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T H E

CINCINNATUS:

Edited by the Faculty of Farmers' College,

COLLEGE HILL, O.

VOLUME I.

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TABLE OF CONTENTS.

PAGE.		PAGE.	
Cincinnatus—A Sketch.....	1	"Deacon Goodman,".....	141
Theory and Observation.....	6	Our Winter Coverings.....	149
Agriculture—its Defects and Remedies.....	7	Reflections.....	151
Observations on the Flora of the West.....	13	The Honey Bee.....	154
Cincinnati Horticultural Society...	17	Sword Blades of Damascus.....	157
The Minuteness of Creation.....	23	Spontaneous Plants.....	159
Reasoning in Animals	24	Difficulties in Establishing Agr. Institutions—Plan to be Pursued	161
Circular—The Ohio Pomo. Society	25	Our Experimental Farm—Asiatic Seeds	170
Landscape Gardening as an Art...	27	A Little Experience in Gardening	175
The Effects of Steam on Timber...	29	Spr. Work—Dooryard, Lawn, Och'd	177
Instinct of Plants.....	30	"Effects of Frost on Dormant Vegetation," (G. M. Kern).....	183
Something Advantageous—Family Fracas	31	Kate Osborne.....	188
Do Fossils and Rocks Grow ?.....	41	"Effects of Frost on Dormant Vegetation," (A. H. Ernst).....	201
A New Way to Pay an old Debt...	43	Philosophical Questions.....	205
Rain and Heat in the Un. States...	45	Observations on Western Flora...	209
Romance of Insect Life.....	46	Practical Education.....	214
A New Horse Shoe.....	48	Cranberry Culture.....	217
"The Mythic Sea,"	49	A Word from the West.....	219
Importance of Fresh Air.....	50	Raising Potatoes under Straw.....	220
Singular Effects of Attraction	51	Chlorine Gas a Rat Exterminator	221
A Vermonter among the Yankees	52	Kate Osborne, (Concluded).....	223
Changes in the Climate of Europe	53	Pruning in Summer.....	248
The Frigate Bird.....	54	Our Wondrous Atmosphere.....	244
Durability of Timber	55	Ashes as Manure.....	246
Ingenuity of Birds.....	55	Bad Effects of Grass on Colts.....	248
New Motors	56	Suffolk Hogs.....	250
Our Views and Reviews...59, 107, 160	56	Views and Reviews.....	252
Rotation of Crops.....	67	Vegetable Reproduction.....	257
Transactions Cin. Horticul. Soc'y	69	Western Giants in their Slumbers	266
The first words sent by Telegraph	76	"Corn Poetry,"	267
Observations on the Flora of the West	81	Absence of Trees from Prairies....	268
Our Climatic Vicissitudes.....	84, 296	Founder & Diseases of Horses' Feet	275
O. Pomo. Soc.—Pres. Ernst's Ad..	87	California Wheat Crop.....	278
The Neshanock Potato.....	92	Institutions for Promotion of Scientific Agr.—Their advantages....	279
"That John Mason,"	93	The Worsted Stocking.....	292
An Experiment with Concentrated Fertilizers, on Grass.....	99	Commencement Week at Col. Hill	301
Proceedings of Cin. Hort. Society	100	Memoranda of Current Events....	304
A Siberian Winter.....	105	Bread	305
Rothschild	106	Clover Hill Strawberry Seedling..	310
Meteorological Table.....	110, 206, 254, 302, 350, 492, 494, 558, 606	The Cryptogamia—A Class Essay	314
Prices & Profits of Agr. Products	113	The Resurrection Flower.....	318
Bissell's Retreat at Buena Vista...123		What one Man can do.....	320
Cultiv'n of Taste among Farmers	125	"A Yankee Man-Trap,"	321
Atmosphere a Source of Timber Growth.....	127	Farmers' "Hole and Corner" Club	326
Preserving Butter.....	127	Gravel-Wall Houses.....	327
"Give,"—A Poem.....	128	Cin. Hort. Society's Exhibition....	329
Fertilizers for Fruit Trees.....	129	Does the Moon Rotate ?.....	331
Effects of Frost on Dormant Veg.	130	Grandfather's Old Farm	333
Spring Work	133	Promotion of Napoleon—A Challenge.....	337
Under Draining—its Benefits.....	137	English and French Agriculture...	338
		Salt to Destroy Worms.....	339

Table of Contents.

PAGE.	PAGE.		
"Mr. John Thrift,".....	340	A Public Rebuke—Anec. of Judge	486
Strawberries in New York.....	342	White	486
Capture of a Noted Wild Horse.....	343	Heaves in Horses.....	488
Colonel Billy vs. Uncle John.....	344	Management of Canaries.....	489
Cin. Horticultural Soc'y—Hedges	348	Discoveries of the Pres. Century	492
Farmers' Col.—Commencement.....	353	Our Forage Crops.....	497
Home Department.....	355	Mental Precocity.....	507
Return of the Jews.....	360	The Guano Trade.....	509
The cost of War.....	361	Small Farms.....	509
The Raining Tree.....	363	Pomeroy, O.....	510
The Japan Pea.....	364	Hist. Author. Version of the Bible	516
Relaxations of Great Men.....	365	Farm Records Important.....	518
Duration of a Flash of Lightning	366	Ladies and Agriculture.....	519
Buried Treasures.....	367	Glass Milk Pans.....	521
Washing Preparation.....	367	Couldn't tell the Difference.....	521
Humboldt and Agassiz.....	368	The Calliope.....	522
Osage Orange Report Reviewed.....	369	Bottom of the Atlantic—Atheism	523
Sorgho Sucre—Sweet Millet.....	371	Wheat.—Points of a Good Milch	
"May Be So"—A Ch. for Mothers.....	375	Cow.....	524
Apple Tree Borer.....	378	Exhausting the Soil.....	525
Compressing the Bulk of Flour.....	379	The Sensitive Plant.....	526
Horticultural Society Proceedings	380	Egyptian, or Mummy Corn.....	527
Reflections by a "Resident on the		Vegetable Eggs.....	527
Hill Side,".....	385, 430	Rye.....	528
Shrubbery and Vines.....	391	Influence of the Bible on Communi-	
Agricultural Entomology.....	392	ties	528
What a Farmer needs an Educa-		Ded. of Polytechnic Hall—Address	
tion for.....	397	by Pres. F. G. Cary.....	529
Education cheap Insurance.....	398	Correspondence—Terra Culture	551
Magnificent Project—An Artificial		The Dead Sea.....	552
Sea	399	Milk as a Manufacturing Ingred't	553
The Man for the Times.....	401	Vegetable Vitality.....	554
Prospect of Cheap Flour.....	405	Taste in Female Dress.....	558
Cin. Hort. Society—Proceedings	406	Facts for Mechanics.....	560
What is the Use of Botany?.....	413	Stall-Manure and Straw	561
Our Farm Department.....	415	Married in spite of their Teeth....	565
Mr. Halloway's Report.....	418	The Age of a Horse.....	566
Catarvissa Raspberry	422	The Bloodhounds.....	567
A Sketch from Life.....	424	How to choose a good Milch Cow	569
Chinese Potato.....	427	A Premium for Experience.....	574
The Ravens—A Stratagem.....	432	Grain in Great Britain.....	574
Personalities of Literati.....	434	More about Terra Culture.....	575
The Emperor and the Yankee.....	437	The Wife for Me.....	581
Where and how Guano is obtained	440	The Chinese Sugar-Cane.....	584
The Mighty Cedars of California	442	The Immensity of the Universe	591
Tact and Talent.....	444	Coffee.....	592
Lord Rosse's Telescope.....	445	Subsoil Plowing.....	594
The Mountain Wind.....	448	Something Worth Seeing	596
Chapt. on Wheats and Wheat Cul.	449	The Tallow-Chandler's Son.....	597
Study of Nature.....	453	Our Botanic Garden	598
Transpl'ng Trees, Effects of Frost	455	Sharpening Edged Tools.....	600
"Terra Culture"—Prof. Comstock	457	The Execution of Major Andre.....	601
Scientific Agriculture.....	464	The Black and Green Teas of Com-	
Agricultural Discovery.....	465	merce.....	602
Cincinnati Horticultural Society	466	The Great Wrought Iron Gun.....	603
Indian Corn.....	475	The Potato a Heathen.....	604
Hard Study.....	476	A Scrap—The Seconds of Eternity	605
A Beautiful Thought.....	477	Experiments with Cast Iron, etc.	608
"Royal Families"—Whence came			
They?	478		

THE CINCINNATUS.

Vol. I.

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No. I.

Cincinnatus.

AT a midnight hour, two thousand and three hundred and eleven years ago, the streets of sleeping Rome were echoing the clattering foot-falls of a panting steed, as his wearied rider urged him sternly on beyond the Palatine, beyond the Capitoline, and up the Quirinal hill, towards the guarded portals of the princely house of Quintius Fabius. Dismounting here, the knightly horseman answered the sentry's challenge by a hasty countersign; and, declaring that his errand concerned the safety of the Commonwealth, demanded instant speech with the noble Fabius; whereupon he was forthwith ushered in, and conducted by a freedman to the audience chamber of the Roman Consul. Full soon another courier, mounted on the fleetest horse, issued from the Fabian gate, and sped him in the darkness through city and across plain toward the army of Caius Nautius, then encamped in the adjacent country of the Sabines. Lictors were seen passing rapidly to bear official summons to the masters of patrician mansions, who in turn hurriedly followed the fasces to the Forum. The Senate was thus hastily convened; the city was aroused; and rumor ran babbling from street to street, from house to house, proclaiming that danger was hovering over the city of Rome.

Two thousand and three hundred and eleven years ago, as the morning sun of a spring-time day was just peeping over the Alban Hills—as his earliest beams were glancing from the towers and turrets of the Palatine and Arentine, and bathing the broad Campagna in a flood of golden light,—across the Tiber, over against the city, there stood the noble form of “the noblest Roman of them all.” Fifty years had but

filled that manly form with firm and rounded fullness. His crisp glossy beard and curling locks—which had surnamed him in his youth—still flowed with patriarchal beauty around a face where glowed the ruddy bronze of health, while the large, lustrous eye beamed beneath a forehead upon whose towering amplitude commanding thought and self-reliant power sat enthroned. Amid the moistly fragrant earth, now new upturned, with spade in hand, his toga laid aside, in graceful attitude he stood gazing with kindling eye upon the rising sun as his effulgent disc slowly rose above the glittering summits of the distant Appenines. His soul was rapt in pious adoration of the gods, as, ceasing thus from labor, he gazed devoutly upon the brightly rolling chariot of Phœbus coursing up the sky, which erst the Tonant Jove had covered o'er with clouds and seamed with vivid lightnings. At her cottage door, near by, embowered in dewy blossoms, stood his wife, Racilia, gazing with admiring fondness on her lordly looking husband, as he admiring gazed upon the glowing loveliness of earth and sky around him.

As the Roman turned to resume his labor with the soil, a lightly built and elegantly decorated boat, such as the patricians used, shot out from the city shore of the Tiber, and was swiftly rowed, by stalwart arms, to the opposite side, where cheerfully wrought the “Great Roman Farmer.” That patrician boat carried a deputation of Roman Senators to wait upon that Farmer, whose morning labor was suddenly interrupted by their salutation: “Hail to thee, LUCIUS QUINCTIUS CINCINNATUS! The Senate calls thee to the city, and declares thee Supreme Dictator of Rome!” “Hail, Patres Cons scripti!” he wonderingly replied, “Hath aught of evil befallen the State?” “Yea, verily, most noble CINCINNATUS,” said the Senators, “peril the most imminent is impending over the Commonwealth! The faithless Aequians, scorning alike the laws of the gods and men, have broken their treaty of peace; have plundered the villages of the Lavici, and the lands of Tusculum; and, proceeding toward Rome, pitched their hostile camp on Mount Algidus. A Roman army under Lucius Minucius was sent against them. By pretending to retreat, Gracchus, the wily leader of the Aequians, has led Minucius and his army into a defile among the Alban Hills, and by a secret and rapid counter-movement, has cut off our Consul’s retreat, and is about, we fear, to put the whole Roman army to the sword!” “Can this be so!” exclaimed the Roman Farmer, with flushing cheek and flashing eye; “But how know ye this? Think ye ‘tis not false—a trick to lure our Romans from the city walls, and thus to leave our hearths and homes defenceless?” “Nay, my lord

Dictator," replied the Senators, "'tis too true—too well avouched: for five of our brave Equites, furiously spurring their fiery steeds, broke headlong through the Aequian ranks: and, one, more fleetly mounted than his fellows, pressed his high-mettled steed swiftly on to Rome, and at midnight hour bore the fearful tidings to our Consul Fabius. By him a Lictor was, forthwith, dispatched to summon Nautius from his camp among the Sabines; the Senate was immediately convened; and, the Consuls so advising, thou, most noble CINCINNATUS, by decree of our Senate, art summoned from this quiet farm, and constituted Rome's sole and supreme Dictator! Therefore, we pray thee, hasten to the city, and there *see to it that the Republic receive no detriment.*" "'Tis Rome that calls, and I obey!" said Cincinnatus in a firm, calm undertone, half turning to Rricia as she drew near, bearing his ample toga, wherewith to cover the rustic work-day tunic in which he had received the Senate's embassy. Bidding her adieu, and bowing to the Senators his readiness to depart, he proceeded with rapid strides to enter the boat they had left, which speedily re-crossed the Tiber. Stepping upon the City's shore, Consuls, Senators, Aediles, and Equites, hurried to meet and greet him, attended by thronging thousands of the citizens whose great alarm their silent, anxious bearing full well bespoke. Surrounded now by mighty Rome's most mighty chiefs, his portly form erect, his stately tread, his eagle eye, his firm-set lip, bespoke the patriot's stern resolve that, though die he might, Rome should not receive a wound. Perceiving this, the watching multitude raised concurring shouts; the four and twenty Lictors, filing in before him, bearing their official fasces and secures, escorted the Roman Farmer to the Forum, as Rome's Supreme and Sovereign Ruler. Here anxious expectation held all breathing silent. The Lictors cleared ample space around the Dictator's curule chair.

Upon his native dignity this regal honor sat with all the graceful ease that his own flowing toga sat upon his more than regal person. But, a Roman army is surrounded, and Rome herself in peril; hence no precious time did he consume in idle forms and useless pagantry. Quick to think, wise to choose, and prompt to act, turning him from the helmeted Patricians around, he calmly ordered Lucius Tarquitius, a brave and prudent man, but, withal, too poor to buy a horse, and therefore a soldier in the ranks on foot, to be brought. Tarquitius came. As he approached, addressing the wondering soldier, Cincinnatus said: "Tarquitius, right well thy valor Rome doth know, right well do we approve thy wisdom; thou art, therefore, this hour, appointed our Magister, Equitum; and, as Commander of the Horse, go arm you from Rome's

public armory, and choose your steed from our public stalls; assemble all our centuries within the Campus Martius; thence in full armor march, and speedily advance upon the *Æquian* camp at mount Algidus; and I myself will bear you company." Thus the quick command was given; and quick as given the ready soldier went.

"To arms! to arms! To horse! to horse! To the Campus Martius!" was now shouted by all Rome's voices, and echoed by all Rome's hills. Leaving the Forum, attended by the Lictors, CINCINNATUS quickly made him ready to join the centuries marshaled by Tarquitius. And scarce had that morning sun, which rose upon the cheerful Roman Farmer as he tilled his fruitful field, mounted to its meridian, before the eagle banners of Rome were streaming out upon the wind, as that Roman Farmer, now Dictator of his country, boldly bore them on to the rescue of his country's sons.

That morning sun declined; the evening came; throbbing with suppressed emotions of alternate hope and fear, the anxious heart of Rome beat painfully under the forebodings of that silent night. The day dawned again; and again the morning sun, embracing the seven hills of Rome, saluted Father Tiber, whose smiling face sent back the kissing beams with warmth and joy increased. Again the sun mounted to the zenith; in the streets and squares of Rome thousands were abroad—too fearful to labor, too anxious to rest. From lofty heights and towering ramparts thousands were gazing out with whispering solicitude, across the widening Campagna that stretched away eastward toward the Alban Hills, watching to catch the earliest token of their army's fate. Its meridian passed, again the sun declined; the shadows of Rome's hills were lengthening and stretching out toward the east, as though they too were anxious to anticipate the comming messengers, who were ere long to announce the City's fate. In the Forum, seated on their curule chairs, the grave old Senators meanwhile remained in silent, thoughtful session. The sky was clear, the air was calm, all nature hushed. On the eastern ramparts the matrons stood and thought, but spake not, of their husbands and their sons,—the maidens, of their brothers and betrothed. "Behold! I see a banner!" at length one cried. "Where?" a hundred eager voices asked. "Nay, 'tis but the volant bird I saw, whose plumage the golden sun hath touched, and made my wishing mind mistake it for a Roman banner," faintly replied the keen-eyed gazer. "Nay, nay, mehercule! 'tis there again! A Roman banner sure I saw!" And all eyes looked strainingly for what no eye could see. Then stillness so profound ensued that the silent tide of life grew

turbulent and noisy in the mystic chambers of the brain. “Look!” cried another, “was not that a helmet’s sheen I saw?” And Rome, again, was as silent as the expectant sepulcher. A gentle breeze came freshening up from landward toward the sea: it was the messenger that bore to Rome the tidings of her Hero’s conquest! for, laden with the fitful trumpets’ notes, it came hurtling on o’er hill and plain to greet the ears of listening Rome; a moment more, and, rising over a distant hill, the streaming banners with sheen of helmet and shield, of buckler and spear, came gleaming in the mellow light to greet the eyes of tearful Rome. Then went up the shout—“*Io Triumphe!*” that made the concave welkin ring.

That moment, from out the advancing column, a horseman galloped swiftly forward, and took his course directly to the city gate. At his approach the massive portal ope’d; and he, still pressing his gallant charger on, straight proceeded to the Forum to bear his message to the waiting Senate. Arrived there, and vaulting from his steed, he straightway stood, unhelmeted, with well-suited reverence, before the Conscrip Fathers; who, saluting, said: “Hail to thee, Publius! What tidings bringest thou to Rome?” “Hail, Patres Conscripiti!” Publius replied, “Our noble CINCINNATUS hath rescued the Roman army, and delivered Rome from danger: he hath routed the faithless Aequians, and taken Gracchus Cloelius, with his chieftains, prisoner; whom, after passing under the spear in token of subjugation, he brings bound as captives before his chariot to Rome: And, as those multitudinous huzzas without proclaim, the Dictator, at the head of his victorious troops, even now draws nigh unto our City’s walls.” When thus informed, the Senators forthwith decreed perpetual power and triumphant entry to CINCINNATUS as he returned to Rome. The hurrying thousands, then, with joyous shouts reared triumphal arches, made gay with floral gems, wherewith to honor—and spread along the vocal streets feast-laden tables, wherewith to cheer—the heroic bands that now came marching in. The gayest notes of trump and clarion rang out upon the balmy air. Bearing Rome’s delivering Dictator, on the ear of Triumph came. At the Forum’s arch, with greeting high, the Senate meet the noble ROMAN FARMER. In speech of warm laudation they commend his valor and his wisdom; and in the Roman nation’s name proffer to his hand Rome’s regal diadem and sceptre! Then first the noble Roman’s lordly brow grew dark, and mingled grief and anger sat quivering on his lips. Rising in his chariot, he scornfully put back the ivory globe and golden circlet, saying: “Hear, ye Senators! Hear, ye Romans! At Rome’s command, and for my country’s good, I received this Dictator’s sword;

to our arms the gods have given victory, and Rome is safe from all her foes. My duty done, I cease to rule ; this sword I sheathe, and at your feet lay all my power down. Instead of the purple toga, give me my rustic tunic ; instead of that regal sceptre, give me my trusty spade ; instead of that Roman diadem, give me my Roman Farm ! ”

Thus having spoken, he descended from his chariot ; and, while admiring awe held all voices silent, he passed quietly through the yielding throng, re-crossed the Tiber, and stood once more upon his own paternal acres, the “ Representative Man ” of Rome’s purest history and proudest era—ROME’S GREAT REPUBLICAN FARMER !

More than two thousand years had passed, and another Commonwealth, upon another continent, was in peril. To save from impending ruin, another dictator was demanded ; another CINCINNATUS was sought ; and another CINCINNATUS was found. Called from his farm by his country’s voice, he drew the sword but to obtain her deliverance. This done, he, too, spurned the proffers of regal rank ; laid down the powers he had so wisely used ; exchanged the gory fields of battle for the quiet fields of agriculture : AMERICA’S GREAT REPUBLICAN FARMER ! “ Representative Men ” of earth’s loveliest and loftiest virtues, they have taught to Earth the lesson that among the TILLERS OF THE SOIL are to be found the soundest wisdom, the purest patriotism, the most stainless honor :—Representative Men, whose noble souls were anchored to the same fixed centre of Truth, though the ashes of one slumber on the banks of the Tiber, and the ashes of the other on the banks of the Potomac—CINCINNATUS ! WASHINGTON !

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THEORY AND OBSERVATION.

A striking example occurs to us, of the happy connexion of theory with observation, in the prediction that there must exist a spot in the German Ocean—the central point of area of rotation, produced by the meeting and mutual action of two opposite tides—where no rise or fall of tide whatever could occur ; a prediction actually verified by Capt. Howett in 1839; without any prior knowledge that such a point had been supposed to exist. This is one among the many triumphs of like kind achieved by modern science.

OUR PRESENT SYSTEM OF AGRICULTURE—ITS
DEFECTS AND REMEDIES.

A CORRECT system of agriculture lies at the very basis of our national prosperity. In whatever light we view it, our sense of its importance is continually increased and strengthened. In its social, political, and moral bearing, in its connection with the subsistence of mankind, with their general comfort, and with the progress of civilization, no subject more demands the attention of the political economist, the statesman, and the philanthropist.

In these United States agriculture gives employment to more capital, and to more labor, than all the other pursuits combined. With its progress is identified every important interest of our country.

It becomes then an important *problem*, in what manner this paramount interest is to be sustained and its permanent prosperity secured.

Before the discussion of this question we would advert to some of the results that have followed, and that must inevitably continue to follow, our present mode of tillage—results which are now being fully realized in many once fertile portions of our country. Liebig says of Virginia, “Harvests of wheat and tobacco were obtained, for a century, from one and the same field, without the aid of manure; but now whole districts are converted into pasture land which, without manure, produces neither wheat nor tobacco.” “From every acre of this land there were removed, in the space of one hundred years, twelve hundred pounds of alkalies, in leaves, grain, and straw.”

* The soil in parts of Pennsylvania and New York, where formerly large crops of wheat were grown, is now incapable of producing this cereal, and the yield per acre is yearly diminishing throughout the State. The same is true even in this comparatively new and fertile State—the average yield per acre having been reduced from twenty-six to fourteen and fifteen bushels, the highest in any county being but twenty-two bushels, and a number falling even below six bushels.

To compel the earth to produce the largest return with the least possible outlay of time and labor, constitutes the chief study of the mass of farmers. Hence, to secure large farms and lay them under the severest contribution, is the effort of most of them. And when their land is exhausted they abandon it for virgin fields, apparently exulting in the

thought that there is a vast area yet *intact* in the far West.. Thus, from the time our forefathers landed on Plymouth Rock, has the wilderness been disappearing, and the population, with constantly increasing tide, has been moving westward, wasting and destroying timber and soil, and like an army of locusts, leaving a desert in their track. And now that our facilities for travel and transit are so much increased, our people, with true Anglo-Saxon rapacity, are extending with unwonted strides this vandal policy to the wild woodlands and prairies of our vast Western domain.

Productiveness of crops and destructiveness of soil are two of the most prominent features of American agriculture.

Wherever reliable statistics have been furnished, the rapid deterioration of our soil is fully demonstrated. Depletion, constant depletion, has been the inculcation and practice enforced by precept and example by all who have exercised guardianship of these matters. The absurdity of this policy must be apparent to every reflecting man.

In the State of New York, according to a recent report of the Patent Office, while the amount of land under cultivation was increased near seven hundred thousand acres from the year 1845 to 1850, the crops, neat stock, horses, swine, and sheep, instead of having gained in like proportion, were actually greatly diminished. The facts presented by the figures are at once startling. For instance, the number of horses in 1845 was 505,155, in 1850 it was 447,014, being a decrease of 58,141; during the same period the decrease in cows was 68,066; of other cattle, 127,525; of swine 566,092. Of sheep there were 6,443,865 in 1845, and only 3,453,241 in 1850, nearly one-half. Of the great staples, potatoes, peas, beans, flax, wool, wheat, and buckwheat, there was the like enormous falling off. Only in the articles corn, rye and oats, was there a gain; and these in by no means such quantities as to make up the deficiency; so, while the area under cultivation was greatly increased, there was an actual and absolute diminution in the amount produced. It is estimated that two-thirds of all the improved lands in this State are damaged to the extent of at least three dollars per acre yearly, involving an annual depreciation of twenty-five millions of dollars. And this state of facts is not confined to New York, but is applicable to a greater or less extent to all the States, especially to the cotton and sugar growing States, South.

Of the one hundred and twenty-five millions of acres under cultivation in the United States, it is estimated that four-fifths, or one hundred millions, are damaged to the extent of three dollars an acre per annum. That is, that complete restitution of the elements of crops removed, such

as potash, soda, lime, magnesia, chlorine, phosphoric and sulphuric acids, and ammonia, cannot be made short of this expense, amounting annually to three millions of dollars. An incalculable sum, and all worse than wasted by improvident culture.

And yet for this amount, constantly accumulating in geometrical ratio, posterity will hold us responsible. Shall we as stewards thus squander our patrimony and beggar posterity? This is the inevitable result of our present system of tillage.

Is it not time to seek out, and if possible, apply the remedy. Shall it be delayed until the present millions shall be increased to myriads; and the power to recover this waste shall become impossible, so that even an iron necessity can neither invent nor apply a remedy?

This physical atrophy, which is now pervading our limbs, will soon be upon our vitals, unless arrested. It has already made a desolation of many of the fairest portions of our goodly heritage. Many of the lands of our older States have been deserted by the inhabitants for the rich virgin soils of the West and South. These are to undergo the same wretched system of depletion, when they in turn will be abandoned. And may we not pertinently ask, what agencies different from those already in existence must be brought into requisition before any material improvement can be realized? Certainly some more rational system must supplant the present, or a fearful future is before us. And such a system must be based on an exact acquaintance with the laws regulating vegetable nutrition, and the action of chemical agents upon the soil, in short, upon patient and laborious scientific analysis and experiment. Some may be ready to ask, "may we not look with confidence to the numerous agricultural societies, farmers' clubs, and lyceums, now formed and forming, for the rapid improvement and ultimate renovation of our system of agriculture?" These have had and doubtless will continue to have their beneficial effects. They lead to investigation and awaken a spirit of inquiry. The fairs held by them bring together experienced and successful cultivators, to exhibit the results of their well-directed efforts and skill, and a generous rivalry in the different departments of agriculture, horticulture, &c., is secured. Yet, after all, but few important facts, and fewer general principles, are elicited or brought into available and tangible form.

There can be no extended classification of facts or analyses had, such as are necessary to the discovery of general laws, in the hurried manner in which our fairs are necessarily conducted.

We are chiefly employed on such occasions in viewing a series of successful results, without the time for inquiring into the *modus operandi*.

And too frequently these exhibitions are managed so as to make the chief interest to consist in feats of horsemanship, or some more ridiculous device to catch the multitude, such as a general baby show, a device well worthy the conception of the *Prince of Humbugs*; the excuse being uniformly that no other course will *pay*.

Certainly no very flattering compliment to their intelligence. While then, agricultural societies and such like instrumentalities can and may, when properly conducted, do much, they never can radically reach or remove the evil complained of. Many are disposed to trust in the general improvement of the country, and to its numerous commercial facilities, and perhaps, more especially, to its advancement in the useful arts for the improvement demanded.

But so far from this improving our tillage it has directly the opposite tendency. True industry is greatly stimulated thereby, and our farmers are led to add field to field, and greatly to increase their productions. But the improvements in farm implements, modes of transit by railroad, river, lake, &c., as well as the increased demand from abroad for our breadstuffs, serve but to open increased facilities, and to call into requisition new agencies for robbing more effectually and speedily the productive elements of the soil. Such farming may build up cities and enrich monopolies, but it will impoverish our lands and destroy their productive agency, the great effort being to secure the largest return with the least possible labor.

The great misfortune in all this process is that the destruction is so gradual as not to be appreciated; and the motives of the multitude are so gross and groveling that while they may be led to see the aggravated wrong, they will not use the proper correctives within their knowledge. Our maxim is, "get what you can, let posterity take care of themselves, they have done nothing for us."

Another method has been recommended, and in some parts of our country, has been adopted with success, viz: the appointment of lecturers who shall give proper scientific instruction to those disposed to listen. But two important difficulties meet us here: first, to secure men that are qualified to lecture; and the second, no less insurmountable, to find interest and capability enough in communities to appreciate the information given.

Indeed, it is apprehended that little will be done in this direction until science herself is divested of many of her crudities, and many of her applications, as yet of doubtful propriety, are more fully tested by experiment by men capable of such a task. Science, applied science, has as yet made but little advance in agriculture. Our scientific men are

rarely practical men. Even chemistry, with all her vaunted discoveries in the arts, can as yet point to but few practical triumphs.

Without mentioning other expedients for revolutionizing our present defective system of agriculture, we assert with confidence that all relief must come from science, from applied science. The deeply interesting but occult problems found in agriculture cannot be solved, or new principles developed, without institutions adapted to this numerous class of society. Institutions that shall not be satisfied with mere theory, but shall unite theory and practice, after a most rigid analysis of facts and phenomena, carried forward through numerous experiments, under a great variety of circumstances. The fact has been, that while there is no pursuit in which so many laws of nature must be consulted and understood, the general and prevalent feeling has existed that, to be a farmer, the mere rudiments of an English education were all that were necessary, and that it would be an improvident waste of time and money to attempt their further enlightenment. We will not stop to controvert so unfounded an opinion. This error has arisen from the fact that agriculture is both a science and an art, and the class alluded to have never looked upon it in any other light than a very simple art, that can be as easily and successfully imparted from father to son as coopering or blacksmithing. As a science little has yet been done; yet sufficient to show its inestimable value; and if the inventive genius and talent of our country could be as successfully turned in this direction as it has been in mechanics and machinery, it would be attended with similarly marked and stupendous results.

