this he should have salt and fresh water always before him. If one has peas or beans they may be fed instead of meal, after having been soaked 24 hours. If rams will eat them, there is no better feed for them especially at this season.

When the time of service is nearly passed, the rams may have their liberty and run with the flock, for if a flock is in good condition and has been well watched and cared for, 100 ewes will all, with rare exceptions, have passed their season successfully with only a single ram, within fifteen or twenty days.

There are several ways of managing a flock at this period. That of separating the rams from the ewes every night, and confining them in a small enclosure where they cannot hear the flock, is most desirable in either large or small flocks. A very good way is to keep the ram in a small pen in the field with the ewes, which should be conveniently near the farmstead. The ram should have a cord about 50 feet long attached to his hind foot, by which he may be fastened to a stake whenever he is let out, which is for the shortest possible time, whenever the flockmaster or shepherd notices a ewe lingering about his enclosure. By following the hints here given, a fine lot of vigorous lambs in April will be almost certainly secured.

Care of Store Hogs in Winter.

Store hogs, especially shotes, really ought to have warm and dry apartments during cold weather. Their thin coat of hair affords them but little protection, hence, the importance of warm pig-sties, well littered with dry straw, and so tight that cold winds will not blow directly on them. It is far more economical to keep the animals warm in a snug and well ventilated piggery than by extra feed, and this will promote faster growth, if they are kept comfortably warm by a good building. When a piggery is spacious, with one end open to the weather so that winds make their sleeping place uncomfortably cold, a portion should be partitioned off with boards having the edges well jointed, and a narrow entrance made at the point least exposed. Then nail a board 6 or 8 inches high across the bottom of the entrance to keep the straw from being worked out. Let a liberal supply of straw always be provided.

It will pay well to cook the feed for store hogs, as well as for those that are being fattened. Swine will not extract all the nourishment from dry corn unless it is first ground to fine meal; and even then it will be much more economical to scald it. As farmers must necessarily keep a good fire in the kitchen for a large proportion of the time during the day, the expense of cooking feed for a small herd of swine in cold weather is much less than the gain over feeding with uncooked food. Raw potatoes are frequently fed to store shotes. If the same quantity were boiled, and a few handfuls of meal mixed with them as they are mashed, and warm dish water mingled with the mass, not more than two-thirds the amount would be required to keep pigs in a growing and thrifty condition. The cooking costs nothing, as a farmer or some of his help can attend to the business when there are no other duties to perform. If grain is not ground, let it be boiled until the kernels crack open. Those who have never practised cooking feed, will be surprised to find the marked difference there will be in the quantity of feed consumed, and the condition of the animals.

Some Notes on the New-York City Fish Markets—How Supplied.

Probably not less than one and-a-half million people are fed daily from the N. Y. City markets. This number includes, besides the regular population of this city, that of the immediate vicinity, and transient visitors. The immense demand thus created, of course makes the supply of each important article of food in itself a subject of great interest. Fresh fish are brought to this market, not only from most of the large lakes and rivers of the country, but from points along the entire length of the Atlantic seaboard, from Florida to Labrador, the different species constituting the supply being exceedingly numerous, and presenting an almost endless variety as regards appearance, habits and characteristics. Even the experienced naturalist may here find much that is interesting, and no one can fail to be greatly delighted as well as instructed by an occasional visit to the places where fish are exposed for sale. Aside from these considerations, the skill employed by the expert and daring fishermen, and the perils and hardships involved in the pursuit of their avocation, lend a charm to the subject, giving it all the more interest.

The principal fish mart adjoins the Fulton Market, on the East river, at the foot of Fulton street. This is the only wholesale fish market in the city, and by far the largest in the country. A wholesale business is of course done at Boston, Providence, and other seaport cities, but here is the central depot of the fresh fish trade for all sections, and unlike the meat market, it promises to remain here for a long time. From this center other markets supply their deficiencies, and here send their surplus when overstocked. Prominent among the retail markets of this city are Washington, Jefferson, Catherine, Spring-street, and others located in various quarters of the city. A large part of the fresh fish, however, are sold at small shops, or peddled about, especially on Fridays.

The Fulton fish market extends about 150 feet along the wharf, the space being apportioned to different dealers. The advantage of this location is, that the fish may be taken directly from the water into the market without the trouble or expense of cartage. In the

water adjoining the rear of the market, a space of an equal length, and 50 feet or more in width, is occupied by the dealers for their fish-"cars," in which the fish are kept alive. These cars are boxes, about 10×12 feet, and three feet in depth, with their bottoms and sides made of slats for the free admission of water; and are sunk by putting in stones until the tops only remain above water. When required for use, the fish are scooped out into baskets with dip nets constructed for the purpose, and hoisted by tackles into the rear of the market, whence they are taken for sale or "trimming" to the stands in front. This operation, which commences as early as 3 o'clock in the morning, in order that the retail markets and shops may receive their supplies in season, is mostly over by noon, and comparative quiet reigns where a short time since there was great bustle and confusion. Large quantities of fresh fish are sent daily far into the interior of the country, packed in close boxes between alternate layers of ice. In this way they are preserved in all their freshness, and appear as delicious upon the tables of our inland cities and towns, as at the seaboard. Fresh-water fish from the lakes and rivers are brought here to the market in the same manner, except in the winter, when ice is unnecessary. As a full account of sales is not kept by the leasers of the market, an accurate statement as to the number of pounds sold out from the wholesale market daily, or yearly, cannot be made. One of the superintendents of the market, having had long experience in the business, estimates the average daily sales at not less than 50,000 lbs. The yearly cash receipts at the market, which are more easily ascertained, he placed, after a careful computation, at \$2,000,000; and the amount received by independent dealers outside of the market at probably about \$500,000 more. This total of \$2,500,000 gives an average of \$48,077 paid weekly in this city for fresh fish, not including shell fish. We can not now enter into a description of the different varieties of fish, which, with the manner of taking them, their comparative value in market, etc., may form themes for future articles.

Sowing Rye Late in the Season.

Winter rye, though not properly a biennial plant, nevertheless requires a portion of two seasons to come to perfection. To secure remunerative crops it is usually necessary to put in the seed early in autumn or very late, just before the ground freezes up. With this statement we think all who have much experience will agree; as also, to the statement that the rye most apt to winter-kill is that which being sown in the intermediate time (October or November,) makes only a small growth of either tops or roots before the ground freezes up. Even this sometimes does very well, especially if a heavy fall of snow blankets it during the winter. However, when the seed is put in after the growing season has past, so that it will not germinate until the spring, winter-killing is entirely avoided of course, and at the same time that effect is produced, whatever it is, which makes winter rye sown in autumn, produce a crop, when the same sown in spring, and coming up at almost exactly the same time, would not. We have practised raising winter rye in this manner with the most satisfactory results. Plow the ground as late as possible in the season before it freezes, harrowing in a thin top-dressing of well-rotted barnyard manure, and

sow the seed broadcast or in drills. The manure should be as well rotted, or composted for rye, as for a crop of wheat. If the manure is rather coarse, better plow it under, as it will be more completely covered than if harrowed in, unless, indeed, you use a Share's harrow and go over the field twice before sowing. Wherever the ground is very wet, it should be underdrained, if practicable. Otherwise let it be plowed, and the middle furrows cleaned out before seeding, as shown on page 342 (November). One of the best crops of rye that the writer ever saw was raised by sowing the seed in December, only one day previous to the falling of a deep snow which remained on the ground until the next spring. Soon after the snow disappeared, the rye came up, having suffered no injury from the freezing and thawing of the soil.

This mode of raising rye can be followed with better success on wet land, than if the seed is sowed early; still, better crops can be raised by seeding with spring rye, if good seed can be procured. White winter rye and white spring rye can now be obtained in most of our large cities, at the seed stores. One and a half bushels per acre is sufficient if distributed evenly, provided the seed is good and kernels small. If the kernels are unusually large, seven pecks will be none too much for one acre. *

Cutting up Corn Stalks for Fodder.

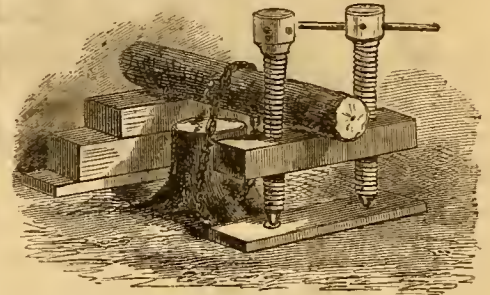
The advantages and disadvantages of feeding corn stalks chaffed or whole to stock may be thus stated. When the stalks are cut into pieces which sheep and cattle are able to take into their mouths and masticate, they will eat much more of the stalks than when not cut. Uncut stalks are in a very inconvenient condition for feeding animals of any kind. There is considerable nourishment in them after the leaves have been eaten off, which sheep and neat cattle lose, if they are not cut so that they can take them readily between their grinders.

It is not necessary to cut stalks as short as some persons have recommended, in order to have animals eat them with avidity. For fourteen years the writer has been accustomed to cut all his corn stalks with a cutter driven by horse-power, and for several years some were cut about half an inch long, though for the most part two inches was the usual length unless they were very large, and to be fed to sheep. Neat cattle and horses will eat them quite as well when cut two inches as if half an inch long. And it is much safer to cut them two inches long than half an inch, because when short, hard pieces are often crowded endwise between the teeth of animals, and splinters of the hard coating, which is almost like glass for hardness, will wound the gums, making the mouths so sore that animals will sometimes suffer with hunger before they will venture to eat cut stalks. Moreover, it is highly probable that these short, flinty chips with thin sharp edges, injure the intestines.

Jack-Screws—Various Uses.

All are more or less familiar with the use of Jack-screws in raising buildings, and for other operations, where a strong lifting power is demanded. For ordinary farm use they are better used in pairs than singly, because they stand so much firmer and are so much more easily adapted to the various purposes for which they are needed. We figure a pair of wooden

ones of about the following dimensions: The extreme length is about 3 feet, the heads being 8 inches long and of about the same thickness. The shafts are 4½ to 5 inches in diameter. The nut-block is of hard wood (maple or beech), 4 feet long, 10 inches wide and 5 inches thick. The ends of the screws are round, that is hemispherical, and depressions about half an inch deep for them to turn in are made in the strong 2½ or 3-inch hardwood plank which rests upon the ground. Such a pair of screws may be procured in most of our cities and large villages, at hardware stores or machine shops, or made to order. Such a pair of screws are much more con-



JACK SCREWS.

venient for raising a corner, side, or middle of a building, than one or more single screws could be, for, by placing them upon the ground, a strong plank or timber of any desired length, even 20 feet or more, may be set on the nut-block, and thus the part over head may be raised without using any blocking for the screws to rest upon. By a little contrivance these screws may be used for raising large trees for transplanting, having balls of frozen earth encasing their roots. They will be found equally convenient for lifting any rocks that a chain may be put around, or logs too heavy to be moved with common levers.

During the past season we have had several inquiries for a cheap and efficient stump-puller. Where great expedition is not required, a good pair of Jack screws with a strong spar, a powerful chain, and suitable blocking, are all that is necessary. The chain, which should be about 10 to 12 feet long, may usually be obtained at hardware or farm-implement stores in our cities or large villages; or second-hand chains, almost as good as new, may often be found at seaports, and if provided with hooks, they will answer an excellent purpose.

The manner of operating this stump-puller is, to dig under a large root of the stump, and fasten the chain beneath the root and over the middle of the timber, which should rest on the top of the stump. The stick may be 14 or more feet long, and 8 or 10 inches in diameter. Then set the screws under one end and work them until the nut is run up to the heads. Next block up that end of the timber, and put the screws under the other. When a stump is firmly rooted, and starts hard, it may be necessary to dig around and cut off some of the large roots, below the surface of the ground. Sometimes a few smart blows with a heavy sledge against the sides of large roots will jar them loose, when the stump will rise with comparative ease. A blow downwards will often break a strong chain. An iron Jack screw working in a socket or square block, may be used in place of a pair of wooden ones, by flattening a portion of the under side of the ends of the timber. This stump-puller may be easily worked by one man, who will be able to take out more stumps in a day, in proportion to the force employed, than could be extracted by a large machine requiring a team or two, and several men to work it.



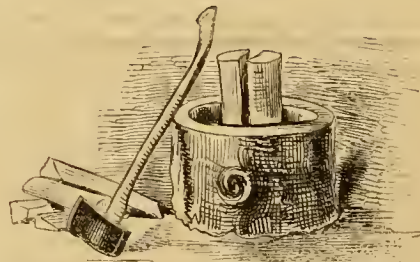
How to, and How not to Fell Timber.

Large trees of valuable timber are sometimes seriously injured by splitting when they fall, simply because those who cut them down do not know how to do it well. We have had a sketch engraved showing a large stump and tree, which was badly damaged in the felling, and another well cut and ready to fall. Almost every one who has been among the wood choppers, when they have felled large trees of tough timber, will recollect having seen the "but logs" of many trees split, as seen in the sketch, and the long splinters remaining on the stump, which were pulled out of the tree, are very common. When a tree is designed for fire-wood, it is of no importance to fell it without damage; but when every foot in length is valued at \$1.00 or more, it is of prime importance to know how to cut it down without damaging the but log.

When a large tree stands perpendicularly, brace it on two sides, as represented, with long, stiff poles, having the lower ends secured by wide stakes. If the wind does not blow, a large tree may be cut nearly off before it falls. The way is to leave a small strip on each side of the tree, while at the middle it is cut entirely through, as represented. When a tree standing as shown in the figure, is ready to fall, remove one of the braces by prying out the lower end with a hand-spike, and it will come down without any damage. When a tree leans, for example, to the north or south, it should always be cut to fall east or west, and always if possible, at right angles to the way it leans. If cut to fall the way it leans, there is great danger that it will split at the but. It is often desirable to have a tree fall in a certain place, though it leans in an opposite direction. To do this, fasten a chain or strong rope to the body, 10 or 20 feet from the ground, and make the other end fast to the short end of a long lever. Then fasten another chain to the lever, some 3 or 4 feet from this end, and hitch it to some tree, stump or post standing near, and in the right direction. Fasten the long end of the lever, so as to hold the chain taut and the tree in its place till it is cut almost off, and then a team drawing at the long end, will pull the tree over where it is desirable to have it fall. A system of pulleys or a tackle, in which the rope is reeved through double and triple blocks, will subserve the purpose of a lever. When it is desirable to have a large tree fall in a certain direction, let the kerf on the side where it is to fall be cut deeper, and 2 to 6 inches lower than that on the opposite side. If a large tree be cut nearly off

on one side, it will usually fall on that side of the stump. For this reason, if a longer and deeper kerf be made on one side of a tree than on the other, and the small one a few inches higher than the large one, it will be easy to make a large tree fall in the desired direction without the aid of braces, or chains. A tree may sometimes be sawed down quite as advantageously

as felled with an ax, if a saw is in good order. To facilitate starting a saw in the right direction, bore a hole horizontally into the tree about two inches deep, and drive in a wooden pin, on which the blade of the saw may rest, until the kerf is sufficiently deep to steady it. Decide where the tree is to be felled, and saw the side in that direction half off first, then saw the opposite side. Two broad and thin iron wedges should be driven after the saw into the kerf, to prevent the saw being pinched so tightly that it cannot be worked nor drawn out. The ears on the end of a saw for felling timber should be secured with bolts, so that one may be removed, and the saw withdrawn, when it is difficult to knock out the wedges from the kerf.