It must be obvious then, before agriculture can realize what is desired, we must have institutions where the science shall be thoroughly taught and applied, that its results may be made known.

The want of such institutions is the true reason why this species of knowledge is not more highly appreciated in our country. Amidst all the efforts to popularize science, and build up colleges, there is not in all North America one agricultural college, where a farmer may learn the elements with which he constantly deals, or the laws which govern them. And we affirm without fear of contradiction, if agricultural science shall ever make any advance in our country, it will never be done without such institutions, with all the means and appliances furnished them, of proper teachers, and text books, and laboratories, with extensive apparatus, and a sufficient quantity of ground to test experimentally the principles and doctrines taught. In short, theory and practice must go together, without which all efforts at improvement must fail. Justice can never be done to the soil until such opportunities shall be given to

investigate understandingly the laws, numerous and complicated as they are, involved in agricultural science. This can not be done by farmers, nor societies, nor clubs, nor lyceums, without proper teachers, without apparatus, without text books, where problems long and complicated, and extending to numerous and varied experiments, and often through a series of years, are to be demonstrated. That science, agricultural science, thus taught and applied, would be productive of the beneficial results proposed, we are not left without experience.

Mr. Riddle, in his report to congress on the guano trade, in favor of opening friendly relations with those islands furnishing it, incidentally remarks that since schools of science for the promotion of agriculture have been established in Europe, lands formerly producing but fifteen bushels of wheat per acre, have been made to yield from forty-five to fifty.

The Hon. Marshal P. Wilder, chairman of a board of commissioners appointed by the legislature of Massachusetts, in an excellent and elaborate report on agricultural education, gives us an instructive account of the principal schools and colleges in England, Scotland, Ireland, France, and other continental nations of Europe, with the great results thereby effected.

This report of over ninety pages, from the pen of Prof. Hitchcock, who devoted some months to visiting these institutions, furnishes a volume of facts and arguments in our favor.

There are now 352 institutions of all grades, in Great Britain and on the continent, where agriculture is scientifically taught; 22 superior institutions which would rank with our best colleges, and 54 intermediary, which would compare favorably with most American colleges.

These institutions are receiving the liberal patronage of government, as well as the munificence of private individuals, and are working a revolution as important as it is extensive. They have quadrupled the quantity of produce from the same land, in many places.

The rent roll of the Coke estate in Norfolk, England, was increased in a brief period from five thousand to forty thousand pounds sterling per annum.

Prof. Mapes remarks that England, with her agriculture as it was a century ago, could not now maintain her population.

We may pertinently ask, then, if agriculture is meeting with such favor under monarchies, where it never has been the policy to spread knowledge and light among the masses, with what favor should efforts be regarded for the enlightenment of our farming population, where every man is a sovereign, in whose hands political supremacy most unequivocally resides.

True it is, this is no new question. It has been agitated under every administration, from that of Washington down. Our state legislatures have discussed it over and over again.

New York, for the last thirty years, has been putting forth fitful efforts to establish an agricultural college. All have yet proved unsuccessful. It belongs to Ohio—to the enterprising citizens of Hamilton county—to have made the first successful effort at establishing a department for the promotion of scientific agriculture and horticulture. It will be one object of this journal to awaken and diffuse an interest on the subject of Industrial University education, and as far as possible unite the friends of progress in similar efforts.

Observations on the Flora of the Western States.

THE intelligent traveler, who, with a mind awake to the teachings of nature, surveys the phenomena of different and distant lands, can not fail to notice that each region presents something peculiar in the aspect of its vegetation. If his observation has been sufficiently extensive, he has noticed the general fact that the vital force and luxuriance of the plant-world increases with the increase of solar heat, from the poles to the equator, and also that the same gradation is repeated on mountains, in miniature zones, from the summit downward. Moreover, the different geological formations, surface configurations, soil, etc., impress varying characters upon the flora of each region, not to be mistaken. The native rushes, which rejoice in the bogs, would starve on upland plains, and those bright forms which luxuriate on these plains are unknown on the Alpine summits. We do not search for ferns in the rich meadow, nor for flags on the hill-tops. But on the other hand, the experienced botanist can generally predict what species of plants will be found in any given locality.

Upon facts and phenomena like these, a great deal of observation has been bestowed, and the outlines of a new science founded. In the "Geography of Plants," the world is distributed by botanists into about twenty-five plant-regions, each distinguished by a peculiar flora, and named in honor of some botanist, who has especially distinguished himself in its investigation. For example, the region of the Saxifrages and the Mosses, or *Wahlenberg's region*, in arctic latitudes, north of

the limits of the growth of trees, is distinguished by the absence of arborescent plants. Such is also the flora of the summits of the White Mountains, in New Hampshire. The *Linnæan region* lies next south of Wahlenberg's in the old world, reaching to the Pyrenees and the Alps. Forests of deciduous trees, and firs, mark this region, together with luxuriant meadows and broad heaths. This forest is also graced by Linnæus' own lovely name-sake, the *Linnæa Borealis*. A third region, occupying the basin of the Mediterranean, with southern Europe, extending from the Alps to the Atlas, is called, in honor of the great Genevian botanist, *De Candolle's region*. This is distinguished by the fair Liliaceous plants and the Aromatic Labiate.

Corresponding to these two plant-regions in the east, North America has two lying beyond the tropics. That of *Michaux* embraces the basin of the great lakes, with Canada, New England, the Middle States, and those of the Northwest, while *Purshes' region* includes the Southern States. The former we may briefly characterize as the land of the Asters and Goldenrods; the latter, of the Magnolias. But to us it is obvious that the limits of these two regions do not everywhere meet. Blended in one on the Atlantic coast, they separate and diverge as they extend eastward, leaving the magnificent valleys of the Ohio, the upper Mississippi, and the Missouri, between them, to constitute a new region, which in all justice must be assigned to that pioneer botanist, *Nuttall*. This splendid region may well be characterized as the realm of the Phlox and Liriodendron. But we propose to notice the peculiarities of this region more especially.

This great Western valley is truly a glorious land ; but its glory does not consist in wild mountain scenery, nor in burning volcanoes. Here are no frowning mountain-passes, no headlong torrents, no echoing, rock-bound lakes. All these grand and sublime features of Alpine scenery, which are admired in primitive countries as exponents of the handiwork of the Almighty Creator, are wanting in the great valleys of the West. Indeed, the peculiar grandeur of these lands consists in the fact of their being destitute of such features, and in the development of characters directly the opposite.

In New England the traveler meets here and there a level spot of earth of few acres in extent, nestling among the hills, and called *meadow*, formed of detritus deposited by a mountain torrent. Along the rivers, also, which wash the base of the hills, he finds often a narrow plain, lying between the precipice and the water's edge, and called *interval*; and the farmer whose boundaries include these choice aeres is deemed fortunate indeed.

True, there are some portions of those States where the rugged hills seem to flow down into plains and intervals to a considerable extent, so that there might be located, here and there, a quarter, a half, or even a whole section of level and arable surface. But such sections are rare, while hundreds may be found which do not include a single rood of level or even arable territory. Variety of soil and surface, literally *endless*, is therefore the characteristic of those highland regions. There are bogs, fens, swamps, and marshes—ravines and defiles—slopes north, south, and everyway—low bottoms and lofty plateaus—hills and hillocks—mountains and moraines—and all these varied by every possible contour and substance, as sand, gravel, pebbles, and boulders—clay, loam, mold and marl—solid rock and oozy mud. In such a territory, how varied the landscapes which greet the traveller at every turn ! How rich in variety the native plants which greet the delighted botanist ! But alas, for the toil-worn farmer !

Now, bidding adieu to this broken sterility, the New England emigrant comes hither to look upon different scenes. Here interval meets interval, or blends with the gradual plains, both expanding beyond the limits of vision into boundless prairies, or woodlands strangely miscalled “barrens.” Along the whole circuit of the heavens the eye wanders in vain for those towering forms which everywhere in eastern skies mark the blue outlines of the horizon, but it ranges smoothly on an unbroken circle. Mountains there are none, and the hills scarce deserve the name, since they arise only to the general level of the country, having been formed, not by elevation, but by the excavation of surrounding streams. Upheaved and distorted rocks, overhanging cliffs, and granite boulders, are as rare as honest statesmen are. Our strata of silurian limestone and sandstone lie low and level, and must be quarried, after the manner of ores, in order to be found. Our lowest bottom-lands seldom degenerate into amphibious swamps or peat-bogs, but like the higher “barrens” consist of loam and vegetable mold perfectly consolidated into soil, and both await the call of the ploughshare to pour forth inexhaustible supplies for the subsistence of man.

Such are the general features of this great Western valley, now fast becoming the granary of the world. Her glory, therefore, consists not in cloud-capped mountains and broken rocks, but in her vast ocean-like prairies, and in a soil of almost universal fertility.

In contemplating the flora of such a country after its settlement, it is necessary to distinguish between the past and present. Those lovely children of nature, our native plants, once (not long since) overspread this whole territory. Everywhere their lovely flowers decked every

sunny prairie, every shady grove—the ravines, bluffs, and river-bottoms. But now they fly like the timid deer before the advancing tide of civilization, and are already strangers in half the land. The scythe and axe are sweeping them from the fields—the rooting swine and browsing cattle, from the wild prairies and woods. They retire and give place, not only to the favorite grains and fruits, but also to those foreign vagrants—the naturalized weeds, which ever follow close on the steps of civilized man.

In regions comparatively broken and sterile, like New England, there are numerous safe retreats for the wild flowers, as well as wild beasts, in the mountain and wilderness, whither the forces of husbandry can never follow. But in the fertile regions of these western valleys there are found no such retreats beyond the reach of the plough and of foraging cattle. “Art usurps the bowers of nature” everywhere, and changes the destiny of every foot of soil. Already the despairing botanist searches in vain on the hills, ravines, and plains, far around Cincinnati, for numerous native species which Nuttall, Lea, Riddell, etc., a few years ago, found abundant in all this territory; and he anticipates the day as not very distant when entire species of these beautiful beings, unless preserved in botanic gardens, will be forever blotted from the book of nature.

We have characterized this plant-region as the realm of the Phlox and Liriodendron. This, however, is entirely arbitrary. A hundred other genera, equally abundant, might fairly claim the honor of giving character to our flora. Of the twenty-five species of the Phlox, all save one are exclusively native of North America, and twelve of these flourish all over the prairies and barrens of the Western States. In spring and early summer their rich purple flowers adorn the wild prairies in such numbers as often to tinge the prevailing green with the hue of flame, thus suggesting the significant name of the genus, ($\varphi\lambdaο\xi$ —flame). Many of the species are cultivated in the gardens both of America and Europe—particularly the Moss-Pink (*P. subulata*), Drummond’s Phlox (*P. Drummondii*), spotted Phlox (*P. maculata*), and *Phlox acuminata*, which have sported into numerous varieties.

Among trees, the Liriodendron—tulip-tree—is the undoubted monarch of the Western forests. It grows native in nearly all the States, save the New England, extending from the great lakes to the Mexican Gulf; yet is most abundant and characteristic in the valley of the Ohio. Few vegetables are endowed with an equal combination of interesting traits. Its dimensions are magnificent, it being often one hundred and forty feet in height, and its trunk eight feet in diameter. Its foliage is very

marked in figure, and of a dark shining green. Its flowers are in great numbers, cup-shaped, broader than the tulip, beautifully pencilled, and all dripping with honey. Its lumber, known as *white-wood*, or *poplar*, in the absence of pine is more valuable than that of any other native tree.

Other traits in the character of our western vegetation will be noticed in a subsequent number.



CINCINNATI HORTICULTURAL SOCIETY.

THE following sketch of the history of the Cincinnati Horticultural Society, by GEO. GRAHAM, Esq., presents many points of interest to both the local and general reader:

The first meeting with reference to the formation of the "Cincinnati Horticultural Society," was held at the house of R. Buchanan, on the evening of the 17th February, 1843. The following gentlemen were present: R. Buchanan, A. H. Ernst, M. Flagg, S. C. Parkhurst, J. B. Russell, H. Probasco, V. C. Marshall, John Locke, George Graham, and Thomas Winter. A committee was appointed to report a Constitution and By-Laws, which were adopted at a subsequent meeting, and the Society fully organized by the choice of the following officers: R. Buchanan, President; S. C. Parkhurst, Treasurer; John B. Russell, Corresponding, and John G. Anthony Recording Secretary.

From that time a deep interest was felt in the cultivation of the grape, and other fruits of the West, which induced the Society to adopt the plan of holding Spring and Fall Exhibitions, and also to make reports on the culture of the grape, the strawberry, and the fruits and vegetables of the Miami Valley. The reports on the grape and strawberry having been published in pamphlet form, excited an interest among the fruit-growers and botanists of the Eastern and Northern States. It was in the Strawberry Report that the sexual character of the plant was maintained, by practical cultivation of the numerous varieties, and many thousand plants. This theory was at first controverted by Hovey and others; but it has at last triumphed, and it is now admitted as correct; and the Cincinnati mode of planting appears to be the most successful.

To test thoroughly the plan of planting more female than male plants—which was the plan adopted by Mr. Longworth, and the gardeners in the vicinity of the city—a committee was appointed in 1846, to visit the markets of the city, and ascertain the quantity sold during the strawberry season.

Accordingly, this committee commenced on the 19th of May, to take account, and ended on the 12th of June—a period of twenty-two days—when they reported the quantity sold in market, and at hotels, to be 4,150 bushels.

This enormous yield, compared with the number of acres of ground cultivated, satisfied the Society of the correctness of the theory, which is now adopted by all our gardeners.

The proper culture of the grape, and the manufacture of wine, was made one of the most important considerations of the Society, from the time of its first organization; and in 1846, a report was presented by a competent committee, on the analysis of the soils of Hamilton county, the quantity of ground cultivated in vines, and the product of the vineyards, with a correct chemical analysis of the Catawba, Isabella, and other native wines, as compared with foreign productions.

This report, in connection with the early and continued able efforts of N. Longworth, Esq., induced many of the farmers of the country to turn their attention to the cultivation of the grape, and by adopting an American mode of pruning, better suited to our soil and climate than the foreign practice, the success was much greater than expected, and we may now safely predict, that the Ohio Valley is to be the rival of the vine-growing regions of Europe; nor is the time far distant when the Catawba and Herbemont wines of Hamilton county, will ornament the tables of the aristocracy of the old world.

In 1845, the citizens of Cincinnati became interested in securing, in the neighborhood of the city, a suitable Cemetery for the burial of the dead, and the members of the Horticultural Society were the first to select the beautiful ground now known as Spring Grove Cemetery. A committee was appointed to make the purchase from Josiah Lawrence, Esq., who agreed to sell the farm known as the Gerrard farm, for \$10,500. In consideration of this proposition, a charter was passed by the Legislature, in February, 1845, incorporating the Society, and giving them power to dedicate a “rural cemetery, or burying ground, and for the erection of tombs, cenotaphs, and other monuments; to lay out the grounds into suitable lots, and to plant and embellish the same with shrubbery.” About the time that the negotiation was completed with Mr. Lawrence, some of the members of the Society preferred a separate

and distinct incorporation for the Cemetery, and the Horticultural Society generously yielded their claim to the new organization, which was incorporated the same session, under the title of "Spring Grove Cemetery."

The officers and directors of the new organization, were elected from the leading members of the Horticultural Society; and from the first election of directors until the present time, the laying out of the grounds, and control, have been under the supervision of gentlemen belonging to both institutions; the Cemetery being merely a distinct incorporation, managed by horticultural members, performing their duties without charge, and devoting their energies in another sphere of usefulness, for the general public good. That they have been successful in the highest degree, let Spring Grove answer, for we challenge the world to show more beautiful grounds than this Cemetery, produced in the same space of time.

Gratitude is eminently due to the managers of it, and too much praise can not be given, for the admirable taste which characterizes every part of the extensive grounds so magnificently laid out.

Another public duty discharged by the Society, was the appointment of a committee, at the request of Mr. Warden, Superintendent of the Water Works, to convert the rude and unsightly hill adjoining the reservoir, into a landscape garden, or public ground. The committee was appointed, and, with the aid of Mr. McAvoy, who graded the ground and furnished the trees and flowers, the whole was soon a beautiful public promenade, reflecting high credit on all concerned, and now justly the pride of the citizens.

It is to be regretted that this is the only ornamental public ground in the city. Cincinnati, with a population of 200,000 inhabitants, instead of having one or two acres of public ground, should have one or two hundred, as breathing places in the hot weather of our summer months, for this overgrown population.

Many of the members of the Horticultural Society were the pioneers in most of the improvements of the city; and by them, from the earliest period, none was considered of more importance than extensive public grounds; consequently, they were always found to be the first to recommend and advocate the purchase of the many suitable blocks which at various times were offered to the Council, which they considered on the most advantageous terms. Not longer than two years ago, when the city was authorized by an act of the Legislature, to appropriate \$500,000 to the purchase of parks and wharves, this Society appointed a committee to wait on the authorities, and propose to them the services

of the Society, free of charge, in planting, laying out, and superintending any public ground which they might think proper to dedicate as a park.

A committee of Council, with the Mayor as chairman, was at that time authorized to act with the Society, and a favorable offer of ground was made by Mr. George Burnet; but, like all preceding propositions, the Council failed to urge the purchase, and we are still without a public park.

This Society, however, did all in their power to secure this great public benefit, and the failure on the part of the city can not be charged in any degree, to any want of exertion on the part of this institution.

The Horticultural Society, under their new charter, increased in numbers, and continued their weekly and annual exhibitions until the Fall of 1854, when it was found that the contributions of the members would be too numerous to be admitted into any of the large halls of the city; it was therefore, determined to construct five large pavilions, and to occupy the vacant lot of ground adjoining the Orphan Asylum, thus covering over with canvas several hundred feet of the lot, and under these pavilions the Fall exhibition was held. Mr. Kern, a distinguished landscape gardener, was engaged to construct a beautiful design of rock work, and a connection with the water pipes of the street, enabled him to add beauty to it, by a display of fountains. The whole of the ground being also lighted with gas, rendered the effect grand and beautiful. The magnitude and splendor of this display, attracted a large number of visitors and placed the Society high in the estimation of the public; but this being the first attempt at anything of the kind so extensive in its arrangements, many expenses were incurred which were not anticipated, and the location of the lot being distant from the populous parts of the city, interrupted by unpaved streets, the net profits to the Society were smaller than expected. The members, however, had the gratification to know that refreshment tables, kept by the ladies of the Horticultural Society, for the benefit of the Orphan Asylum, yielded that institution the sum of \$780.

The canvas of the pavilion having been carefully preserved, the Society this year resolved to obtain a better location, and accordingly secured the large vacant lot on Vine, between Fourth and Fifth streets, where the late exhibition was held, and which has been acknowledged the most extensive and magnificent ever given in the United States. This remark applies not only to the display and general arrangements, but to the size and quality of the fruits and vegetables; clearly establishing the fact, that the climate and soil of the valley of the Miami has

made Cincinnati the greatest fruit and vegetable market of the United States.

It would occupy too much space here, to attempt a detailed description of the whole of the exhibition.

The principal object of attraction on entering the main pavilion, was the beautiful rock ornament at the termination of the main avenue, in front of which was a splendid jet of water, falling into a large basin. In addition to this display, a beautiful sheet of water was made to fall from a projection of the rock, into a small basin at the base. This rock-work and display of water, with the beautiful arch in front of all, was, perhaps, the greatest attraction. Many of the designs, however, which were correct imitations of European castles, were also very interesting when closely examined; several of them had a connection with the water pipes, to show natural waterfalls, running streams of water, and in the grounds represented around the castles, the shrubbery in miniature, was growing in a thriving and healthy condition.

In the pavilion which contained the fruit, great interest was taken. Here, tables of several hundred feet contained over one thousand nine hundred dishes and plates of choice fruit; each plate with a card showing the owner's name, and each specimen of fruit properly named, with cards placed on the contributions.

The great variety of fruit on the tables in this department, was highly interesting to the pomologist and vine-dresser.

Apples and pears, the product of trees from every part of Europe, were placed alongside of our native fruits. Grapes, the product of vines imported from France, Italy, Germany, and the higher regions of the Alps, were placed side by side with our native Catawba, Herbemont and Ohio. In the regions of our own country, from the sunny plains of Texas to the extreme northern latitudes of New York and Massachusetts, every intermediate region where fruit is cultivated, was represented by the products of the trees or vines; thus giving, at one view, the effect of culture and climate upon the fruit of the various regions of our country.

The vegetable department, in the rear of the rock work, contained wide tables of more than one hundred feet in length, loaded with gigantic vegetables of every description, and each lot properly labeled, with the contributor's name given. From the green-houses and conservatories of the neighborhood of the city, the Society was enabled to present a grand display of growing plants, native to almost every region of the globe. The beautiful plants from Australia were new and highly interesting.

The *Anastatica*, or "Rose of Jericho," a species of fern, or moss, from the deserts of Arabia, two specimens of which were exhibited, one in a dead or dried condition, the other in a vase of water, in a living, green and healthy state. Both of these plants had remained dry and lifeless since 1832, at which time they were obtained in Calcutta, and had not been revived till they arrived in this city, when one of them was placed in water, and within three hours after it was immersed, it expanded to its natural living dimensions, resuming a green, healthy existence. The other specimen was exhibited in a dry and dead state, to show the contrast. These specimens excited great interest.

The living moss, also, from the Devil's Bridge, in Ireland, excited curiosity.

The celebrated *Victoria Regina* Lily was exhibited by three different gardeners, with a leaf in one of the tanks nearly seven feet in diameter. These lilies were in full bloom several evenings of the exhibition.

The fruit of the tropical climates, in a growing state, such as the banana, the pine-apple, the pomegranate, the cotton-plant, and many other southern productions, were new to the visitors, and added greatly to the exhibition.

The numerous attractions of the pavilions induced a large number of visitors from the city and many of the neighboring villages, to call during the first week. The second week presented a new feature. The whole was converted into a splendid picture gallery, and nearly three hundred fine paintings, engravings, photographs, daguerreotypes and other works of art, were added, to beautify the display, and blend together the imitations of art with the productions of nature. Over the green-house plants, were arranged some of the best paintings of our native artists, such as Whitridge, Beard, Sontagg, Frankenstein, Lee, Cridlin, Spinning, and others. Over the vegetable tables were arranged botanical specimens, in frames, of our Western plants. Here, also, was an interesting collection of paintings executed by East Indian artists, representing the trades and various castes of society in Hindooostan. In the main avenue, the mezzographs and other fine paintings were exhibited. Over the fruit tables there was also suspended a splendid collection of paintings and engravings, many of them imitations of the natural fruit below them.

This feature of the exhibition added new interest; and although the weather was inclement, still the pavilions were crowded with visitors during the second week.

The third week, from Monday until Wednesday evening, the gates

were closed for the purpose of preparing a floor for a grand ball, concert, and banquet of the fruits and vegetables on the tables.

This entertainment was a novel one, which excited great amusement and good feeling among all the visitors.

It was a happy mode of disposing of the fruits and vegetables ; and taking into view the large number who were present on this occasion, perhaps there never was an assembly better satisfied.

It is one of the objects of this Society, to discover what fruits and vegetables are best adapted to our climate ; to diffuse such information throughout the great valley of the Mississippi ; and by example and practice, induce the organization of similar Societies, for the purpose of developing the vast resources of this great garden of the earth.

The system and good order which characterized every department of the exhibition, and the evident good feeling of the company who visited the pavilions, were subjects of general remark.

An admirable address was, by request of the Society, delivered by President I. J. Allen, of Farmers' College, on Thursday evening of the first week, to the largest audience at any time assembled within the inclosure.

The next morning after its delivery, the Society unanimously passed the following resolution :

“Resolved, That the Secretary request President I. J. Allen to furnish the Society a copy of his address, for publication in pamphlet form, with a suitable preface, to be prepared by the Secretary.”

GEO. GRAHAM,
Sec'y Cin. Hor. Society.

THE MINUTENESS OF CREATION.

It is utterly impossible for the mind to conceive of the almost infinite minuteness of an atom. A single grain of gold, for instance, might be beaten out so as to cover a square foot of space, and yet we have not approached its reduction to atoms. The following admirable illustration by Depler, may be given to show how incomprehensible is an *atom* : Reduce a cubic inch of sulphur to fine powder, and you may cover it with an area of six square miles. Take one grain of this powder, and triturate it thoroughly with ninety-nine grains of sugar of milk, and its presence would be detectible in every grain of the hundred. Take a grain of

this, and treat it in the same way with other ninety-nine grains of sugar of milk, and so on. At the third dilution, as we may call it, the powder thus resulting from a cubic inch of sulphur would cover two square miles of area ; at the fifth, the empire of Austria ; at the sixth, the whole of Asia and Africa ; at the ninth, it would cover the entire surface of the sun, with all its planets, and all their satellites. And yet, although in every grain of this powder the sulphur was found to be present, we had not reduced it to atoms. Again, it is well known that every drop of putrid water, under certain circumstances, contains millions of animalcules, invisible except to high powers of the microscope. And every one of these animalcules is a highly organized being, having at least something analogous to a skeleton—capable of action—of pursuing, of retreating, of attack and of defense. The globules of the blood of an elephant are perceptible only with a powerful microscope, and yet these animalcules must have blood, and that blood must consist of similar globules. Once more ! The Bovista Gigantea, a specie of mushroom, in the space of twelve hours, shoots up from a scarcely perceptible germ to a plant a foot in diameter. Every square inch of its surface contains three hundred and thirty-six millions of cells, every cell, with their six sides, is divided from those around it by filaments of far more complex structure than an atom of potash, and yet we have not got a glimpse even of the atoms of which they are composed. He would confess, inquiries such as these inspired him with but one feeling—fear. It was as if he were taken, by some profound astronomer, far among the worlds that people infinite space, and he was ready to cry out for some one to lead him back to solid ground once more. One thing only gave him comfort : he knew of something higher, deeper than those facts—it was their idea. These were, after all, only the letters in which the infinite idea is blazoned. He felt as did the deep-thoughted Pascal, when he exclaimed, that although the universe were to crush him, he would still feel himself greater than the universe, for *he knew that and how* it was crushing him.

REASONING IN ANIMALS.

THE following remarkable instance of *sagacity* in the swallow is taken from “Everett’s Life of Dr. Adam Clark.” It may serve to rouse our minds to the consideration of the question touching the reasoning capacity of animals :

"The nearest approach to reason in animals I ever was witness to," said the doctor, "was at Ratcliffe Close, near Bury, in Lancashire. Looking up to the eaves of a house, I saw a number of swallows' nests in a row, and perceiving no place of egress, I inquired of Mr. Bealie, the proprietor of the building, how it happened they assumed such an appearance; when he told me, that in that neighborhood they were designated 'blind nests.' Before the return of the swallows in spring, some sparrows had taken possession of them. On the arrival of the original proprietors, attempts were made to eject the occupants; but the sparrows sat, and maintained possession. Other swallows came to the aid of the lawful owners; but no power which they possessed would serve the purpose of ejecting the villainous sparrows — for the sparrow is a villainous bird! What was the result? The swallows after various and fruitless attempts, assembled on the roof of the building, and sat for some time as though in grave deliberation; they then flew away, each returning, in a few seconds, with mud in his bill, with which they closed up the holes, thus burying the sparrows alive; where, in those nests, they remain entombed to this day." "That," said a friend, smiling, who heard the relation, "was returning evil for evil, with a vengeance." The doctor, who was one of the last men to act on the *lex talionis* system himself, commenced advocate with no unapt illustration, for the poor harmless swallows: "What," said he jocosely, "if a man were to enter my house, take possession of it, and turn my wife and children out of doors, should I not, on finding that I could not eject him, be justified in nailing him in?"

[For the Cincinnatus.

C I R C U L A R .

THE OHIO POMOLOGICAL SOCIETY.—In pursuance of the adjournment of a special meeting held in Columbus, on the 19th, 20th, and 21st Sept., the Society will hold its regular *biennial session* on the second Tuesday in January next, (the 8th), in the city of Cleveland, and continue in session so long as the interest of the same may require.

The Society, though constituted for the region of Ohio, *nevertheless, of necessity, takes in the wider range of our country*; in view of which, a resolution was unanimously passed, that all fruit growers and pomologists, out of the State, be invited. In pursuance therefore of said resolution,

they are respectfully and cordially invited to be present with specimens of fruit, and participate in the deliberations. Especially is it desirable to have specimens of all the *Winter Pears* for examination.

Among the prominent objects of the society are, to collect, from actual observations, all facts in connection with *Western fruit culture*, and to embody this in such a form for publication, as will be of the greatest benefit to the public.

It is therefore desirable that each member and participant in the deliberations, come prepared to submit information on the following points, (so far as not previously disposed of), or any new facts that may have arisen, viz:

First, On the fruits cultivated by himself, or in his region, with the proper name, all local and synomymes known to him; the character of the top and sub-soil in which grown; if the surface is a level plane, undulating, or hill-side, aspect and elevation; what varieties are best adapted to these soils and locations; their productiveness and keeping properties, as the result of these soils and locations; the mode practised in the cultivation, pruning, etc.

Second, The influence of the stocks on the health and duration of the varieties grafted, or budded on the same, with the relative merits of the two modes of propagating. Also, on the health, productiveness and duration of the pear worked on the quince stocks, and the cherry on the Mahaleb stock; the best mode for their cultivation; with any new facts in reference to the fire-blight in the pear tree.

Third, Observations on insects injurious to fruit, the tree, and the vine; the diseases to which they are subject, with the best mode to counteract these evils, with all other information tending to promote the general interest of Pomology.

Well written communications on any of the above subjects are particularly desired. They should be concise and to the point.

Communications may be addressed to the President or the Secretary. Packages of specimens should be marked for the Pomological Society, to the care of F. R. Elliott, Cleveland, Ohio; to whom members and others will also report themselves, to learn the place of meeting, and for other information.

Editors friendly to the objects of the Society, are respectfully requested to give the Circular an insertion in their columns, and otherwise draw public attention to it.

A. H. ERNST, President.

A. B. BUTTLES, Secretary.
December 15, 1855.

A COMMON SENSE VIEW OF LANDSCAPE GARDENING
AS AN ART.

ORNAMENTAL GARDENING, it is fair to suppose, had its origin in that desire common to all mankind above the nomadic tribes, to possess a home, which should differ in some degree from, and be superior to, the common waste. The useful—the field or garden patch—is the first step in civilization. But no sooner are the necessities provided for than that aesthetic sentiment which exists, although perhaps in a dormant state, in every breast, however rough or savage, makes itself felt, and demands that something shall be done for its gratification. Simple and uncouth indeed we may suppose the first attempt at ornamentation of grounds to have been. In his strolls through the surrounding woods, the improver's eye is struck with the gay color of some flower, or the beautiful foliage of some umbrageous shrub. He stops to admire it, and with his admiration springs up a feeling—the very first one succeeding admiration in the human breast—the desire to possess the object. The flower is transplanted to the vicinity of his hut, where, under his careful tending, it thrives and re-pays him by its graceful bloom and grateful fragrance. But the very effort of taking care of his first floral pet, has developed and strengthened the feeling of admiration for some similar beautiful objects in nature, and it is not long ere he is induced to transplant another prize to his own home. Ere long he has a little collection of such. Not harmoniously arranged, nor even judiciously chosen—yet, rough though it be, it is a garden. And farther, it is a garden which, so far as it has a plan or principle at all, is formed upon what will be shown, a little further on, to be the only true and correct principle in the art.

From the time when mankind arrived at such a forwardness in civilization that ornamental gardening became a necessary art, and was reduced to certain rules, up to the present time, two great systems may be said to have reigned in Gardening.

The first of these, that which was adopted when first the nations emerged from barbarism, when the other arts of civilization were developed, had also the longest reign, and ruled for many centuries, to the entire exclusion of the ideas which now prevail. The chief idea in this first system appears to have been to make all Gardens as *distinct* as possible from similar pieces of ground in a state of nature. Mankind

had but just thrown off the shackles of ignorance and barbarism—were not yet in fact quite released from their bonds—and naturally sought to make as clear a distinction as possible between the present and the but too recent past. They were the admirers of the false in art. By art they understood artificiality—by artistic, something labored, and consequently unnatural. Thus we read of the hanging gardens of Semiramis; of the vast spaces, divided into squares, circles, and other artistical figures, which formed the model gardens of Rome; and we meet even yet in Europe with specimens of these primeval barbarisms in gardening: trees trimmed to fanciful resemblances of animals or statues; flower-beds sown in names; sheets of water formed into strange and grotesque shapes; and the still ruder device of endeavoring, by means of a painting at some garden wall, to produce the illusion of an indefinite extension of the grounds. In this category must be reckoned, too, the host of sheared red cedars, junipers and arbor vitae, which, as the forlorn sentinels of the French and Dutch styles of gardening, disfigure but too many of our American residences.

All these, instead of producing the impression intended by their devotees, of a mature state of civilization and a refined taste, argue only a crude and undiscriminating mind, which, having just emerged from the one extreme, the state of nature, rushes at once to the other, and becomes of course *unnatural*; mistaking alteration for improvement, and hailing that as art which is only artifice.

Let us now look at the other system—that which, introduced by eminent men in England, has spread all over the European and American continents, and is now acknowledged to be the only exposition of the true æsthetic love of nature which prompts to the beautifying of grounds.

The design in this system is not to *alter* the whole face of nature. Taking for granted the fact, that in nature he must find all that he can possibly want of form or arrangement, and that all for which he can not there find authority, of beauty, must be considered a defect, as being essentially false, the modern landscape gardener aims simply to *aid* nature,—to carry out to perfection her most charming designs.

What the painter aims at in transferring to the canvas the beauteous conceptions of his mind; what the sculptor performs when he represents on marble those æsthetic *fancies*, which we call the evidences of his genius: this is also the landscape gardener's object. His aim is, or should be, to be true to nature. Who would admire the most artistically executed painting, or the most finely finished sculpture, if the object represented was deformed. So in the creation of the garden, true taste refuses to acknowledge the legitimacy of that which has no proto-

type in nature. It is not expected, on the other hand, that the artist will be so mere a copyist of nature, as not to rise above her faults. It is his, so to arrange the various beauties found in different individuals of the genus to be represented, as to form one beauteous and harmonious whole.

With man, nature has fallen from her original perfection. We meet no where with an object beautiful in all its parts and proportions. But neither is there any thing, however homely or unpretending, if it is the product of nature, which has not about it some feature of beauty. It is the artist's mission to study these particles of perfection, and their proper relation to each other, in order that his mind may conceive, and his skill execute, that which though viewed, as a whole, impossible to nature, yet in every individual part, adheres most faithfully to the examples set by her. And it is the realization of this conception which produces that agreeable sensation, by which we acknowledge perfection.

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THE EFFECTS OF STEAM ON TIMBER.

ONE of the most important discoveries of modern time is the great improvement on timber, by such a simple process as that of ranging its temperature by steam. Simple as it appears, it is only a late discovery, but liable to be put to extensive and very important use. We give it as it is :

Mr. Violitter has lately presented to the Academy of Sciences in Paris, a very able communication on the desiccation of different kinds of wood by steam. He stated that steam raised to 482 degrees Fah., was capable of taking up a considerable quantity of water; and acting upon this knowledge, he submitted different kinds of oak, elm, pine, and walnut, about eight inches long and half an inch square, to a current of steam at seven and a half pounds pressure to the square inch, but which was afterwards raised to 482 degrees.

The wood was exposed thus for two hours. It was weighed before it was exposed to the steam, and afterward put into close stopped bottles until cool, when the samples of wood were again weighed, and showed a considerable loss of weight, the loss of which increased with the increase of the temperature of the steam. For elm and oak the decrease

in weight was one-half, ash and walnut two-fifths, and pine one-third. The woods underwent a change of color as the heat was rising from 395 degrees to 428 ; the walnut became very dark, showing a kind of tar, formed in the wood by the process, which was found to have a preserving effect on the wood.

It was found that wood thus treated became stronger—having an increase in the power of resisting fracture. The maximum heat for producing the best fracture resisting power for elm was between 302 and 347 degrees, and between 257 and 302 for the oak, walnut, and pine. The oak was increased in strength five-ninths, walnut one-half, two-fifths for pine, and more than one-fifth for elm. These are but preliminary experiments which may lead to very important results, and are therefore interesting to architects especially. By this process the fibres of the wood are drawn closer together, and maple and pine treated in the steam at a temperature of 472, were rendered far more valuable for musical instruments than by any other process heretofore known. This is valuable information to all musical instrument makers :—who knows but this is a discovery of the Venetian fiddle-maker's great secret !

INSTINCT OF PLANTS.

HOARE, in his "Treatise on the Vine," gives a striking exemplification of the instinct of plants. A bone was placed in the strong but dry clay of a vine border. The vine sent out a leading or tap root, directly through the clay to the bone. In its passage through the clay, the main root threw out no fibres, but when it reached the bone it entirely covered it, by degrees, with the most delicate and minute fibres, like lace, each one sucking at a pore in the bone, like a litter of pigs tugging at their dam as she lies down on the sunny side of the farm yard. On this luscious morsel of a marrow bone would the vine continue to feed, as long as any nutriment remained to be extracted. What wonderful analogies there are running through the various forms of animal and vegetable creation, to stimulate curiosity, to gratify research, and finally, lead our contemplations from nature, in a feeling of reverence, up to nature's God !

SOMETHING ADVANTAGEOUS;
OR, A FAMILY FRACAS.

I ONCE attended a very poor old man of the name of Jordan, in his last illness. I call him poor, but yet he was not in want, and had about him the comforts of life. When he was near his end, he said to me—

‘Doctor, I want to know the truth from you. I am not in the habit of being flattered by the world. There was a time, indeed, when it ‘fooled me to the top of my bent;’ but that was long ago. Do you not flatter me, but tell me your real opinion. Shall I soon die, or shall I linger on a brief career, in a world I am quite *willing* to be done with?’

‘You desire me,’ replied I, ‘to be candid with you, and I will. You are on your death bed.’

‘How soon shall I be immortal?’

‘That I can not say. But your hours, so far as human experience can teach me to predict, are numbered.’

He was silent for a few moments, and a slight spasm passed across his face.

‘Well,’ he said, ‘it is the lot of all. I have lived long enough.’

‘Is there no friend or relation, Mr. Jordan,’ said I, ‘to whom you would wish to send? You are here, as you have often told me, quite alone in lodgings. Perhaps you would like to revive some old recollections before you leave the world.’

‘Not one,’ he said.

‘Are you so completely isolated?’

‘Most completely. I have tried all relations, and found them wanting. But still I have remembered them, and made my will. It is now between the mattress and sacking of this bed, and Mr. Shaw, the only honest attorney I ever met with, and who resides in Lincoln’s Inn Fields, will carry my intentions into effect. I was rich once in early life. How dark a day!’

‘What day?’

‘To-day. How dark and misty it has come over, doctor.’

His sight was going fast, and I felt certain that it would require but little patience, and a small sacrifice of time to see the last of Mr. Jordan.

‘Yes,’ he continued, speaking in an odd, spasmodic fashion. ‘Yes, I was rich, and had many a crawling sycophant about me, many smiling

faces at my board; but there came a reverse, and like fair flowers at a sudden frost, my kind friends hid their heads. I was nearly destitute, and thinking and believing that the tie of blood would be strong enough to bind to me, in my distress, those with whom I claimed kindred, and who had been delighted to claim kindred with me, I went to them, a visitor.'

'And failed.'

'And failed, as you say. They dropped from me one by one. Some remembered slight offenses; some were never at home; some really thought I must have been dreadfully improvident, and, until they were convinced I had not, could not assist me. Doors were shut in my face—window blinds pulled down as I passed. I was shunned as a pestilence—my clothes were in rags—my step feeble from long want of common necessities. And then an old school companion died in the West Indies, and left me £20,000, which I received through the hands of Mr. Shaw.'

'A large fortune! And your relations?'

'Heard of it, and were frantic. I disappeared from them all. From that day to this, they have not heard of me. Do you love wild flowers?'

'Wild flowers?'

'Yes. Here are heaps just from the teeming garden. Look, too, how yon cherub twines them in her hair. The stream flows deep to eternity!'

'Mr. Jordan, sir,' I cried. 'Mr. Jordan, do you know me.'

'Come hither, laughing, gentle spirit,' he said, 'bring with you your heap of floral gems. Yes, I know this is the sweet violet. Mary, my Mary; God knows I love you.'

It was a strange thing but, at the moment the blind of the window, which I had drawn up to the top, came suddenly rattling down, and the room was quite dark. I raised it again, and then turned to the bed.—Mr. Jordan was a corpse! What a remarkable change had in these few moments come over the old man's face. The sharp lines of age had all disappeared, and there was a calm, benign expression upon the still features, such as in life I never saw them wear.

'A restless spirit is at peace,' I said; as I felt for the will where he told me it was placed, and found it. It was merely tied up with a piece of red tape, and addressed to Mr. Shaw, 20, Lincoln's-Inn Fields; so I resolved to trust no other messenger, but to take it in my hand myself. I told the landlady of the house that her lodger was no more; and that she would no doubt hear immediately from his solicitor, and then I left.

'Well, Mr. Shaw,' I said, after I had mentioned to him the manner of

Mr. Jordan's death, 'here is the will, sir, and I presume I have nothing further to do than to thank you for your courtesy, and bid you good evening.'

'Stay a moment,' he said. 'Let me look at the document. Humph! a strange will. He leaves the form of an advertisement here, which is to be inserted in the morning papers, calling his relations together, to here the will read.'

'Indeed!'

'Yes, Well, I shall, as I see I am named trustee, do as he wishes. He states that he is very poor.'

'Why, he spoke to me of £20,000.'

'Did he really? A delusion, sir, quite a delusion. £20,000! He had that amount twenty-five years ago. But, sir, as you have attended him, and as I happen to know he had a high opinion of you, I should like you, as his friend, to be with me, as it were, in future proceedings connected with his will!'

'In which there is a mystery, eh! Mr. Shaw!'

'A little—perhaps a little bit of *post mortem* revenge, that is all, which I am not now at liberty to descant upon. But I will take care to coincide with you, and I shall hope that you will follow the old fellow to the grave.'

I promised that much, and duly attended the funeral. It was a quiet, walking affair, and from the manner of it I felt quite convinced that there were not funds to make it otherwise. A mound of earth alone marked the spot in the little church-yard at Barnes, where Mr. Jordan slept the sleep that knows no waking. A drizzling rain came down. The air was cold and eager, and I returned home from the funeral of Mr. Jordan, about as uncomfortable as I could.



The next day the following advertisement appeared in a morning paper, and caught my eye as I sat at breakfast:

'If any of the relations of Mr. John James Jordan, deceased, will call at the office of Mr. Shaw, 20, Lincoln's-Inn Fields, they will hear of something advantageous.'

I made up my mind to call upon Mr. Shaw during the day, and about three o'clock, I reached his chambers, or rather I reached the stair-case leading to them, and there I had to stop, for it was quite besieged by men and women, who were all conversing with great eagerness.

'What can it mean?' said an old woman; 'I'm his aunt, and of course I speak for my Ned!' 'Well, but bother your Ned,' said a man, 'he hardly really belongs to the family. I'm his brother. Think of

that, Mrs. Dean.' 'Think of what, you two-legged goose?' 'Pho, pho,' said another man, 'I knew him very well. I'm his cousin. Hilloa! what's this? Who are you?'

A woman in tattered garments, but who still looked like a beautiful one, stood hesitatingly at the foot of the stairs. 'Is this Mr. Shaw's?' she said. 'Hush, Mary, hush! don't my dear.' 'But I am hungry, mamma,' said the little girl, who was holding her by a handful of her dress.

'Oh, Mary—do not dear; we—we shall soon go home. Hush, dear, hush, hush! Is this Mr. Shaw's?'

'Yes,' said a fat woman, 'and who is you, pray?'

'I—I saw an advertisement. I am his aunt Grace's only child. My name is Mary Grantham. This is my only child. She—she is fatherless and has been so for many a day.'

'What,' cried a man, 'are you the Mary he broke his heart about?'

'Broke his fiddlestick,' said the fat woman. 'Good God, do I live to hear that!' exclaimed the woman with the child.

'You had better go up to the solicitor at once,' whispered I. 'Come, I will show his door.'

I made a way for her through the throng of persons, and we soon reached the chamber. 'Here is another of Mr. Jordan's relations, Mr. Shaw,' said I, 'I find you have had quite a levee.'

'I have indeed, doctor. You must come at twelve o'clock, next Monday, madam, when the will of Mr. Jordan will be read by me to all around.'

'I thank you, sir.' She was about to leave the chambers, when I interposed.

'Pardon me, madam,' I said. 'But as I was the only person with Mr. Jordan, at the time of his decease, I wish to ask you a question. If I mistake not, your name was the last that passed his lips. 'Mary, my Mary,' he said, 'God knows that I loved you!'

She sank into a chair, and burst into tears.

'You, then,' I added, 'are the Mary whom he loved. Ah, why did you not, if you can weep for him now, reciprocate the passion?'

'I did love him,' she cried; 'God knows, and he, who is now with his God, knows how I loved him. But evil tongues came between us, and we were separated. He was maligned to me, and I was wearied by entreaties and tears, until I married another. She, who has turned me from him, and severed two hearts that would and should have been all the world to each other, confessed the sin upon her death-bed.'

'Who was it?' said Mr. Shaw.

'His mother! From no other source could I have believed the tales I was told. But I did not then know enough of the world to think that there were mothers who could malign their own children. We were separated——my husband died, leaving me that last little one, of many. We are very, very poor—no one will help us—an acquaintance showed me the advertisement, and urged me to come—it was a false hope. But I find that there are strong arms and brawling tongues below, that I can not contend against.'

'Never mind that,' said the solicitor; 'it is my duty to read the will on Monday, and as a relation it is your duty to attend at the same time. I tell you to have no expectations.'

I saw Mr. Shaw try to slip some money into her hand, and I saw a crimson flush come over her face as she said, 'We can still work:' and then, fearing she had been harsh to one who wished to be kind, she shook his hand in both of hers, and said. 'God bless you, sir, I thank you from my heart.'

Bang, bang, came to the door of the chamber, a minute after Mary had left, and upon its being opened, a man of about six and thirty made his appearance.

'Something advantageous?' he gasped, for he was out of breath; 'what—what is it? Give it me, give it me! How much? Good God, do'nt let any body else have it. I'm his youngest brother—give it to me.'

'If you will attend here at 12 o'clock on Monday, the will will be read.'
Bang, bang, bang!

'I'm thoroughly besieged,' said Mr. Shaw; 'now, madam, who are you?'

'Something advantageous,' screamed a masculine looking woman; 'I'm a relative—what is it? Come on, my dears. Here's my five dear daughters, and my baby—come along.'

'Be off with you,' cried the younger brother.

'Did you speak to me, you wretch,' said the lady, and she planted a blow in his face that made him reel again. 'Take that; I know you are a sneaking hound; you used to be called the chimpanzee, in the family, you poor, scorched-up-looking bundle of cat's-meat.'

Several more arrivals now took place, and poor Mr. Shaw was fairly bewildered. Sounds of contention arose on the staircase—shrieks from family combatants came upon our ears, and finally, I advised Mr. Shaw to paste a placard on the outer door of his office, on which was written,

'The will of Mr. Jordan will be read here on Monday next, at twelve o'clock, precisely.'

The riot gradually subsided. The evening came on, and all the

relations of the deceased had been and gone. Mr. Shaw and I supped together, and I promised to be with him punctually at twelve o'clock on Monday, for I was as curious as anybody could be to hear the will read, and at all events, anticipated a bustling scene upon the occasion. I was not doomed to be disappointed.

It is a habit of mine rather to be too soon than too late, and in the present instance I found it a most useful one, for I really almost doubt if I should have got into the chambers of Mr. Shaw at all, if I had been later than I was.

I had fairly to push Mrs. Mary Grantham in, despite a vigorous opposition; and a man stopped my own entrance, crying—

'Who are you? What relation are you?'

'His grandfather's uncle,' said I; 'and if you don't make way I'll pull the nose off your face.'

It was well that Mr. Shaw occupied very spacious chambers, or otherwise he could not have accommodated one-half of the persons who came to the reading of the will; and never in all my life did I see such malignant looks pass from one to another, as shot from the eyes of the relations. It was a most pitiful picture of human nature.

'Ladies and gentlemen,' said Mr. Shaw; 'ahem! ahem!'

There was a death-like stillness.

·Ladies and gentlemen, I am commissioned to read to you the—the
—what shall I call it?—it is hardly a will—of the late Mr. Jordan. No,
it certainly ought not to be called a will, for a will, properly speaking,
is a testamentary—”

'Read, read, read!' cried a dozen voices.

'Well, ladies and gentlemen, I am glad to see you are all in respectable mourning.'

'Except one,' said the younger brother; 'there's his Mary, that he was so fond of. Oh, dear me! she only comes for what she can get.'

Mrs. Grantham burst into tears. There was a little shabby piece of black crape upon her arm, and another upon the arm of her child.

'I—I could not,' she said; 'I could not do more. God help me! I had not the means!

'Read, read, read!' cried all the voices.

'Ahem!' said Mr. Shaw, reading; 'I, John James Jordan, being very poor, and having in vain called upon every relation I have in the world, for assistance, and found none, have to state that my heart was filled with bitterness and uncharitableness toward them. But still I think that they are not dead to all feeling; and this being my last will and

testament, I desire that my debts, amounting to the sum of one pound, three shillings, and eight pence, be paid forthwith of my estate; that my funeral be strictly private, in Barnes churchyard, where I last parted with one whom I loved, but who has gone abroad, I am told; and to that one of my relations who will erect a tombstone, I bequeath—

‘Hark! will you!’ cried one; ‘be quiet. Go on—yes, yes. Oh: you wretch, where’s your feelings! Go to the devil!’

‘Really, ladies and gentlemen,’ said I, ‘this is most indecorous.’

‘I bequeath,’ continued Mr. Shaw, ‘my dying blessing and forgiveness.’

Mr. Shaw then folded up the will and put it into his pocket, saying—

‘I wish you all good morning, ladies and gentlemen. I sold the few clothes and other matters he died possessed of, and paid for the funeral, and his debts; being myself minus one shilling and four pence, which I hope you will some of you pay.’

It is quite impossible by any words to fairly depict to the reader the appearance of Mr. Jordan’s relations at this moment. If the fabled Gorgon’s head had suddenly appeared, and transformed them all to stone, they could not have looked more completely paralyzed and panic-stricken.

‘A tomb-stone!’ shrieked twenty voices. ‘A tombstone!’

‘A tombstone!’ said Mr. Shaw. ‘A small one would not cost much. You could put on it a suitable inscription. Here lies—’

‘Lies here—never mind,’ said the brother. ‘Never mind. I—I—Oh, that’s all, is it?’

‘You are a humbug,’ said the masculine woman to Mr. Shaw, ‘and so was old stupid Jordan.’

‘Go to the deuce, all of you,’ shouted another; ‘a tombstone indeed.’

Mr. Shaw was wiping his spectacles.

‘Ladies and gentlemen, allow me to add,—’

‘Oh, stuff, stuff! Bother! A tombstone indeed; I shan’t stay another moment. An old thief. I wish a tombstone had been down his throat. Come on! Come on! It’s all a do.’

‘But, ladies and gentlemen—’

They were quite deaf to the remonstrances of Mr. Shaw, and in a few moments the chambers were quite clear, with the exception of Mrs. Mary Grantham, who was sobbing bitterly. She then rose, and looked at me hesitatingly. Then she looked at Mr. Shaw, and she seemed to be struggling to say something. She placed her hand in her bosom, and drew forth a ring tied to a black ribbon, and then, with a convulsive effort she spoke.

'This—this ring—it is my only valuable possession. It was given to me thirty years ago, by him who is now no more, my cousin John, who loved me. I have clung to it in pain and in sorrow, in difficulty and in distress; I have never parted with it. I seemed to be but only separated from him while I had it near my heart. But now, great distress forces me—to—to part with it. Will—will neither of you gentlemen buy it of me. I—I shrink from its going into the hands of utter strangers.'

'Humph!' said Mr. Shaw; 'there are a couple of sovereigns for it.'

She took the money, and then, after one long, lingering look, and a fervent kiss at the ring, she laid it on the table, and tottered from the place. I was about to follow her, but Mr. Shaw held me back.

'Hold! hold!' he said.

'You are a brute sir,' said I. 'Take your hands off me; I will buy the ring of you and give it back to her. It breaks her heart to part with it, I see.'

'I shan't part with it,' he said; 'you are a very hasty man, doctor.'

I was very angry, and bounced out of the office. I looked eagerly about for Mrs. Grantham, but could not see her. I walked hurriedly across the square, and as chance would have it, I went in the same direction she did. My first impulse was to speak to her, and my second thought was to follow her, and to see where she went. She crossed Holborn, and traversed some of the long streets that lead into the New Road, where she arrived at last, and finally paused at a stone-mason's yard.

I could have shed tears at that moment, for now I felt why she had parted with her cherished ring. She stayed about a quarter of an hour at the stone-mason's, and then she came out and walked slowly away. I did not follow her further, but I went into the mason's yard, and said to him—

'Did that lady give you an order?'

'Why, yes, sir, such an one as it is. She has got me to do a stone for two pounds, and she's paid me. I'm to meet her at the church-yard at Barnes to-morrow morning at nine o'clock with it, and put it up. It's only to have on it the name of John James Jordan, and under that, "God bless him."

I walked away with a sort of mist before my eyes, and it was an hour before I recovered my composure. 'I will meet her,' thought I, 'at the grave of her last love, and I will be a friend to her, if she never have another in the world. She shall have her ring again, if I force it from the lawyer. She shall have it. I'll go and get it now, at once.'

I suppose I looked in a very tolerable passion when I got back to Mr.

Shaw's chambers, for he got behind a table when he saw me, and said—
‘Come, come, no violence.’

‘Hark you, sir,’ said I; ‘you have got the ring. There’s your money. Give it me directly, sir. Mrs. Grantham, poor thing, is going to-morrow morning, at nine o’clock, to place a stone at the grave of Mr. Jordan, and I intend to be there and give her her ring.’

‘Oh! very well. Bother the ring. I don’t want it. It aint worth half the money I gave for it. There it is; don’t bother me.’

I took up the ring, then put down two sovereigns, and casting upon him a withering look, which, to tell the truth, he did not seem much to care about, I left the chambers.

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A soft, damp, white mist covered up all objects, and made the air uncommonly raw and chilly, as on the following morning, just as the clock of the church at Barnes chimed the three-quarters past eight, I entered the churchyard.

The first thing I then did, was to fall over somebody’s grave, for I was looking for Mrs. Grantham, instead of minding where I was walking; and then a voice said—

‘There you go again, as violent as usual, doctor;’ and in the dim mist I saw Mr. Shaw, the solicitor, to my great surprise.

I was going to say something, but at the moment I was nearly knocked down again, by some one brushing past me. A gleam of sunshine came out, and the mist began to clear away, when a most singular scene presented itself. A few yards off was the grave of Mr. Jordan, and kneeling by it was Mary, his first love, with her child by her side. Mr. Shaw stood to my left, and at his feet there knelt a respectable-looking young man—I recollect him as Mr. Shaw’s clerk.

‘Good God! Richards,’ said Mr. Shaw, ‘is that you? What is the matter?’

‘Oh! sir,’ said Richards, ‘I have come to ask your forgiveness. The spirit of my poor old father stood by my bedside all night. Oh, God! oh, God! it was dreadful; and I knew what it was for. Oh! sir, forgive me. I—I peeped into the will, sir, while you went out to dinner—Mr. Jordan’s will—and—and I went round to all the relations, and sold the secret for two pounds a-piece, and—and—’

Mr. Shaw gave a jump that astonished me.

‘Doctor, doctor,’ he shouted; ‘for God’s sake run down the London road, and bring the man with the gravestone. Oh! good gracious. Oh! d——n you, Richards. Ha! ha! ha! Oh! here he is. Oh! bless

you for a prudent stone-mason ; you shall get well paid for this job. Hip ! hip ! hip !—hurrah !'

I thought, to be sure, that Mr. Shaw must have gone mad. There was a man looking over the railing of the church-yard, with a spade on his shoulder ; to him Mr. Shaw said—

‘ Five guineas for that spade.’

The man thought he was mad, and tried to run away ; but he dropped the spade ; and in another moment Mr. Shaw’s coat was off, and he was digging away like fury.

‘ Where’s the stone ?’ he cried ; ‘ bring the stone. That’s right. Poke it in—prop it up. That’s the thing—all’s right. Here we are. Another knock. All’s right—all’s right.’

‘ Lor !’ said the stone-mason, as he lifted up his hands ; ‘ look there !’

I looked in the direction he indicated, and there, to my astonishment, I saw arriving, carts, coaches, cabs, and wheel-barrows, and each containing a tombstone. A regular fight ensued at the entrance of the church-yard ; and engaged in the fight I recognized the relations of Mr. Jordan. Heavens, how they cuffed each other !

‘ Hold !’ cried Mr. Shaw ; ‘ you are all too late, although you had information you ought not to have had. There is already a stone on Mr. Jordan, and placed, too, by the only one who knew not what you all know. Listen to the conclusion of the will—‘ And to that one of my relations who will erect a tombstone to my memory, I bequeath my blessing and forgiveness, and eighty thousand pounds in bank stock.’ ‘ Madam,’ to Mrs. Grantham, ‘ I congratulate you.’

‘ And there’s your ring,’ said I ; ‘ Mr. Shaw, let us shake hands ; I understand you now.’

‘ Ha ! ha !’ said Mr. Shaw, ‘ Ladies and gentlemen, you had better all of you keep the tombstones for yourselves. You can get the name altered, for if you don’t, I’m very much afraid you will not find them SOMETHING ADVANTAGEOUS.’

IRON MANUFACTURE.

AT the late meeting of the British Association of Science, Prof. Calvert read a paper on the iron manufacture, in which he stated, that by mixing about half a bushel of common salt with every ton of coal in the coke-oven, the coal so made gave off no sulphurous fumes, and when used in a cupola in smelting, it produced iron much closer in grain, and 20 per cent. stronger than that made from common coke.

DO FOSSILS AND ROCKS GROW?

GEOLOGY, although comparatively a new science, still has its established principles.

One of the most important of these is, that the fossils which many rocks exhibit, were once living plants and animals. As obvious as this now appears to us, it found many opponents in the early history of the science; and when these objectors were driven to the wall by the plain question, "Whence came these images of living things in the depths of earth, if they did not grow upon its surface, and were buried here by the action of water, in ages long passed?" then would they reply, "they were formed where we find them, in the interior of the earth, by an inherent *plastic force*."

But such absurd doctrine could not be tenable, and nothing in the geologist's creed seems more clearly established than that the fossils we preserve in our cabinets are veritable remains of beings which long ago swam in the waters or flourished upon the surface of the earth. But, as we see by the *Scientific American* of December 1st, a new antagonist has arisen, in the person of William Ennor, an English practical miner, of great experience.

In a communication to the London *Mining Journal* he says:

"I would call attention to the fossil plant, so often found on stones, and notice that they are at all times found to take the cleavage way of rocks, and to incline south or west, with the top of the plant upward. Were these plants once imbedded in sediment, which had undergone upheavals, they would now be found lying in all directions, and not passing between the cleavage, as the cleavage is often contrary to the bed. Every different rock appears to produce its own species of plant. I have long doubted the fact of a large portion of them being plants which once enjoyed the sun's rays. Query, are these plants the rock's natural produce, or the seed of living plants that became imbedded and strove hard' with Nature to produce what we see? or did all plants germinate from the earth?

"I must mention a plant which I saw growing last Christmas, in a level from seventy to one hundred fathoms deep, at North Wheal-crofty. These plants might be seen coming out of the joints, some not above six

inches long, and others of various sizes—one was perfect, four feet high, spreading four feet, and stuck to the side like ivy to a wall. There were many others as large, but injured, as it was a working level. I can produce impressions of plants of the same kind and as large, printed between the cleavage of stone. All these things are to be seen, as I never promulgate mere hearsay.