A Convenient Wood Holder.

A subscriber of the *Agriculturist*, whose name we have lost, described to us recently in conversation a contrivance for holding wood for splitting, which we here illustrate. It consists simply of a portion of a hollow log sawed off square, about one foot long, and placed on one end for holding the wood while it is being split into small sticks. Such a contrivance saves much labor, as it keeps the sticks erect, so that a workman may swing his ax freely; whereas, when he has nothing to hold his wood in place, much time must be spent in picking up and adjusting the billets to be split. To prevent the numerous blows in one place from splitting such a holder, pin a half-round stick on the upper end, against which the ax may strike.

Snow Tools.

It is not because we are afraid of work that we advocate making all kinds of work easier. When, as ambitious boys, we came into the house staggering under the weight of a big armful of wood, perhaps dropping a stick or two, we were told such was "a lazy man's load." It was indeed easier to fetch a big load once than

to go twice, but there was no laziness in that. On the same principle we shovel snow with a shovel large enough to make heavy work of what would be like "beating the air," if we used a common square shovel. We see with surprise the very common use of inconvenient tools for moving snow, making paths, etc., and figure a few very simple ones, which will commend themselves to every man who has this work to do. Hammer and nails, a saw, a drawing-knife, a jack-plane, and a scratch-awl, with a few boards and pieces of wood, are all that are needed, to enable any one to make the implements we describe, and any one can do it.

The Snow Push (fig. 1). This is a very convenient tool to clear paths after light falls of snow, or when snow changes to rain, which is soaked up by the snow. It is made by inserting

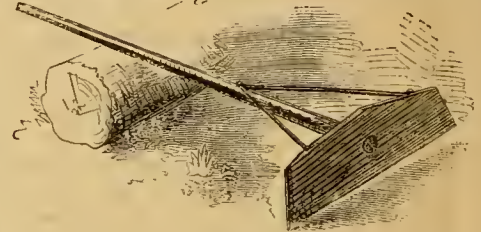


Fig. 1.—SNOW PUSH.

a handle 5 or 6 feet long in a head of oak or other hard wood, 1 inch thick, 14 inches long and 5 wide. To prevent it from working loose, it may be braced with stout wire. In use, the snow is shoved along before it.

The Snow Shovel (fig. 2) is made of pine; the blade of $\frac{3}{4}$ inch stuff, 20 inches long and 14 or 16 wide, tapering to an edge over which is turned, and tacked, a strip of tin, having a width of $1\frac{1}{2}$ or 2 inches on each side. A back, perpendicular to the blade is nailed on, and this has a slot to receive the handle, which is set on at an angle of about 20 degrees. It is about 4 feet long, and strongly screwed to the blade and to the back piece. By some a shorter handle is preferred, furnished with a grip-piece at the end.

The Snow Plow (fig. 3). There ought to be somebody in every neighborhood, who is public spirited enough to make and use a snow plow, not for his own family only, but for the general good. The convenience of having good, wide paths all cleared by horse power, and almost as fast as Dobbin will trot, about the farm buildings, etc., can hardly be estimated. When this work is done, a man can set the neighborhood in a state of pleasant good feeling, if he drives about for half an hour, leaving behind him everywhere a good walk in the deep snow, and cross-walks where they are needed. The school, the church, and the post-office should receive especial attention, so that the children and women may conveniently get about. Other men with their shovels will make the connections and put the finishing touches, and soon too the street will

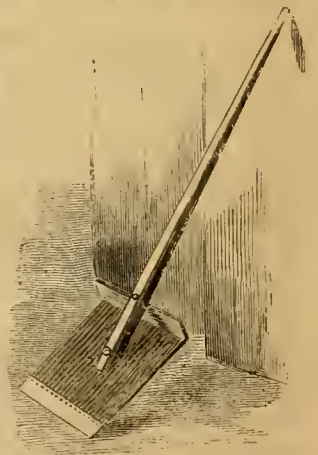


Fig. 2.—SNOW SHOVEL.

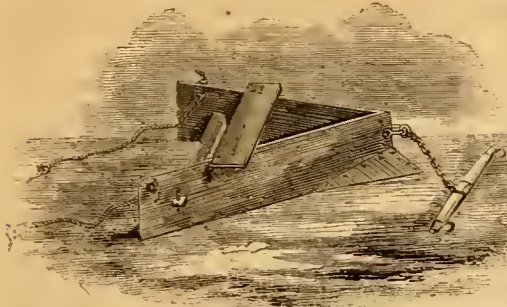


Fig. 3.—SNOW PLOW.

be quite lively with people running here and there. The snow plow figured, is thus made: The side pieces are 1½ inch oak or chestnut stuff, 12 inches wide and 4 feet long, chamfered off at the forward ends, so as to come together at an edge, when the rear ends are a little more than 4 feet apart. They are braced apart by a 2 × 3 inch stud, which is mortised in. A 6-inch cleat is nailed upon each board on the inside near the mortise. The horse may be attached by a clevis, the bolt of which goes through the edge, as shown, or by a chain fastened to a long bolt or pin run through a few inches back from the front edge. A board on the top answers for the driver to sit or stand upon, and the ropes behind enable him to lift the plow over bad places, stones, etc., to turn it on one edge, to guide it, or pull it back. A sort of share may be attached in front, as shown in fig. 3, and in many cases will be found very useful, especially where the snow has been trodden somewhat, or where it is very moist and packs in front of the plow. It requires rather nice sawing or work with the drawing-knife to make a good job of putting on this attachment. It should be well nailed on, and it adds strength and durability to the plow.

Water, Useful and Ornamental.

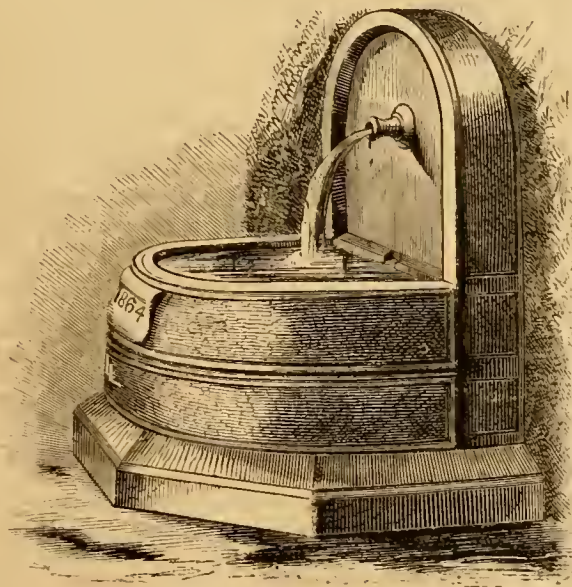
That was a good idea of the Turk who, when dying, provided for the construction of a fountain, on the sides of which was carved a request for the prayers of all who should drink from it. In the town of Cazenovia, N. Y., a wealthy and liberal gentleman, has constructed drinking-troughs of granite, on every highway leading into the village, for the use of horses and cattle. The water is brought in pine logs from cool springs in the neighboring hills, and rising into the center of stone structures by the road-side, pours through a copper pipe into the troughs below, and a cup chained to each provides for the wants of thirsty travelers. The simple inscription, "L. L.," carved on each fountain, perpetuates the memory of the benevolent Mr. Ledyard Lincklaen.—A friend in Cazenovia furnishes at our request a sketch of one of these fountains, which we have had engraved. The structure consists of a base, a back stone, and a stone containing the trough. It is about 5 feet high, 5½ feet wide, and projects about 4 feet. The trough is 4 inches deep, and the waste water flows off at the back.

Do we make all provision as we should for furnishing good and abundant water for our homes? Pure water is essential to the health of man and beast. Horses and cattle always prefer the water of springs and running streams to the "hard water" of our wells. In limestone regions, it would doubtless be healthier for man

to drink pure rain water than that of wells. Cisterns can be so built as to filter the water through gravel and charcoal, and render it as pure as when dropping from the clouds. The amount of water falling on our roofs annually is greater than we are wont to suppose. A roof ten feet square will furnish seventy barrels a year. A roof thirty feet by forty, gives 864 barrels a year, i. e., more than two barrels a day for every day of the year! If our cisterns are large enough we shall never lack water. The labor and expense of bringing water from springs on hillsides is not so great as

many imagine. In the country, ordinarily, nothing is better for this purpose than wood, which when well bored and properly put together and laid below frost, will last from ten to twenty years. The Water Ram, when well put up and managed, is a useful machine. The relative proportion of the supply and delivery varies with the height of the fall and the elevation to be overcome. As a general rule, one seventh part of the water may be forced to 5 times the height of the fall. A fall of eighteen inches with supply pipe one inch in diameter, will raise water in a half inch pipe twenty feet. A fall of four feet from the spring will deliver three and a quarter gallons every ten minutes at the height of nineteen feet above the Ram. (A minute description of the Hydraulic Ram, and its operation, fully illustrated, may be found in the November *Agriculturist*, 1858, Vol. XVIII, p. 324-5.

Every farm yard should have, if possible, its penstock running day and night with pure



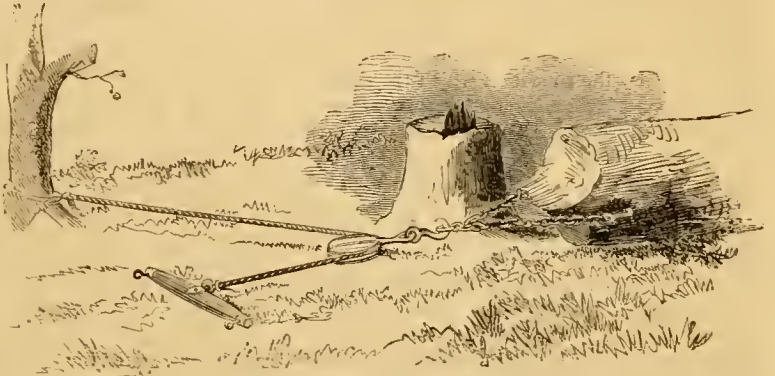
DRINKING FOUNTAIN AT CAZENOVIA, N. Y.

spring water. Where springs are not within reach, water may be raised from wells or cisterns into tanks in the upper lofts of barns or other buildings, by windmills or force-pumps. But whatever be the means employed, every farmstead and every house should be provided

with an abundance of pure water. Wooden water pipes are safer than lead, usually better than iron, and are generally more accessible.

The Use of the Single Pulley in Moving Heavy Loads.

Farmers need a correct understanding of the principles of draught; their teams are required to haul a great variety of articles, and it is highly important to know how to economize time and force most advantageously. There are frequently large logs or heavy stones to be drawn a short distance, which cannot be moved with a single team when hitched directly to them, but they may be moved with comparative ease by means of a single pulley. By drawing upon one end of a rope, passing around a pulley attached to a log, as shown by the figure, while the other end of the long rope



USE OF SINGLE PULLEY.

is made fast to a stake or tree, one horse will draw a log that two horses cannot move, directly. The reason for this is that the log will move only half as fast as the horse; consequently the horse is exerting his force during twice as long a time, and so, of course exerts twice as much force. Now, if the pulley block be placed at a tree, or post, while one end of a rope passing through it is hitched to the log, (the team drawing at the other end,) the united force of three horses will probably not move a log that might be hauled by one horse, were the pulley near the log. The tackle in this case would not only be of no advantage, but a decided disadvantage. The team might better be hitched directly to the log, for when the pulley is fixed, the weight moves just as fast as the team.—There are many other places where a rope and a single pulley may be used to a great advantage. A heavy stone, that four horses could not move by a straight pull, may be drawn from a stone quarry with ease with two horses, by using a rope and one pulley. Should a teamster get into a place with a heavy load, where four horses could not haul it out, two horses, with a pulley at the end of the wagon tongue drawing by a rope, one end of which is hitched to a fence-post or stake, might start it with ease. Teamsters traveling where their wagons are liable to sink in deep ruts, as is sometimes the case, especially in new countries, would often

save themselves a great deal of trouble and much time, if they would carry with them a 60-fathom ¼-inch rope, and a block to match, to draw out their loads in case they "mire." Many other applications of the pulley will readily suggest themselves to the reader.

An Education Good Enough for a Farmer.

The best education is none too good. Who sets out second-rate fruit, if he can get first-rate? or who sows poor wheat if he can get the best? What is the best education that a Farmer can have? Truly, that which will fit him for most successfully tilling the soil, for business intercourse with men, for taking a creditable position in society, for serving best his fellowmen and honoring his God. To help us to decide what course of mental culture—for that is what we generally mean by education,—will best accomplish these ends, let us see what men are the best farmers, and what their education has been. As a general thing, we believe that among those farmers who work with their own hands more or less, and are not merely proprietors of estates which they may or may not personally manage,—those *not* bred to the business of farming, are by far most successful. Many of them were born on the farm, and others took to farming after learning other business. Is then the education which the farmer-boy picks up after he leaves the farm, while he is at work in the machine shop, shoving the jack-plane, or behind the counter, the best he can have? No, indeed; but he gains something which makes him a better farmer than his neighbors. Premising that he would not have returned to farming, or taken it up if he had not a love for it, he has probably gained, in the shop or store,—*First*, a just estimate of the value of accurate accounts, of knowing the pecuniary success or failure of the simplest ventures; *Second*, a high estimation of the value of knowledge of one's business, which makes him read and think, as well as work; *Third*, liberality in regard to the views and opinions of others. It has made him quick witted also, and not set in his own way. Besides, contact with men has given him confidence in himself when he knows where he stands, and a lack of confidence when he is not sure of his ground. Such a man will always succeed as a farmer. He may be dreadfully green for a year or two, but in a short time he will beat the old farmers out and out. If our readers will testify, they will confirm what we say, and point out neighbors of theirs that they used to laugh at for their blunders and cityfied farming, which, perhaps, was half book farming and half guesswork, who now are beyond being laughed at; or at least the laugh is on the other side. These men have gained their farming education by the hardest. Our boys ought to have a better chance.

The Home School is where the boy gets his first notions and principles, and these will have their effect upon him to the day of his death.

The Common School is where the foundations are laid of whatever literary or book education the boy ever gains, together with the establishment of correct habits of study and thought, a taste for mathematics, quickness at figures, etc.

The High School, whether it be Academy, College, or Agricultural College, is supposed to bring the young man forward to the threshold of mature life with knowledge enough to enable him to make a good start, and with such habits of study and thought that he will always value knowledge and seek it. Finally there is—

The School of Experience, in which we are all pupils and always have been, from the time we first learned we could not reach the moon, and that the candle-flame was too hot a place for our fingers. It is in the school of experience that men educate themselves in their judg-

ment of probabilities, in the estimation of men for what they are worth, and in many other things which have a great influence on their success or failure, superiority or mediocrity in whatever business they follow.

This last excepted, the other schools mentioned are named in order of their importance in forming character and developing the mind. The boy should have the best instruction where and when this development takes place. The best teachers are by no means those who know the most, they are those who inspire the child, or youth, with a desire to do best, and to learn most, those who guide the young mind into those channels in which it can and will pursue useful knowledge with zest. A child of fourteen well started, will do well under poor teachers, after that. We propose to discuss these three schools in other articles.

Western Agriculture.

"C. S. W.," a "York State Farmer" and pioneer in Scott County, Iowa, sends to the *American Agriculturist* his views:

"Agriculture in Iowa differs materially in all its departments from the long established systems of the Eastern States. Theoretical farming finds little encouragement here (?); our most successful and intelligent farmers are those who have in a general way discarded theories, and applied themselves to a faithful study of the nature and characteristics of the soil. Within the past ten years our farmers have gradually adopted the opinion that our soil has its peculiar and fixed *constitution*, and that it is essential to acquaint ourselves with its local laws. We have but little faith in any of the popular disquisitions on acids and alkalies, and how to preserve the equipoise of their relations, for we daily discover the abundance of inconsistencies in theories originating in regions possessing few features in common with our own. Any of our old settlers would give you a series of facts that would upset a multitude of the ideas advanced by Liebig, Mechi, etc. My own farm is probably one of the oldest in the State, and I have fields that have been almost uninterruptedly cultivated in corn for thirty-three years, and yet the annual yield, by actual measurement, ranges from 75 to 100 bushels [of ears, no doubt. ED.] per acre. (?) This year the stalks average over eleven feet in height, and the corn yield promises to exceed its usual average. The land is high and dry, and was never manured. And this is the usual, I might say universal, fertility of Iowa soil. 'Gradual impoverishment' is very slow in its operation here. Of late years we are beginning to believe that Iowa soil is rich in the elements that contribute to fruit growing, and orchards are becoming popular, and are almost invariably successful. We get apples in eight years after planting the seed, or more practically speaking, standard fruit-trees, as usually sent out from the nurseries, bear fruit within four years, and an orchard six years old yields a profitable crop. Four years' growth, with cultivation, gives our fruit-trees a diameter of from three to five inches. It is, however, noticeable that few of the Eastern varieties retain their prominent characteristics when grown here. The greenings and pippins of 'old York State,' degenerate into very ordinary fruit in Iowa. But we have our own peculiar apples that leave us little cause to regret that grafts from the old homesteads of our youth, do not give us the fruit that tasted so well in our boyhood. Systematic and judicious

land culture in Iowa is richly rewarded, and our best farmers are those who, on the sterile fields of their former homes, were forced to acquire habits of industry, observation and reflection. These invariably meet success in the West, and it is this fact that offers so much encouragement to the immigration of our Eastern friends. It is strange that more of the surplus population of the large cities do not seek the West, with its certainty of comfortable homes and a fair chance for wealth. A New Yorker myself, I know how many intelligent mechanics, business men, small capitalists, etc., are wasting life there, struggling for the daily bread and assured welfare, that are so easily obtained in Iowa (?); obtained too, without the sacrifice of any Eastern privilege, for churches, schools, and newspapers here abound, and the *Agriculturist* sheds its kindly rays on us within forty-eight hours after its issue in New York."

[We can not let our correspondent have his say without adding a word. (1) All men who cultivate the soil have some sort of theories, at least a kind of reasoning founded on guesswork; and the men who declaim loudest against theories have the most of these very peculiar kinds. Even Iowa farmers, plow and sow, raise grain and roots, and grass, and feed cattle and sheep; and at the East we do so too. Practice and facts never hurt a good theory yet, and never will. The experience of 10 or 33 years in Iowa and other States may show that the land is not exhausted yet. There is land in Connecticut that has been cropped longer than that, without exhausting it, and so there is in England.—This does not militate against any correct theory however. Continual cropping does tend to impoverish the soil. The larger the crops, the more rapid the impoverishment. Manuring does maintain the fertility of the poorest land, and it increases and improves the crops upon the best natural soils.—(2) Good farmers out West may be entirely satisfied with 75 or 100 bushels of ears per acre, but we of the East do not consider it much. When we get 80 or 100 bushels of shelled corn measured in November, then we begin to brag. (3) C. S. W. can hardly be better informed about the condition of Eastern mechanics, etc., and the wages they are getting, than he is in regard to the theories of acids and alkalis he has such a horror of; for the West with all its fertility as a general rule presents few or no inducements to the classes of persons named, which will compare at all with the pecuniary prospects presented here. But there are other classes—enterprising young farmers, with capital, and without, foreigners not mechanics, and all sorts of men without trades. Such men will usually better themselves by going West, or South.—ED.]

A Private Park with Five Acres of Land.

In the unequal distribution of tastes, it often happens that those who are best fitted to enjoy rural life, are the least able to do so, and many a merchant or mechanic toils on in city or village in the hope that the time may one day come when his desire for a quiet retreat may be filled. How many such have studied all the best works on landscape gardening, in anticipation of the time when they could lay out grounds otherwise than on paper. How many such have visited the "show places" of the wealthy, where acres of lawn, miles of perfect drive, beautiful pictures of tree grouping have shown how lovely earth can be made if one only has the means. There is the disheartening thing about the whole matter, that but few can

hope to possess that fortune which an ample and well kept domain implies. Fortunately for those whose purses are not in proportion to their tastes, Mr. L. S. Haskell, has contrived a plan by which one may enjoy all of rural beauty that the wealthiest can encompass, without being a millionaire, and as the plan upon which he has done this is one which is capable of imitation elsewhere, and is practicable upon a much smaller scale than that attempted by him, a description will interest our readers.

Some ten years ago Mr. Haskell, being impressed with the great natural beauty of the slope of Orange mountain near the town of Orange, N. J., purchased a tract of 500 acres, which has since been extended to 750 acres, and is now called Llewellyn Park. The land is judiciously divided up into building sites of from 5 to 10 acres each, while a park of 50 acres is kept for the use of the owners of these sites. This common park is an irregular strip running lengthwise of the tract, easily accessible from all the residences, and includes ravine, forest, and lawn in pleasing variety. Aside from the grand old native trees, the original occupants of the soil, many new and valuable ones have been introduced. Great numbers of Rhododendrons have been planted, the rare and slow growing kinds flourishing with a vigor and health of foliage that we have never seen equalled in cultivation. Fine roads are laid out through the whole tract, and each resident has a stately approach to his grounds, the uneven character of the surface allowing one in a short drive to enjoy a great variety of scenery. The beauties of the park culminate at Eagle Rock, an abrupt bluff upon the highest point of the grounds. The view from this point is finer than one would think it possible to find within less than an hour's ride of New-York City. Indeed there are few more enjoyable views to be found anywhere. Of the thirty proprietors who have dwellings in the park, not one has had the bad taste to put up a fence, and after the visitor passes the tasteful gateway there is nothing to remind him that he is not driving about the extensive grounds of some princely manor. The roads and other common portions of the park are kept up by an annual assessment, the amount of which is determined by the proprietors themselves, but which is limited to \$10 an acre. There is also a fund provided by setting apart a portion of the proceeds of the sales of sites, the income of which is for general improvements. The advantage of an associated proprietorship of this kind is, that it enables one of moderate means to enjoy surroundings which are usually at the command of only the very wealthy. The owner of five acres, more or less, has as much as he can well improve by himself, he has an undivided share in 50 acres of play ground, seven miles of drive, and views which can never be obstructed. Those who wish to enjoy a few hours most delightfully should visit this charming spot. The only formality required is to enter name and residence in a book at the gate keeper's lodge. Every place has not its romantic mountain slope, and not many can hope to be so fortunate in the selection of a site for such an enterprise as has Mr. Haskell, but we can not see why every large town or village might not have a park upon a similar plan. Were it not that the word is sometimes used in an unpleasant sense, we should call it a "community park." It is in fact, a rural town where each one can have all desirable seclusion on his own grounds, and contribute his share to a fund for the tasteful adornment of the common domain, with its drives and walks, to be enjoyed by all.

Some Experiments in Potato Culture.

In the brief account of the exhibition of the Penn. Horticultural Society, in the Nov. *Agriculturist* we mentioned a fine display of potatoes by A. W. Harrison, of Philadelphia. The samples were so excellent and the yield (stated plainly upon the label of each variety) so generally large, that we applied to Mr. Harrison for an account of his method of cultivation, which he not only cheerfully furnished, but also gave us a fine set of specimens, which have for some time been on exhibition at our office. Mr. H. commenced his operations upon a farm so much impoverished by nine years of cultivation without manure, that two years ago his first crop of Peach Blows was only 50 bushels to the acre. The following are the chief points in which Mr. Harrison's cultivation differs from the ordinary:

The land is plowed, subsoiled and supplied with ordinary manure in the fall; in the spring it is plowed crosswise, harrowed and rolled and then marked out 3 feet each way with a corn marker. At the intersections of the markings one whole potato is planted 6 inches deep, and with it is put a handful of the following compost: Wood ashes, 4; salt, $\frac{1}{2}$; lime, 2; plaster, 1; and superphosphate, 1 part. A good handful of this to the hill takes about 50 bushels to the acre. The superphosphate may be of domestic production, or that of some reliable manufacturer, but it is considered essential as a preventive against the attacks of the grub. After planting, 1000 pounds to the acre of the above composition is sown broadcast. The first cultivation is up and down each side of the rows with Knox's cultivator; afterward the ground is worked twice with a horse-hoe run in the opposite direction. Three dressings are afterward given with the hand-hoe, in all cases avoiding hilling. The harvesting is done with a fork. Over twenty varieties of potatoes were tested, some of them of well known prolific character, and others poor croppers. The total yield of all sorts upon 14 $\frac{1}{2}$ acres was 2,811 bushels. Some English kinds gave only 40 bushels to the acre, while the Harrison yielded 305 bushels; Early Goodrich, 232; Cuzco, 263; Monitor, 235; Jackson White, 196; Calico, 171; Garnet Chili, 130; Buckeye, 170; Dalmahoy, 193; Goodrich's No. 380, 181; No. 24, 179; Seedling Mercer, 171; Snowball, 161; Gleason, 157; Early Wendell, 95; Blue Coat, 86; Red Bird, 47; Early Handsworth, 41; Race Horse, 41. At the head of all varieties for every good quality, Mr. H. places the Early Goodrich and the Harrison. These are both seedlings raised by the late Mr. Goodrich, and the last named was so called by him as an acknowledgement of the interest manifested by Mr. H. in the experiments of Mr. Goodrich. The Monitor is an enormous potato, 50 of which have weighed 60 pounds and filled a bushel; it is represented as being solid and excellent.

There is nothing in the results above given which, on good soil, would be a great yield, and it is only in consideration of the impoverished character of the land that they become remarkable as showing what may be done on exhausted soils by judicious manuring, and also how much the yield is affected by the choice of a prolific variety. Several samples of the entire yield of a hill were exhibited, showing a large proportion of marketable potatoes. Mr. Harrison is decidedly in favor of planting whole and good sized potatoes, and claims that not only is a larger yield of larger potatoes obtained than when cut seed is used, but there is no ten-

dency to degenerate, and the variety is, on the contrary, improved. Whole potatoes may be planted very early; the most vigorous eyes will start, and if the shoots from these should be cut down by a late frost, others will sprout from the dormant eyes, and a crop will be realized without replanting. We understand that Mr. Harrison intends to prepare a detailed account of his experiments with the potato. This outline is from notes taken of a conversation with him while he was actively engaged in the discharge of his duties at the Exhibition as Secretary, and if any essential point is omitted we have no doubt he will willingly supply it.

Unseasonable Growth in Trees, etc.

Quite a number of correspondents have sent us accounts of apple, pear, cherry and other fruit trees, which have come into bloom in the months of September and October, and we have ourselves seen a number of instances of this kind in which the trees had flowers and young fruit. Several who had plants of the "Agriculturist" strawberry have sent us by mail specimens of poorly developed ripe fruit, some of them finding fault with the variety on account of its being a "late kind." It is not rare to find strawberry flowers late in the season, and this year they have appeared more or less abundantly on plants of different varieties, and the thing is not peculiar to the "Agriculturist." In the middle of October we went over a large bed of Boston Pine and found quite a picking of fruit. Nor are our ornamental trees exempt from this unseasonable development. In the streets of New York City we have noticed several Horsechestnut trees, the terminal buds of which had pushed, and though the growth from them was not as vigorous as it is in spring, it was sufficient to cloth the tree in green long after the regular crop of leaves had fallen. These phenomena are caused by the unusual character of the past season; late summer and early autumn being so dry as to cause early maturity of wood and foliage, as well as of fruit, and vegetation came to a rest at a much earlier period than usual. This cessation of growth is usually followed by cool weather, which keeps the plants in a dormant state, but this year it was succeeded by continued warm weather with occasional rains. The effect of this was to start into life the buds which had been prepared for another year, and as it were to use in the payment of a present necessity, funds which had been reserved to meet an obligation not yet matured. As we cannot spend our money and keep it too, the trees that have pushed flowers and leaves are in the condition of one who has exhausted his resources, and the only remedy for the tree, as for the individual, is at once to retrench. To drop illustration, trees which have pushed either flowers or leaves, must be severely cut back, as whatever of late growth they may have made, cannot be sufficiently ripened to endure the winter. Those trees which have flowered cannot be expected to repeat the operation next spring, unless there should be some buds that have remained dormant; so much of the accumulated energy, so to speak, of the tree has been exhausted, and in order to repair the damage we should shorten in the branches, and secure a vigorous growth next spring from buds which have not been swollen in the autumn. This is especially necessary on young trees, which will have their future vigor much impaired if it be neglected, but if they are severely cut back now, having regard as much as may be to the future shape of the tree, they will in all probability do well.



BREAD SERIES, NO. III.—(See page 268.)

Cultivating Chestnuts.

The striking picture which is presented of a chestnut burr with its fruit, is no exaggeration. The measurements were fairly taken, and the character of the nuts, their sweetness and freedom from bitter inside skin convinced every one, without other testimony, that they are genuine native Americans, or at least just as good. They were brought to our office by E. S. Lamoreaux, Somerset Co., N. J., who has for four or five years exhibited chestnuts from this tree. Each year they have been larger than the year before, and this year the nuts weigh 40 to the pound. Mr. L. states that when he came in possession of the place he now occupies, he found the tree which bears this fruit, then in bearing, and of good size, standing isolated in arable land. The field has been regularly cultivated to common farm crops, corn, potatoes, etc., well manured; but the chestnut tree, which originally bore fine large fruit, has received on its own account, an additional dressing of about one load of manure in the spring, and a quantity of lime in autumn. The result is a constantly increasing vigor in the tree, and larger crops, and at the same time very greatly augmented size of the nuts.

Every one who has taken pains to observe the fruit of different chestnut trees must have noticed very great diversities both in size and sweetness. In Europe where this nut has been cultivated for centuries, there are over thirty catalogued varieties which may be had of nurserymen there. Should we turn our attention to the cultivation of the chestnut here, valuable varieties would soon multiply upon our hands, as do the sorts of native grapes. That their culture will pay need hardly be argued; chestnuts now bring \$7 to \$13 per bushel.