"We have also ample proof that quartz grows in a short space of time, which I could prove to any one who likes to accompany me through the mines. A person visiting Devon Consols will have it pointed out. I am, for various reasons, inclined to think that all lodes, where quartz or other crystals are in the act of growing, are progressive lodes. While on this subject, I would call attention as to how these things first form. Do they germinate from a seed of their own kind? or what is the first formation? as I at all times find the centre to be of a different character from the outer portions. Again, how do they increase in size? I was at first inclined to think the additions took place on the outer side by accumulation from aqueous gases passing through the earth, but I now discover it is not the case, as the very chrystals at Devon Consols have shot up by thousands from the lode in the bottom and sides of levels where there is a current of air, which clearly proves that they draw their nutrition from the rocks below, which is carried up as the sap passes up in a tree; and rings may be often seen in a quartz chrystral when broken across, similar to those in a tree when sawn."

We give these observations for what they are worth, firmly believing, however, that no future discoveries will ever overthrow the commonly received doctrine of geologists in regard to the antiquity and nature of most fossils. But the thought here suggests itself, how many valuable discoveries might be made by our working men, were they oftener found as devotees of science. They have better opportunities, in their particular province, for observing the mysteries of nature, than the professional man or the mere amateur can have. This pursuit of knowledge would not, or need not, interfere with the pursuit of their calling, though it would probably sadly interfere with their attendance at the grog-shop or tavern.

DR. KANE'S FORTHCOMING WORK.

WE see it stated that Dr. Kane has been busily engaged since his return from his last Arctic Expedition in preparing a full account of this novel, perilous and interesting voyage. It is being gotten up in splendid style, and at a cost of upward of \$20,000.

A NEW WAY TO PAY AN OLD DEBT.

A MERCHANT, very extensively engaged in commerce, and located upon the Long Wharf, died February 18, 1806, at the age of 75, intestate. His eldest son administered upon the estate. This old gentleman used pleasantly to say, that for many years, he had fed a very large number of the Catholics, on the shores of the Mediterranean, during Lent;—referring to his very extensive connection with the fishing business. In his day he was certainly well known; and to the present time is well remembered, by some of the “*old ones down along shore,*” from the Gurnet’s Nose to Race Point. Among his papers, a package of very considerable size was found after his death, carefully tied up, and labeled as follows:

“*Notes, due-bills and accounts against sundry persons, down along shore. Some of these may be got by suit or severe dunning. But the people are poor; most of them have had fishermen’s luck. My children will do as they think best. Perhaps they will think with me, that it is best to burn this package entire.*”

“About a month,” said my informant, “after our father died, the sons met together, and, after some general remarks, our elder brother, the administrator, produced this package, of whose existence we were already apprised, read the superscription, and asked what course should be taken in regard to it. Another brother, a few years younger than the eldest, a man of strong, impulsive temperament, unable, at the moment, to express his feeling by words, while he brushed the tears from his eyes with one hand, by a spasmodic jerk of the other, toward the fire-place, indicated his wish to have the package put into the flames. It was suggested, by another of our number, that it might be well, first to make a list of the debtors’ names, and of the dates, and amounts, that we might be enabled, as the intended discharge was for all, to inform such as might offer payment, that their debts were forgiven. On the following day we again assembled—the list had been prepared—and all the notes, due-bills, and accounts, whose amount, including interest, exceeded thirty-two thousand dollars, were committed to the flames.

“It was about four months after our father’s death,” continued my informant, “in the month of June, that, as I was sitting in my eldest brother’s counting-room, waiting for an opportunity to speak with him, there came in a hard-favored little man, who looked as if time and

rough weather had been to windward of him for seventy years. He asked if my brother was not the executor. He replied that he was administrator, as our father died intestate. ‘Well,’ said the stranger, ‘I’ve come up from the Cape to pay a debt I owed the old gentleman.’ ‘My brother,’ continued my informant, ‘requested him to take a seat, being at the moment engaged with other persons at the desk.’

“The old man sat down, and, putting on his glasses, drew out a very ancient leather pocket book, and began to count over his money. When he had done—and there was quite a parcel of bank notes—as he sat, waiting his turn, slowly twisting his thumbs, with his old gray, meditative eyes upon the floor, he sighed; and I knew the money, as the phrase runs, *came hard*—and secretly wished the old man’s name might be found upon the forgiven list. My brother was soon at leisure, and asked him the common questions—his name, etc. The original debt was four hundred and forty dollars; it had stood a long time, and, with the interest, amounted to a sum between seven and eight hundred. My brother went to his desk, and after examining the forgiven list attentively, a smile lighted up his countenance, and told me the truth at a glance—the old man’s name was there! My brother quietly took a chair by his side, and a conversation ensued between them which I never shall forget. ‘Your note is outlawed,’ said my brother; ‘it was dated twelve years ago, payable in two years; there is no witness, and no interest has been paid; you are not bound to pay this note; we can not recover the amount.’ ‘Sir,’ said the old man, ‘I wish to pay it. It is the only heavy debt I have in the world. It may be outlawed here, but I have no child, and my old woman and I hope we have made our peace with God, and wish to do so with man. I should like to pay it;’—and he laid his bank notes before my brother, requesting him to count them over. ‘I can not take this money,’ said my brother. The old man became alarmed. ‘I have cast simple interest for twelve years and a little over,’ said the old man. ‘I will pay you compound interest if you say so. The debt ought to have been paid long ago, but your father, sir, was very indulgent—he knew I’d been unlucky, and told me not to worry about it.’

“My brother then set the whole matter plainly before him; and, taking the bank bills, returned them to the old man’s pocket-book, telling him that, although our father left no formal will, he had recommended to his children to destroy certain notes, due-bills, and other evidences of debt, and release those who might be legally bound to pay them. For a moment the worthy old man appeared to be stupified. After he had collected himself, and wiped a few tears from his eyes, he stated that, from the time he had heard of our father’s death, he had raked and

scraped, and pinched and spared, to get the money together for the payment of this debt.' 'About ten days ago,' said he, 'I had made up the sum within twenty dollars. My wife knew how much the payment of this debt lay upon my spirits, and advised me to sell a cow, and make up the difference, and get the heavy burthen off my spirits. I did so—and now what will my old woman say? I must get back to the Cape and tell her this good news. She'll probably say over the very words she said when she put her hand on my shoulder as we parted—*I have never seen the righteous man forsaken nor his seed begging bread.*' After a hearty shake of the hand, and a blessing upon our old father's memory, he went upon his way rejoicing.

"After a short silence—taking his pencil and making a cast—'there,' said my brother, 'your part of the amount would be so much—contrive a plan to convey to me your share of the pleasure derived from this operation, and the money is at your service.'

"Such is the simple tale, which I have told as it was told to me."

RAIN AND HEAT IN THE UNITED STATES.

THE last Patent Office Report contains meteorological tables and statistics, by which we learn the mean annual depth of rain at various places in the United States, as well as the mean annual temperature. The greatest depth of rain falls at Fort Monroe, Virginia, where it is 52.53 inches, the least at the St. Louis Arsenal, Missouri, where it is 24.12 inches, or less than half. At Fort Hamilton, New York, the depth is 45.71, and at West Point, 48.70. As a general rule, the least rain falls in the Western States, and the most on the Atlantic sea-coast, and on the eastern side of mountain ranges. At New Orleans, however, and other points near the Gulf of Mexico, the fall is heavy; it being 51.85 at New Orleans. The fall at Baltimore and Boston is about equal, being 39.23 at the former place, and 39.90 at the latter. Through Michigan and Missouri it ranges at about 30.00; but, as we go more South, it rises, and in Arkansas averages 35.00. At Fort Constitution, in New Hampshire, the depth is 28.85, the lowest on the Atlantic sea-board. At Key West, Florida, the fall is comparatively slight also, being but 31.39. At Charleston, South Carolina, it is 33.89; at Washington, District of Columbia, 34.62; and, from that place, it steadily

increases as it goes North, till it reaches West Point, where it begins to decline.

The mean annual heat of the cities of the United States exhibits somewhat different results. The most southern parts, of course, are the hottest; the sea-ports, in the same latitude, are cooler than inland towns. The hottest city appears to be Jackson, Mississippi, where the average temperature is 65.64 of Fahrenheit; the coolest is the little town of Penn Yan, in New York, which is 45.46. The tables do not include Texas, however, in the South, or Maine, New Hampshire, or Vermont in the North. Cambridge, Massachusetts, is a comparatively cool town, the average temperature being 47.48; while that of Philadelphia is 52.57. New Haven, Connecticut, is 49.00; Newark, New Jersey, 50.89; Louisville, Kentucky, 53.08; and Fort Madison, Iowa, 49.62.

These, be it remembered, are the average temperatures. Some of the towns mentioned above as comparatively hot, have summers unusually cool for their location; while others, with a low average temperature, are excessively sultry in July and August.

ROMANCE OF INSECT LIFE.

THE following beautiful extract is from a historical lecture by Judge Charlton, of Georgia:

"The earth teems with mysteries—the sky shines with them—they float in the air—they swim in the deep—they flash from the dark-robed clouds—they whisper in the gentle tones of the summer wind—they speak in trumpet tongues, in the voice of the tempest and the thunder. Cease thy longing for the ancient days, oh dreamer! Close thy book and look about thee, upon the volume of Nature. See there, before thee, is a tiny insect, that thou canst scarce distinguish from the grains of sand that surround it—watch it; it moves on with an energy and an instinct that enables it to overcome or avoid all obstacles. See, it has seized some object larger than itself, and still it goes bravely on—nothing daunts it—nothing stops it—tread it under foot, if thou canst have the heart to attempt such a murder, and it will rise up again beneath the ocean of sand, and turn once more to its labor. Dost thou know it? It is the

ant—the lion-hearted ant—toiling amid the heat of summer; and though the season's brightness and its warmth are bringing up and producing ten thousand enjoyments for the little traveler, he is busy gathering together his provender for the long winter time, when frost, and snow, and cold, shall have locked up the granaries of Nature.

"Thou wilt tell me that I am mocking thee; that thou canst see this daily and hourly; and is this a mystery, therefore? If thou hadst read in those ancient legends before thee, of an insect so courageous that it would attack an animal of ten thousand times its magnitude; of industry so indefatigable that it would climb house-tops and mountains to pursue its course; of perseverance so unflagging that, though repulsed a thousand times, it would still return and overcome the obstacle that impeded it—thine eyes would have sparkled with interest and amazement; it is because it is constantly before thee—because it belongs to the present time—that thou lookest so disdainfully upon it. When did the Knight Errants of thy heart do so much? When did their bosoms beat as high with valor and determination as this poor insect? 'But it has no loves, no jealousies, no blood-stained victories!' How knowest thou that? I warrant thee, even that tiny breast has grown gentler for some fond one that lived within its little world: that its blood has flowed quicker when some Adonis ant has flirted around the little coquette; that its path has been stained by the trophies of its mimic battles.

"But thou wilt say, 'Why dost thou lure me from my glowing page, to point me to this moving atom? Why not show me the majestic mysteries of nature? Why waste my time with a topic so insignificant?' I answer, because it *is* insignificant? I point thee there to one of the smallest of earth's creatures, to ask thee, if the atoms contain such wonders, how much more the noble and lofty works of Nature? Follow me, if thou wilt; let us dive into the deep caverns of the earth, and mark the sculptured halls—the rocky avenues stretching miles and miles below the busy haunts of men. Let us plunge into the deep, and see the huge leviathans sporting amid the waters; or the rainbow-hued dolphin, as she flings back bright rays of the glorious sun. Let us climb into the air, and behold the eagle with his untiring wing and his unflinching eye, the noble image of indomitable perseverance and of brilliant genius, soaring proudly and gazing fixedly toward heaven's brightest luminary! Oh, dreamer! if the moments of thy life were multiplied by the sands of the desert, they would be all too short to unravel these mysteries that are around thee and above thee."

A N E W H O R S E-S H O E.

THE August number of the United States Magazine, in an article relating to the 'Farmer's Club of the American Institute, New York,' gives the following description of a new patent horse-shoe, the invention of Mr. Sewell Short, of New London, Connecticut, by whom it was submitted to the Club for examination. It is an ingenious contrivance, to say the least; while if it works well, it will mark a new era among horses.

"The patent horse-shoe," says the writer, "attracted a good deal of attention, and bids fair to be a valuable improvement; though that must be decided by more extended experience of its use. This improvement does away entirely with the cruel practice of driving nails into the horse's hoof, which not unfrequently 'touch the quick,' causing great pain to the animal, lameness, and sometimes ruin. The new shoe has not a nail or a nail-hole in it. Otherwise, it is made in the common form, and is held on to the foot by an iron cap, something in the shape of a low cut vamp of a man's leather shoe, or the leather peak on the front of a boy's cloth cap. This iron cap on the hoof, is about two inches wide at the toe, but narrower on each side toward the heel. It is so thin as to be a little flexible, and is fastened to the foot by a screw passing through the two ends behind, by the heel. The lower edge of this cap fits into a groove cut in the outer edge of the shoe, which holds them together, and the screw fastens them both to the hoof. This cap does not come to much wear, and will outlast many shoes; so that the inventor thinks the cost will be no greater than the common shoe, while it possesses many advantages, besides being more comfortable for the horse."

"The horse can go to bed at night with shoes off, 'like other folks,' and have them put on his feet again in the morning; he can run bare-foot in the pasture, and put on his shoes to go to mill: he can have a pair of smooth shoes on hand for warm and soft weather, and also shoes with sharpened corks to slip on when the ground is suddenly covered with ice. The inventor had used these shoes on an active and valuable horse, about three months, and said the horse seemed to be well pleased with them. He thought if horses could speak, he should soon receive from them a vote of thanks."

This would appear to be an excellent shoe; but is it not the same as that patented by Wm. H. Towers, of Philadelphia, December 20, 1853?

His specifications read thus; "I do not claim the employment of flanges or lips on the upper surface of the shoe, but I claim constructing the shoe with a detatched flange, secured as described, so that *the side and front flanges shall firmly fasten the shoe to the hoof.*"

It would seem, indeed, most desirable to secure some invention that would obviate the many serious evils that attend our present mode of shoeing horses. To such an inventor, all horsemen, as well as the horses, would award a "vote of thanks."



"THE MYTHIC SEA."

THE following, from the *Sandusky Register*, is a glowing description of the *open sea* said to have been discovered by Dr. Kane, in the hyperborean regions which he has recently explored:

"For ages," says the *Register*, "there has existed a myth concerning a Northern Ocean, whose shores were the impenetrable barriers of ice, and whose waters held a life and music all its own. The Scandinavians remember the myth, and to this day, in Sweden, and Norway, and the Northern Islands, the great unknown sea has existence in the belief of every superstitious mind. To us, who reason so philosophically that nothing is hidden, it was not deemed probable that such a body of water did or could exist; and though many navigators asserted their belief in the myth, it has not had sufficient data to claim attention. A few minds, keen from observation, and sagacious from nature, still clung to the ancient story, and suffered it not to die. One of these minds was Dr. Kane, who now returns home with tidings that the lost sea is found!"

Our readers doubtless perused the narrative of the Kane Expedition with a breathless attention, and from it learned that the intrepid navigator left his vessel fast in the almost impenetrable mountains of ice, in latitude 78 deg. 45 min. north, pushing his way in sledges and on foot to latitude 82 deg. 30 min., where he stood upon the shores of, to his eyes, a limitless sea. Three thousand square miles did he scan with his eye and glass, and yet no bounds of that expanse of water were found; for fifty-two hours did a heavy gale from the north heave up the heavy surf, and yet it brought down not a particle of ice—showing

that around the pole all was ocean life instead of frigid death. Thus was the veil penetrated ; surprise seized upon the philosophical speculator, and now the world is busy at the re-solution of this wonderful problem of a Northern Sea.

First, The Doctor represents those waters as limpid as any summer sea. By what process in nature can that high latitude so modify the temperature of the air as to leave the sea unfrozen ? Where the Doctor wintered, the thermometer often stood at 60 degrees below zero, and yet in a still more northerly clime there is a sea which never is frozen. Science stands stupefied—for all its axioms are repudiated, and new laws are to reconcile the facts to theory.

Second, Bird and fish life is there existent in the utmost profusion. There the awk and eider duck range in unlimited freedom, while whales and walrus sport in such herds as make the waters swarm with their huge merriment. Can these all live without proper food ? Does the duck infest these regions without its berries, and grasses, and bulbs, for sustenance ? Here, then, is another query for the speculator to answer, and the mystery of that Northern Sea grows more and more exciting.

Over the grand ice barrier which Dr. Kane passed was a new land. and he called it Washington, giving names also to the bays and capes. Beyond this is that sea, and that sea bathes the intangible North Pole—it holds the mystery of the Northern Lights in its keeping—it keeps the secret of its own life within its bosom ; will man ever solve that secret, and open up that unknown world ? We shall patiently await in hope ; for in our minds is a vague thought floating that the sea which whirls around the pole of this earth holds in its keeping the key to a thousand mysteries, and we have faith to think that in our years—should they be three score or more—that mythic sea shall give up its long kept secret.

IMPORTANCE OF FRESH AIR.

DR. GRISCOM, lecturing in New York upon the importance of air, a fact of which builders do not seem to be sufficiently aware in the construction of houses, says the lungs can contain about twelve pints of air, though nine and a half pints is as much as is inhaled at a single inspiration. In ordinary and placid breathing we inhale about one pint

at an inspiration ; public singers, when they "take breath," as it is called, inhale from five to seven pints. Eighteen respirations take place in a minute ; it takes, therefore, eighteen pints of air every minute, and fifty-seven hogsheads every twenty-four hours to supply the lungs. Seventy-two pulsations occur in one minute, and one hundred and three thousand six hundred and eighty, in twenty-four hours. The dark venous blood passed and repassed from the veins through the heart, to be purified into vermillion-colored arterial blood, by contact with fresh air in the lungs, amounts to twenty-four hogsheads in twenty-four hours. It is then sent through the arteries to nourish the whole system, distributing its vitality, to be recovered again from fresh air in the lungs. From the construction of some of our public buildings, it would seem that the builders thought that pints of air were sufficient, in place of hogsheads.

SINGULAR EFFECTS OF ATTRACTION.

THE Edinburgh *Journal of Science* has a very interesting paper, by Dr. Hancock, on the motions that result from merely mixing a few drops of Alcohol with a small vial of Laurel Oil. To exhibit this singular phenomenon, which seems to bear some analogy with the motions of the planetary orbs, the drops of alcohol should be introduced at different intervals of time. A revolving or circular motion instantly commences in the oil, carrying the alcoholic globules through a series of mutual attractions and repulsions, which will last for many days. The round bodies seem to move with perfect freedom through the fluid, turning in a small eccentric curve at each extremity of their course, passing each other rapidly without touching. In the course of his experiments Dr. Hancock observed particles of the fluid to separate in large globular portions ; these commence a similar revolution, and the smaller ones quitted their course and revolved about the larger, while the larger still pursued their gyrations after the manner of primary planets and their secondaries.

A VERMONTER AMONG THE YORKERS.

"A PARTY of young men were amusing themselves in Albany, skipping and throwing stones from a wharf, and excited considerable interest among themselves, in sending them the greatest distance in the water. A tall Vermonter soon appeared among them, who taking up a half brick, jerked it far beyond the point any of the party had reached. This raised a cry of 'bravo' from many voices. He continued throwing, and stretching farther into the river every time. One of the class seemed nettled with the feats of the stranger; he walked up to him, and said:

'Where do you come from, stranger?'

'Me! wall, I hails from Varmount, jist naow, friend,' he replied.

'Havn't been in these parts long, eh, I reckon?'

'Wall—no—not edzactly here, but up and douwn, sorter!'

'Yes—I s'posed so.'

'Yaas,' continued the Vermonter, and taking up a billet of wood, and twirling it over his head, sent it many rods off into the water.

'You've a little strength in those clinchers of yours, neighbor,' said the green jacket Albany boy.

'Some punkins in those flippers, stranger, I guess; I driv them are knuckles, a month ago, rite through a board more than an inch thick!'

'Haw, ha, hah!' shouted the company.

'May be you don't believe it, eh? Wall, naow, look ye, friend, up in our country we've a purty big river—may be you've heard of it—called Injun River; wall, I hove a man clean across that river, t'other day, and he came down fair and square on t'other side.'

'Hurrah! hah! ha! he!' shouted every one.

'Wall, neow, you may laff, but I can deu it agin.'

'Do what?' demanded green jacket.

'Why, I can take you and heve you across this here river, jist as easy as open and shet.'

'I'll bet you ten dollars of it!' said green jacket.

'Done,' said the stranger, and drawing forth an X bill, he covered the shin-plaster. He then said: 'Can you swim, feller?'

'Like a duck,' said green jacket.

"The Vermonter instantly seized him by the collar and seat of his pants, and raising him with almost superhuman strength, threw him

into the river, a distance of twenty feet. A terrific shout rang in the air, as he floundered in the water, and again, on his return to the wharf, a joyful greeting with his friends. He soon said :

‘ I’ll take that X spot, if you please ; you no doubt took us for green-horns, stranger, but we can show Varmounters that we know a thing or two, down here in York.’

‘ Wall, I reckon you won’t take no X spots jest yet, captin ! ’ replied the stranger.

‘ Why,’ said green jacket, ‘ you’ve lost the bet, havn’t you ? ’

‘ Not edzactly ! I didn’t calculate on doing it the first time, but I tell you, neow, I kin deu it slick ! ’ and in spite of green jacket’s exertions to escape, the fellow seized him as before, and pitched him into the river some four or five yards further than at the first time.

This fling, he found hard work to gain the wharf ; he was much fatigued and exhausted. The Vermonter roared out :

‘ The third time never fails ; ’ and stripping off his coat, said : ‘ I kin deu it, and will deu it, if I try till to-morrow morning ! ’

‘ Hold on,’ said green jacket ; ‘ I’ll give it up ; you may take the money.’

The Vermonter pocketed the bills, and on parting with the company, said :

‘ We aint much ’quainted up our way with Yorkers, but once in a while we take the starch out of ’em purty slick, and when we come douwn this ’ere way, I reckon tant best to try to balance accounts, without knowing what you have got to pay it with. Good by, Yorkers ! good bye.’ ”

CHANGES IN THE CLIMATE OF EUROPE.

THOSE who have read the ancients with attention, conclude that the degrees of cold are much less severe than they were formerly. The rivers in Gaul, namely, the Loire and the Rhone, were regularly frozen over, every year, so that frequently whole armies, with their carriages and baggage, could march over them. Even the Tiber froze at Rome ; and Juvenal says positively, that it was requisite to break the ice in winter, in order to come at the water of the river. Many passages in Horace, suppose the streets of Rome to be full of ice and snow. Ovid asserts that the Black Sea was frozen annually, and appeals for the truth of

this to the governor of the province, whose name he mentions. He also relates several circumstances concerning that climate, which at present agree only with Norway and Sweden. The forests of Thrace and Pannonia were full of bears and wild boars, in like manner as are now the forests of the North. The northern part of Spain was little inhabited, for the same cause. In short, all the ancients who mention the climate of Gaul, Germany, Pannonia, and Thrace, speak of it as insupportable, and agree that the ground was covered with snow the greatest part of the year, being incapable of producing olives, grapes, and most other fruits. It is easy to conceive, that the forest being cleared away, the face of the country cultivated, and the marshy places drained, the moist exhalations which generate cold must be considerably lessened, and that the rays of the sun must have a freer access to warm the earth. The same thing has happened in North America, since the Europeans have carried there their accustomed industry. The history of the North leaves us no room to doubt that there have been vast forests cut down, and by this single means extensive marshes have been dried up, and converted into land fit for cultivation. Without mentioning the general causes which insensibly effect the destruction of forests, it was common to set trees on fire, in order to procure fertile fields. A king of Sweden was sur-named the Wood-cutter, for having grubbed up and cleared vast provinces, and felled the trees with which it was covered. Nor were they less cleared away in Norway and Denmark. Thus a change in the climate must long have preceded that in the manners.

THE FRIGATE BIRD.

At a meeting of the members of the Ipswich Museum, the Bishop of Norwich said he had sent to the museum that day, a specimen of the frigate bird, which was literally a tenant of the air; it lived in the air, slept in the air, and never came to the shore except in the breeding season. The explanation of this extraordinary phenomenon was as simple as possible. It was admirably constructed for the support of its existence. It had an enormous pouch beneath its throat, its skin was loose, and its bones and arteries were like air vessels; and with an extraordinary expansion of tail and wings, it could, by imbibing a quantity of air, and rarefying it within its body, become, in fact, an air balloon. In this manner it floated in the air even during sleep.

DURABILITY OF TIMBER.

THE following instances show how extremely durable wood becomes, when kept immersed in water. The piles under London bridge have been driven six hundred and fifty years. On examination, in 1756, they were found to be but little decayed: they were principally of elm. Old Savory Place, in London, was built about the same time; *i. e.*, about six hundred and fifty years ago, and upon recent examination, the wooden piles, consisting of oak, elm, beech, and chestnut, were found to be perfectly sound.

But, the most striking example of the durability of timber in a wet state, is afforded in the piles of the bridge built by the Emperor Trajan, over the Danube. One of the piles was taken up, and found to be petrified on the surface to the depth of about three-fourths of an inch: beneath this the rest of the wood was not different from its original state, though *sixteen hundred years* had elapsed since it was driven!

INGENUITY OF BIRDS.

THRUSHES feed very much on snails, looking for them in mossy banks. Having frequently observed some broken snail-shells near two projecting pebbles on a gravel walk, which had a hollow between them, I endeavored to discover the occasion of their being brought to that situation. At last I saw a thrush fly to the spot with a snail-shell in his mouth, which he placed between the two stones, and hammered at it with his beak till he had broken it, and was then able to feed on its contents. The bird must have discovered that he could not apply his beak with sufficient force to break the shell when it was rolling about, and he therefore found out and made use of a spot which would keep the shell in one position. When the lapwing wants to procure food, it seeks for a worm's cast, and stamps the ground by the side of it with its feet, somewhat in the same manner as I have often done when a boy, in order to procure worms for fishing. After doing this for a short time, the bird waits for the issue of the worm from its hole, who alarmed at the shaking of the ground, endeavors to make its escape, when it is immediately seized, and becomes the prey of the ingenious bird. The lapwing

also frequents the haunts of moles. These animals, when in pursuit of worms, on which they feed, frighten them, and the worm, in attempting to escape, comes to the surface of the ground, where it is seized by the lapwing. The same mode of alarming his prey has been related of the gull.

NEW MOTORS.

FROM that truly valuable journal, the *Scientific American*, we extract the following account of new Motors, and we fully agree with the writer in the belief that there is at present no prospect of degrading steam from its present high position as the king of motors.

"During the last few months we have enjoyed the pleasure of witnessing the operation of three engines propelled by new agents never before successfully applied to driving machinery. These are, the engine of B. Hughes, in which the bi-sulphuret of carbon is employed as a substitute for steam; the "Cloud Engine" of Mr. Storms, in which a jet of cold air is mixed with the steam; and the third is the engine of Dr. Drake, of Philadelphia, the motive agent of which is gas and air. The bi-sulphuret of carbon engine performed in a superior manner to steam in our presence; but we only witnessed two experiments, and have had no opportunity of testing it or seeing it tested under different conditions; we were pleased, however, with its performance. The "Cloud Engine," which was in operation at the Fair of the Americen Institute, gave evidence, in our presence, on one occasion, of being more economical than simple steam. How this was obtained by injecting a jet of cold air with the steam into the cylinder, we could not divine, nor did the explanations of the inventor satisfy us; but its superior performances have been indorsed by Horatio Allen, Esq., of this city, an engineer of distinguished reputation. C. W. Copeland, M. E., has also been making a series of experiments with the "Cloud Engine," and his report of it will, no doubt, throw much light on the subject. Every improvement in prime motors is of vast importance, but the advantages of any new engine must be clearly established before it takes the place of steam, and we are of the opinion it will not be easy to do this; still, we hope it may soon be done, as we wish for and welcome every new and useful improvement in science and art.

"The other motor, called the "Ignition Engine," was lately erected

by its inventor in the Crystal Palace, as noticed by us on previous occasions. After many failures, causing no small amount of mortification to himself, and disappointment to great numbers of curious spectators, from far and near, the inventor at last, just as the Fair closed, discovered that the cause of his ill luck was owing to a deficient supply of gas. Having remedied the defect, we were invited, on the 20th inst., to visit the Crystal Palace once more, and see it operate for a certainty. We accepted the invitation, and did see it work freely and powerfully for a considerable period, at the rate of sixty revolutions per minute.

"The motive agent of this engine is carburetted hydrogen,—the gas used in our streets and houses for illumination—and a mixture of atmospheric air. It is well known that when this gas is saturated with oxygen, it becomes an explosive mixture, which, when ignited, suddenly explodes with great violence, like gunpowder. Many attempts have been made to construct gunpowder and explosive gas engines, but Dr. Drake is the first inventor who has succeeded in harnessing this mighty agent, and making it submissive to his will in driving machinery; for this he deserves great praise. He commenced his experiments in 1837, and by perseverance and ingenuity, has brought his gas engine to its present operative condition.

"In external appearance, Dr. Drake's machine bears a close resemblance to a horizontal engine. It has a piston and cylinder, but in its other parts a number of new devices are involved that are not required for steam. Motion is produced by exploding gas in the cylinder, first behind and then in front of the piston, just the same in effect as steam is employed. At every stroke of the piston nine times more atmospheric air than gas is admitted to the cylinder; this is done by a peculiar valve, which takes in the proper quantity of air from the atmosphere, while the exact quantity of gas is being admitted through a pipe from the supply reservoir. The heat generated by the explosion of the gas is very great: the piston is, therefore, made hollow, while the cylinder is surrounded with a jacket, through which a stream of cold water circulates for refrigeration. Two red hot igniting capsules are placed through the side of the cylinder, one at each end. After the mixed gas is admitted, it comes in contact with the hot iron, ignites, and instantly expands, giving motion to the piston. Valves of the puppet kind, operated by toes and springs, are used alternately to cover and uncover the igniting irons, as well as to open and cut off the gas supply. The mixed gas being composed of nitrogen, oxygen, and carburetted hydrogen, these, when ignited, unite chemically in the cylinder—suddenly forming carbonic acid gas, a little steam, and nitrogen. The amount of expansion

is stated by the inventor to be twelve or fifteen times the original volume of the gases, so that the power obtained from a small volume of gas is very great. We had no means of knowing the amount of pressure on the piston, but Dr. Drake informed us that the engine could work up to the power of twenty horses. It is a little more bulky than a steam engine of the same power.