While there is no doubt that if large chestnuts are planted, trees may be raised, the majority of which will produce improved fruit, there is no certainty of this, and in Europe, recourse is had to grafting or rather, budding. As there is but little American experience in chestnut culture to draw upon, we condense the following account of the manner of proceeding in the French nurseries from the "Arboriculture" of Dubreuil:—Stocks are raised from the seed, and for this purpose the ordinary chestnut answers perfectly well. The chestnuts, after being gathered, are exposed for several days to the sun, to rid them of superfluous moisture, and they are then packed in an abundance of sand, where they are kept until the soil is ready for planting in spring. This treatment is necessary to prevent the nuts from heating or becoming too dry, either of which would destroy their vitality. The nuts are planted in rows about 15 inches apart, at distances of some 10 inches, and covered about 3 inches deep. During the first two years the plants remain in the seed bed, which is to be kept clean. The third spring after

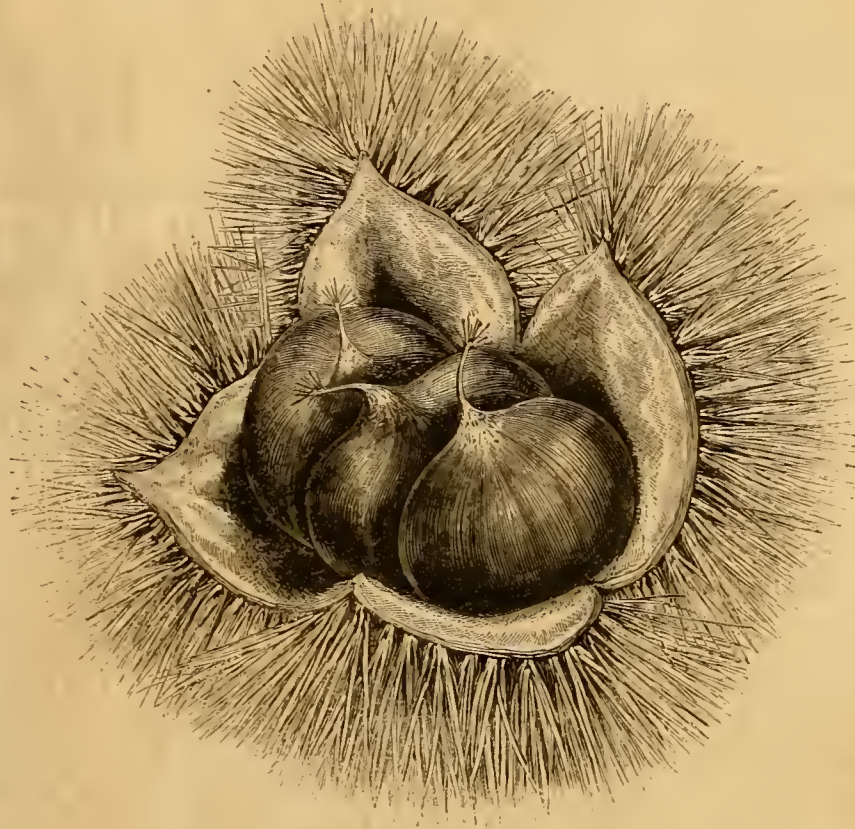
planting, they are set in nursery rows, the tap root being shortened at transplanting. When the young trees are about 8 feet high, they are set where they are to remain. To graft or bud the chestnut, the young trees are cut back in

in a lawn and rather thickly planted with this, with a border of other and lower growing plants, makes a fine show. A very white leaved plant, *Centaurea candida*, is a good one to use with the Coleus. The Coleus is not inelegant as a pot plant, and it may be easily kept over winter in the house, and afford plenty of cuttings with which to start a stock in the spring. Nothing is easier to propagate. Placed in a dish of wet sand, every joint will strike root and make a plant.

The Trailing Arbutus. (*Epigæa repens*.)

Engravings, be they ever so faithful as to form and outline, generally fail to convey an idea of the exquisite delicacy and beauty of flowers, as a photograph gives a correct map of the face of a friend, and yet lacks the expression which is characteristic of it. No stronger instance of the inability of the engraver's art to present that which we most wish to show about a flower, has occurred to us than the one now before the reader. Both artist and engraver have done well, and yet the delicate texture, the fresh breath of spring, in short the living plant is not there; and if those who do not know the

Trailing Arbutus, would learn how lovely a gem our woods contain, they must go in March or early April to some wooded hill side, where, upon the edges of the wood, snugly nestling among the fallen leaves, they will find a treasure worth the seeking. The plant is common in New England and extends to the Carolinas, generally preferring a sandy soil, though some-



AMERICAN CHESTNUTS, IMPROVED BY CULTIVATION.

spring to 6 or 8 feet, when numerous shoots will start, 5 or 6 of which are selected upon which to bud, and the rest removed. The method of budding said to succeed the best, is the ring or flute budding. A ring of bark containing a bud, is removed from a twig, of the variety it is desired to propagate, of the same size as the stock, and neatly fitted in the place of a similar portion of bark that has been removed from the stock. In France this operation is performed in August, but the time to be selected here must be that at which the bark will separate most readily from the wood.

Since the foregoing was in type, a friend, who has been experimenting with chestnuts, informs us that he has been successful in propagating them by the ordinary whip grafting. The work was done in the spring, just before the trees started into growth. Young shoots were selected to graft upon, and the cions were of the same size as the stocks upon which they were placed.

Coleus Verschafeltii.

This very pretty "foliage plant" with an unpleasantly awkward name, (pronounced *Co-le-us Ver-shaf-fel-ti-i*) was engraved in June 1863. It was then new and quite rare, but such is the ease with which it is propagated, that it is now one of the most common, as it is one of the most useful bedding plants. In the figure referred to, the foliage is given as variegated, and it usually is so when grown in-doors, but when put out in the grounds, it becomes a rich mass of maroon-crimson foliage, often beautifully tinged with bronze. It is pleasing when grown in single specimens, but the best effects are obtained by planting it in masses. A bed cut out



TRAILING ARBUTUS.

times found on the borders of rocky woods, especially where there are pine forests. It is a little evergreen shrub, growing prostrate upon the earth, as its name *Epigæa* expresses. The stems and leaves bear brown hairs, which give

a rich effect to the foliage; the flowers vary in color from pure white to a rich rose, and have a deliciousness of fragrance not equalled by any of our wild flowers. So attractive is the plant that many have removed it to the garden, where with ordinary treatment, it is quite sure to die, and some of the books state that it cannot be cultivated, but this is not so. An amateur of our acquaintance has a great liking for growing wild flowers, and he usually succeeds, for the reason that he consults the natural habits of his favorites, and gives them a treatment suited to their needs. With him the *Epigæa* grows finely. He takes up the plant in autumn with a good ball of earth around the roots, and transfers it to a bed prepared with leaf-mould and a plenty of sand, and over the whole puts a thick covering of leaves. Then in summer the bed is shaded by a frame work of laths, the laths being put as far apart as they are wide. This, while it affords free circulation of air, wards off the burning sun, and by this method he succeeds not only with the *Epigæa*, but with other native plants that are usually difficult to manage. We have given at the head of this article the most generally used common name, but it also bears those of Ground-Laurel and May-flower.

Knox's Fruit Farm and Grape Festival.

The Rev. J. Knox, was some years ago known as the "Strawberry King," but he has since cultivated the grape so largely that we are not sure that his former title holds good. Though he does not by any means give up strawberries, he each year has "a little more grape." Mr. Knox has a pleasant way of holding "festivals" over his strawberry and grape harvests, at which all pomologists are welcome. Lest the term might be misconstrued, we will state that the festival part consists of a hospitable farmers' dinner, with perhaps a glass of home-made wine, but that their real object is to get people together to "talk fruit," and see what he is doing in the way of fruit culture. We attended his grape festival this year, which owing to a prolonged storm, drew together fewer than usual. There were several gentlemen present from Ohio, Michigan, New-York, and Pennsylvania, all more or less concerned in fruit culture. Mr. Knox's fruit farm is upon a hill, about two miles from Pittsburgh, and just outside of the smoke cloud that overhangs the Iron City. His farm contains about 140 acres, and has a gently undulating surface, the soil being a stiff loam. Forty acres are in strawberries, twenty-two acres in vineyard, the rest of the land being devoted to nursery purposes, orchard, currants, and other small fruits. The first thing that strikes the visitor, is the practical air that pervades the whole, everything for use and nothing for show. This is a successful fruit farm, and the principal element in its success is thorough culture. The fields of strawberries are immense, but there are no weeds, and in those where fruit is expected, no runners. Mr. Knox's manner of training grapes we described in November, 1863. The trellis there figured is the one now in use. It struck us that 8 feet was rather too high for convenience, and afforded too much surface to the winds. It was to be expected from Mr. K's known partiality for the Concord, that this would be the leading variety, and so we found it. All other kinds are represented, but for grapes he grows the Concord. Looking at the splendid show of fruit on his trellises where the vines had hardly cast a leaf, and then at the

fruitless and leafless vines of most other varieties, we can hardly wonder at his enthusiasm, when he declares this to be the grape for him. This year his Concord vines have been healthy and fruitful, while the Delaware, Diana, Rebecca and others have completely failed. With tons of the Concord bringing good prices and comparatively nothing in other kinds, we should speak well of a friend that had bridged over a disastrous season. The Concord is much better with Mr. Knox than it is at the East, and though not on his grounds a first class grape, it is the variety that gives him *fruit*, which he considers the object in growing vines. At the time we were there (Oct. 20,) one standing upon an elevated part of his grounds could tell by the show of foliage the places where the Concord were growing. The same was the case in the nursery grounds with one and-two-year-old plants. All the Delawares and other favorite sorts had lost their leaves, while the Concord were still a mass of green. The Herbmont did well this year with Mr. Knox, as did Elsinburgh, Creveling and Hartford. He has two seedlings of the Concord which he considers of great promise; one a white grape, called Martha, and the other a very early black one, Black Hawk. Both these present the same characteristics of growth and foliage as their parent, the leaves of the Black Hawk being noticeable for their blackish-green color. Mr. Knox has been experimenting some at wine-making. The Concord gives a very good rough red wine. He exhibited samples of Delaware of different ages, Isabella, Catawba, Delaware and Diana. The most remarkable sample of wine was made from a mixture of the Delaware and Anna, and possessed a delicacy of perfume and flavor which reminded one of the choice wines of Hungary, and which it is rare to find in an American product. While those who accepted Mr. Knox's hospitality regretted that the discouraging weather prevented a larger gathering, they were all gratified and instructed by an inspection of one of the most successful horticultural establishments in the country.

The Cultivation of the Tuberose.

BY PETER HENDERSON, JERSEY CITY, N. J.

I know of no flower that is so generally admired, and that is yearly planted with so much uncertainty of blooming as the *Tuberose*. The amateur plants his bulbs of Hyacinths, Tulips, or Gladiolus, and is just as certain of a bloom following in due season as he is that the summer will follow the spring. But it is not so with his Tuberose bulb; unpleasant experience has too often told him that after selecting the sunniest spot in his flower bed, and planting with the greatest care, instead of flowers he is rewarded only by a mass of rank green leaves. Now, as in most mishaps in amateur horticulture, the cause is a very simple one, the knowledge in this case is easily imparted, and failure need never occur. In the selection of the bulbs, reject all that do not show signs of vegetation from the centre bulb. It is true that they will occasionally flower even when the centre does not show green, but it is always doubtful, even to us of the trade. Figure 1 shows a bulb as it is taken up by the cultivator in the fall—a large center bulb with several smaller ones, or "sets," attached. The large bulb only is that which produces the flower, and if that has rotted in the center sufficient to destroy the flower germ, it will not bloom. Figure 3 shows a perfect bulb cut longitudinally;



Fig. 1.—BULB OF TUBEROSE.

Figure 2, one in which the center has decayed.

Now, in lifting the bulbs in fall, every bulb is then perfect, that is large enough to flower, those figured are about the medium natural size. I am satisfied beyond all doubt that the cause of decay and consequent failure to flower in the Tuberose is its being kept in too low a temperature during winter. It is supposed, generally, that it is enough to keep them dry and free from frost as we keep potatoes in a cellar. But unfortunate experience has demon-

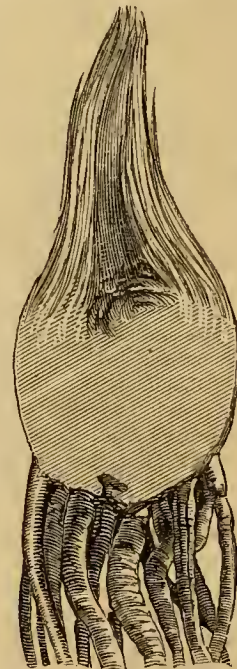


Fig. 2.—IMPERFECT BULB.

strated to me, by a loss of some thousands of dollars, that this is not enough; they must be kept both dry and warm, from October until May. If they are allowed to remain for any length of time in a temperature less than 50°, the center or flower germ will be destroyed, though the outward appearance of the bulb to the uninitiated would be the same. To those who have green-houses, the best place to keep them is alongside the flue or hot water pipes; to those who have not, the shelves in a closet of any well warmed room will suffice. The Tuberose is now a plant of rising importance for market purposes. I have no doubt that half a million roots are grown annually in the vicinity of New York. The greater part of these are grown by the Florists to supply the bouquet makers with this most important item in the construction of their baskets of flowers, bouquets, vases, etc., etc. Tuberose flowers are now produced nearly all the year round, and sell at wholesale from \$1 to \$10 per 100 florets, according to the season, the price

being the highest during the holidays. Each spike averages 20 florets or single flowers, so that at some seasons the flowers of a single root of this common bulb produce \$3 at wholesale.

CULTIVATING THE BULBS.—Our mode is very simple. After the ground has been well manured and spaded, or plowed, lines are struck out one foot apart; the small bulbs or "sets" (see fig. 1,) are then planted six inches apart, and at least *four inches below the surface*; this



Fig. 3.—PERFECT BULB.

we consider of great importance, as it tends to solidify the neck of the bulb, and thereby prevent the disposition to decay. Our time of planting here is about the 1st of June, but as they do not begin to grow for nearly four weeks after planting, it is necessary to hoe and rake the ground once or twice before they come up, to prevent the growth of weeds which would otherwise quickly choke them up in their feeble state. The bulbs are matured by the end of October, the tops are then cut off (but not too close,) and the roots at once placed in a warm and dry place.

PRODUCING FLOWERS.—To secure a continuous bloom of the Tuberosa, the first roots should be started in January, in a temperature not less than 65°, and if kept regularly not below that temperature, they will flower in May. Those which are wanted to flower out doors, and which are of most interest to general readers, should be started in a Green-house, Hot-bed, or warm room, not sooner than the 1st of May, and planted out in the flower borders three or four weeks after; thus treated, they will begin to bloom in August, and continue in bloom for two or three months. In warmer sections of the country there is no necessity for this forwarding treatment, as there the dry bulb planted out in May will flower freely during the autumn months.—For a later succession of flowers, say for the months of November, December, and January, the bulbs should be kept dry and planted by the first or middle of August; these of course, must be grown in the Hot-house or Green-house, as the Tuberosa is a plant requiring at all times a high temperature. The beauty and fragrance of this flower well repay the little care required to produce it.

Notes on Grapes and Grape Culture.