"This engine can be set in operation in a few seconds when there is a supply of gas, which can always be had by keeping it ready made in a reservoir. In this one respect it has an advantage over steam. By the perfect combustion of fuel under a steam boiler, and under retorts to generate the gas, the expense of the two—gas and steam—may not differ much, to be used as motive agents; but there are great advantages on the side of steam. The process of obtaining steam is more simple than generating gas, and consequently cheaper. The construction of the steam engine is also more simple, and so are most of its appendages. The action of the steam on the piston is altogether superior to that of an explosive mixture. Steam is rapid in its motion, silent, elastic, and equable in its pressure, making the piston move without jarring and noise. The explosive gas operates like small discharges of artillery; it expends much of its force suddenly on the cylinder heads, and shakes the whole machinery with great violence. This is a difficulty which can not be overcome; it belongs to its very nature, and its continued use in a large engine would soon shake it to pieces. For these reasons we conclude that this new motor will never supersede the steam engine; but we entertain great respect for the sincerity, the ingenuity, the perseverance, urbanity, and intelligence of its inventor."

To which Dr. Drake replies thus:

"MESSRS. EDITORS—Will you grant me a small space in your valuable journal, to remark that the percussive action of explosive mixtures of gas and atmospheric air, when fired in a properly constructed engine, is not of that injurious character you suppose, much of the *jar* in the working of the machine you saw being the result of a sudden and violent shutting of the valves at the moment of ignition—a fault which will be remedied by the use of larger and better arranged ones. This has been demonstrated.

"You have overlooked also the ability of using as fuel the *liquid* hydro-carbons, as turpentine, naphtha, oil of tar, etc., the vapors being generated by the escape heat. The use of these products as fuel enables us to dispense with the gas, and the space they would occupy would not be more than *one-twelfth* of that required for coals.

"There being no boiler, there is much economy in the first cost of an

engine, and with the small bulk of fuel, gives great additional room for freight or passengers, making long and continuous voyages, even to China, practicable, or the running of a locomotive engine for a distance of five hundred miles, with a few barrels of liquid fuel. In this latter case, express locomotive engines could be built as light as desirable, and as there would be no boiler to exhaust, there would be no difficulty in maintaining speed. To these advantages, hastily summed up, may be added *security*; no danger from explosion nor from fire, either accidentally communicated, or from the spontaneous combustion of the fuel.

"With great respect, your obedient serv't.

"ALFRED DRAKE."

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OUR VIEWS AND REVIEWS.

Elements of Natural Philosophy, by ALONZO GRAY, A. M.

THIS is not a new book; on the contrary, it has been so well known and has been so well received, as to have been adopted extensively as a text book in our best institutions. On this account, some degree of critical attention becomes the more important, in order to bring this, among our other scientific text books, to the highest possible degree of accuracy. Under such examination, the work will be found not free from errors in several essential points.

On page 131 it is stated that, "the specific gravity of liquids is ascertained by means of a bulb of glass, which loses one thousand grains when weighed in water. If, when weighed in any other liquid, it loses *more* than one thousand grains, the liquid is *lighter* than water." The author doubtless intended to say "*heavier* than water," which is manifestly the fact.

Problem—(Page 136.) "It is required to determine the quantity of gold and copper in a chain, composed of an alloy of these two metals, which weighs two ounces in air, and one ounce seventeen pennyweights in water." Calling the specific gravity of gold nineteen, and of the copper nine, the author proceeds to show that there are 17 1-3 ppts. gold, and 22 2-3 ppts. copper—whereas, the true answer is, gold 24.7 ppts., copper 15.3 ppts. We content ourselves at present with stating the result, submitting the problem for solution, *in extenso*, to our mathematical readers—and invite them to draw out their solutions for publication in a future number of the *Cincinnatus*.

Problem—(Page 142.) "There is a pipe 1 foot diameter, and 64 feet high, filled with water. How long will it take to empty it from an orifice in the bottom of one square inch?" The answer given is, three minutes and forty-six seconds, which is just *one-twelfth* of the true time for the answer.

In a stereotype publication, these are rather serious errors. We, nevertheless, consider the book as one of sterling merit, both in its style and arrangement, and use it as a text book in Farmers' College.

The Schools of Cincinnati and its Vicinity, by JOHN P. FOOTE. Cincinnati, C. F. Bradley & Co., 1855.

To perpetuate the memorials of its various scientific and literary societies, is no small service to a community. That service Mr. Foote has most effectually rendered to this community, in his excellent book bearing the above title. Without such memorials, our history must needs be incomplete; for with the history of its institutions of learning, is bound up much of the public and domestic history of every city and community—much especially, as our author has suggested, that is explanatory of the rapid growth and permanent prosperity of our City.

As Mr. Foote remarks, “The entire period of the history of Cincinnati, is within the memory of persons now living.” And yet, when passing our thronged streets, along which palatial mansions and wealth by millions meet the eye, how incomprehensible to those not conversant with “the record,” is the statement that no longer than sixty-six years ago, thirty inlots, each of half an acre, and thirty out-lots of four acres each, were offered to “be given to settlers, upon paying one dollar and fifty cents for the survey and deed for each lot;” so that for ninety dollars, the “settler” could have secured a farm of one hundred and thirty acres, in the midst of what is now the third city on the continent.

Under the title “*Cincinnati College*,” the author has given many reminiscences of those distinguished pioneers, whose cultivated minds, enlarged views and liberal hearts and hands, left an auspicious impress upon our institutions of learning.

Speaking of “*Farmers’ College*,” the author says: “This Institution is established at College Hill—one of those beautiful hills that surround Cincinnati, and which, like the mounds of our predecessors of a remote antiquity, that seem to imitate them, are monuments—not like them of the dead, decayed and forgotten, but in their present high state of cultivation, of the life-aiding loveliness of Agricultural and Horticultural sciences and art, when brought into legitimate operation.”

Again he says: “The charter of Farmers’ College was granted in 1846, with all the powers usually conferred on such Institutions; and an endowment has been obtained by voluntary donations for that purpose, amounting, in buildings, grounds, etc., to upward of \$130,000.* Its Faculty includes professorships of mental and moral science, rhetoric and institutes of civil law; of history and political economy; of mathematics, natural philosophy and astronomy; of ancient languages and literature; of the natural sciences, with their application to agriculture and the arts; of modern languages and literature; and of botany and vegetable physiology, with a Principal in the preparatory department, who is adjunct professor of mathematics, a Principal (Mr. Carey) of the Farm Department, a professor of scientific and practical agriculture and horticulture; with an Actuary of the Farm Department and Teacher of Landscape Gardening. These, with two tutors, constitute a powerful Faculty. The curriculum is extensive, embracing two courses, one termed the classical, which does not differ from the curriculum of our colleges generally, and the other termed the scientific course, which omits the ancient, and includes the modern languages, with the sciences and practical agriculture,” etc.

* Since Mr. Foote’s book was written, the additional sum of about \$113,000 has been raised, making the property and endowment of the Institution now amount to about \$243,000.

The author pays a well merited compliment to the high character and efficiency of the "*Young Men's Mercantile Library Association:*" "It was formed in 1835, and has gone forward, in a course of uninterrupted prosperity, to this date; and its library and reading room are now models for similar institutions." "Its library," continues the author, "contains fifteen thousand, five hundred volumes—fifteen hundred volumes of which have been added during the past year." Its reading room is supplied with files of one hundred and sixty newspapers, and with sixty-two magazines, reviews, and other similar periodicals."

The article on the "*Astronomical Society,*" contains much valuable information of both a general and local character. Indeed, the whole book abounds in such information; and it must, therefore, be regarded as an important accession to our public and private libraries. Its typography is excellent.

"*Man-of-War Life: A Boy's Experience in the U. S. Navy, During A Voyage Around The World, in a Ship of the Line:*"—Cincinnati: Moore, Wilstach, Keys & Overend, 1856.

UNDER this unpretending title we have a most excellent book. The style is perspicuous, the descriptions graphic and truthful, the reflections just and judicious. Though assuming to be only "*A Boy's Experience,*" it nevertheless presents us with delineations of "*Man-of-War Life*" from a stand-point quite different from the usual positions in which such delineations have been presented. It accordingly gives us views of the peculiar polity, of the internal orderings, and of the systematic arrangements of the *Floating Castles* of the Nation,—our Men-of-War,—that are not presented by any other writer. Views, too, which instruct while they delight; and really daguerreotype "*Man-of-War Life*" before our mind. The author does not assume to speak for the "*Quarter Deck,*"—the upper-tendom—of our National Vessels; but incidentally gives us much useful information about the "*Upper Ten*" of that "*holy of holies of a Man-of-War!*" Concerning the 'working classes' of the vessel, however, he furnishes most lively and picturesque descriptions. The information is, therefore, the more valuable, inasmuch as it is the more practical.

Some of his narratives are exceedingly bewitching to minds of more gravity than belongs to boyhood; and much of the information touching the localities visited is worthy of the philosophic consideration of the wisest landsmen, while it affords a fund of delightful instruction to the minds of youth.

The account given of the vessel's visit to the ports of China and Japan, is of high interest. His description of the Japanese, though unvarnished in style, is exceedingly impressive. Speaking of them, the author says:

"During our stay in Yedo Bay, great numbers visited the ship, our decks being crowded each day with men of all ranks; but no ladies made their appearance. Judging of the people generally, from the specimens which came under our observation, we were forced to admit that they were a far better developed race, both mentally and physically, than we had met with since leaving the United States.

The boatmen, the only ones of the lower classes with whom we came in contact,

had not, it must be acknowledged, very intelligent countenances. They looked like slaves, and their cringing and servile obedience to their rather haughty masters, told at once their condition to be that of serfs.

But a noble or more intellectual looking set of men than were those of the better classes than we saw, it would be difficult to conceive of. There was not one, old or young, whose appearance would not command respect in any society. There was, in particular, no where to be seen, high or low, that sly look of mean cunning, or constant deceit which disfigures the Chinaman, and gives to his countenance a brutishness, allied to the most loathsome form of idiocy.

Their frank, open countenances, their marked politeness toward each other, and toward us, strangers, as well as the degree of intelligence evinced in their observations on all they saw on board, prepossessed all hands greatly in their favor, contrasting as they did, strongly, with the dull, inanimate appearance, and boorish manners of the Chinese.

There is in their appearance or carriage, very little either of the lassitude or cunning, which form such distinguishing traits of the East Indian races. In features, although plainly showing, by their high cheek bones and the oblique position of their eyes, their Mongolian origin, they yet resembled, far more than any other East Indians, the Caucasian race.

In general expression, as well as physical development, those of the higher classes that we saw, I thought resembled much the better classes of mountain Swiss.

Their color is a very clear nut-brown; features tolerably regular; eyes bright, moderately large; nose straight; forehead broad and prominent; and hair black and coarse.

The entire front and crown of the head is smoothly shaven, and the hair of the back and sides of the head drawn upward and forward, and gathered into a tuft on the top.

They wore no hats, although many carried with them straight broad-brimmed heavily japanned head coverings, doubtless as protections against the sun, should his rays prove too powerful.

A belt confines their dress at the middle, and serves, beside, to suspend the sword, or swords; all the higher grades of the nobles carrying two of these weapons.

Both swords, one short, the other long, have straight blades, which, we noticed, were invariably keen edged, as though prepared for instant use. They are worn both on the same side, above the other.

In their broad sleeves, or the bosoms of their gowns, they carried, with a variety of other matter, the square sheets of white paper which served them in lieu of pocket handkerchiefs. When one of these sheets was used, it was carefully deposited in an empty sleeve, to be thrown overboard at the first opportunity.

The hats, which, as detailed above, are rather carried than worn, are very awkward contrivances, the Japanese seeming to stand as much in need of a reform in the matter of head covering as does the Europeans and Americans.

Fancy a perfectly flat plate or disk of papier-maché about two feet in diameter, over a quarter of an inch thick, and highly japanned. This has a little projection in the center, on top, looking not unlike a small bell pull, which serves as a handle by which the unwieldly instrument is carried. A narrow

receptacle of wicker-work beneath receives the top of the head. No wonder, thought I, when I examined this novel contrivance to keep out the rain, that they prefer to go bare-headed.

Their shoes are very rudely constructed, being simply sandals of plaited straw held on by a thong or latch, which fits between the two large toes. Their feet are encased in a kind of stockings, made of white cotton cloth, room being left between the toes for the thong of the shoe to catch readily.

On entering any of the cabins, or private apartments of the officers, the sandals were left at the door, their owner walking in in his stocking feet. Thus there were often fifty or sixty pairs of sandals in the little ante-chamber o the commodore's cabin.

The *fan* seemed to be universally in use with them. From the highest to the lowest, all, walking or sitting, talking, eating, or saluting, had a fan in their hands. It is applied to the most various and different uses. Did the sun shine: the fan performed the office of a parasol; were they eating: morsels of food were presented to friends upon a fan; did one desire to make a memorandum of some object striking his attention: the fan serves as an extempore writing-desk, on which to lay the note-book; was it necessary to drive overboard some over-curious boatman: the fan, now transformed into an instrument of punishment, showers blows upon the back of the offending serf. In short, the fan is evidently used anywhere and everywhere, on land for all occasions."

When we read "*How the Commander Cured a Lad of Chewing Tobacco*," we almost invoked the presence of such an *Autocrat* on shore, to apply a similar remedy to the "land-lads" who go about "larding the green earth" with the foul and fulsome saliva, whose secretion they provoke by the foul and fulsome "weed." Here is the "*Commander's prescription*," as administered to "the boys" on board a Man of War.

"There was one species of uncleanliness over which our commander reserved to himself exclusive jurisdiction, and with which, therefore, the master-at-arms never interfered. This was tobacco-chewing. Many of our boys, in the beginning of the cruise, labored under the hallucination, already mentioned as common to tyros in sailor-craft, that to be a true sailor, one *must* chew tobacco. The commander, unfortunately, did not share in this belief, but was, on the contrary, a zealous upholder of the opposite doctrine, and considered no trouble too great, in his efforts to make converts among the boys. Thus, he would come along in the morning, to inspect us, and while walking down the row, apparently looking very steadily at the individuals immediately before him, would catch sight of a boy at the other end of the line slyly drawing his hand across his face, or emptying his mouth of a quantity of saliva. Nothing would be said, until he arrived opposite the devoted tobacco-chewer, when:

"Master-at-arms, come this way—smell this boy's breath." To the boy:

"Boy, breathe in his face." This done, and the look of disgust on poor Jemmy Legs' countenance giving forth unmistakeable evidence of the presence of the forbidden weed; the commander would say, very good-naturedly:

"Master-at-arms, go and get some sand, and soap, and canvas." And then to the boy: "Now, my lad, you ought to know, for I have told you all that tobacco is a very injurious thing, and that I, who have the care of your welfare, would be doing you a serious wrong to permit you to acquire so filthy a habit as chewing

it. You may think it an evidence of sailorship, that you chew your cud, but if you know anything of natural history, you are aware that it would be just as good proof of your being a calf. I, who am an old sailor, and know much more about such matters than any of you, will tell you that tobacco-chewing will never make of any one a sailor; and, as you spit about decks, and are filthy in other ways, you are an annoyance and an object of disgust to your fellows, which I can not endure. Do you think you could break yourself of the habit?" To this the boy would answer, very demurely: "Yes, sir."

"Well, I am very glad to hear it. I hope I shall never catch you with a quid in your cheek again; and in order that you may begin your reformation with a clean mouth, the master-at-arms will now proceed to purify it, by means of this soap, and sand, and piece of canvas. Master-at-arms!"

"This functionary approaches with the required articles.

"Now, my lad, that you may be enabled to make a fresh start in your reformation, we will see your mouth scrubbed clean. Master-at-arms, take his head upon your lap, and commence operations."

"Thereupon, the unwilling victim to another man's belief, has his mouth half-filled with a lather of soap-suds mixed with sand, and his lips and teeth scoured till they bleed again, the olfactory test being applied from time to time to ascertain if all the defilement is removed; and after half choking him, and giving him ample cause to remember the commander's injunctions, he is released. All this is transacted in presence of the whole assemblage of boys, and generally an additional audience of grinning tars, who are delighted witnesses to the commander's "*doctoring* one of the boys." Two or three punishments of this kind, were quite sufficient to cure all the tobacco-chewers."

The Merchant Vessel: a Sailor Boy's Voyages to see the World, by the Author of "*Man-of-War Life*." Cincinnati, Moore, Wilstach, Keys & Overend, 1856.

THIS is another handsome duodecimo, by the same author as of the volume last above noticed. It is substantially a continuation of the former work, with the author's experience transferred from the Navy to the Merchant Service. It is written in the same unassuming style, the very simplicity of which carries to the reader's mind, a conviction of the truthfulness of the author's statements, and of the accuracy of his descriptions; and certainly, this is no small merit in reference to "sailors' yarns."

The author's reflections on the difference in the mental development characteristic of the "blue jacket" of the Navy, and the sailor in the merchant service, contain much sound philosophy of practical import. In the navy, the officer does all the thinking—the "men" do but execute *his* thoughts—and their merit consists only in *obedience to orders*. In the merchantman, the "hands" are, to some extent, *deliberative* as well as *executive*. "In this respect," as our author most justly remarks, "the merchant service is infinitely preferable to the Navy, as a school for training."

The book has the same beautiful typography that distinguishes "*Man-of-War Life*." For sale by Moore, Wilstach, Keys & Overend.

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No. 2.

ROTATION OF CROPS.

A PROPER rotation of crops, suitable for the different descriptions of soil, is a subject of the first importance to the practical agriculturist, and one upon which the profits of the farmer, and the continued sustentation of his farm, depend, more than any other.

It will be found difficult to lay down a system of rotation adapted uniformly to every soil, or a rotation for any one soil, which will be alike applicable in all cases. Much must be left to the judgment and experience of the cultivator, while something depends on climate, something upon the market value of particular products, and other local and attendant circumstances. The reasons for a rotation of crops are based upon facts furnished from experience, and clearly established on scientific principles. It is found, that in continuing to grow the same kind of crop for a succession of years, the properties of the soil necessary to the maturing that crop will become exhausted, and the elements of nutrition so far removed, or rendered unhealthful, as to make it incapable of producing any other remunerative crop. Science demonstrates the fact that by a proper rotation the elements suited to one kind of grain or vegetable will be restored, at the same time that another kind of grain or vegetable is being matured. The process appears to be this, that a portion of the juices which are absorbed by the roots of plants is, after the salutiferous portions have been extracted by the vessels of the plant, again thrown out by exudation from the roots, and deposited in the soil.

The existence of this exuded matter, which may be regarded as the feces of the particular plant or vegetable grown, must certainly prove

injurious to the growth of that same grain, or vegetable, the succeeding year; and the injurious tendency must be cumulative by every repeated succession of the same kind of crop. By a suitable rotation, those excrementitious particles, which have been deleterious to one tribe of plants, furnish nutriment to another; hence different kinds of crops succeed one another with advantage. And it becomes a nice point to ascertain the order best calculated to follow each other. As a general rule, culmiferous crops, ripening their seeds, should not be repeated without the intervention of roots, herbage, or fallow. There is here a wide field open to experiment, in which little has been, as yet, effected. We mention one fact corroborating the above theory of fetal exudation. The bean grows pretty well in pure water. It was found, on trial, that the water continued clear, but assumed a yellow tint. Chemical tests and evaporation seemed to detect a matter similar to gum, and a little chalk. Another bean was placed in this liquor and would not thrive. Then, in order to determine whether this was occasioned by the want of carbonic acid, or by the presence of some exuded matter, plants of wheat were placed in the water. They lived well, the yellow color of the fluid became less intense, the residuum less considerable, and it was evident that the new plants absorbed a portion of the fecal matter discharged by the first. Hence, the practice in Europe, of cropping wheat after beans, is justified by this experiment. It is now everywhere regarded as fully established, that alternate husbandry, especially where the several processes of labor which belong to each crop, are properly executed, will not only preserve a soil from exhaustion, but by the introduction of a small amount of putrescent matter, will yearly *improve* in fertility. And whether the cause be as above, or found in the nature of the soil, or of the plants themselves, experience has established the fact, beyond controversy, that a soil will hold out much longer where an appropriate succession is observed, than where it is not. The frequent repetition of the same kind of crop, even at short intervals, is also to be reprobated for the same reason.

It may not be amiss to give here a few examples of what have been found by experiment successful rotations. Let the basis of these rotations be a summer fallow: then,

FIRST ROUND OF ROTATION.

Rotation for Loams and Clays.

- | | | |
|------------|------------|--|
| 1. Fallow. | 4. Oats. | 7. Potatoes, or Corn. |
| 2. Wheat. | 5. Clover. | 8. Wheat; when it should
be laid down in grass. |
| 3. Corn. | 6. Wheat. | |

SECOND ROUND OF ROTATION.

For Clays and Loams of an inferior description.

1. Fallow, with manure.
2. Wheat.
3. Clover; and when the second crop is well grown, plow under in the fall.
4. Corn, or Potatoes; if the latter, manure,
5. A crop of Wheat; after harrowing the ground well upon digging the potatoes, plow in the wheat, shallowly, upon which sow timothy and clover.

THIRD ROUND OF ROTATION.

Supposed to be a very thin, clayey soil.

This is one which has come more directly under our own observation, and which, as deserving of attention, we will give more fully in detail, being one of the most successful, and one, it is believed, by which the thinnest, clayey soil, may be resuscitated, and improved. We will suppose the ground is in sod; contrary to the usual practice, of plowing in the fall, with a view of having the action of the frost, break up the sod during the last of April or the first of May, in order to secure the speedy decomposition of the green sward, which will warm up the soil, and prepare it for the reception and rapid germination of the seed; then plant corn, say from the 5th to the 15th of May, according to the course of the season. The next spring plow, and, if possible, manure with barn-yard manure hauled directly from the barn-yard to the field and spread; after which, plow to the depth of eight inches. Then plant potatoes, putting them in as early as the ground can be worked. After the potatoes are dug, say from the 20th of September to the 10th of October, harrow the ground thoroughly, which will expose all the potatoes covered by the plow in digging, when they can be readily gathered up.

This harrowing prepares the ground beautifully for the reception of wheat, the next crop. Then cover the wheat with a shallow plowing. You may then seed with grass; or, if desirable, follow with a crop of rye, and upon it sow grass, say timothy, one peck to the acre; most persons are too sparing of seed.

If a mixture of clover is desired, sow in March following, say three quarts to the acre. If well set, you may take safely three crops of grass; after which, say in the following spring, sow six quarts of clover seed to the acre, and harrow in, thoroughly, upon the timothy sward; then you may take a good fourth crop; after which pasture one year, say until August, then remove your stock, and let it grow up well, in order to plow under, which completes a round of rotation; such a round, it is

believed will resuscitate the leanest clayey soil, and render it loose, and perfectly friable, and profitably productive. Indeed a gentleman, a very intelligent farmer, informed me, that under this system of rotation he had so improved a field of twelve acres (upon which he had expended fifty dollars for putting it into wheat, and after all his labor did not receive enough in return to pay the first outlay), that he raised forty-three bushels of excellent wheat to the acre.

After all that can be said, there are many things to observe, in all these processes, which must be left to the judgment and experience of the cultivator. Much importance is attached to the selection of the best seed, and the kind of seed best suited to the soil. It is certain that there are some kinds of white corn that will mature better, and grow better, on a thin, clayey soil, than the large yellow. So of wheat. The Mediterranean wheat will do better on a thin soil, than on a deep, rich soil ; while it is the reverse with the Genesee. The Mediterranean wheat, on a deep, rich soil, runs to straw and will be sure to fall.

In adopting a judicious system of cropping, a degree of judgment and experience is required which few cultivators possess. And it will be found that this very subject is replete with the profoundest principles of science, requiring a most rigid and exact series of analyses, and experiments, fully to develop, elucidate, and render practical. Such will form an important item in the course of instruction in this Institution as soon as the Farm Department shall have been fully opened up, and the Laboratory, now begun, shall have been completed. And even when science shall have performed her full part in laying down a judicious system of rotation, much will depend upon the manner in which the different processes shall be executed ; for the very best rotation will be of little value, if the processes belonging to it are imperfectly and unseasonably executed.

GUNPOWDER.—Some of the effects of ignited gunpowder are wonderful. When it is heaped up in the open air and inflamed, there is no report, and but little effect produced. A small quantity opened and ignited in a room forces the air outward, so as to blow out the windows ; but the same quantity confined within a barrel, within the same room, and ignited, tears in pieces, and sets on fire, the whole house. Count Rumford confined within a mortar one-twentieth part of an ounce of powder, and placed upon it a 24 lb. cannon ; he then closed up every opening as completely as possible, and fired the charge, which burst the mortar with a tremendous explosion, and lifted up its enormous weight.

Transactions of the Cincinnati Horticultural Society.

Memorial of Nicholas Longworth, Esq., and Dr. J. A. Warder's Report on "Prince's Strawberry Catalogue."

THE following interesting and important "transactions" are taken from the original papers on file with the Cincinnati Horticultural Society, pursuant to the order of the Society, made on motion of Mr. Ernst, "that the same be published in the *Cincinnatus*."

MR. LONGWORTH'S MEMORIAL.

CINCINNATI HORTICULTURAL SOCIETY :—I send you a late pamphlet of Mr. Prince, that excites surprise. He advertises for sale a great variety of Strawberry plants. I am aware that horticulturists charge an extra price for new varieties. Our seedlings are also new varieties, and we paid to Mr. McAvoy a premium of \$100, deeming his *Superior* of more value than any pistillate plant in cultivation. We deemed the *Prolific* superior to any American or foreign hermaphrodite, and Hovey's pistillate seedling then of more value than any other. Mr. Prince has for sale a large number of his own seedlings. He has ten pistillates, for which he asks four times, and six, for which he asks three times the price that he asks for McAvoy's Superior. He has for sale six hermaphrodites, for which he asks three times, and ten for which he asks double the price of our Prolific. Mr. Prince is one of our most experienced horticulturists—has paid great attention to the cultivation of the Strawberry—and if our new seedlings are not greatly underrated, his are of inestimable value. If you offer a premium of \$50, for two new pistillates, superior to McAvoy's Superior, and \$50, for two new hermaphrodites, superior to the Prolific, and you award them to Mr. Prince, or any other competitor, I will, myself, pay the premiums with pleasure. I had supposed our new seedling, the Extra Red, from its large, uniform size, great beauty of color, and very large crop, to be of very great value as a market fruit, and of fair, though not superior quality. Mr. Prince denounces it as "*vile trash, and the sourest and most worthless of all other varieties;*" placing it thus far below all his other seventy REJECTED varieties. Is this true? If true, we have everything to learn, and I trust you will speedily investigate the subject.

Again—He says, "pistillates may be allowed to run together in a mass, and will still bear profusely, where male blossoms are near." Advise us on this subject. If true, our market gardeners, who now

occasionally bring *only five thousand* quarts per day to market, can, with less labor greatly increase the quantity. Again—Mr. Prince says, the Primates, and two or three other of his hermaphrodites “comprise the only varieties with large fruit, that produce large crops.” It seems our Prolific does not:—advise us if such be the fact. He describes the Prolific as only two-thirds the size of our Superior, “of weaker growth than any other Cincinnati varieties, leaves thin, and very subject to be burned by the sun.” He says, as regards the Ohio varieties, “gross confusion exists.” Is such the character of the Prolific? He says, “the sexual character of the Strawberry was discovered by them, and made known in 1828, and that we in Ohio have adopted *his views*.” Correct me, if I have in frequent publications committed a gross error, for I deem the discovery worth millions of dollars. I supposed the discovery was made from an illiterate German female gardener, who for years raised five times the quantity of fruit her neighbors could, in the vicinity of Philadelphia, some forty years since, and here some thirty years since, in our vicinity, and of larger size, and made a fortune by it. That a chance observation of her son, taught us to throw aside the doctrine of Linnaeus, and adopt that of the illiterate market woman. The result was, the fruit went down to one-fourth its former price. But some of the wise botanists of the East, still stick to Linnaeus, and will, till they plant a bed of Strawberry plants.

When East, I inquired of their leading horticulturist, Mr. Thorburn, Sen., if he could advise me of any new variety of Strawberry, of superior value. He said not, but advised me to go to the garden of Mr. White, in New York, five miles above the Astor House, who paid more attention to the Strawberry plant than any other person, and cultivated a greater variety. I went to the garden of Mr. White, and inquired of him, how many varieties he cultivated? The answer was, “three kinds only.” “Three!” said I. “I was told that you cultivated a greater variety than any other person.” “I did,” said he, “and threw them all away but three kinds.” I inquired their names, and the answer was, “Three Cincinnati seedlings—the Prolific, Superior, and Extra Red.” I wrote him lately to get his opinion of the “most worthless and vile trash” of all Strawberries, the Extra Red. I send you his answer. It would appear that but little attention is paid to the Strawberry plant, East, as it appears that the gardeners about New York are not advised of the value of Mr. Prince’s new seedlings. I trust your Report may draw their attention to the subject, and make their superior value known.

Your's, truly,

N. LONGWORTH.

The foregoing communication, and accompanying papers, by order of the Society, were referred to a select committee, Dr. J. A. WARDER, *Chairman.*

The following are the statements made in "Prince's Catalogue," and which we quote as the "items" coming more especially within the scope and purview of the preceding Memorial, and the following Report.

"LONGWORTH'S PROLIFIC, or SCHNEICKE'S HERMAPHRODITE.—H. Early, large, rounded, dark scarlet, fine flavor, sweet, but not as sweet as McAvoy's Superior, and only two-thirds its size; but has some advantage in earliness, productive for its sex, but not so much so as the Primate and some others; plant of weaker growth than the other Cincinnati varieties, with pale green foliage, by which it is readily distinguished. *The leaves are thin and very subject to be burned by the sun, which is a great objection.*"

Again—"McAVOY'S SUPERIOR.—P. Very large, averaging full as large as the berries of Hovey's Seedling, rounded, glossy crimson, of a good color in the medium stage, but becomes, when full ripe, RATHER DARK for a market fruit, very juicy, good flavor, and very productive. This is a highly valuable family fruit, but it will not do for the market, as it is tender, and bruises easily, when the juice runs out, and it speedily decays, and is, therefore unsuited to long carriage. This may be deemed a rather early variety, but continues a long succession of fruit, and in strong soil it will often throw up a succession of scapes, that bloom at the period the first crop is ripening.

"MCAVOY'S EXTRA RED.—We reject, *it being the sourest, and most worthless of all Strawberries.*"

Vide Catalogue, pp. 5, 6.

DR. WARDER'S REPORT.

TO THE CINCINNATI HORTICULTURAL SOCIETY:

The committee to whom was referred a communication from N. LONGWORTH, Esq., and several accompanying documents, printed and written, respecting Mr. PRINCE's famous new Strawberries, beg leave to report:

That they have examined the printed Catalogue of Mr. Prince, in which are names and descriptions of eighty-eight varieties, most of which are introduced as new seedlings, said, *in the Catalogue*, to be possessed of rare merit. These are classified as belonging to the Scarlet, Pine, and Chili varieties, and are exclusive of Alpines, Hautbois, and Wood species. Among these eighty-eight varieties there are less than one-fourth of

sorts that are generally known to horticulturists; of the remainder of this "select variety (!)", fifty-five are said to be new seedlings, produced by Mr. Prince, himself, and selected from some thousand varieties of his growing. Those who have grown seedling Strawberries may congratulate Mr. Prince on his remarkable success! for he styles these fifty-five as "*most splendid varieties!*" (*vide*, first page of Catalogue.) Indeed, nothing beyond their euphonious and high-sounding titles would be needed, to indicate the exalted position they occupy in the estimation of their happy originator:—Campagna, Champion Montevideo, Colonia Montevideo, Cordova Montevideo, *Cornucopia* (!), Coronation, Coronet Scarlet, Crimson Cluster, Crimson Profusion, Crimson Prolific, Dido Swainstone, Early Prolific Scarlet, Eclipse, Eustatia, Globose Cluster, Globose Swainstone, Imperial Crimson, Imperial Scarlet, Scarlet Mag-nate, Le Baron, Luscious Scarlet, *Magnifique* (!), Maximus Swainstone, Perfumed Scarlet, Primate, *Prince's Black Prince* (!), Prince's Climax, Prolific Swainstone, Psyche, Rubicon, Saccharine Scarlet, Scarlet Prolific, Scarlet Primordial, Serena, Sirius, Tivoli Scarlet, Troubadour, Supreme Stamineate, Superlative, Transcendant Scarlet, Trumpet Montevideo, Triumphant Montevideo! *et cetera! et cetera!!*

In this catalogue of "select varieties" we also find a "rejected list," and among the rejected we observe many of the celebrated English prize Strawberries—Keene's, Swainstone's, etc.—from which, remarkable specimens have been, and still are constantly shown at the exhibitions of Europe; also, all of Burr's seedlings, our favorite and productive *Necked Pine*,—and, *mirabile dictu*, "*McAvoy's EXTRA RED*," which we all know to be a large, handsome, and productive variety, is denounced with all the emphasis of italics, as "*vile trash!*" thereby condemned, even beyond all others, in the "rejected list" of this *Prince* of Strawberries!

A closer analysis of this catalogue, in which the comparative merits of varieties are given, enables us to gather some curious facts, that should induce us, and our cultivators generally, to seek after some of the remarkable improvements of these modern times. For instance, there appear, by this catalogue, to be fifty sorts that Mr. Prince considers of greater value than our own seedlings, the *Prolific*, and the *Superior*; ten sorts that possess four times their value; six sorts that are worth three times as much; twenty-six sorts are named having double their value; and seven kinds are designated as being fifty per cent. better! Now then, taking these two varieties, the *Prolific* and *Superior*, which we know well, and highly appreciate, as the standard of comparison, we may feel prepared for the other view of the matter: that is, Mr. Prince's estimate of his own "*most splendid varieties*," when

he compares them with Hovey's Seedling as a standard. We find in this catalogue, seventy-eight varieties estimated as superior to Hovey; fifteen sorts as having equal value; but *not one* introduced as being of *inferior* value to it! Such remarkable fruits must, it would seem, have attracted the attention of cultivators; at least in the region where they have been originating during the past ten years. We can scarcely imagine, that such superior excellence, demanding such high-sounding titles for its designation, could have lain hidden, and been kept concealed within the narrow limits of a single garden, even if guarded by the extremest diffidence of the most diffident of modest cultivators.

Let us turn now to the written testimony before us, accompanying Mr. Longworth's communication, consisting of letters from amateur and market gardeners in and about New York City, and from the very neighborhood whence issues this Flushing and flourishing catalogue.

Mr. Wm. M. White, of New York City, writes that "*McAvoy's Superior, and Longworth's Prolific*, are the best table fruit I ever cultivated, of most excellent flavor, and can always be depended on for a good crop. *McAvoy's Extra Red*, I consider the handsomest fruit, the most abundant bearer, and the most uniform in size through the whole crop, of any Strawberry known. It is inferior in flavor to the two others named, but it is equal in flavor to most of the Strawberries sold in New York market. I have no knowledge of Prince's seedling Strawberries—have made some inquiries among the gardeners, but find *no one who grows them, or knows any thing about them.*" (This letter bears date of September 18, 1855.)

Peter B. Mead, a well known amateur in gardening and horticulture, and a gentleman of fine discrimination in such matters, also writing from New York, under date of July 7, 1855, says, "The three best (Strawberries), are the Superior, the Prolific, and the Number One. The latter is a large, handsome, and productive variety, of very fair quality; there are not many better. The Superior is a better fruit than Hovey's Seedling; it is of larger size, more productive, and much higher flavored. It is not such a bright berry as Hovey, but that is a matter of but little moment to me." (Mr. Prince objects to the "dark color" of Hovey's.) "The Superior, taken altogether, is 'A. No. 1.' The plants set last fall produced berries nearly *six inches* in circumference. The Prolific is the most valuable Strawberry I have ever seen. No other kind yields such a large crop of handsome and first rate fruit. I picked thirty-two varieties of Strawberries, numbered them, and called in a neighbor who has good taste in such things, and desired him to taste them all. His

opinion of each was noted, and on referring to the corresponding numbers, *Longworth's Prolific* was found noted *the best*; *Superior, second best*; and *Jenny's Seedling, third best.*—the latter were large and well ripened. This was, of course, an unprejudiced opinion, since he did not see the names of any of them till after the opinion was pronounced. These thirty-two varieties embrace all our best kinds, except *Burr's New Pine*, *British Queen*, and *Swainstone*. At our Horticultural Exhibition *Longworth's Prolific* was awarded the first prize, being ‘for the best variety exhibited.’ *McAvoy's Number One* has been very generally grown for the *Superior*—I will try to make it better known.”

Mr. Thorburn, when asked by Mr. Longworth for the best new Strawberry, referred to Mr. White as the most extensive cultivator. His statement is already submitted, and in favor of three Cincinnati seedlings; and he has *thrown aside all other varieties*. Comment is not needed. Our Cincinnati seedlings sustain their high reputation wherever fairly tested, and will continue to do so, until finer varieties may be originated. We think this Society will never have occasion to blush for its indorsement of them, nor for its action in their behalf. The confusion which existed to some extent, at one time, has been overcome, and our nurserymen are now able to furnish the varieties true to name.

Your committee, believing that there may still be improvements in this fruit, heartily recommend the suggestion of Mr. Longworth, to whom Strawberry-lovers already owe so much for his assiduity in extending, through a long series of years, correct views concerning the peculiar botanical character of the Strawberry; the abundant results of which are familiar to all, and the truth of which has become so apparent that he who looks may read.

We therefore recommend that the Society, on behalf of Mr. Longworth, direct its Corresponding Secretary to address Mr. Prince on the subject of his catalogue, and inform him that the Society will pay \$50 for two new pistillates that shall be better than the “*Superior*;” and \$50 for two new hermaphrodites that shall be better than the “*Prolific*,” payable whenever a committee of the Society shall render such award.

We make this recommendation the more willingly, for the reason that one of your committee ordered a selection from Prince’s catalogue, the last season, with a view of testing their merits for the benefit of the Society; but the plants were never received. We feel that it would be almost a work of supererogation to say, that the remarks in the catalogue respecting the *Superior*, the *Prolific*, and the *Extra Red*, do not correspond with our observations and experience. The foliage of the *Prolific*

is not "thin," and it stands heat and drought remarkably well. Extra Red is not "vile trash," as designated in the "rejected list," thereby catalogued as worse than the remainder of the seventy rejected sorts.

We still hold that Strawberries, whether pistillate or otherwise, should not be crowded, if a good crop is desired; but that every individual plant should have an opportunity and space to develop itself, fully, the season before it is to bear fruit.

As to the claims of Mr. Prince to the priority of discovery, or announcement, of the sexual character of the Strawberry, in 1828, and "which has been adopted in Ohio, and elsewhere," as he says on the last page of his catalogue, we have only to refer to our files and newspapers for the reiterated advice, offered annually by Mr. Longworth, for a refutation of Mr. Prince's pretensions to originality in this all-important particular. Then, in confirmation of this, look at results. Here, this fruit has been both abundant and cheap, in consequence of the early adoption of the enlightened views presented on this subject, and chiefly maintained and diffused, through the instrumentality of Mr. Longworth; whereas, even among the *illuminati* of the East, this "*theory*," as it has been jeeringly called, instead of being adopted, has been made the subject of ridicule. Even their writers have changed ground upon the subject, repeatedly; and distinguished officers of their horticultural societies are still unsettled in their opinions, and all for the want of a little observation, and in spite of the convincing logic of Mr. Prince's "*Treatise on Horticulture, published in 1828.*"

Respectfully submitted,

JNO. A. WARDER,
F. G. CARY,
A. H. ERNST, } COMMITTEE.

From the minutes of the Society it appears, that "At a regular meeting of the Cincinnati Horticultural Society, January 19, 1856, the foregoing Report was received, and on motion of Mr. A. H. Ernst, the same was unanimously adopted as the sense of the Society, and ordered to be published in '*The Cincinnatus.*'"

THE SPIDER.

"Look upon my web so fine.
See how threads with threads entwine;
If the evening wind alone
Breathe upon it, all is gone.
Thus within the darkest place
ALLAH's wisdom thou mayst trace;
Feeble though the insect be,
ALLAH speaks through that to thee."

THE FIRST WORDS SENT BY TELEGRAPH.

THOUGH grown familiar with its operations and exploits, our minds can not cease to marvel at the sublime achievements of the ELECTRIC TELEGRAPH. Wiry, weird, wonderful—it stands before us incomprehensible ; spelling the very lightnings of heaven into the English language, like some unheard of Pedagogue !—Affording us a messenger more fleet than the “ delicate Ariel ” of Prospero’s art and Caliban’s isle !—Giving to the globe a nervous system, and making a whispering gallery of the world ! And a consideration of the nature of the *First Words* borne from man to man by this heavenly messenger, thus brought down to earth, must serve, in a material degree, to highten the sublimity of its functions and characters. So remarkable were the circumstances attending that wonderful invention, in this particular, that we deem them well worthy of recording at length. And, in order that the circumstances may be abundantly authenticated, we give in full the excellent speech of Prof. MORSE, himself, by whom the facts are detailed.

We quote from the “ *St. John’s Ledger*,” which contains a description of the occurrences that transpired on the occasion of the visit of the steamer James Adger to that town, having on board members of the New York, Newfoundland, and London Telegraph Company, and their guests. A dinner was given on board the steamer, in acknowledgment of the hospitalities received from the inhabitants of St. John’s, at which Peter Cooper, Esq., President of the Company, presided.

The following toast was one of the series given upon the occasion :

“The Electric Telegraph”—

“The steed called Lightning (say the Fates),
Was tamed in the United States ;
'Twas Franklin’s hand that caught the horse,
'Twas harnessed by Professor Morse.”

To which the learned Professor replied as follows :

“I thank you, Ladies and Gentlemen, most cordially, for the flattering mention you have made of me, in connection with the electric telegraph, for it expresses the kindness, the good will, the generosity of your own hearts. But, Ladies and Gentlemen, I place myself as one only among the instrumentalities in this great enterprise of binding the nations together in the bands of electric intercourse. It is thus, only, that I find relief from what I may truly style the oppression of praise. Let

me explain. It would be hypocrisy in me to affect callousness, or indifference to the good opinion of my fellows. No: I confess to a deep feeling of gratification in receiving this evidence that the labors and sacrifices of so many years of my life have not been thrown away upon an impracticable, a chimerical dream. I have not, however, so superficial a self-knowledge, as not to be aware, that there is something within this bosom ever ready to kindle into a selfish pride at the least spark of praise, a pride that would give utterance to the arrogant boast, 'Is not this great Babylon that I have built, by the might of my power, and for the honor of my majesty?' Who is it that commands the lightnings to go, and they go? Who gave the telegraph to the world? Permit me to state an incident in the early history of the telegraph, which is directly pertinent to the answer to these two questions. At two sessions of the Congress of the United States, my petition for the pecuniary aid of the government to construct the experimental line of telegraph from Washington to Baltimore, to test its practicability and utility, dragged its slow length along, and at the close of the session of 1842 and 1843, threatened a result as inauspicious as the previous session of 1837 and 1838. I need not more than allude to the fact, that in the previous session of 1837, I had expended all the pecuniary means I possessed, to sustain myself at Washington, while urging upon the attention of Congress, then untried, this then generally esteemed visionary enterprise of electric telegraph. Years were required to put myself again in a pecuniary condition to appear before Congress with my invention, and now I saw the last day of another entire session just about to close, and with it the prospect of still another year's delay. My bill had, indeed, passed the House. It was on the calendar of the Senate, but the evening of the last day had commenced, with more than one hundred bills to be considered and passed upon before mine should be reached. Wearyed with the anxiety of suspense, I consulted with one of my senatorial friends; he thought the chance of reaching it so small, that he advised me to consider it as lost. In a state of mind I must leave you to imagine, I returned to my lodgings to make my preparations for returning home the next day. My funds were reduced to the fraction of a dollar. In the morning, as I was about to sit down to breakfast, the servant announced that a young lady desired to see me in the parlor. It was the daughter of my excellent friend and college class-mate, the Commissioner of Patents. She called, she said, by her father's permission, and in the exuberance of her own joy, to announce to me the passage of the telegraph bill, at midn'ght, but the moment before the Senate's adjournment. *This was the turning point of the telegraph invention in America.* As

an appropriate acknowledgement for her sympathy and kindness, a sympathy which only a woman can feel and express, I promised that the first despatch, by the first line of telegraph from Washington to Baltimore, should be indited by her. To which she replied, 'I will hold you to your word.' In about a year from that time the line was completed, and every thing being prepared, I apprised my young friend of the fact. A note from her enclosed this despatch : 'WHAT HATH GOD WROUGHT !' *These were the first words that passed upon the electric wires, on the first completed line in America !* None could have been chosen, more in accordance with my own feelings. *It baptized the American Telegraph with the name of its Author !* It placed the crown of success and of honor where it belonged. I lately somewhere read, in an article on the telegraph, written apparently by one not friendly to me, this sentiment, 'that the telegraph is too magnificent an invention to have its glory concentrated in a single man.' *Ab hoste fas est doceri.* I assent to the justness of this sentiment, giving it, however, a wider application than the writer probably intended. Is there an invention or discovery, great or small, or operation in arts or arms, that has been achieved by one mind, independent of aid derived from the co-operation of others? Wellington, Napoleon, Scott, may plan the most brilliant campaigns; but of what avail are brilliant plans, unless carried out to success; and how can they thus be carried out but by the co-operation of thousands of others?

"Was Watt unaided by the co-operation of other minds in elaborating his magnificent invention, that indefatigable drudge, the steam engine? Was Fulton alone in achieving steam navigation? Did Whitney find nothing of other men's labors to incorporate into his invaluable cotton gin; or Arkwright find prepared no mechanical appliances already in use, for his spinning-jenny? Does the poet, or the rhetorician, weave his beautiful web of imagery from no tissue prepared for him by the traveler, and historian, and the naturalist? No: the co-operation of other minds is as necessary to the success of every design, as the design itself. We can not be independent of others. Place me, then, Gentlemen, where you will in the chain of instrumentalities. I look behind and before me, and see in the vista of the past and of the future, a long procession of co-operators, without whom my thought, however brilliant, could never have been realized. To them all, whether present or absent, I would render here, at least the homage of my thanks. The enterprise we have undertaken, has thus far had, and will still require, the co-operation of all; and happy am I in perceiving and acknowledging the co-operation of the Governor and Council, of Secretary and Attorney

General, and Legislature, of all the officers of the government, of the clergy and laity, and of hundreds of private individuals, in this beautiful and picturesque city. I claim for my reward the gratification I can not but feel with an intensity which I can scarcely find words to express, that the favorite dream of three and twenty years of my life, whose realization I have cherished day and night: to wit, that universal humanity is to be bound in a true and social fraternity by instantaneous intercommunication of thought, is now near its consummation."

A similar interest attaches, too, in relation to the

FIRST TRIP MADE BY LOCOMOTIVE.

For when, with earth-vibrating tread, there looms up before us that modern Megatherium of labor, the STEAM ENGINE, it is not in the nature of man, however familiar with its exploits, to pass it by, without amazement, and wondering what intrepid mortal first dared to bridle its power, to mount and spur the shrieking demon along its iron race-course? The answer to that question, which our children's children will ask, is given as follows by a New York paper.

"Major Horatio Allen, the Engineer of the New-York and Erie Rail Road, in a speech, made during a recent festival occasion, gave the following account of the first trip made by a locomotive on this continent.

"When was it? How was it? And who awakened its energies and directed its movements? It was in the year 1828, said Major Allen, on the banks of the Lackawaxen, at the commencement of the railroad connecting the canal of the Hudson and Delaware Canal Company with their coal mines; and he who addresses you was the only person on that locomotive. The circumstances which led to my being alone on the engine were these: The road had been built in the summer, the structure was of hemlock timber, and rails of large dimensions notched on caps placed far apart. The timber had cracked and warped from exposure to the sun. After about three hundred feet of straight line the road crossed the Lackawaxen creek, on trestle work, about thirty feet high, with a curve of three hundred and fifty to four hundred feet radius. The impression was very general that this iron monster would either break down the road, or that it would leave the track at the curve and plunge into the creek. My reply to such apprehensions was, that it was too late to consider the probabilities of such occurrences, that there was no other course but to have a trial made of the strange animal which had been brought here at great expense, but that it was not necessary that more than one should be involved in its fate; that I would take the

first ride alone, and the time would come when I should look back to the incident with great interest.

"As I placed my hand on the throttle-valve handle, I was undecided whether I would move slowly, or with a fair degree of speed; but believing that the road would prove safe, and preferring, if we did go down, to go handsomely, and without any evidence of timidity, I started with considerable velocity, passed the curve over the creek safely, and was soon out of hearing of the cheers of the vast assemblage. At the end of two or three miles, I reversed the valves, and returned without accident to the place of starting—having thus made the first railroad trip by locomotive on the Western Hemisphere."

Observations on the Flora of the Western States.

[CONTINUED FROM PAGE 13.]

As we proposed in these articles to consider only the native or spontaneous products of our Western soil, we necessarily omit those vegetables which are chiefly interesting to the agriculturist. We here write as a *naturalist*, pleased only with the wild tenants of the woodlands and prairies, and doubly interested in them, because, like the aborigines of our country, they are rapidly retiring before the advancing hosts of the cereals, the fruits, the grasses, and the sordid weeds.

In the "West," that is, in the basin of the Mississippi river and its tributaries, we distinguish clearly enough, three kinds of lands—the *Barrens*, or upland woods, whether plain or broken; the *Prairies*, whether level or rolling; and the *Bottoms*, lying low, and perfectly level. Respecting the barrens, we observe that scarcely a century has passed since the primeval forest, wild, gloomy and grand, was everywhere unbroken, except by the Indian fires which are believed to have caused the prairies. But now, their range is generally circumscribed, and reduced to parks and wood-lots, standing here and there, trimmed and fenced, as if only awaiting the leisure of the owner, to fall, like their companions, before the ax, or perish by the lingering death of the *girdle*.

This destruction of the forests, by the early settlers of the country, is to a certain extent, necessary; but in general, it has been carried on to an unreasonable and ruinous extent. They seem to have been actuated by a passionate dislike to every thing in the form of foliage, or shade. Death to the forest trees—to the groves—indiscriminate, and to the

widest extent, is the watchword of the pioneer, deaf to the plaintive wail of the doomed forests, at mid-day or in the twilight hour, and deaf to that piteous prayer in their behalf, which every lover of nature breathes in sympathy with the poet—

“Woodman, spare that tree!”

But the plea was in vain; and now many a cotter, whose taste revives as his leisure increases, repents himself too late of that rash vandalism which has left him no tree to shelter him from the scorching sun in summer, no grove to protect from the rough winds of winter. And while his blundering art is now employed on a few starving saplings, with the forlorn hope that posterity will live under their shade, he thinks how gladly he would give hundreds, or thousands, perhaps, to replace upon his naked pleasure-grounds that grand old elm, or maple, or oak, and those beautiful vines which ascended to, and crowned their summits with clusters!

Let us now look into the remains of these primeval forests, and observe of what they are composed. The New Englander is surprised at the various contrasts presented him with those mountain forests through which he roamed in his youthful days. The lofty pine, rearing its tufted head two hundred feet in air, the conical spruces, the prim cedars, the larches, and all the evergreen tribes of the coniferae, he seeks for here in vain. The birches are also wanting, those hardy denizens of mountain woods—the yellow,^{*} the black,[†] the white,[‡] the canoe,^{||}—whose papery bark, pendant tassels, aromatic wood, and, we add, whose tingling twigs, were so familiar to his childhood. Not a solitary birch in all these vallies, unless very far to the north! And those Eastern species, which he *does* meet with in the West—the maples, the oaks, the beeches, the sycamores, etc.—he is scarcely able to recognise, so overgrown are they, aspiring to the hight of a hundred feet, while there they scarcely arrive at fifty. Compared, also, with the forests of New England, ours are remarkable for their greater number of flowering trees and shrubs, which in spring array the wilderness in robes of varied beauty. Among these are conspicuous the dogwood,[§] a small tree, with a crooked trunk, and a wide-spreading head, clothing itself in April with a multitude of large white involucres, as with a sheet. This tree grows also at the East, but far more sparingly. The red-bud,^{||} called also Judas-tree, is abundant here, presenting to sight a solid mass of purple bloom, before a single

* *Betula excelsia.* † *B. nigra.* ‡ *B. populifolia.* || *B. papyracea.*

§ *Cornus Florida.* || *Circis Canadensis.*

green leaf appears. Numerous wild plums, and wild crabs also, with flowers of varying shades of whiteness, perfume the gay forests in spring. Nor must we omit to mention the buff-colored clusters of the buckeye,* nor the glorious tulips of the liriodendron.

As we remarked in our former article, this tree is highly characteristic of the Western forests, and foremost in value for lumber. A single tree, of the largest dimensions, might yield thirty thousand feet of inch boards, easily wrought, but inferior to pine for durability. But this is by no means the only tree of stately dimensions, and of real value. Yonder stands a forest giant, with a straight and cylindrical trunk sixty feet in height without a branch, and there surmounted by a leafy summit of an oval outline, rising some forty feet higher. The pinnated leaves constitute a light, pale green foliage, among which are concealed, in spring, strings of small, green flowers. We might despise these unsightly things but for the drupaceous fruit which follows—large, round, oily nuts. Then, how beautiful the wood! Scarcely inferior to the mahogany of Yucatan. Of a fine chocolate brown in its native state, black-walnut† asks no coloring, but polish only, when wrought into some of the most costly furniture in the parlors of the rich. This noble tree was universally abundant here, but, like meaner trees, it has been recklessly sacrificed to clear the way for corn, and desecrated, as it were, from the higher uses to which its beauty entitles it, to the common purposes of fuel or rail fence. But now, let the woodman forbear, for the time is approaching when every black-walnut tree will be a treasure to its possessor.

The oaks and hickories constitute the commoners of our forests, often to the exclusion of nearly every other genus. Indeed, there are extensive regions peopled by oaks alone. But as if, in these oak forests, to compensate the want of variety in *genera*, the *species* are multiplied to such a degree that the botanist still finds scope for his most active and interested observation. Besides the red ‡ and the white § oak, well known also to the New Englander, we have the huge and stately black oak,|| looking as sturdy as Atlas, able to sustain a world upon its shoulders. The pin oak,|| whose dead limbs, projecting from its trunk, liken it to a ladder, with its light and open foliage; the iron oak,†† with cross-shaped (hardly *stellate*), leaves; the black-jack, with dark green, massy foliage, are also among our characteristic species. But the fairest among the oaks as an ornamental tree, is the laurel oak, called also shingle oak,††

**Aesculus flava*. †*Juglans nigra*. ‡*Quercus rubra*. §*Q. alba*. ||*Q. tinctoria*.
||*Q. palustris*. ††*Q. stellata*. ††*Q. imbricaria*,

so remarkable for its leaves, which are never lobed and sinnate like those of its congeners, but perfectly entire, lance-shaped, thick, and shining. Its wood rifts kindly into shingles—a miserable substitute, often used by the new settlers for want of better; but under the sun's rays they speedily curl, and liken the roof which they cover to the back of a frightened alligator. Moreover, we find in the same forests, the chestnut oak,* the mossy-cup,† the over-cup,‡ and many others, so that he must be a good botanist who is able to distinguish all our species of this useful family.

Of the gum-tree,§ often of great size, whose toughness defies the beetle and wedges, it is not necessary to speak; but so remarkable is the aspect of yonder massive sycamore,|| vegetating in the gravel-beds of the stream, and so characteristic of the Western bottom-lands, that we must pay them here a passing notice. This tree, called also the American plane tree, and the button-wood, abounds in every section of the Union, but seems to attain the highest perfection only in these rich bottoms. Here they stand in clumps, some erect, some bending over the water, others leaning toward his neighbor, as if in close consultation, all looking like so many towers in ruins, covered with moss, and wreathed with ivy.

We mention the single species of the beech,||| abundant in our woods, as being gigantic when compared with the dimensions which it attains at the East. But our maples and elms, both in abundance and magnitude, must yield the palm to those which flourish there. Only four species of maple, the red, white, black, and the rock,†† are found here, against six species there. The rock maple, the crown of the deciduous woods of New England, here loses its pre-eminence, in comparison with many other genera, and even with its allied species, the black maple—the “sugar-tree” of the Hoosiers, well known to all.

But time bids us hasten. We may not linger among the forest trees; but before we bid them adieu, let us cast a single glance upon the humble shrubs beneath them, and skirting the groves, throughout prairies and barrens. Three only are so abundant as to merit the envy of the husbandman, and give importance to the occupation of the grubbing-hoe: viz., the red-root,†† the sassafras,||| and the hazel.||| The first is the “Jersey tea,” well known to our ancestors, with downy-leaves, and close,

* *Quercus castanea.* † *Q. olivaeformis.* ‡ *Q. macrocarpa.* § *Nyssa multiflora.*

|| *Platanus occidentalis.* ||| *Fagus sylvatica.* †† *Acer rubrum, dasycarpum, nigrum, and saccharinum.* †† *Ceanothus Americanus.* §§ *Sassafras officinale.*

||| *Corylus Americana.*

round clusters of white flowers; the second, famous for its spicy, aromatic bark; and the third for its nuts.

It is not unusual to meet with parks and shrubberies composed of foreign genera and species, carefully planted and nursed, in grounds from whence a native and nobler growth has been destroyed, to give them room. To slight and reject the products of our own soil for the sake of that which is foreign, merely because it *is* foreign, is evidence of a preposterous taste, against which we would earnestly protest. We have, in our own American forests, species endowed with every trait which we value in utility, ornament, or shade. Do we prize beauty of foliage, leaves dark green, waxen, and shining? Such are those of the liquidambar (sweet gum), the liriodendron, and the laurel oak. Do we ask for a heavy and sombre shade? Such have the beech, the maple, and the elm. Do we admire the tree which clothes itself with gay and brilliant flowers as well as leaves? What can delight us more than the florid cornus, the white thorn, the purple cercis, or the resplendent tulip-tree? If you delight in the picturesque, then the sycamore, the black-jack, the honey-locust, and the Osage orange (*Maclura*), will serve you well. Go not to China for its ill-scented ailanthus, nor to Japan for its paper-mulberry, nor to Lombardy for its poplars—trees of rapid growth, indeed, but destitute of any other recommendation.

Fortunate, then, is that proprietor, who, when he first entered the wilderness, with prudent forethought, left inviolate, here and there in clusters, the vigor of the forest, around the selected site of his dwelling, and yonder, just behind it, set bounds to that lovely park, with shaded walks and avenues, fanned by the summer breezes, vocal with birds by day, and loquacious insects by night.

OUR CLIMATIC VICISSITUDES.

THE weather, that inexhaustible topic of conversation, has, thus far, marked "the year of grace," 1856, by a degree of temperature lower than ever before recorded in this part of the world. Science, which predicts eclipses for all future time, with an accuracy so unerring that even the fraction of a second is noticed; which tells us when all the changes of "the inconstant moon" will occur; and which can with ease the rolling "tides presage," is as mute as dull-eyed ignorance

itself, concerning our prospects for weather. True, there have not been wanting those who claimed to have discovered meteorological systems, by the use of which the weather might be predicted; and predictions were ventured accordingly; and the only deficiency in the systems seemed to be, that their prophecies oftener *failed* than *came to pass*; a rather serious defect, it is true, but which, nevertheless, is all that the systems lack of perfection! The utmost that has, as yet, been accomplished in the weather department, is the acquisition of a vast number of observations, made in different parts of the world, upon the course of the winds, the amount of rain, and the fluctuations of the barometer and thermometer, etc. These facts being collected, collated, and placed before the philosopher, he can tell in what condition the weather was, at any one time, over a great extent of country; and thus he can trace out the laws which governed any noted atmospheric disturbance, such as a storm of wind, or rain. To have such observations made is the plan of the Smithsonian Institute. They have secured the services of some two hundred observers, in various parts of the country, whose duty it is to keep the weather records, similar to the one published in the present number of this journal. These are transmitted monthly, to the meteorologist of the Institute, at Washington, who gives the result of a comparison of them, all together, and then places them in safe keeping, for future reference. In this way, several interesting facts have been already ascertained. For instance, these records show that all, or nearly all, changes in the weather, of any kind, occur first at the west, and work their way, gradually, toward the east; thus, in the summer of 1853, an unusually warm time occurred about the middle of June—beginning on the twelfth and thirteenth, at the extreme west, viz., Minnesota, Wisconsin, and Iowa, but did not reach the extreme east until the seventeenth and eighteenth of that month. Another wave of hot air started on the nineteenth of the same month in Texas, and was about four days in reaching New York; and on the thirtieth another, occupying about one day and a half in traveling from St. Louis to Washington. By citing other cases from the same record, we might show that nearly all changes of an opposite nature, *i. e.*, from warm to cold, proceed in the same direction; and in the case of great storms, the velocity with which they travel *toward the east*, is very great. So well is this known, that whenever a storm occurs on the westernmost of the chain of great lakes, the telegraph apprises all ports eastward, in order that their shipping may be duly prepared for the blast that ere long comes rushing on, from west to east.