"What, more about grapes?" says the reader who has no interest in the culture of the vine. Yes, for the reason that it is now one of the leading horticultural topics. The vine growers have their grape shows and grape conventions, and we should not be much surprised if they started a grape journal, but whether they do or not, we must have our share of grape talk. Those who do not come in contact with grape people, are little aware of the great amount of capital already in vines, and of the perhaps still greater amount about being invested there, especially in the Western States. Individuals are about to plant their acres, and companies with abundant capital, their scores of acres. Land in localities known to be favorable to the vine, sells at great prices, and men known to be good vineyardists, are engaged by companies at liberal salaries. If we add to all this activity in planting vines, the large amount of capital engaged in raising and selling them, it will be seen there is no one plant which is of more pecuniary interest just now than the grape vine, nor one concerning which people are so anxious for facts. "Facts are just what I have been looking for," suggests the reader, "I have read all the reports of the grape discussions, all the grape notes, books, and catalogues, and the only 'fact' I arrive at, is that it is all a precious muddle." We admit that there is some truth in this view, but we regard matters more hopefully. Chaos always precedes order, and every science accumulates first a disjointed mass of materials before any general laws are found by which to arrange them. So in grape culture we are accumulating varieties and bits of information, bye-and-bye we shall have a sweeping away of the rubbish and a clearer knowledge of general laws. Then grape discussions are useful and amusing withal. One grower comes several hundred miles to assert that there is no grape like the Tweedledum; another comes as far from the opposite direction to declare the merits of the Tweedledee, while the growers around in the State where the Convention is held, are sure that the old Thingumbob is the best sort. All of these talks have settled just one thing, and as far as we can see only one: that there is no one grape yet known that is suited to every locality. A very little bread for so much sack, truly, but still it is one point fixed, and perhaps by another year we may be able to set another stake. Meanwhile let us go on discussing the matter, especially in State, County and Town Societies, and learn to give more value to our own experience and that of our neighbors, than we do to that of those who dwell in far distant localities.

The past season has explained the caution, that we must be slow in making up our final judgment upon varieties, as it has shown us that some of them are likely to recede from the high position accorded them, while others have developed new claims to popularity. It must be recollected that grape culture with us is still in its infancy, and notwithstanding the remarkable progress it already presents, it is only the vigor and growth of the youth, and not the steady and settled character of manhood. But few of our finer grapes have had a fair trial. How many have had ten years' experience with them—yet it was nearly a half century before the verdict was made up for the Isabella. Our new sorts are all on young vines as yet, and we all know what a difference the age of the vine makes in the character of the fruit. Then in the desire of propagators to meet the

demand for any variety worthy of trial, every available bud is coaxed to make a vine, and many poor "knitting needles" are sent out, and these slender specimens are forced into fruit at the earliest possible moment, and then, if the first product of the vine, which that year, and probably the next, ought not to have borne a bunch, is not up to the description, the variety loses in the estimation of the grower.

There is one point upon which our Western friends are exercised; some go so far as to say that no variety which requires for its healthy development to be grown under glass the first year, should be recommended for general culture. We cannot agree with this view. The object of the grower is, to procure the strongest possible well ripened cane at the close of the first season's growth. If this can be done in the open ground, all the better. If by mulching the young vines, let him mulch, or if by shading them, let him shade. So if by controlling the atmospheric changes by means of glass structures he can secure a healthy growth, let him do it, for he only accomplishes by legitimate horticultural appliances what the out-door grower trusts a favorable season to do for him. That a variety is a slow grower and delicate when young, is not in itself an argument against it, any more than the fact that young turkeys will die if allowed to run in the wet grass, is a reason why we should not raise them.

Grafting the Grape Vine.

In September 1863, we gave an extract from Fuller's Grape Culturist, containing its instructions for grafting the vine. We have had numerous requests to republish the article, but can only comply so far as to give the principal points, which will be all that is necessary to enable one to perform the operation. The proper season for putting in grafts, is the fall or early winter, at any time before the ground is frozen. The stock has the soil removed from around it, and is cut off at the depth of four or six inches below the surface. The cion is a piece of well ripened wood, of the previous summer's growth, and consists of one eye or bud and about four inches of wood. This is prepared and inserted in the stock in the same way that ordinary cleft grafting is done. Tie a piece of string or bass around the top of the stock, and then fill in earth enough to cover the junction and the graft up to the bud. In the article above alluded to, it is recommended to wrap the junction with waxed cloth, as in grafting trees. Experience has shown that this is not only unnecessary, but often injurious, and that success is much more certain if the stock be simply tied and covered with earth. A flower pot, small box, or other convenient utensil, is then to be inverted over the graft, and earth filled in around, but not upon it. About six inches of straw is put over the pot or box, and a mound of earth made over all. Treated in this way, the graft is protected from the action of frost and the union takes place slowly. The object of the flower pot or box is to enable one to uncover the graft in spring without danger of injuring the bud. The uncovering should not be done until hard frosts are over. Grafts inserted in this way grow with surprising rapidity and vigor, and the method affords a very easy method of replacing an indifferent or worthless variety of grape by a good one, and of imparting greater vigor to a slow growing sort, by giving it a stock of stronger roots. If carefully performed, the risk of failure is very small.

VENUS'S FLY TRAP (*Dionaea muscipula*.)

The Movements of Plants.

There are some plants which, by their sudden movements when irritated, justly excite our wonder. The Sensitive Plant (*Mimosa pudica*), is one of the most familiar of these, and is one which can readily be raised, as the seeds, which may be had at the seed stores, will germinate in the open ground. A portion of the sensitive plant was figured in December of last year on page 349. Its leaves upon the slightest touch suddenly close and droop, and after a short time gradually unfold. Another remarkable instance of irritability in plants is shown in the Venus's Fly-Trap (*Dionaea muscipula*), a native of our Southern States. We give a figure of this plant taken from one of the admirable illustrations in Gray's Genera. The plant is here represented of life size, and the peculiar leaves are well shown in various positions. The petiole or leaf stalk is very broad, and the proper blade, which is short in proportion, consists of two rounded lobes, each of which bears upon its margin a row of short bristle-like hairs, and upon its upper surface a few scattered minute hairs, which seem to be the seat of sensitiveness. When an insect alights upon the leaf and touches one of these hairs, the two lobes immediately close and secure the insect which is held until dead. One of the leaves is shown closed in the en-

graving, the marginal bristles interlocking in the manner of the fingers when the hands are clasped. Why a plant should be provided with so complete a contrivance for trapping insects is not understood, but it does it most effectually, and its operation affords us another striking instance of sudden motion in plants, when subjected to some irritating cause. But there are instances in which the movement is spontaneous, i. e., without any apparent exciting cause. A plant of the East Indies, *Hedysarum gyrans*, in the warm air of the hot-house, keeps its leaflets constantly in motion. Other instances occur of spontaneous motion, which is so slow that we notice only its effects. We have all of us noticed the climbers after they had wound themselves around some support, and it is a matter of observation that this is sometimes with the sun, and at others in an opposite direction, and though the manner in which climbers twine

about objects had attracted some attention from scientific observers, it is only recently that the subject has been thoroughly investigated. Darwin, the well-known English naturalist has published the results of his experiments in a most interesting paper in the Transactions of the Linnæan Society, for June 1865. We can only call attention to a few of the points in this investigation that seem to be of general interest. When the growing end of a twining plant hangs without support, it bends over in a more or less horizontal direction, and continues to sweep around

in search of some object around which to twine. In doing this, the extremity of the branch describes a circle or ellipse which widens as the shoot increases in length. The time occupied in making these revolutions varies in different plants, and also in the same plant under different circumstances. The shoots of common Pole-beans and of Morning Glories revolve in about two hours, while other climbers occupy 24 to 50 hours in completing the circle. The top of a *Ceropegia*, a greenhouse climber, 31 inches in length, revolved day and night, describing a circle of over 5 feet in diameter, about once in 6 hours. This motion Darwin remarks is not a twisting, but that "the movement is in fact a continuous self-bowing of the whole shoot, successively directed to all parts of the compass." * * * "When at last the revolving shoot meets with a support, the motion at the point of contact is necessarily arrested, but the free projecting part goes on revolving. Almost immediately another and upper point of the shoot is brought in contact with the support and is arrested; and so onward to the extremity of the shoot; and thus it winds around its support." The whole of the interesting article, from which the above is quoted, would occupy several pages of the *Agriculturist*, and we must content ourselves with calling the attention of those curious in

such matters to these readily observed phenomena. We must leave some notice of Darwin's observations on those plants which climb by means of tendrils and by twisting their leaf-stalks for an article in a future number.

A Pretty Climbing Solanum.

Solanum jasminoides.

In noticing ornamental plants, we generally select those which may be readily obtained by the reader in any part of the country where there are nurserymen and seedsmen. Sometimes there are plants we would like to introduce to our readers, but are deterred from doing so, from the fact that they are not generally to be found in the hands of the dealers. Perhaps the best way in such cases is to notice the plant, and thus create a demand for it, which the florists will soon try to meet. But few have an idea of how much popularity is given to a plant or implement by a figure and



CLIMBING SOLANUM.

description in the *Agriculturist*. Among the many thousands who read the article, there will be a sufficient number order plants, etc., to exhaust any ordinary stock. One of our largest dealers in seeds and plants says that he can tell by his orders what plants have been recently recommended in this journal. We are led into these prefatory remarks by recollecting that the plant we have had figured is not one of those that the florists make much stir about,

yet it is nevertheless an exceedingly pretty and useful climber. The engraving shows a flowering shoot of the natural size. The plant belongs to the same genus with the potato, *Solanum*, and its flowers look like small and delicate potato blossoms; they are nearly pure white, having the slightest tinge of blue or purple in the corolla, against which the cluster of lemon-yellow stamens shows conspicuously. The leaves are of a fine deep green, and form a dense mass of dark verdure; their shape is quite variable, the lower ones having two lobes at the base, others having only one lobe, while many of them are quite entire, as is shown in the figure, and some of the larger leaves have even more than two lobes. The plant is a vigorous grower, climbing to the height of 10 feet or more, and answers well to cover a trellis, the part of a veranda, or any other object which it is desirable to clothe with foliage. It climbs by twisting its leaf-stalks around the support. In our climate it is only half hardy, but it may be kept from year to year with a little trouble. After frosts have destroyed the foliage, cut the stem off about a foot from the ground, and put the root in a box or pot of earth, and set it in the cellar. One hangs in front of our window as we write, that has been kept along in this way for several years. The plant is propagated with great ease from cuttings, and wherever a branch lies upon the ground it will strike root. It is besides a very useful plant for in-door decoration, whether of the green-house or sitting room, as it stands the unfavorable conditions of heat and moisture of our dwellings very much better than will most climbers, except the Ivy.

THE HOUSEHOLD.

About Tapioca.

This substance was formerly used mainly in preparing food for the sick, or convalescent, but is now being more widely adopted as an article of diet, as it may well be, since it is very nutritious and easily digestible, and comparatively economical. Tapioca is a very pure form of starch, prepared from the root of a tropical plant, which in the West Indies is called "*Cassava*," and in South America, "*Man-dioca*" and "*Tapioca*." Though a shrub, the plant attains perfection in less than a year, reaching the height of 6 or 8 feet from a large and fleshy root, which often weighs as much as 20 pounds. Botanists have given the plant the names of *Jamipha Manihot*, and *Jatropha Manihot*, the former being the one most generally adopted. The shape of its leaves and its general habit are shown in the engraving. When the fleshy root is grated or rasped, the starch it contains is liberated, and this, after washing, is dried by artificial heat, which causes the grains to cohere and form irregular masses. The character of the starch is somewhat changed by heat, which causes it to have a peculiar gelatinous character when cooked. There are two varieties of the plant, the sweet and bitter, both of which are used in preparing tapioca. The root of the sweet variety is eatable and harmless, while that of the bitter is actively poisonous. This statement need cause no one to regard tapioca with suspicion, as all the deleterious matter is washed away in preparing it. Starch, in whatever plant it may be found, is harmless, and we have an illustration in the common potato, of the fact that a valuable starchy food may be yielded by a plant otherwise poisonous, it being well established that the potato vines and fruit, or balls contain a powerfully poisonous principle.

There is a very great difference in the quality of tapioca pudding, as prepared by housekeepers. Some make a thin insipid compound, while others prepare an excellent well flavored dessert, having the consistence of a fully baked custard. A

lady furnishes for the *American Agriculturist* the following two modes of making TAPIOCA PUDDING:

1.—To a quart of milk add a teacupful of tapioca, and let it stand for an hour or two in a warm place on the stove or range, to swell out. Stir in half a teaspoonful of salt, three well beaten eggs, sugar to the taste, flavoring with vanilla or nutmeg, or both. Then bake like custard. (Most persons do not bake it enough to suit our taste. We prefer it pretty well done, and to be eaten when partly cold; others prefer it left more moist.)

2.—The other method is similar to the above, but when ready for baking, the bottom of the dish is covered with tart apples, pared, and the cores taken out without cutting the apples in pieces, or they may be quartered, and over them the prepared tapioca is poured and baked until the apples are well cooked. This preparation will require a pudding



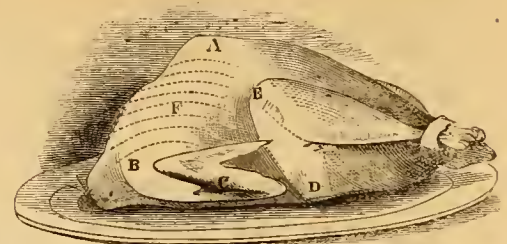
TAPIOCA PLANT.

sauce of some kind. Beaten butter and sugar (hard sauce) flavored, is very good. Some like a wine or lemon (soft) sauce with the hard. The hard sauce goes well with the simple pudding, first described.

How to Carve Well.

The short article on page 286 (September) answers so well as preliminary to what we now write, that a reference to it is a sufficient introduction.

At this time of the year most country people are supposed to have roast turkeys to carve, and though we ought logically to select a simpler subject at first, upon which to give a lesson in carving, a more attractive one it would be hard to find. A roast turkey should come to the table on its back, with its wings close to the body, not turned upon the back; with its legs also close to the body, the ends of the "drum-sticks" being close together, one on each side of the tail, or "Pope's nose." The carver should insert firmly the 2-tined carving fork, held with the guard away from him, one tine going on each side of the breast bone about an inch back from the front end. Here it penetrates the bone easily and holds well, so well indeed that the bird may be safely lifted by it. It is usually an object to help every person at the table to a satisfactory piece. Almost every one likes the breast, some prefer the brown meat. The wing, if crisp and not too dry, is a favorite part with many, but the drumsticks few take of choice—though, if well cooked, having been properly basted and not allowed to dry hard, they are very delicious. A good carver will cut off but little of the breast with the wings, nor will he leave so much meat on the thighs that



METHOD OF CARVING A TURKEY.

he will not be able to give brown meat to those who do not get either a thigh or a side bone. It is a very awkward thing sometimes to trim and reduce the size of a piece of meat, before placing it upon the plate of a guest, hence it is best to cut off from the fowl just such pieces as you wish to help to.

The fork being firmly in the left hand, with a sharp and pointed knife, the carver may cut down and open the joint a little at B, then passing the knife under the wing and up to the joint, cutting the tendons, turn the left wing off with ease; or he may first remove the flight part of the wing, passing the knife from C up to the second joint of the wing, and turning this part off first, afterwards removing the other part at B, as described. If it is desirable, a portion of the breast may be easily removed at the same time with the wing.

The carver next removes the thigh on the same side. The knife, pointing forward, may be passed down between the thigh and the carcass nearly to the joint, and then turned so as to separate at one movement "drum-stick," thigh, and almost all the brown meat on one side of the bird; this involves subsequent dissection and cutting up on the platter, or upon another plate. It is much neater to take off the drum-stick first, which is done by striking a light but true blow at E, cutting the joint on the top, then passing the knife under the joint and turning it off; and then, to remove the thigh, first cutting down on each side of it, so that it will not tear away much meat with it when it is taken off.