We notice, too, by inspecting these records, that the changes from warm to cold are, during the winter months, extremely sudden. For

example: at Farmer's College, on the 20th of January, 1854, the thermometer, at 2 P. M., stood at 54° ; at 7, next morning, it stood at 10° , a fall of forty-four degrees in seventeen hours. This sudden fall was occasioned by a change of wind, from the south around to the north-west. Again: February 2d, same year, the thermometer, at 7 A. M., was at 51° ; next morning at the same hour, it stood at 14° . Once more: March 17th, of the same year, the thermometer, at 2 P. M., stood at 71° , and the wind south-west. At 7, next morning, the thermometer stood at 27° , with the wind north-west. Another change of forty-four degrees in seventeen hours.

Such changes are common in this region, and are still more sudden and violent in the open prairie lands, where the wind, unimpeded by hill or forest, whips about from one point of the compass to another, with amazing rapidity. An old resident of Illinois says, that one winter day, at 9 o'clock, A. M., the mud in front of his school-house, where he was teaching, was so soft and deep that a horse could scarcely get through it. At 4 o'clock in the afternoon of the same day it was frozen so hard that a heavy wagon passed over it, without breaking through.

Changes like these are wholly unknown in England. There, the thermometer has a limited range, rarely rising above 70° in summer, or descending below 20° in winter; while here, the mercury dances up and down the tube, through an extreme range of one hundred and twenty-five degrees!

What can be the cause of our unsettled weather—of these great and sudden changes?

Mr. Russell, a scientific Scotchman, who traveled extensively in this country, says that it is owing, chiefly, to the modifying influence exercised by the Rocky Mountains upon the great aerial currents of the globe. Every school-boy is aware that the ascent of the heated air at the equator causes the flow of an under-current from the north-east toward the tropics, while an upper-current, in the opposite direction, restores the equilibrium. As the north-east trade-wind approaches the equator, it gradually turns more directly west, and if we follow it across the Atlantic, we shall see that when it strikes against the towering Cordilleras of Mexico, it will be gradually deflected northward, along their eastern slope, and finally overflow the whole Mississippi valley, producing in summer those extreme heats, for which this region is remarkable, when the thermometer, even as far north as Chicago, rises nearly to 100° in the shade. Even in the winter it frequently brings the thermometer above 60° , generally making that lovely weather, occasionally known to our winters, when a warm, golden mist fills the whole air.

But suddenly the scene changes. The air of the whole region, having become lighter by its heat, tends upward. Then, to supply its place, the cold upper-current from the west plunges over the Rocky Mountains, and, insinuating itself underneath the western edge of the body of warm air, rushes along toward the east, producing everywhere in its course, those sudden descents of temperature described above.

THE OHIO POMOLOGICAL SOCIETY.

THE seventh biennial session of the Ohio Pomological Society was held at Cleveland, January 8th, 9th and 10th, 1856. We are pleased to learn that the attendance was large, and the proceedings of more than usual interest. The prospects of the Society are most flattering, and its capability for usefulness is beyond estimate. We give, below, the excellent, practical Address of PRESIDENT ERNST, commanding it to our readers as a production well worthy of attentive perusal.

PRESIDENT ERNST'S ADDRESS.

BRETHREN AND FRIENDS: Sincerely rejoicing to meet you again, to wish you all a happy new year, with long life, health and happiness, and to enjoy many returns of the same, I welcome you to the *seventh biennial session* of the "*Ohio Pomological Society*."

We have abundant cause of gratitude to the *Governor of the Universe*, for preserving our health and lives, affording us the opportunity of thus once more assembling on such an interesting occasion. Interesting, indeed, for we have here before us a display of *His* unbounded goodness, in the fruits of the land, with which we are so abundantly surrounded in varied forms and characters, on these tables.

We have not come from our homes on an errand of *speculation*, for selfish ends: the benefit of a *class* only! No, our mission is of universal *philanthropy*. We meet to consult on matters of comfort and good to all—to acquire a more thorough knowledge of the *tree*, the *vine*, and *their fruits*—the best means of improving them—to acquaint ourselves more fully with the nature of their enemies, and their various modes of attack; the best means to counteract their destructive effects, and if possible, to learn how to exterminate them. These are the objects of our mission. If we act wisely, we shall confer innumerable blessings, not only on our cotemporaries, but on millions who will never hear our

names; and, as a reward, we shall have the satisfaction, when we retire from the world, and leave its busy scenes, to feel that we have done something to promote the comfort of those who shall occupy our places.

The knowledge of Pomology is yet in its infancy. It may be said that, as a science, it is just beginning to be understood. It is true, writers on it may be traced to a remote period. It is also true, that not a few good varieties of fruit have long been known and cultivated. But it is equally true, that only within the present century can we date any considerable advancement toward a scientific and systematic improvement of the qualities of fruit in general. No other period in the world has produced a VAN MONS. To him, more than any other, are we indebted for the many rich and luscious pears that have been given to the world. It is true, others have done well, but they were incited to follow, rather than to lead; but for doing even this, they are entitled to our highest gratitude. The apple, plum, and peach have no one to point to as their presiding genius, but owe their improvements more to chance and accidental causes than to science. This, to some extent, was true of the cherry, until a noble son of our own Ohio gave the world the rich result of a life devoted to its scientific improvement.* The strawberry and the raspberry have each contributed largely to prove their capacity for improvement in the hands of science. In the grape, adapted to out-door culture, but little has been effected in the way of improvement over nature's rich store. The gooseberry and the currant have each received much attention, and in the former wonderful improvement has been made.

It is, however, not to be *disguised*, that while *science* has improved the quality of many of our fruits, *especially the pear*, the tree is less capable of enduring the vicissitudes of climate, or, rather, is more subject to *disease and sudden death*. Whether this be a necessary consequence of the improvement in the quality of the fruit, or if it be the result of *mispapplication of principle in scientific practice*, I must leave to your better judgment to decide. We must, however, not rest satisfied with what has been done. It is for us to follow on, and with the lights before us, we shall have no difficulty in finding our way to practical results, far beyond the most sanguine expectations. It is a field in which all will find a most pleasant labor.

- Two prominent systems are practiced in the improvement of fruits, (I should rather say, the pear). Each has produced very satisfactory

* Allusion is here made to the distinguished Prof. J. P. KIRTLAND, of Cleveland, Ohio.

results. The first is that which *the ever to be remembered* Van Mons practices, and should be called his system. His method is, to go back and plant the seeds of a good natural fruit; to select from their product such as bear evidence by the leaf, wood and general growth, of the susceptibility of an improvement in their fruit; to encourage their fruiting at as early a period as possible, by budding, or grafting on older fruit-bearing trees; to select from their first fruiting the best specimens, those that are most fully developed, and plant the seed of these, selecting the most perfect ones for this purpose. From the product of these, again select as before, graft or bud, and so continue the process to an indefinite period—each practice improving on the fruit of the last. The method has proved wonderfully successful in the hands of its author; but it is to be feared that this has often been accomplished at the expense of the hardiness of the tree. It should be borne in mind that there is a close analogy between vegetable and animal life, as to their re-production of individuals; that the production of fruit is merely a part of the process in the organization of a new being, separate and distinct from real vitality, containing only its germ in the seed, which, for its *existence* and *final results*, is as *essentially the effect of the union of two parents*, as the *generation and birth of an animal*. If it be a fact that a continued breeding between the near family connections in animal life tends to disease and impair the active vital functions, is it not to be presumed that the same results will follow from a continued in and in breeding of one branch, (brother and sister, if you please), of the same family, in the re-production of any variety of fruit trees? And does it not furnish a satisfactory solution for the frequent destruction of our pear trees, by what is termed the fire blight? I suggest this thought for your consideration.

The other system of practice in this particular is that of *hybridizing*—the crossing of different varieties and remote connections of the same species, by removing the stamens from the bloom of one variety, and then fertilizing or impregnating the pistils with the pollen of some other variety. This has been, very appropriately, styled “Knight’s Theory,” in honor of the eminent English Pomologist and Horticulturalist who may be said to be its author, at least as applied to pears. This system, however, requires the application of more practical scientific skill, to insure success, than the other. It is to this system, however, in my judgment, that we must look for the restoration of the hardiness of the pear-tree, that may incapacitate it to resist the rigor and to successfully combat the vicissitudes of our climate. In it we find the element of control, not only over the

quality of the fruit, but, also, over the hardiness of the tree. We select and bring in contact the parents whose qualities we wish to combine. For instance, we want to effect a cross of the *Seckel*, and throw the fine and excellent qualities of its fruit with the hardiness of the tree into the *Bartlett*, or the *Duchess D'Angouleme*; to effect this, it is necessary to remove from the bloom of the variety we wish to change, immediately on its expanding, the stamens which contain the impregnating element, and which are easily distinguished from the pistils by the length they rise above them. This operation is best performed with a pair of pointed scissors; and in the operation, the bloom should be held downward, in order to prevent the escape of the pollen and its falling on the pistils. This effected, without delay, the pistils of the variety to be impregnated should at once be fertilized with the matured pollen of the fully expanded *Seckel* bloom, which, in this case, becomes the *father* of the offspring; and we have good reason to believe that its character will mix with, and, perhaps, predominate over that of the *mother*. Great care is necessary in this process of fertilization, that the elements of fecundation be not mixed, by the agency of insects, and that the pollen of the stamen be brought fully in contact with the pistils. In the morning, before the insects have commenced their work of carrying the pollen from bloom to bloom, is the best time to perform the operation. After it has thus been artificially impregnated, thin gauze should be placed over the bloom, to prevent insects from making a mixture; the gauze should be removed as soon as the fruit is set. Fruits closely resembling each other in flavor and character should not be used, but rather those differing in some strong points. The seed of the fruit which is produced from this crossing, is our reliance for the new and improved variety, or varieties.

We need but turn to the Florist, and see the wonderful effect produced by this system on the *rose*, to stimulate and encourage us. Ours, it is true, will require more time to obtain the same results, but the results are just as sure. A few years since, the only ever-blooming rose was a house plant, and this of a very inferior character; now every garden abounds with the most magnificent, and perfectly hardy, ever-blooming roses. So it may be with the pear, if the same perseverance and skill are employed, until our gardens and orchards shall abound with a highly improved class, in the quality of fruit and the hardiness of tree, which will banish the fire-blight from the land. Let me, then, urge on all the young and *old* men of our association, and others, not to permit the next spring to pass without beginning this work, and persevering in it so

long as life endures. Teach it to your children and your children's children. I have done something at it, and hope its good effects will be felt, though I may not be here to partake of its fruits.

Let me not be thought tedious, however, and to have taken up the time that should be devoted to a discussion of the fruits before you. I am sure that, on reflection, the importance of what I have advanced will be felt, and acted upon. It is appropriate that we take a step forward, and not leave chance, unguided, unaided, in her efforts to improve and bring into existence new varieties for us to pass judgment on, and assign them their place in the catalogue. Our work of *collating* from this *source* will soon be accomplished. It may not be amiss to remark, that as the art of grafting and budding is now universally adopted—that plantations of fruit trees are no longer permitted to grow and mature fruit on the natural stock—by this innovation, we are depriving *chance* of accomplishing her accustomed work. It, therefore, is incumbent on us to be active, and put our knowledge in a shape to produce practical results. Ohio, with a soil unsurpassed, a climate mild and balmy, must not be content to be an indifferent looker-on, or content even as a follower; she should aim to *lead* in the noble enterprise. She did so in the forming the *first State Pomological Association*, from which we have good reason to believe that great benefits have resulted.

In conclusion, permit me to return you my sincere thanks for the uniform kindness that has been extended to me, during the entire time of our organization, and especially for the flattering honor you have conferred on me during most of this time, as your presiding officer—a trust which is now about to expire, and from which I shall be happy to be relieved by the selection of some one, more competent than myself, to discharge its important duties. In retiring from this responsible duty, I may be pardoned for saying, that the want of experience has, not unfrequently, been the cause of doing less than might have been done, or doing what was done, not as well as it should have been; still, the leading motive has been, with an honest zeal, to promote the best interests of our association."

MINNESOTA RICE.—The wild rice of the swamps in Minnesota, has produced an abundant crop this year, and upon this myriads of ducks and geese fattened until the water froze up. The Indians also make great use of wild rice. It has been sown in Connecticut and produces well.

The Neshanock, or Mercer Potato.

THIS potato is regarded by most amateurs, as far superior to any other, in the delicacy of its flavor, its uniform size, and indeed as possessing all the excellencies belonging to this valuable vegetable, in the highest degree. There is no other potato that will bring as high a price in the market; and while there are many kinds that yield better, yet, taking all its superior qualities into the account, there is no kind as profitable.

The Neshanock, when first introduced, was much more vigorous in its growth, and productive, than at present, and fears are entertained by many that its cycle is almost completed, or, vulgarly speaking, that it is "about run out." I received a valuable hint from an experienced and successful cultivator, a few days since, which I will give you. He remarked that this potato, originally, was much more deeply tinged with blue than it is generally now, and that blue streaks pervaded the inside of the entire tuber. Of this, all who are acquainted with the Neshanock (and who is not?), must be aware. In proportion to its degeneracy this blue disappears, until having lost its vigor, the eyes increase in number, are more shallow, and the potato becomes white outside and in. Now, says he, on digging my seed, I select all the blue noses, whether great or small, when I dig my crop; and I saw him when digging, and he would seize upon the smallest tuber as soon as upon the largest one, provided its *color was right*. For, says he, these small ones, of this shade, will throw up quite as vigorous a stalk as the large ones; much stronger than any, however large, whose surface has become white. This hint is worthy of observation, and I have no doubt, to all who will follow it, will prove valuable. This man raises a larger crop, yearly, on less ground, than any of his neighbors; and his potatoes command a higher price; and he goes to the trouble, every fall, of selecting his seed, as he digs, from his entire crop. Last fall he raised over three thousand bushels of the most beautiful Neshanock potatoes I ever saw, and they will command a premium of from ten to fifteen cents per bushel at any time, in the market.

NEW ORLEANS SHIP CANAL.—A company has been organized in New Orleans to build a ship-canal from the Mississippi river, at that city, to Lake Borgne.

[From the Model American Courier.

THAT JOHN MASON.

BY JOHN JONES, JR.

'What kind of people have you here?' I asked of my acquaintance, after becoming a citizen of the beautiful little village of Moorfield.

'Very clever people, with one or two exceptions,' he replied. 'I am sure you will like us very well.'

'Who are the exceptions?' I asked; 'for I wish to keep all such exceptions at a distance. Being a stranger, I will take a hint in time. It is an easy matter to shun acquaintanceship, but by no means so easy to break it off after it is once formed.'

'Very truly said; and I will warn you in time, of one in particular. His name is John Mason. Keep clear of him, if you wish to keep clear of trouble. He's smooth and oily as a whetstone, and, like a whetstone, abrades everything he touches. He's a bad man, that John Mason!'

'Who, or what is he?' I asked.

'He's a lawyer, and one of the principal holders of property in the township. But money can't gild him over. He's a bad man, that John Mason; and my advice to you, and to every one, is, to keep clear of him. I know him like a book.'

I'm very much obliged to you,' said I, 'for your timely caution, and will take care to profit by it.'

My next acquaintance bore pretty much the same testimony, and so did the next. It was, that John Mason was not the right kind of a man, and rather a blemish upon the village of Moorfield, notwithstanding he was one of the property-holders in the township.

'If it wasn't for John Mason,' I heard on this hand, and 'if it wasn't for that John Mason,' I heard on the other hand, as my acquaintance-ship among the people extended. Particularly against him was the first individual who had whispered in my ears a friendly caution, and I hardly ever met with him, but he had something to say about 'that John Mason.'

About six months after my arrival in Moorfield, I attended a public meeting, at which the leading men of the township were present. Most of them were strangers to me. At this meeting, I fell in company with a very pleasant man, who had several times addressed those present, always in such a clear, forcible and common-sense way, as to carry

conviction to all but a few, who carped and quibbled at everything he said, and in a very churlish manner. Several of those quibblers I happened to know. He represented one set of views, and they another. He had regard to the public good; theirs looked, it was plain, to sectional and private interests.

'How do you like our little town?' said the individual to me, after the meeting had adjourned, and little knots of individuals were gathered here and there for conversation.

'Very well,' I replied.

'And the people?' he added.

'The people,' I added, 'appeared to be about a fair sample of what are found everywhere—good and bad mixed up together.'

'Yes. That, I suppose, is a good general estimate.'

'Of course,' I added, 'we find in all communities certain individuals who stand more prominent than the rest—distinguished for good or evil. This appears to be the case here as well as elsewhere.'

'You have already discovered, then, that even in Moorfield there are some bad men?'

'Oh, yes! there's John Mason, for instance.'

The man looked a little surprised, but remarked, without any change of tone:

'So you have heard of him, have you?'

'Oh, yes.'

'As a very bad man?'

'Of course. You know him, I suppose?'

'Yes, very well. Have you ever met him?'

'No, and never wish to.'

'You've seen him, I suppose?'

'Never. Is he here?'

The man glanced around the room and said, 'I don't see him.'

'He was here, I suppose?'

'Oh, yes; and addressed the meeting several times.'

'In one of those sneering, ill-tempered answers to your remarks, no doubt.'

The man slightly bowed his head, as if acknowledging a compliment.

'It's a pity that such men as this John Mason often have wealth and shrewdness of mind, to give them power in the community,' said I.

'Perhaps,' said my auditor, 'your prejudices against this man are too strong. He's not perfect, I know; but even the devil is often painted blacker than he is. If you knew him, I rather think you would estimate him differently.'

'I don't wish to know him. Opportunities have offered, but I have always avoided an introduction.'

'Who first gave you the character of this man?'

'Mr. Laxton,' I replied. 'Do you know him?'

'Oh, yes; very well. He speaks ill of Mason, does he?'

'He has cause, I believe.'

'Has he ever explained to you what it was?'

'Not very fully. But he gives him a general bad character, and says he has done more to injure the best interests of the village, than any ten of its worst enemies that exist.'

'Indeed! That is a sweeping declaration. But I will frankly own, that I can not join in so broad a condemnation of the man, although he has his faults—and no one knows him, I think, better than I do.'

This made no impression on me. The name of John Mason was associated, in my mind, with everything that was bad, and I replied, by saying, that I was well satisfied in regard to his character, and didn't mean to have anything to do with him, while I lived in Moorfield.

Some one interrupted our conversation at this point, and I was soon separated from my very agreeable companion. I met him frequently afterward, and he was always particularly polite to me, and asked me if I had fallen in with John Mason yet; to which I always replied in the negative, and expressed myself freely in regard to the personage mentioned.

Careful as we may be to keep out of trouble, we are not always successful in our efforts. When I removed to Moorfield, I supposed my affairs to be in a good way; but things proved to be otherwise. I was disappointed, not only in the amount I expected to receive from the business I followed in the village, but in the receipt of money I felt sure of getting by a certain time.

When I first came to Moorfield, I bought a piece of property of Laxton, (this business transaction made us acquainted), and paid cash down one-third of the purchase money; the property remaining as security for two-thirds, which I was under contract to settle at a certain time. My first payments were two thousand dollars. Unfortunately, when the final payment became due, I was not in funds, and the prospect of receiving money within five or six months was anything but good. In this dilemma, I waited upon Laxton, and informed him of my disappointment. His face became grave.

'I hope it will not put you to any serious inconvenience,' I said.

'What?' he asked.

'My failure to meet this payment on this property. You are fully

secured, and within six months I will be able to do what I had hoped to do at this time.'

'I am sorry, Mr. Jones,' he returned, 'but I have made my calculations to receive the sum due at this time, and can not do without it.'

'But I haven't the money, Mr. Laxton, and have fully explained to you the reason why.'

'That is your affair, not mine, Mr. Jones. If you have been disappointed at one point, it is your business to look to another. A contract is a contract.'

'Will you not extend the time of this payment?' said I.

'No sir. I can not.'

'What will you do?'

'Do? You ask a strange question!'

'Well, what will you do?'

'Why, raise the money on the property.'

'How will you do that?'

'Sell it, of course.'

I asked no farther questions, but left him and went away. Before reaching home, to which place I was retiring in order to think over the position in which I was placed, and determine what steps to take, if any were left to me, I met the pleasant acquaintance I had met at the town-meeting.

'You look grave, Mr. Jones,' said he, as we paused, facing each other.
'What's the matter?'

I frankly told him my difficulty.

'So, Laxton has got you in his clutches, has he?' was the simple, yet I perceived meaning reply that he made.

'I am in his clutches, certainly,' said I.

'And will not get out of them, very easily, I apprehend.'

'What will he do?'

'He will sell the property at auction.'

'It won't bring his claim, under the hammer.'

'No, I suppose not, for that is really more than the property is worth.'

'Do you think so?'

'Certainly I do. I know the value of every lot of ground in the township, and know that you have been taken in, in your purchase.'

'What do you suppose it will bring at a forced sale?'

'Few men will bid over twenty-five hundred dollars.'

'You can not be serious.'

'I assure you I am. He, however, will overbid all, to four thousand. He will probably have it knocked down to him at three thousand, and

thus come into the unincumbered possession of a piece of property upon which he has received two thousand dollars.'

'But three thousand dollars will not satisfy his claim against me.'

'No. You will still owe him a thousand dollars.'

'Will he prosecute his claim?'

'He!' and the man smiled. 'Yes, to the last extremity, if there be hope of getting anything.'

'Then I am certainly in a bad way.'

'I'm afraid you are, unless you can find some one here who will befriend you in the matter.'

'There is no one here who will lend me four thousand dollars upon the piece of property.'

'I don't know of but one man who is likely to do it,' he answered.

'Who is that?' I asked, eagerly.

'John Mason.'

'John Mason! I'll never go to him.'

'Why not?'

'I might as well remain where I am, as to get into his hands. A sharper, and a lawyer to boot! No, no; better to bear the evils that we have, than to fly to others that we know not of.'

'You may get assistance some where else, but I am doubtful,' said the man, and bowing politely, passed on, and left me to my own unpleasant reflections.

Laxton made as quick work of the business as the nature of the case would admit, and in a short time the property was advertised at public sale. As the time for sale approached, the great desire to prevent the sacrifice, suggested the 'dernier resort' of calling upon Mason. But my prejudice against the man was so strong, that I could not get my own consent to do so. But accidentally meeting with my unknown friend, he asked :

'Have you been to see Mason?'

I shook my head.

'Then you have made up your mind to let the scoundrel, Laxton, fleece you out of your property?'

'I see no way of preventing it.'

'Why don't you try Mason?'

'I don't believe it would do any good.'

'I think differently.'

'If he did help me out of this difficulty,' I replied, 'it would only be to get me into a more narrow corner.'

'You don't know any such thing,' said the man, in a different tone

from any in which he had yet spoken, when Mason was the subject of our remark. ‘Think, for a moment, upon the basis of your prejudice. It lies mainly upon the assertion of Laxton, whom your own experience has proved to be a scoundrel. The fact is, your estimate of Mason’s character is entirely erroneous. Laxton hates him, because he has circumvented him more than a dozen times, in his schemes of iniquity, and will circumvent him again, if I do not greatly err, provided you apply to him.’

There was force in this view. True enough, what confidence was there to be placed in Laxton’s words? And if Mason had circumvented him, as was alleged, of course, there was a very good reason for detraction.

‘At what hour do you think I can see him?’ said I.

‘I believe he is usually in about twelve o’clock.’

‘I will see him,’ said I, with emphasis.

‘Do so,’ said the man, ‘and may your interview be as satisfactory as you can desire.’

At twelve, precisely, I called upon Mason — not without many misgivings, I must own. I found my prejudices still strong as to the good result. I could not help feeling serious doubts. On entering his office, I found no one present but the individual under whose advice I had called.

‘Mr. Mason is not in?’ said I, feeling a little disappointed.

‘Oh, yes, he is in,’ was replied.

I looked around, and then turned my eyes upon the man’s face. I did not exactly comprehend its expression.

‘My name is John Mason,’ said he, bowing politely; ‘so be seated, and let us talk over the business upon which you called to see me.’

I needed no invitation to sit down, for I could not have kept my feet if I had tried, so suddenly and completely did his words astonish and confound me.

I will not repeat the confused, blundering apologies I attempted to make, nor give his gentlemanly replies. Enough, that an hour before the time at which the sale was advertised to take place, on the next day, I waited upon Laxton.

‘Be kind enough,’ said I, ‘to let me have that obligation upon which your present stringent measures are founded.’

The man looked perfectly blank.

‘Mr. John Mason,’ said I, ‘has generously furnished me with the funds necessary to save my property from sacrifice, and will take the securities you hold.’

'Curse that John Mason!' ejaculated Laxton, with excessive bitterness, turning away abruptly, and leaving me where I stood. A suspicion that he meant to let the sale go on, if possible, crossed my mind, and I returned to Mason, who saw the sheriff, and had the whole matter arranged.

Laxton has never spoken to me since. As for 'that John Mason,' I have proved him to be a fast friend, and a man of strict honor in everything. So much for neighborhood SLANDER.

AN EXPERIMENT WITH CONCENTRATED FERTILIZERS ON GRASS.

THE following is taken from an experiment reported in that excellent paper "*The American Farmer*:"

"What is the cheapest manure for mowing-lands, is a question not easily answered. Probably, no one fertilizer is the best under all circumstances. We tried an experiment last spring, which has settled this question for our own premises. The lot selected for the trial was an old mowing field, laid down a dozen years ago, or more, and cutting not far from a ton to the acre. Four plots of ground, of four square rods each, adjoining each other, were measured off, staked and numbered.

"May 3d, in a rain, we sowed fifteen pounds of De Burg's super-phosphate of lime upon number one. On number two we sowed fifteen pounds of Mapes' improved super-phosphate of lime. On number three we put fifteen pounds of Peruvian guano, that had been moistened and mixed with charcoal cinders for a fortnight. On number four we put nothing, in order to show the natural product of the land.

"A week after the application, the plot manured with the guano could be distinguished at a distance, by its greater luxuriance, and darker green. The effect of the super-phosphate was not very manifest. About the 1st of July, the grass upon the several plots was carefully cut, dried and weighed. Number one gave eighty-four pounds; number two, seventy pounds; number three, one hundred and four pounds; and number four, fifty-nine pounds. The following tabular arrangement gives a better comparative view.

Manure.	Date of application.	Date of Cutting.	Area,	
Nothing,	May 3d	July 1st	1-40 acre	59 lbs.
Mapes' imp. sup. lime,	" "	" "	do	70 "
De Burg's sup. lime, .	" "	" "	do	84 "
Peruvian guano, . . .	" "	" "	do	104 "

"It will be seen that the manures were applied in about twice the quantity usually recommended, or at the rate of six hundred pounds to the acre. The return of Mapes' super-phosphate of lime was eleven pounds of hay for fifteen pounds of the manure; De Burg's gave twenty-five pounds; and the guano forty-five pounds.

"We had purposed to cut a second crop upon these plots of ground, but the drought has been so severe that it will hardly pay. We had supposed it quite probable, that the effects of the super-phosphates would be more manifest upon the second cutting than upon the first, but now (September 1st), the after-math is looking much the best upon the plot treated with guano. It may be that another season will bring number one and two up to a level with number three.

"It is quite evident that it will pay well to dress old mowing fields with Peruvian guano, but it ought to be applied very early in the spring, and directly after thoroughly harrowing or scarifying the old sod. We got here in the first cutting forty-five pounds of hay for the fifteen pounds of guano, or nearly enough to pay for the manure, which we suppose will improve the yield for at least three or four years to come. In a favorable season, we should have had at least a half crop at the second mowing, half of which should go to the credit of the guano, making seventy-one pounds of hay for fifteen pounds of guano.

"The super-phosphates may redeem themselves another year. We shall watch the effect of these manures next season, with considerable interest.

"Last year, on a red clover patch, super-phosphate was more successful than guano. They were spread broadcast on the same day, early in May. We did not weigh the quantities applied, nor the quantity of clover produced — we only judged by the eye."

PROCEEDINGS OF THE CINCINNATI HORTICULTURAL SOCIETY, FOR JANUARY, 1856.

JANUARY 5, 1856.

REGULAR MEETING. Vice President, J. P. FOOTE, in the Chair; J. K. GREEN, Secretary, *pro tem.*

After reading and approval of the minutes of the last meeting:

Mr. Stoms desired an expression of opinion from the society as to the merits of *Longworth's Prolific Strawberry* as a fructifier for other

varieties. The Society was unanimously of the opinion, that the *Prolific* is one of the best for that purpose.

Wisicell's Hall. — The committee on obtaining a room for the future meetings of the Society, reported that they had rented Wiswell's Hall, for five years, at \$200 per annum. The Society received and adopted the report.

New Members. — Mr. D. C. Richmond, and Dr. C. S. Woodward, were elected members of the Society.

Fruit Committee. — Dr. Warder, chairman, made report on the fruit present for examination; which report was, on motion, laid on the table for future discussion.

Election of Officers, being the special order, was taken up. Mr. J. K. Green (who had been reported by former committee for president), declined being a candidate. On balloting, the result was announced as follows:

President. — F. G. CARY.

Vice Presidents. — J. P. FOOTE, A. H. ERNST, WM. ORANGE.

Recording Secretary. — GEO. GRAHAM.

Treasurer. — WM. ORANGE.

Librarian. — M. H. WHITE.

Council. — Messrs. J. SAYRE, M. McWILLIAMS, G. SLEATH, WM. HEAVER, S. W. POMEROY, S. S. JACKSON, W. STOMS.

Corresponding Secretary. — DR. J. A. WARDER.

Further elections were then postponed.