One side is now clear, and the whole of the breast untouched. Holding the sharp knife obliquely, beginning just above B, and cut thin slices down to the bone, following pretty nearly the lines drawn—according to the size of the bird. When the slices are all cut, the knife may be slipped down under them, and remove them all at once. Now, turning the fowl on the untouched side, the carver puts his knife by the side of the tail, and about half an inch from the line of the back bone; he forces it along nearly to the thigh joint D, through the thin bone which lies before it, keeping about the same distance from the back bone, when a slight twist throws off the "side bone" clear, with the most delicate meat of the fowl upon it. All this is done without removing the fork. If the supply cut off is likely to be sufficient, the fork is withdrawn and the guests served. It will be very easy to select a piece of white and of brown meat for each one, or to give each his favorite piece, and not overload any plate with bones. The bird being laid upon the carved side, makes a handsome dish for a cold lunch. When the whole turkey is needed at once, it is usually best to carve half at first and dispense it, then to dispatch the other half in the same way.

Many carvers attempt to remove the "wish-bone," or "merry-thought," as they would that of a chicken. It is not worth while, but it may be taken off after the white meat of both sides is chiefly removed, by passing the knife down in front of the fork towards the neck; and after its removal, the "key-bones" may be taken off by passing the point of the knife under the joint at B, and up towards the fork some 3 inches, or more, and then breaking the bones from their attachments by prying them up. In a young bird this is easy, but in an old one hard and awkward. The operation, however, rescues some very nice white meat, which might be overlooked and left upon the carcass.

Corn Bread.—Take three pints of water, put in a vessel, let come to the boil, put in a table

spoonful of salt, add meal to thicken, and boil a few minutes, then take off and put in three pints of water to cool, add two eggs and thicken again with meal. Set aside covered in a warm place for about six hours to rise, and then bake with a hot fire about one hour—and if left in the oven moderately warm for a few hours, it will be still better.

About Keeping Warm.

A short article on this subject in the last number (page 358), it would be worth while for the reader to refer to, as we continue the subject of—

Warm Houses.—Windows and doors can hardly be made air-tight, and however warm the walls, a house receiving a good deal of cold air from these sources, will be cold. In old times, when we had much looser fitting windows and doors than we now have, and at the same time no end of wood to be burned, people were healthy and tolerably comfortable with their immense fires. To be sure they were "roasted on one side and frozen on the other at the same time," but they breathed fresh air, and that aided in keeping up the internal heat, by an abundant supply of pure oxygen. Our readers doubtless understand the philosophy of keeping up the animal heat: how that a portion of the food we eat is the *fuel*, and the air we breathe fans the flame as truly as the wind from a bellows driven among glowing coals. Pure air is essential to keeping a healthy internal warmth, not only because it contains more oxygen, but because foul air produces a stupefying effect, which interferes with the functions and, so to speak, makes a bad draught.

In the last volume (page 272, Sept., 1864), in writing on the subject of ventilation, we recommended for winter ventilation a "register" in the floor at the coldest part of the room, connected by a trunk under the floor with an unused flue in a warm chimney. Such an arrangement draws off the air from the floor where the air is the coldest. If the cold air be thus drawn off, other air must come in, which indeed will be cold too, perhaps, but which, even in rooms warmed by stoves and made very close, will come more or less in contact with the warm air of the room and be itself warmed, while the air of the room either coming against the windows or mingling with the cold air, becomes chilled and settling to the floor is, to a considerable extent drawn off, and by this process a constant circulation of air and ventilation are secured in connection with warmth more evenly distributed.

Caulked windows and listed doors, exclude to a great extent the external air, if the work is well done. It is true that walls, which are not papered, admit much air directly through them, as explained in last month's article, but this supply is not reliable. When the windows are caulked, paper pasted over the cracks, and the doors shut tight, and are listed besides, and especially if the walls are papered, some means must be employed to introduce a supply of fresh air. This should enter the room either previously warmed, or in close proximity to the stove. To secure the health of a family, or of school children, pure air is much more important than warmth; but with pure air much less warmth in the room makes it comfortable.

Greasing Boots and Shoes Too Much.

It is a mistaken notion that coating the leather thoroughly with grease or water-proof blacking keeps the feet dry and warm. The feet of every person in health perspire more or less—the exhalations from the feet alone usually amount to several spoonfuls of water daily. If this be confined by having the leather saturated with oil, or varnish blacking, or by wearing tight India rubber overshoes, the feet are kept damp and chilly, and the moisture tends to rot the leather. The better way is to not grease boots or shoes at all, except to occasionally put on a *slight* surface coat of oil when the feet are likely to be exposed to much water, to shed it off. We have not for several years greased our boots at all, except one coat on the bottoms when

new, and a pair usually gives us over a full year's wear. We keep a light pair of rubber sandals, which are only worn when walking or standing on wet ground, and are removed on going into the house or office. It is a decided luxury, as well as promotive of health, to keep two pairs of socks in use, and change them the latter part of the day, when those on the feet are damped by perspiration. A minute's time spent in changing will add much to one's comfort for the rest of the day and evening. Remember that it is the dampness from the feet themselves that usually keeps the feet cold. It is the confining of this in the leather that leads to the supposition that rubber shoes are injurious to boots, when kept constantly on the feet. The varnish and water-proof blackings are generally of far more injury than benefit to either feet or leather.

Hints on Cooking, etc.

Salt Codfish makes Good Food.—This will be "poohed at" by many housekeepers, for the reason probably that they have never cooked the fish right. Yet it is a pity to have so convenient and cheap an article of food rejected, when fresh meat is 20 to 40 cents a pound, and not always to be obtained, while dried salt fish can be kept on hand at all seasons, ready for any emergency. First buy good codfish, those that are clean and white, and not spoiled in the curing, as evidenced by a strong odor. Pick the fish into *very small shreds*, and soak over night in plenty of water, or freshen by boiling in two waters and plenty of it each time. When thus freed from all excess of salt, add milk with a thickening of flour well stirred in, and cook thoroughly without any scorching. A beaten egg or two materially improves it. If rightly prepared at first, a little salt may be needed. Such a dish is not only palatable, but it is easily digested and contains much nourishment. The usual trouble is that for want of picking fine at first, there are some pieces not soaked and freshened through, and these injure the flavor. We have eaten a fair dish made by soaking large pieces of salt codfish for 24 hours or more in plenty of water, changing it twice or thrice. Then roll in flour and fry like any fresh fish.

Apple Sauce Always Ready.—There are a thousand ways in which a skillful housekeeper can economize labor and food also. Here is one item: When the apples are gathered or purchased, there are always more or less of them bruised and some already beginning to rot. Sort these out, and at one job make up a large batch of apple sauce, cooking and sweetening it all ready to put upon the table. Dip this into glass jars; cover air-tight. It will thus keep a long time, and be always ready to bring upon the table, and besides saving the fruit from decay, also saves the frequent making up of sauce. We preserve all fruit in the Baker (Potter & Bodine) Jar. Enough of these jars are usually emptied of strawberries, peaches, etc., by December, to hold the sauce made by a bushel or more of apples. When emptied of the apple sauce, they are refilled, and thus the same set of jars are often used half a dozen times during the year. The above plan of making up a large batch of apple sauce while about it, and of having a stock always ready, besides the saving of the apples that would otherwise decay, is worthy of adoption, even if we have to buy a dozen or two extra jars for this purpose.

Pudding Sauce: Cheap and Good.

At this time, when butter is scarce, or at least a high priced commodity (with us 60 to 70 cents a pound for the best), pudding sauces and the like, requiring much butter, are expensive luxuries. A lady at our request furnished for the *Agriculturist* a recipe for making an economical sauce, which is certainly a good one when made by her: To a pint of hot water add one teaspoonful of sugar, butter the size of a walnut, and a little flour thickening previously beaten with the yolk of an egg. Boil, stirring well, and while still hot pour into a dish in which the white of the egg has been beaten to a froth, stirring thoroughly together; flavor to the taste. It will be found of very light texture and agreeable taste, superior to that made with the use

of a much larger quantity of butter, and of course a good deal cheaper and more easily digestible.

Braising.—This is a French word for a method of cooking meats, which was very common before cooking stoves were so generally used. The vessel employed is the old-fashioned bake pan or bake kettle; a shallow kettle with a cover arranged to hold coals, and is now to be found in many old-fashioned kitchens. Meats cooked slowly and for a long time in a braising or bake pan, with the steam confined around them, have a richness of flavor not otherwise obtained. The meat should be well browned, and water enough added from time to time to prevent burning, and form a rich gravy with the juice of the meat. Veal, usually so badly cooked, becomes, when treated in this way, a delicious morsel, and if any one wishes to know how good ham can be, let them try a thick slice cooked long and slowly in the pan. In the most recent French works on cooking, we find the plan followed by our grandmothers still recommended.

BOYS & GIRLS' COLUMNS.

The Last Day of The Year.

When a boy at school has written the last line of his copy book, he likes to look over it, page by page, and notice what his progress has been, see what mistakes have been made and corrected, and what improvement is shown. He sees how blots have disfigured some lines, and he remembers how some of them occurred; there is a very nicely written page, and he is still happy with the praise he received when it was examined by his teacher; at almost every step he may find something of interest. December 31st will be the last page of one volume in life. In this book of 365 pages, which was blank at the beginning of this year, have been written all the scenes, actions, words and thoughts of twelve months. Many of them are fresh in memory, and may be easily reviewed.

"Tis greatly wise to question our past hours,
And ask them what report they bore to Heaven."

In thus recalling the past, what events are pleasurable now? Of the enjoyment derived from the appetites, though very keen at the time, nothing is left now. Some things that gave great pleasure for a little season, are now recalled with pain. Like some fruits, they were sweet in the taste, but left bitterness and nausea afterward. Cruel or mischievous sports, words by which the feelings of others were wounded, advantages gained by unfair dealing, or in plain English, by *cheating*, selfish triumphs over the less fortunate; in short, whatever the conscience can not now approve, makes the past sorrowful to the memory. But every kind act or word, especially if it cost self denial, every mastery over temptation, every gain in useful knowledge—all things good, pure and noble—give unmixed happiness. How many of our young friends will practise upon the lesson this teaches? The library of life we are now making up, the years that pass so swiftly, will furnish food for thought in all the future: it is then of infinite importance that all the volumes be filled with what we shall love to reflect upon. Thousands of items in life have passed from memory, and can never be recalled in this world; yet not one of them is lost. It needs only a change of condition in the spirit, to bring them all vividly to view, as they now sometimes come in rapidly before the mind in dreams, when the body is in a partially dead state—asleep—and beside this, their influence is already strongly felt in the character. The boy who has frequently given way to anger this year, is now more passionate than ever; the trifler is less considerate; the vain are more eager for praise; the wilful are more stubborn. So, too, the affectionate may have grown more loving, the industrious more persevering, and every virtue may have been strengthened by exercise. Surely there are thoughts enough to interest and benefit all who will carefully review the past on the closing day of the year. There can be no better preparation for entering with a right spirit upon the new duties and opportunities which 1866 will bring.

Signaling in the Army—Interesting

Amusement for Boys or Men.

While with our wounded soldiers around Petersburg, Va., last year, we obtained some insight into how the officers talked with each other at a distance, by means of a single flag by day, and a light by night. An explanation will interest older persons as well as boys, and give the latter a new source of amusement. One or two men were stationed together, on high points usually, as on a

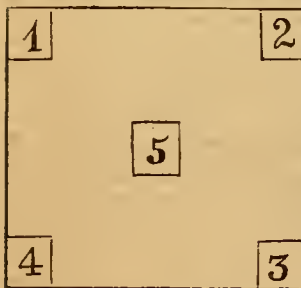
house, or on a hill, or in a tree, but sometimes on low ground. Thus, one set of signal men was on the hill at the "Friend House," (from which we wrote to the *Agriculturist* July 4th, 1864); another in a field a little west, from which they could see the men in a high tower four miles north, at Point of Rocks. These two could see others on high ground at City Point, at General Grant's headquarters, and these again could see others on a high point several miles down the James River. Indeed there was a chain of these stations at various distances apart from all round Petersburg, on to City Point, and up and down more than a hundred miles of the James River. Usually there were relays of men, two and two, at each station, one to make signals, and the other to watch and read the motions made at the next station on either side. Now for the signals. (We of course did not pry into the secrets of the signal men, and only describe the operations as they appeared to others. The actual signals and numbers are probably quite different from those we have described. We only aim to give a general idea of the subject.)

Suppose certain numbers to be used for the letters of the alphabet, as 3 for A; 21 for B; 13 for C; 42 for D; 2 for E; 22 for F; 44 for G; 12 for H; and so on for the whole alphabet. These numbers can be changed every day, or every week or month, or as often as it is feared they are discovered by others. To-day, 44 may stand for G, and to-morrow it may stand for some other letter, if all the signal men privately understand the change. You will see that the four figures 1, 2, 3 and 4, can be combined to represent the whole alphabet and be changed ever so many times. It is then only necessary for the signal-men to use these four figures. Suppose that holding the flag by day, or a light at night, straight over the head to stand for 1, holding it to the ground in front to stand for 2, holding it to the right to stand for 3, and holding it to the left, for 4. By the above supposed numbers, swinging it to the right stands for A; putting it down in front (2) and quickly raising it over head (1), stands for B; throwing it to the left (4) and then to the front (2), stands for D; twice to the left for G, and so on. The expert signal men make these quick motions of the flag or light, for letters, almost as fast as one can write the letters themselves, and the distant signal man, with his eye, or aided by a telescope, sees and understands just what is said to him; and if need be, he sends on the words in the same way to the next station, and from these to the next. We have seen an officer talking to another four miles off, simply by quietly calling over to the flag man at his side, 21, 14, 33, 14, 22, 41, 34, etc. Once we saw a mortar being fired at the Petersburg bridge, from a pit down by the Appomattox, where they could not see the bridge at all; but an officer by us on the hill, where he could see it, directed with his flag to fire lower, higher, to the right, to the left, how many seconds for the fuse, etc.

With these explanations, two boys can write down any numbers they choose for the alphabet, and then go half a mile or more apart each with a flag, and talk together as much as they like, and it will bother any one else to know what they are saying. Two can talk across a room in the same way, and even use a finger instead of a flag.

Two Lively Out-door Games.

No. 1: called *Prison Base*, is well known in some localities, but will be new to many. It gives capital exercise and sport for boys at school, during the "recess." Two boys, generally the swiftest runners, act as leaders,



and choose sides from the others. Four spaces, 1, 2, 3, 4, are marked in a square, one in each corner, and about sixty feet apart. A space is also marked in the middle of the square, as shown at 5. The spaces 1 and 2, are called the *bases*; the middle space is "*Chevy*," and 3 and 4 are the *prisons*. To begin, the boys of the two sides station themselves at 1 and 2. One boy (a), from No. 1, goes out to "*Chevy*," and calls out "*Chevy, chevy, chase*; once, twice, thrice." Then one of the opposite side (b.) tries to touch a before he can return to his base; if b succeeds, he sends a to the prison at 3. But while b is trying to capture a, another boy, c, from No. 1, starts after b, and if c touches b before b has taken a prisoner, or before he can return to his own base, if he has made no capture, then b must go to prison at 4. The general rule of the game is, that any boy absent from his base, may be caught and imprisoned by one of the opposite side, who left his base subsequent to the boy whom he is pursuing. The boys

of each side try to rescue the prisoners belonging to their own party, by touching them without themselves being caught. A boy can take only one prisoner without returning to his base, and any boy is exempt from capture while taking a captive to prison, or bringing home one he has released. The game continues until all of one party are imprisoned. The boys of each side should implicitly obey the directions of their leader, who has an opportunity to display much generalship in the management of his forces.

No. 2: "*Every man in his own Den*," is similar and will be a favorite. In this, each boy selects his own "*den*," choosing some tree, post, stone, or corner. One boy starts out for a "*lead*," and the others try to touch him before he can get back to his den. Any boy touched by one who has left his own den more recently, must accompany his captor home, and aid him in catching others. The game continues until all are taken to some one den, the master of which thus becomes the victor, and has his choice of dens.

Holiday In-door Games.

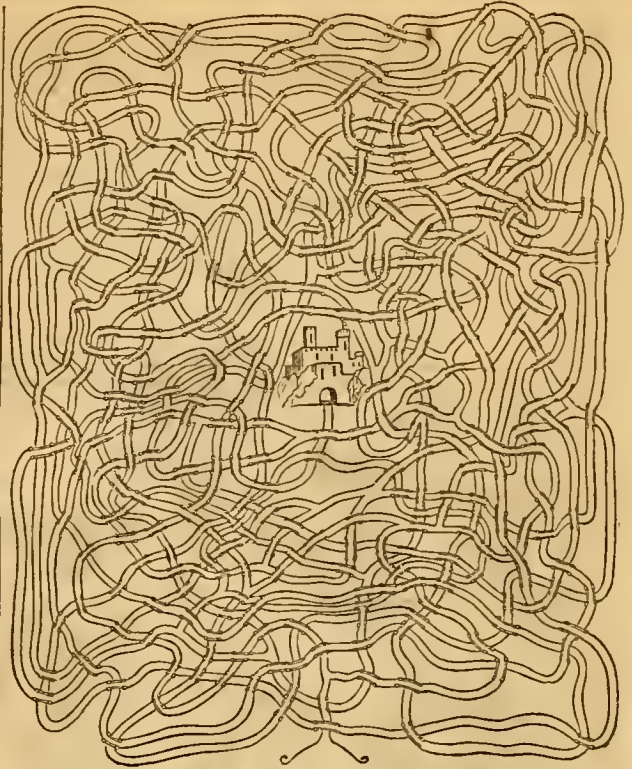
FOX AND CHICKENS.—All the company except two, the fox and one chicken, form a double circle, that is, each one in the outer circle having one standing before him. The fox pursues the odd chicken around the out-side of the circle, and the latter when tired or in danger of being caught, darts into the inner circle and stations himself before one of the couples, thus making three in line. The third one standing behind, or in the outer circle, then becomes the odd chicken and runs, because liable to be caught by the fox. When the latter catches his chicken he takes his place in the inner circle, the captured chicken becomes fox, and thus the game goes on. It is a lively and not boisterous play, for both boys and girls.

SHADOW BUFF.—A white sheet is suspended from the ceiling and stretched by weights at the bottom, to form a screen. The "*detective*" sits on one side of this screen, and the company one by one pass before it on the other side. A strong light is placed beyond them so that while passing, the *shadow* of each will fall upon the screen. The detective must try to name the person correctly by looking at the shadow. Of course each one of the company while walking before the screen will endeavor to alter his gait and general appearance. When one is correctly named by the detective, he must take the place of the latter until he can detect some other party.

PUFFERS.—This is intended for little children, but will also amuse the older ones when they wish to enjoy a little nonsense. The company sit in a circle; one of them blows into the air a feather, bit of cotton, thistle down, or other light substance, and the one it approaches must puff it to keep it floating. The person it falls nearest to, or who blows it beyond the circle, pays a forfeit.

Answers to Problems and Puzzles.

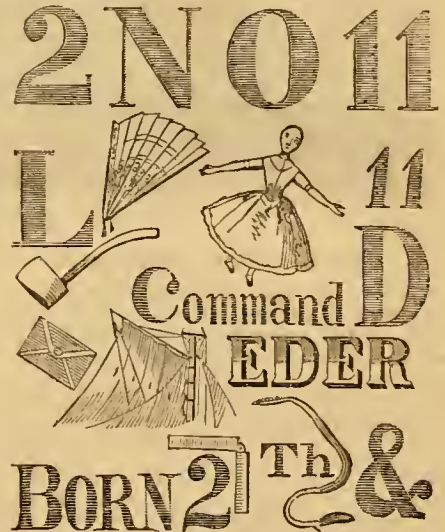
The following is the explanation of the puzzle in the November number, page 351: *Deer children eye hoe pew r soap lease din work king over the puzzle column that ch cue will be d lighted two cc's o long a picture letter four ewe two reed. The American Agriculturist d sires two inns truck t an d ame u's and s pear s naw panes two da's so. Sum girls s and boys s endancers two every puzzle, and men e mower wood bite rye ing. Let tuce c how well cue can read this. Or: "Dear children I hope you are so pleased in working over the puzzle column that you will be delighted to see so long a picture letter for you to read. The American Agriculturist desires to instruct and amuse, and spares no pains to do so. Some girls and hoys send answers to every puzzle, and many more would by trying. Let us see how well you can read this.".... Answer to Mathematical Problem, No. 175, (October Number). B was twenty five miles from Cooptown, when A had arrived there.... The following have sent correct answers up to Nov. 4th. Joseph D. Locey, 165; Fie-hia R. Lord, 176, 178; "J. A. H.," and "E. A. R.," 176, 177; Wm. H. Palne, 176; W. J., jr., 176, 178; Francis M. Priest, 176, 178; George R. Carens, 175; Benj. Doe, 175; J. L. Creswell, 176, 178; E. Currans Savage, 175, 177; C. F. Erhard, 175; Mary E. Servoss, 176, 178; L. Hatoe, 175; Jim R. Hale, 176, 178; J. Green Bundy, 178; John Cotton, 179; G. Jones, 179; Julia B. Pickett, 179; Mary H. McCord, 179; "Subscriber," Southport, Conn., 179; Mary E. Servoss, 179; D. Lee Shafer, 179.*



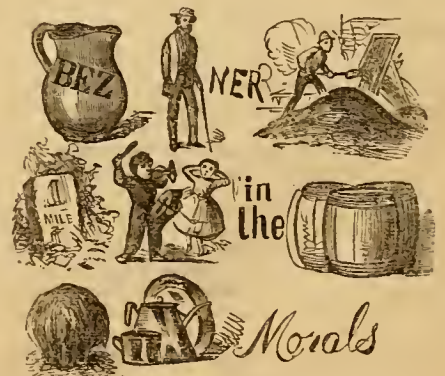
New Puzzles to be Answered.

(Answers in the next Paper.)

No. 180. *Labyrinth*.—Try to find your way from the entrance to the center of the above labyrinth, by following the proper path. The small double lines represent bridges, under or over which the traveler must pass.



No. 181. *Illustrated Rebus*.—Wisdom In rhyme.



No. 182. *Illustrated Rebus*.—Very good advice, especially for those who are forming habits for life.



THE CHRISTMAS TREE. — Engraved for the American Agriculturist.

Christmas is Coming.

How many days from now until Christmas? Our boys and girls can answer that question without stopping to count; they have been reckoning the time every day for weeks, and thoughts of what Christmas is to bring have given pleasant hours and brought many bright dreams. One little fellow has been gliding about (in imagination) half the summer on a pair of Christmas skates; and some of the girls are sure that a new set of dishes for the playhouse will come this time. This holiday ought to open everybody's heart. It commemorates the greatest and best gift to man; that which brings within his reach all other good things. The observance of this season is becoming more general every year. In Europe, it has been kept up for many centuries with great ceremonies, which commence the previous evening. The churches are splendidly ornamented with evergreens and other decorations. Solemn service is held at midnight, and all the church bells are rung. Formerly parties of musicians strolled about carrying torches, singing Christmas carols, dancing and carousing; and intemperate revelry was the order of the night and of several days following. This perversion of the proper celebration of Christmas, and the superstitions that had grown up, caused many to condemn all Christmas observances. Latterly, however, since this festival is kept up in a more rational manner, it is becoming more popular, and the stockings hung by the chimney, or "Christmas Treas," are found in almost every household. Our engraving this month shows a happy group around the Christmas Tree, enjoying the gifts provided for them by their kind friends. — WE WISH ALL OUR READERS A "MERRY CHRISTMAS."

The Force of Habit on a Soldier.

A friend recently related the following incident: A young man who had been for years a soldier became insane, and was confined in an asylum. Previous to this

he had been much attached to the Governor of the State where he lived, but during his insanity he conceived a great dislike for his former friend, so much so that he declared his purpose of killing the Governor whenever he should meet him. One day he escaped from confinement and by some means procured a musket with bayonet attached. Passing along the street he met the Governor, and at once bringing his musket to the "charge" was about to rush upon him. The Governor, however, fortunately did not lose his presence of mind, but in a commanding tone gave the order "Halt." The former soldier from mere force of habit, which was stronger than even his insanity, instantly stopped. "Shoulder arms," continued the Governor, "Right about face," "Forward, march," and each order was promptly obeyed, and the lunatic soon found himself in his proper place.

Parting with an Old Friend.

In a hospital at Nashville, during the war, a wounded hero was placed on the amputating table, under the influence of chloroform. They cut off his right arm and cast it, all bleeding, upon the pile of human limbs. They then laid him gently upon his couch. He woke from his stupor and missed his arm. With his left arm he lifted the cloth, and there was nothing but the gory stump! "Where's my arm?" he cried; "get my arm; I want to see it once more—my strong right arm." They brought it to him. He took hold of the cold, clammy fingers, and looking steadfastly at the poor dead member, thus addressed it with tearful earnestness: "Good-by, old arm. We have been a long time together. We must part now. Good-by, old arm. You'll never fire another carbine nor swing another saber for the Government," and the tears rolled down his cheeks. He then said to those standing by, "Understand, I don't regret its loss. It has been torn from my body that not one State should be torn from this glorious Union." It was by such heroic devotion that the rebellion was finally overpowered.

A Good Many Boys and Girls

Are now engaged in getting up premium clubs of subscribers, and several hundreds, if not thousands of them will obtain one or more of the good premiums we offer on another page. At least one of them will have the 16 great volumes of the *Cyclopedia*, and another a *Melodeon*. A great many will carry off the large Dictionary, and several are getting Wringing Machines for their mothers. Very many are to have books, seeds, grape vines, etc., etc. Well, there is room enough in this broad country for a thousand more boys and girls to each obtain a premium, and the *business* part of obtaining subscribers will be useful to all who engage in it. We could name an active young man in business in Philadelphia, whose first business experience was gained while a farmer-boy in New Jersey, in getting 90 subscribers for the *Agriculturist*, ten years ago. He refers to it with pleasure, as his first stepping stone. Let enterprising boys and girls try their skill this month. If they get but few names this year, they will do some good to themselves and others, and learn how to do more another year. Select the premium you want most and try for it. The premium offers will be kept open several months yet, but begin the work to-day. Send the names on every week, so that people may begin to receive the paper, and they will help you. The premium will be sent as soon as all the subscribers required are received. They need not come all together, nor all from the same post office. Only let us know with each name to whom it is to be credited for a premium. Perhaps your father will help you.

PUZZLES FOR THE TONGUE.—Repeat the following rapidly three or four times: *Six gay green geese grazed. ALSO: A crow flew over the river with a lump of raw liver. ALSO: Repeat rapidly: Mix a batch of biscuit.*

BIBLE QUESTIONS.—What did Adam first plant in the Garden of Eden? Whose daughter was Noah?

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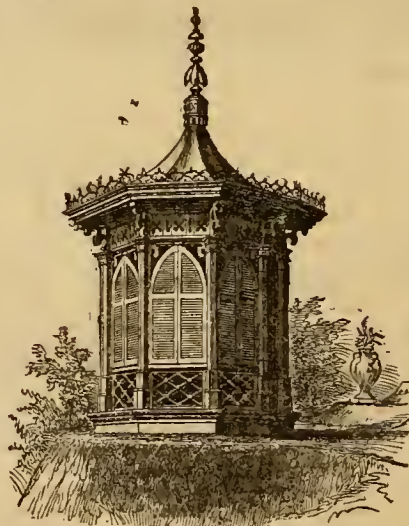
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The Sewing Machine.

The first attempts to sew by machinery date as far back as the year 1755; but the practicability of the Sewing Machine as a substitute for hand labor, in uniting fabrics by means of seams of continuous stitches, was not fully established until nearly a century later. The inventive minds of Europe failed in their efforts to reduce to practice the idea of Machine Sewing, and it was left for the genius of America to produce and give to the world the first practical Sewing Machine. Of the usefulness of this invention it is unnecessary to speak at this late day. The prejudices that impeded its early introduction have long since been swept away by the stern facts which its everyday successes practically demonstrate, and for the last ten years the Sewing Machine has been universally recognized as a necessity in the manufacture or putting together of every known description of textile fabric, and an important addition to the household economy.

As manufacturers and inventors, Grover & Baker are the most prominent names identified with the Sewing Machine. Elias Howe invented the Shuttle Stitch Machine, but did not manufacture more than were necessary to use as models in his lawsuits, until after the Sewing Machine was made practical and useful by subsequent inventors. A. B. Wilson improved on the feeding mechanism of Howe's machine, and invented a substitute for the Howe shuttle in the rotary hook of the Wheeler & Wilson machine, which makes the shuttle stitch by a different mechanism. Grover & Baker invented the machine making the Grover & Baker Elastic Stitch, and have been manufacturing their machines ever since the taking out of their patent. There are over 150,000 of the Grover & Baker Elastic Stitch Machines now in use, which is abundant evidence that the excellences of this stitch are appreciated by the public.

Soon after Howe's invention became known, a number of manufacturers of Sewing Machines appeared in the field, each with some little attachment or improvement, on the strength of which they sought to identify themselves with the Sewing Machine in the public mind. Nearly all these made Shuttle Stitch Machines, and it was their interest in common to cry down and damage, to the extent of their ability, their formidable rival, the Grover & Baker Elastic Stitch Machine; and no means, honorable or otherwise, were spared by them to prejudice the public against it. Despite all this opposition, the Grover & Baker Machines gradually but surely worked their way into the foremost place in public favor, relying solely on their intrinsic and manifest merit over other machines.

As further evidence of their great popularity, we may state that they have been awarded the highest premiums at all the State Fairs at which they were entered in competition the past three years, and at hundreds of Institute and County Fairs. They have also been awarded gold medals and diplomas at various exhibitions of England, France, Spain, and Austria, and have been furnished by command to the Empress of France, Empress of Russia, Empress of Brazil, Queen of Spain, and Queen of Bavaria.

Keeping pace with the growing demand for their Machines, Grover & Baker increased their facilities for manufacturing, and invented and built new machinery, of the most perfect kind, adapted to all the parts of the Sewing Machine. The Company's manufactory is at Boston, and they have wholesale depots in all the principal cities of the Union; in London and Liverpool, England, and Melbourne, Australia. Agencies are also established in all the other leading cities of the Old World, and in almost every village of the New. The Company conduct twenty-four establishments in their own name, and employ in connection with them over 300 clerks, salesmen, mechanics, and operators. At the Factory, in the manufacture of Machines, Stands, Cabinets, etc., between four and five hundred hands are employed, capable of turning out complete, from thirty to forty thousand Machines per annum. The principal depot for foreign export is at 495 Broadway, New York, at which place a large retail trade is also done. This establishment is three stories in front,

and extends through to Mercer-street, 200 feet. Unique in design and magnificently fitted up, it ranks among the first of the commercial palaces of Broadway, and is wholly occupied by their business.

The Grover & Baker Sewing Machine makes a double thread Elastic Stitch, and forms a seam of great strength and beauty, peculiarly adapted for family sewing and the manufacture of goods where firmness and elasticity of seam are required. The mechanism of the machine is simple, the parts few, its movements quiet, and the method of operating it easily acquired. It uses the thread directly from the spool as purchased. One side of the seam can be made highly ornamental for embroidering, by using colored silk or worsted.

The importance of Grover & Baker's inventions will be more apparent when it is understood, that the principle of the Grover & Baker Machines is entirely different from that of the Howe Machine, and all those making the Howe Shuttle Stitch, among which are the Singer, Wheeler & Wilson, Florence, etc. The Grover & Baker Machine, making the double thread Elastic Stitch, from the time of its invention in 1851, has taken its position as a competitor for public favor against the entire class of machines descended from the Howe shuttle invention, and bases its claims for superiority over these, not on any improvement on or attachment to the machine that Howe invented, but on mechanism of an entirely different principle, forming a seam possessing qualities impossible of attainment by any machine making the Shuttle Stitch of Howe. When treating the subject of Sewing Machines, therefore, it is only necessary to hold in view the two principles of forming a seam with two threads by machinery, viz., the Shuttle Stitch and the Grover & Baker Elastic Stitch.

It is not only unnecessary, but leads to confusion, to speak of this Shuttle Machine or that Lock Stitch Machine, for by whoever manufactured or by whatever name it may be known, the Shuttle and Lock Stitch are identical, and it possesses the same merits and the same faults that it had twenty years ago. Those contemplating the use of Sewing Machines in their business or their homes, should attach as much importance to the selection of the one or the other principle, as if they were determining the choice between hand and machine sewing. There are a great many uses, in manufactories and families, to which the Grover & Baker Stitch can be successfully applied, in which the Shuttle Stitch would be utterly useless, while there is no use to which the latter can be applied that the former will not accomplish. Where both principles can be applied to the same uses with comparatively equal success, it is of little importance which is adopted. There are however numerous employments for the Sewing Machine where the superiority of one kind is so marked, that a wrong conclusion as to the stitch best suited would result in failure.

The following extracts from testimony taken on oath, in a recent case before the Hon. Commissioner of Patents we consider conclusive proof of the superiority of the Grover & Baker Elastic Stitch Machine for nearly all the uses to which machine sewing can be applied.

EDWARD S. RENWICK, of New York City, a professional engineer, says:

"The seam produced, while secure, is extremely elastic, and can be strained to as great an extent as the cloth in which it is sewed, without the fracture of the threads, while the two-thread seams, sewed by machines not embodying the said Grover & Baker's invention, are easily fractured by straining the cloth, particularly when bias seams are sewed. The Grover & Baker Machines are therefore adapted to sewing a great variety of articles, which can not be sewed advantageously by other sewing machines."

HENRY B. RENWICK, of New York, civil and mechanical engineer, says:

"I further say, that machines embodying this invention (the Grover & Baker Elastic Stitch) are made and sold in great numbers, to my knowledge, and are by many preferred for all purposes, and by many others for special purposes, to any other sewing machines; such preference being due, in my opinion, to the peculiar elastic character and the strength of the stitch, and also to the ease with which a knowledge of the working of the machine may be acquired, and further, to the fact that less care in the adjustment of the tension is required in these than in any other double-thread machines."

ALBERT H. HOOK, of New York, a mechanical engineer, says:

"From my experience and observation, I state unhesitatingly that the Grover & Baker Machine is the best sewing machine for general domestic and family use yet made. It combines, in the greatest extent, firmness, elasticity, and durability of seam, simplicity of construction and ease of management, capacity of doing the greatest variety of work, including ornamental work and embroidery—advantages not possessed by any other machine. Notwithstanding my own inventions in that line, I use the Grover & Baker Machine in my family, and recommend it to my friends."

Mrs. BELLINA FROELICH, of 123 East Seventeenth-street, New York, says:

"I have had personal experience of four years and a half, during which time I have used it for all the various wants of a large family, on all materials; I have made ornamental work with it, quilting, tucking; and for dress-making purposes I have found it to answer my ends perfectly. The machine I used was the Grover & Baker Family Sewing Machine. I have had work performed for me on other family sewing machines—the Wheeler & Wilson, and Singer; am rather familiar with their mode of operation. I am of the opinion that the elasticity of the seams made on the Grover & Baker Family Sewing Machines is of great value for all garments of family wear, particularly those subjected to washing and ironing; that the facility of ripping a seam to a given point, without injuring or loosening the rest of the seam, is likewise of great value. The ornamental work can be performed with great ease and facility upon this machine, and surpasses all other machines in this particular feature. It is not very liable to get out of order; easy to operate on, and easy to learn to operate on; not complicated, easily managed, easy to adjust its parts, and the spools are easily attached, without the necessity of winding both above and below, as the machine sews directly from the spools as purchased; the tension is easily regulated, and does not vary, and does not require readjustment in passing from light to heavy work. As to strength and durability of seam, I can testify having garments in use during four and a half years, which have been constantly subjected to washing, wringing, and ironing, and which have given out in the fabric before the seam has shown any sign of weakness. In my judgment it is, beyond all question, the best Family Sewing Machine in use. I also prefer the manner in which the work runs over the machine from the operator, getting out of the way as fast as sewed, and thereby enabling the operator to sit in a comfortable position. In strength and durability of seam, I judge its work to last longer and wear better than the seams of the other machines known to me."

Mrs. CHARLOTTE D. WATTS, wife of Dr. ROBERT WATTS, of New York City, says:

"I have been, since the introduction of Sewing Machines for family use, much interested in them, and have taken much pains to inform myself practically of the merits of the different leading machines in the market for family use. My established judgment is that the Grover & Baker Machine, making the stitch known as the Grover & Baker Stitch, is superior to all others, for the following reasons, for family sewing:

"First.—The seam is stronger and more elastic than any other.

"Second.—It is more easily managed, and capable of doing a greater variety and range of work than any other.

"Third.—In addition to plain sewing, this machine is capable of executing ornamental work of great variety and beauty.

"I think the family Sewing Machine, as an instrument for domestic household use, second in importance to no other invention yet made; and I believe, for the reasons stated, the Grover & Baker decidedly the best Family Sewing Machine. I have used a Sewing Machine in my family for many years, and would not be willing to dispense with it on any account."

Mrs. MARY A. PARKER, wife of Dr. WILLARD PARKER, of New York, says:

"Since the introduction of Sewing Machines, and during the last ten years, I have been particularly interested in ascertaining their relative merits and real value as instruments for domestic use in families. I am familiar with the leading machines in the market for family use. In my judgment, established from long observation and experience, the Grover & Baker Machine, making the Double-Loop Grover & Baker Stitch, is decidedly superior to any other for family use. This machine makes at the same time a stronger and more elastic seam than any other; is capable of doing a greater variety of work with less change of adjustment than any other; and, in addition to the work accomplished by other machines, is capable of doing ornamental work and embroidery. I think it would be difficult to estimate too highly the value of the Grover & Baker machine as an instrument for family use."

SARAH EDWARDS, proprietor of store 745 Broadway, New York, says:

"I am proprietor of the establishment for the manufacture and sale of children and ladies' furnishing goods, No. 745 Broadway, New York. I am thoroughly and practically acquainted with the merits of the leading Sewing Machines in the market adapted to my business, or for fine sewing. I have used machines for several years, and state, with the utmost confidence, that the Grover & Baker Machine is superior to any other for fine family and general work. Although I have other machines making the shuttle or lock-stitch of high reputation, I would not use any other than the Grover & Baker upon work when elasticity and strength of seam are required. The capacity of the Grover & Baker Machine for doing ornamental work, in addition to plain sewing, is of much importance and value."

FRANK A. ALLEN, of the firm of ALLEN BROTHERS, manufacturers of cloaks and mantillas, New York, says:

"It is very much more simple than any other machine, so much so that I have learned a person who had never seen any machine, in two hours' time, to run it well enough to stitch a cloak. As regards durability, I have machines that are now running, which I have had in use six years, running them at least six months in each year. They seldom get out of order, and require but a very small expense to repair them. As compared with other machines, as regards elasticity, durability, and strength of stitch, we find it much better in all these points than any other machine we have used. Much of the material used in the manufacture of cloaks is very elastic, and requires absolutely an elastic stitch. This we have never found in any other machine than the Grover & Baker sufficient for the purpose. I have used one in my family about five years, on all kinds of work—fine, thick, and thin; and we give it the preference over other machines on account of its simplicity, and the elasticity and strength of the stitch, and the readiness or facility with which any article of dress can be ornamented or embroidered."

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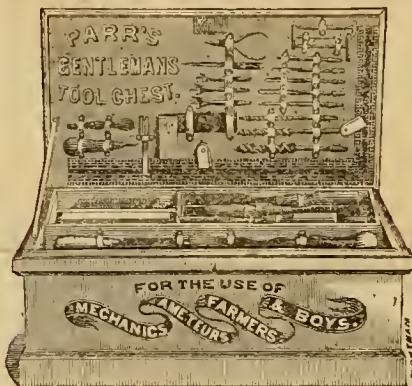
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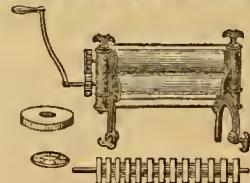
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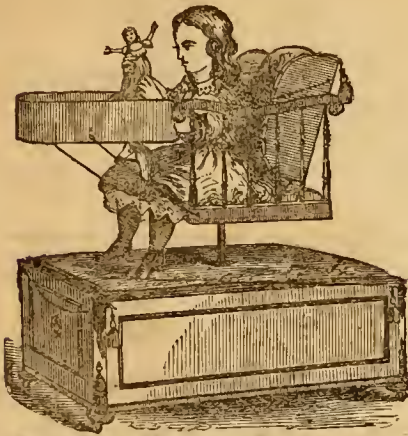
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They recently took the **First Premium** at the Albany and Troy Union Fair, and at the Michigan and Indiana State Fairs, over those of all the leading manufacturers in the land. They have been tested side by side with others in Churches and Parlors, and have uniformly borne off the palm.

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Prof. OSCAR MATO, says: "Its great range and resources for effect are really astonishing. * * * I prefer them above all others."

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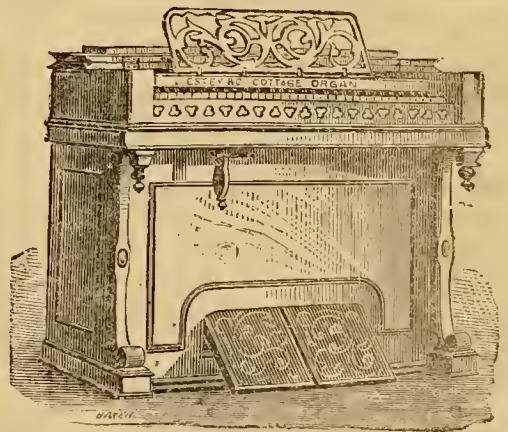
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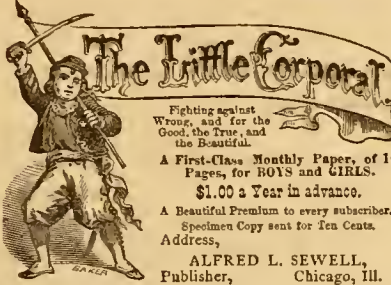
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It is the only American grape that has sufficient uniform richness and tenderness of flesh, with vinous spirit, to make the best of raisins like those from the Muscat of Alexandria.

The testimonials in regard to it from actual trial, are uniformly of the same import from the North and South, and from the Atlantic coast, to far beyond the Mississippi, West.

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Mr. MEEKER, in *N. Y. Tribune*, from Chicago.

"The Committee beg leave to report that they found the Iona a most luscious grape, * * and have no hesitation in placing it at the head of all native kinds, even above the Delaware." "In this judgement all the members of the Society, as well as of the Committee, unequivocally concurred."

Report of the *St. Louis, (MO.) Horticultural Society*.—Mr. J. H. TICE, Chairman.

The Indiana Horticultural Society, at the Fair, unanimously awarded the premium for the best variety of native grapes to the Iona. The Cincinnati Horticultural Society, awarded the FIRST PREMIUM to the IONA. Pennsylvania State Fair awarded FIRST PREMIUM to the IONA. At the great exhibition at Sandusky, where it came in competition with all of the best grapes grown at Kelly's Island, and the whole south shore of Lake Erie, which is the paradise of the Catawba, FIRST PREMIUM to IONA, for "twelve bunches best variety, quality to rule." A friend writes here, "the testing was done by thousands and the Iona carried ALL OF THE PEOPLE AS WELL AS COMMITTEES WITH IT." At New-England Fair, Diploma as best native grape. At Michigan, Iowa, and at all of the other States and County Fairs, where entered for competition, (with one exception,) it received the highest testimonials of excellence.

In Sept., 1864, it received the award of the Greeley Prize of One Hundred Dollars.

On page 255 of *Agriculturist* see extract from Report of Committee, consisting of MESSRS. PETER B. MEAD, R. G. PARDEE, and FRANCIS BRILL. The best and most important ever made on grapes.

THE EARLINESS, HARDINESS, AND PRODUCTIVENESS OF THE IONA.—For several years as the vines gain in maturity, the period of ripening advances nearly a week yearly. Extract from Mr. CHARLES DOWNING. "The past two seasons the Iona being the first seasons of fruiting with me, ripened a little later than the Delaware, but this season a week earlier. * * The Israella ripened as early as the Hartford Prolific, or before it, beginning to color about one week earlier. Both Iona and Israella have

so far proved hardy and vigorous, and their foliage has been much less injured by mildew than that of DELAWARE, CONCORD, AND MOST OTHER KINDS."

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From A. THOMSON, Delaware, Ohio:

"The Israella is the best and handsomest black grape I ever saw and tasted, but the Iona especially carries all before it, both for beauty and excellence of flavor."

From REV. I. B. BRITTON, Chillicothe, Ohio, Aug. 30th:

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From Mr. ISAAC LEONARD, Burlington, Iowa:

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From Rev. W. H. PADDOCK, Delaware City.

Dr. C. W. GRANT, Dear Sir:—"Your Iona grape, being a variety of the Muscat of Alexandria, but the Iona has more of the spirit of wine. * * I have determined to do all that I can in the beneficent work of disseminating the Iona in the States of Delaware and Maryland, not only for the abundant supply of grapes for the table, but for GOOD WINE. I hope also to have all of my seven sons become practical vineyardists."

(Signed) W. H. PADDOCK.

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GRAPE CULTURE, with the IONA leading, presents a new aspect. See adv. page 355.

For the preliminary study of the grape, to aid those in choosing, who desire to plant one vine or many, I have prepared a pamphlet entitled "Our Native Grapes," containing also the "Present and Future of vine culture in America, with a full account of the origin, qualities, and characteristics of the IONA and ISRAELLA." Sent for a two-cent stamp. It has fine engravings of the Iona and Israella vines in bearing.

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