Cold Weather. — Various members made reports of the range of temperature indicated by thermometers, at the following localities, on the mornings of December 26, 1855, and January 4, 1856, viz:

At College Hill, Dec. 26th, 6° below zero; Jan'y. 4th, 8° below zero.

“ Mt. Washington,	“	4°	“	“	“	10°	“	“
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“ Clifton,	“	3°	“	“	“	4°	“	“
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“ Cumminsville,	“	6°	“	“	“	6°	“	“
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“ Reading Road,	“	4°	“	“	“	8°	“	“
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“ Pleasant Ridge,	-	-	-	“	“	11°	“	“
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SOCIETY ADJOURNED.

JANUARY 12, 1856.

The Society met in the new hall — the president elect, Prof. F. G. CARY, in the chair.

The President's Address. — Upon taking the chair the new president delivered an excellent and pertinent address, in which he spoke of the influence the Society had already exerted in the cause of horticultural

and agricultural science, and for the promotion of rural taste. "Let us nobly maintain," said he, "the high distinction claimed by this Society, of having been first in the introduction and promotion of that taste which embellishes the lawns, and gardens, and mansions, and cottages, that environ this queenly city, and which has given to us a Spring Grove Cemetery, whose quiet beauty, as the resting place of the dead, is destined soon to rival, if not to surpass, the far-famed Greenwood and Mount Auburn."

Speaking of the importance of our cultivation of the beautiful about our rural homes, the president handsomely remarked, that "This love of the beautiful ought to be cultivated, not only as it may afford gratification to the eye, but also as a source of moral refinement, the friend to virtue, and the foe to vice. Home should be associated in the experience and memory of childhood with all that is lovely and attractive—flowers, and paintings, and music. The vine over the door, the evergreen on the lawn, the plant in the window, the luscious o'erhanging fruit in orchard and garden, which so often has gladdened by its hue, and regaled with its fragrance and taste, all consecrated by the presence of parental love and domestic affection, furnish images of loveliness and purity to the plastic mind of childhood, which, lingering in memory, hover around the inner sanctuaries of the soul, and oft, amid the tempests of grief, and the desolations of age, will come like ministering spirits to revive the joys of other days, and spread a heavenly halo around the spot our hearts call our HOME!"

On motion of Mr. Ernst, a copy of the president's address was requested for publication.

J. K. GREEN, was appointed Secretary, *pro tem.*

Fruit Committee.—The Society elected Messrs. JACKSON, HOOPER, McWILLIAMS, and WARDER, the standing committee on fruit.

Flowers.—Standing committee on flowers: Messrs. JACKSON, SAUNDERS, SLEATH, EVANS, and HUTCHINSON.

Vegetables.—Standing committee on vegetables: Messrs. WORTHINGTON, PENTLAND, CONSADINE, SAYERS, and FOOTE.

On motion, ordered, that the discussion on northern fruits be postponed one week.

New Members.—Mr. George Brooks, and Mr. S. W. Hazeltine were elected to membership.

Mr. Buchanan said, that in view of the remarkable nature of the present winter, and the importance of meteorological observations in general, he hoped a record would be kept by the Society, of all extraordinary meteorological changes, for convenience of reference hereafter.

Cold Weather.—On call of the president, various members reported the indications of the thermometer, in the following localities, on the COLD MORNING, January 9, 1856, viz:

College Hill,	- - -	6 A. M.	24° below zero.
Cheviot,	- - -	7 "	22° " "
Carthage,	- - -	5 "	26° " "
Cumminsville,	- - -	5 "	24° " "
Glendale,	- - -	6½ "	22° " "
Mt. Washington,	- -	6 "	20° " "
Reading Road,	- -	5 "	23° " "
Warsaw,	- - -	7 "	22° " "
Walnut Hills,	- -	2 "	24° " "
Cincinnati (city), (by Mr. J. Lea),			12° " "

Thus indicating a degree of cold unprecedented in the region of Cincinnati, since the settlement of the country.

JANUARY 19, 1856.

REGULAR MEETING. President CARY in the chair.

J. K. GREEN was appointed Secretary, *pro tem.*

Minutes of last meeting approved.

Salaries.—On motion, *ordered*, that a committee of three be appointed to prescribe duties and affix the salaries of Recording Secretary, Treasurer, and Librarian—Messrs. Ernst, Foot and Green the committee.

On motion, *ordered*, that suitable signs be procured for the doorway of the hall.

On motion of Mr. Buchanan, *ordered*, that the Society hold a spring exhibition.

Presented.—Mr. J. Fiske Allen, by his agents, Truman & Spofford, presented to the Society a handsome copy of his work on the Victoria Regia; for which the thanks of the Society were ordered to be communicated by the President to Mr. Allen.

Mr. S. W. Pomeroy resigned his office as member of the Council. Accepted, and nominations ordered for filling the vacancy caused thereby.

Northern Fruits Discussed.—Mr. Ernst moved to take up the report of the Chairman of the Fruit Committee, made to the Society, January 5th. Adopted, and the report, in the following language, was taken up and fully discussed, viz:

“Very fine, all of them, and exhibiting the advantages of Northern latitudes in the growth of apples.”

Dr. Warder remarked that the report was based upon the fruit that at that time was upon the tables.

There being an unusual and very fine display of fruit upon the tables to-day, (including a fine collection from the Pomological Convention held at Cleveland last week), the members proceeded to discuss the report, and make comparisons between Northern and Southern fruit.

Mr. Warder said there were some very fine specimens of the Gate Apple upon the tables, and he was of the opinion that the Society thought the report of one of its ex-Presidents did that variety injustice, in classing it with apples unsuited to Southern Ohio.

Mr. Ernst said he had seen no reason to change his opinion upon the Gate.

Mr. Orange said, as regards the Belle Fleur in Southern Ohio, he had as good specimens as any he had seen from Northern localities.

Mr. Kelly said, the difficulty is, many of our fine fall apples are, in the North, winter varieties. He proceeded to name many of our winter varieties that were superior to those of the same variety grown in the North, both in size and flavor.

Mr. Ernst agreed with Mr. Kelly.

Mr. Sagers agreed that some varieties were superior, grown in the North, but, in the aggregate, were inferior to those grown in Southern Ohio.

Dr. Petticolas thought that some Northern varieties are better keepers in the North than in Southern Ohio.

Mr. Meves thinks that apples do not keep as well in this locality as they did thirty years ago.

Mr. Orange thinks it is owing to the want of enriching the soil about the trees by manuring.

Mr. Hatch thinks, from his experience, that apples in this locality are better, both in flavor and size, than they are in the North.

Mr. Cary said, the difficulty was, our fine fall varieties, when grown North, become winter varieties; and many of their winter varieties, grown in the South, became fall varieties.

The discussion here closed, and the Fruit Committee proceeded to cut and distribute the specimens among the members present, giving them an opportunity to decide for themselves.

Dr. Warder, the Chairman of the Fruit Committee, amended his report, so as to read:

"Very fine, all of them, and exhibiting the advantages of Northern latitudes in the growth of many varieties of apples for winter use."

Which report was unanimously adopted by the society.

Messrs. W. H. Clement and E. P. Cranch were elected members of the society.

A Siberian Winter.

The following graphic account of a Siberian winter, taken from "TRAVELS IN THE NORTH," we recommend as "*cold comfort*" to all grumblers at the "snug weather" of our present winter.

"The traveler in Siberia, during the winter, is so enveloped in furs that he can scarcely move; and under the thick fur hood which is fastened to the bear-skin collar, and covers the whole face, and can draw in, as it were by stealth, a little of the external air, which is so keen that it causes a very peculiar and painful feeling to the throat and lungs. The distance from one halting place to another takes about ten hours, during which time the traveler must always continue on horseback, as the cumbrous dress makes it insupportable to wade through the snow. The poor horses suffer at least as much as their riders; for besides the general effects of the cold, they are tormented by ice forming in their nostrils and stopping their breathing. When they intimate this, by a distressed snort and a convulsive shaking of the head, the drivers relieve them by taking out the pieces of ice, to save them from being suffocated. When the icy ground is not covered by snow, their hoofs often burst from the effect of the cold. The caravan is always surrounded by a thick cloud of vapor; it is not only living bodies, which produce this effect, but even the snow smokes. These evaporation are instantly changed into millions of needles of ice, which fill the air, and cause a constant slight noise, resembling the sound of torn satin or thick silk. Even the reindeer seeks the forest to protect himself from the intensity of the cold. In the tundras, where there is no shelter to be found, the whole herd crowd together, close as possible, to gain a little warmth from each other, and may be seen standing in this way quite motionless. Only the dark bird of winter, the raven, still cleaves the icy air with slow and heavy wing, leaving behind him a long line of thin vapor, marking the track of his solitary flight. The influence of the cold extends even to inanimate nature. The thickest trunks of trees are rent asunder with a loud sound, which in these deserts falls on the ear like a signal shot at sea; large masses of rocks are torn from their ancient sites; the ground in the tundras, and in the rocky valleys, cracks, forming wide yawning fissures, from which the waters which were beneath the surface, rise, giving off a cloud of vapor, and become immediately changed into ice. The effect of this degree of cold extends even

beyond the earth. The stars still glisten in the firmament, but their brilliancy is dimmed. The beauty of the deep polar star, so often and so justly praised, disappears in the dense atmosphere which the intensity of the cold produces."

ROTHSCHILD.

THE insufficiency of mere wealth alone to confer happiness is strikingly illustrated in the life of Nathan Myers Rothschild, the Jew, who died in London some years ago, "one of the most devoted worshipers that ever laid a withered soul on the altar of Mammon." For years he wielded the purse of the world, opening and closing it to kings and emperors as he listed; and, upon certain occasions, was supposed to have more influence in Great Britain than the proudest and wealthiest of its nobles—perhaps more influence than the Houses of Parliament taken together. He once purchased bills of the government, in a single day, to the amount of \$20,000,000, and also the gold which he knew the government must have to pay them; and with the profits on a single loan, purchased an estate which cost him \$750,000. But, with the clearest and widest comprehension in money matters, with the most piercing insight into all the possible effecting causes in the money market, and with ingenuity to effect the profoundest, most subtle, and most unsuspected combination—an ingenuity before which all the other prodigies of calculation that have, from time to time, appeared, sink into nothing—he was, withal, a little soul. He exercised his talents and calculating powers, not only for the accumulation of millions, and the management of national creditors, but also for the determination of the smallest possible pittance on which a clerk's soul could be retained in connection with his body. To part with a shilling in the way of charity cut him to the heart. One of his grand rules, "Never to have anything to do with an unlucky man or place," which was also one of John Jacob Astor's principles, however shrewd in a worldly point of view, was the very quintessence of selfishness and Mammonism. He was, in short, a thorough-going Mammon-worshiper—his whole soul converted into a machine or engine for coining guineas, and every noble emotion, immortal longing, dead within him. Guineas he did coin, to a sum that seems almost fabulous; but, with all his colossal wealth, he was profoundly unhappy; and, with sorrowful earnestness, once exclaimed to one congratulating him on the gorgeous magnificence of his palatial mansion, and thence inferring that he was happy: "*Happy? ME happy?*"

OUR VIEWS AND REVIEWS.

THE WINTER, after a fall of great beauty and salubriousness, has been, thus far, one of unparalleled severity. On the twenty fourth of December, 1855, the day before Christmas, the cold weather sat in, almost without premonition; and from that to this, we have been enduring a degree of cold almost hyperborean. The sleighing has been good: the Ohio River, opposite Cincinnati, has been for two weeks so frozen as to permit safe passage for teams and loaded waggon. But, amid all the unusual severity of the season the public health has been excellent, and no unusual degree of destitution and suffering known among the poor. But the winter of 1855-6, will be long remembered in this region, as the coldest known since the settlement of Cincinnati.

For the particulars we refer readers to the Meteorological Table, for the month, kept at Farmers' College, and published with this number. And it is perhaps proper to here assure our patrons, that each number of the Magazine will hereafter contain a tabular statement of the meteorology of the preceding month similar in form to the present tables. And these, being compiled for the uses, also, of the Smithsonian Institute at Washington, will be kept with all possible precision and studious care.

*An Address before the Warren County Agricultural Society, by JOHN MILLIKIN, Esq.—
Published by the Society, Lebanon, Ohio, 1855.*

A pamphlet, neatly printed, bearing the above title, has been laid on our table; and, upon perusal, we were gratified to find that the writer had embodied so much of plain, out-spoken philosophy with so much of eloquence and poetic beauty of manner. The farmers of Warren county may well pride themselves on such an address, and their liberality in giving it to the public in a form so attractive seems to signify their full appreciation of its merits.

Mr. MILLIKIN shows, with startling force, the utter neglectfulness of our government, State and national, in regard to agriculture. Indeed, his address abounds in solid, home-thrusts of truth, well calculated to awaken attention, and to be felt where they hit.

Speaking of what constitutes a good farmer, he says: "There are more things necessary to constitute good farming than 'have ever been dreamed of in our philosophy.' It consists in the proper application of labor and capital, and in the just management of farming operations, so as to secure, with a given amount

of capital and labor, the largest amount of income. To attain this object, the farmer should fully understand the nature and properties of soils—of what his particular soil is composed. He should be informed of the proportions of the several elements which enter into, and constitute the various kinds of grains, grasses, and other articles produced by him; he should be able to determine in what element any of his fields may be deficient, in order to the successful production of any specified crop; he should know what qualities of soils are exhausted by growing of any of the various crops usually cultivated, he should understand the various properties of manures, when, and in what condition, and how much to apply, in order to effect any object. He should be well informed in vegetable physiology—should understand the raising of domestic animals, their uses and food—the general management of labor, and when and how to be applied—the best modes of accomplishing particular results; and, in fine, he should be a man of *excellent common sense*—of *THOROUGH EDUCATION*—of *apt and inquiring disposition*—of *ripe experience*—of *great practical tact and business talent, and thoroughly active and attentive to all his duties.*"

Again, in speaking of the prejudices sometimes entertained against what is called "Book Farming," he says:

"While a want of suitable educational facilities and advantages is sensibly felt, there are other evils in the land, which retard the intellectual and physical improvement of the country, and impair its productive capacity; among which is one that farmers possess in a remarkable degree—prejudice. Prejudice *in favor* of old ways and plans of farming—of old implements—old, standard, superannuated notions—old lunar, and equally ridiculous kindred influences—and bitter, unyielding *prejudices against science*, as applied to their business—against the teachings of well-conducted experiments—against agricultural books and newspapers—new implements—new modes of producing particular results—against everything, in fine, that *is written or printed*, and which may be included in the very odious, yet comprehensive term, of "BOOK FARMING." Unfortunately, we have a class among us who imagine that all knowledge necessary for conducting farming operations is intuitive—the gift of nature. They not only disregard agricultural information as derived from other sources, but they sneer at and deride those who have wisdom enough to avail themselves of its advantages.

"Why should this bitter, senseless and uncompromising warfare be continued against 'Book Farming'?" What is it, after all, but the teachings of the laws of nature—unfolding the principles, and explaining the ways and means by which she operates—giving to you, through the medium of agricultural papers, and standard agricultural and scientific works, not only the well matured and enlightened views and opinions of men of deep research and practical knowledge, but giving to you, also, the results of various experimental processes, conducted by their own practiced hands, and observed by their own critical eyes? Are those who have such a holy horror of 'Book Learning,' so profoundly wise that they understand all the laws and all the mysteries of vegetable life? Do they understand all the properties and uses of the various gases, and other elements floating around and about us? Do they know in what vegetables they are most required? Do they understand how, and with what substances these gases can be most readily *fixed*, and the extent to which it may be profitable to thus use them? Do they fully comprehend all the other mysterious agencies by which they can use all the other means and advantages which are spread out in such

profusion before them? Is there nothing hidden in the deep arcana of nature which has not been fully unfolded to the sharp-sighted vision and clear comprehension of these intuitive *wiseacres*?

"I know that some men are not always wise, always infallible, in conducting their operations, and, consequently, that 'experimental farmers' are not always successful in making their farming business profitable. But, pray, how does that unfavorably affect either you or me? The knowledge of a failure, in a particular case, under particular circumstances, may be as profitable and as advantageous to us as if the same experiment had proved eminently successful. *It is quite as necessary, and quite as pruulent, to understand how and when to avoid evils and dangers, as to profit by what is known to be good and safe.*

"In truth, fellow citizens, while I claim to be highly conservative in most things, and am regarded as an '*old fogey*' in others, still, I must be permitted to say, that I have no patience—no toleration—for that class of farmers who are continually decrying agricultural education, and who would stop suddenly every effort making to cultivate the intellect, and to improve and elevate the habits and taste of those connected with country life. Their unconquerable obstinacy, their mole-eyed and bitter prejudices, are equaled only by their deplorable ignorance and their unbearable perverseness. Their precept, example and influence are continually evil. They not only refuse to enlighten themselves, but they discourage others, and especially the young, in every good effort and commendable undertaking."

We cannot conclude our notice of this excellent address, without further quoting the author's forcible remarks on the superior advantages farmers enjoy for self-improvement. On this Mr. Millikin says:

"While you have these signal advantages and opportunities of discharging your duties to your families, allow me to add, that you have *time* and *facilities* for your own daily advancement in knowledge. There is no class of our population engaged in physical labor, who have more time at their command, for reading and study, than have farmers. Every opportunity, and every hour not otherwise necessarily occupied, should be eagerly embraced. A farmer has no right, even after a day of toil, to quietly sit himself down in the corner, and sluggishly doze away valuable, precious, fleeting hours, which God has given him for improvement, and which will return unto him no more. He should rather provide interesting and valuable books and papers for himself, his wife, his sons, and his daughters. These should be read over—should be studied—should be discussed, and the family circle thus be made a school for intellectual, social, and moral improvement. Make your homes, through these instrumentalities, and by cultivation of a taste for music, and all the refinements and courtesies of life, endearing and agreeable to your family, and then your children will not be drawn into the wicked and corrupting scenes of vice and dissipation which so frequently tempt and allure them."

"*The Ohio Cultivator*,"—published at Columbus, Ohio.

This excellent agricultural journal is regularly sent to our "exchange," and we can not better express our high appreciation of its sterling worth, than by saying that no Western farmer should be without it. Col. Harris, its editor, is a fine writer; his knowledge is practical, and his taste refined.

METEOROLOGICAL TABLE.

Observations made at Farmer's College, College Hill, Hamilton County, Ohio, Latitude 39° 10', Longitude 7° 24' 45", for the month of January, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.

7 A. M.	BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.			OPEN AIR THERMOMETER.			CLOUDS—THEIR COURSE AND VELOCITY.			WIND—DIRECTION AND FORCE.			RAIN AND MELTED SNOW.				
	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Hour Begun.	Hour Ended.	Amt' Inches	
1	29.280	29.302	29.284	29.289	18.0	15.8	0	0	0	0	0	0	0	0	0	0	
2	29.213	29.168	29.060	29.127	30.5	26.0	22.5	2	0	10	Mist.	0	0	0	N. E.	0	
3	29.165	29.300	29.543	29.336	21.0	19.5	0.0	13.5	0	0	In S., curre.	0	0	W. 2 N. W. 3	N. W. 1	0	
4	29.565	29.470	29.355	29.463	9.5	12.0	7.0	3.3	0	0	Hazy.	N. W. 1 N. E. 2	0	W. 1 N. E. 1	W. 1	0	
5	29.193	29.125	29.184	29.167	2.0	21.5	18.0	13.8	1	0	0	0	0	0	W. 1 N. E. 1	W. 1	0
6	29.217	29.163	29.076	29.152	10.2	29.0	26.0	21.7	2	0	10	0	0	S. W. 1 S. W. 1	W. 1	0	
7	28.943	29.005	29.170	29.030	19.7	19.7	4.5	18.1	10	Sn'w'g	0	0	0	S. W. 3 N. W. 5	N. W. 5	Last n't.	
8	29.226	29.356	29.303	29.295	30.0	25.00	-11.0	-4.5	10	Sn'w'g	0	0	0	N. W. 5 N. W. 5	N. W. 3	0	
9	29.362	29.341	29.407	29.370	-21.7	-6.0	-8.0	-11.9	9	0	0	0	0	N. W. 1 N. W. 4	N. W. 5	0	
10	29.513	29.511	29.534	29.519	-13.0	7.5	-1.0	-2.5	0	0	0	0	0	N. W. 1 N. W. 1	0	0	
11	29.483	29.384	29.280	29.382	-7.0	15.0	18.5	8.8	2	6	0	0	0	N. E. 2	0	S. E. 2	
12	28.076	28.920	28.840	28.871	19.0	26.5	26.0	23.8	10	0	S. E.	0	0	0	0	0	
13	28.882	28.916	29.013	28.937	22.0	26.0	21.0	23.0	10	9	10	4 N. W. 5	N. W. 2	N. W. 3	0	0	
14	29.112	29.081	29.098	29.097	15.0	26.5	22.0	21.2	2	4	0	3 N. W. 1	N. W. 2	N. W. 1	0	0	
15	29.091	29.030	29.059	29.060	22.5	27.5	24.0	24.7	9	Snow.	10	0	2 N. W. 1	W. 1 N. W. 2	W. 1	0	
16	28.997	28.917	28.865	28.926	20.5	23.4	22.0	22.0	10	N. W. 10	0	0	0	N. W. 2	W. 1	0	
17	28.840	28.825	28.910	28.858	19.5	40.0	36.0	31.8	2	0	0	0	0	N. W. 1	W. 1	0	
18	28.905	28.838	28.857	28.867	29.3	17.0	40.0	38.8	0	0	0	10	N. E. 4	W. 1	W. 1	0	
19	28.922	28.905	28.915	28.914	24.0	28.5	27.0	26.5	0	0	10	0	0	N. W. 1	N. N. E.	0	
20	28.820	28.900	29.088	28.973	16.0	16.0	12.5	14.8	10	Sn'w'g	10	10	0	N. W. 2 N. W. 1	N. W. 1	0	
21	29.144	29.180	29.235	29.190	11.0	20.0	16.8	16.0	10	0	10	0	0	N. W. 2 N. W. 1	N. W. 1	0	
22	29.312	29.306	29.360	29.320	15.0	20.2	11.3	15.5	10	0	0	0	0	N. W. 2 N. W. 1	N. W. 1	0	

REMARKS ON WEATHER.

1. Ground covered with snow, which melted in the sun.
 2. Snow thawed some in the sun.
 7. About three inches snow.
 8. AN AWFUL COLD DAY.
 9. Do. do.
 10. Do. do.
 11. A few flakes snow in P.M.
 12. Do. do. do.
 13. Do. do. do.
 14. Do. do. do.
 15. Do. do. do.
 16. A few flakes this morning and afternoon.
 20. Snowing this morning.
 26. Snowing hard at 10 P.M.
 27. Snowed little in forenoon.
 28. Snowing again this evening.
 29. And yet again.
 31. Snowing at 9 P.M.

MONTHLY EXTREMES.

MAXIMA.

	7 A. M.	2 P. M.	9 P. M.	Month.	7 A. M.	2 P. M.	9 P. M.	Month.
Barometer,	January 4th. - - 29.565	Jan. 10th. - - 29.511	Jan. 25th. 29.572	29.572	Jan. 28th. 28.574	Jan. 27th. 28.665	Jan. 27th. 28.595	28.595
Thermometer,	- - 30.0	- - 47.0	40.0	47.0	-21.7	-5.0	-11.0	-21.7

"*Mimic Life; or, Before and Behind the Curtain,*"—A series of Narratives, by ANNA CORA RITCHIE (formerly Mrs. MOWATT). Ticknor & Fields, Boston, 1856.

In this volume Mrs. Ritchie has well sustained her position in authorship. Her sketches of the scenes "*behind the Curtain*," are not only touching and racy, but also convey much information to us "outsiders" in relation to the actualities of that histrionic *terra incognita* whence issue those moving passages of "mimic life" that alternately convulse with laughter and drown with tears. Mrs. Ritchie writes with a remarkable precision of style, and with a simple elegance that can only flow from a delicate and highly cultivated mind. The "narrative" of "Stella" the *debutante*, is given with wonderful felicity of description, united with the most moving pathos of sentiment. Her delineations in "The Prompter's Daughter" are so exquisitely touching as to be almost painful to our sensibilities. In "The Unknown Tragedian," Mrs. Ritchie has narrowly missed tragedy, and yet has scarcely reached the melo-dramatic: the "narrative" possesses tragic action, but lacks tragic effect. It is wanting in the important attribute of naturalness.

As to the *book*, we object, *positively*, to the long index captions at the head of each chapter. They mar the beauty and uniformity of the page; and, standing among the beauties of the writer, they look about as appropriate as a series of guide-posts would appear among the blooming beauties of the flower-garden.

For sale by Moore, Wilstach, Keys & Co.

GRAY'S NATURAL PHILOSOPHY.

WE have received a letter from Rev. A. GRAY, whose work on Natural Philosophy was noticed in our last number. The author admits the error in the answer to the specific gravity problem, on page 136, and we here submit the following solution by Mr. L. R. Guard, a student of Farmers' College. The problem is: It is required to determine the quantity of gold and copper in a chain, composed of these two metals, which weighs 40 pwts. in air, and 37 pwts. in water.

Solution.—Had the chain been all gold, then its loss would have been $2\frac{2}{9}$ pwts.; had it been all copper, its loss in water would have been $4\frac{4}{9}$ pwts.; but its loss was 3 pwts.; hence, we see by allegation, thus $3 : 2\frac{2}{9} = 1\frac{4}{9}$ gold, $: 4\frac{4}{9} = \frac{17}{19}$ copper, that the ratio of the quantity of gold to the copper, in the chain, is as $1\frac{4}{9} : \frac{17}{19}$; consequently,

$$(1\frac{4}{9} + \frac{17}{19}) : 1\frac{4}{9} :: 40 : 24.7 \text{ pwts.. the gold; and}$$

$$(1\frac{4}{9} + \frac{17}{19}) : \frac{17}{19} :: 40 : 15.3 \text{ pwts., the copper.}$$

In regard to the problem upon the 146th page, which we thought to be wrong, we find, upon our attention being called to it by the author, that the answer given in the book is correct within a fraction.

THE CINCINNATUS.

Vol. 1.

MARCH 1, 1856.

No. 3.

The Prices and Profits of Agricultural Products.

To look chiefly at results, without examining the intermediate operations, is a characteristic of mankind, so universal that it has ceased to be remarkable. We admire the chastened beauty of the classic temple, we gaze in silent wonder on the towering grandeur of the monumental pyramid, but give no heed to the firm unyielding bases on which the splendid superstructures rest. The high, the mighty, the imposing, monopolize attention, and engross all thought, while the unhewn *foundation* is not honored with even a passing notice. In a similar manner do we seem inclined to act in relation to the industrial interests of our national economy. Our navy, our arts, our commerce, our manufactures, are pointed to with a degree of national pride, at least pardonable if not justifiable—while our agriculture, the foundation of all, is treated with a measure of public indifference utterly inconsistent with the magnitude of the public interests that agriculture involves.

The *annual* value of the agricultural products of the United States is officially stated at the enormous sum of *two thousand millions of dollars!* And what has government ever done for the promotion of this prime, essential interest of the country? The accumulated millions of our national revenue are mostly expended for the benefit and protection of commerce, and, by that means, to almost directly advance the manufacturing interest; while only a few hundred dollars, through the instrumentality of the Patent Office, are doled out as a pitiful peace-offering to the interests of agriculture. Only two years ago, our Congress, at a single session, appropriated the sum of sixty-eight millions of

dollars for the civil list and the public defense, in time of peace; while agriculture, the paramount interest of the country, and bearing four-fifths of the whole burden of taxation, *received not one dollar!* Is it wise—is it just, thus to neglect that interest which sustains all others?

The vast extent, the wonderful fertility of our country, with its unparalleled amplitude of adaptations as to soil and surface, will serve to constitute and continue agriculture as *the great interest* of the United States, until all our vacant lands are brought into cultivation, to feed and enrich the teeming millions that are here to have their homes. Indeed, earth has no other country, unbroken by political boundaries, whose productions are gathered from so wide a range of latitude, and yielded from so many varieties of climate. Here are farms producing wool, and farms yielding cotton—farms for growing wheat, and farms for growing rice—farms for raising cattle and corn, and farms for raising sugar and the spices. Never before has earth presented a field of production so vast, so varied, and so fertile, to the control of one people. And it can not be that the genius of our people will permit the agriculture of the country to continue to be burdened with the support and nourishment of a government too haughty to acknowledge, and too illiberal to foster these unpretending, yet powerful elements of its own greatness, security, and wealth. In truth, the farmer, the manufacturer, and the merchant, are allies, bound together by ties indissoluble, and, as such, should be treated by government without partiality. But, we begin to perceive, that while commerce and the arts have been the pet favorites of legislation, the recipients of governmental liberality, and, therefore, replete with public honor, agriculture has been compelled, like the humble publican, to stand “afar off,” and under this public neglect has sunk into disrepute, or remained in comparative obscurity.

Nor can it be presumed that this evil course of public procedure can be pursued, without producing its legitimate consequences of public evil. And one of the evils, of no small import, resulting from this course is, the withdrawal of great numbers of our most worthy and promising youth from the country, and from the healthful and profitable pursuits of agriculture, into the giddy vortex of city life, and into the bewildering maze of mercantile employments. That department of business has consequently become crowded with numbers, and is overwhelmed with competition; whereby thousands of its followers, after a few years spent in convulsively grasping to secure their dazzling day-dreams, have hopelessly failed, and eventually become the most helpless and pitiable of all public paupers—*poor and proud*. That this is so, the observation of all considerate minds will abundantly attest. And we may well venture

the averment, that not a single intelligent merchant nor manufacturer can be found, but will conscientiously declare that his department of business is so crowded with numbers as to prevent a healthy competition in legitimate trade.

And that this depletion of the country, by withdrawing our young men from agricultural pursuits, has become so excessive as to have produced an unpleasant degree of social atrophy, is, moreover, apparent from stubborn facts, and startling figures, developed in our official tables. For, as the general aggregate of our population is so rapidly increasing, our villages growing from hundreds into thousands, and the population of our cities swelling from tens to hundreds of thousands,^{*} where every avenue of business is thronged with jostling numbers, and every department of industry is burning and throbbing with a feverish energy of competition, it would be most naturally presumed that the "rural districts" are also receiving their crowding accessories of sturdy farmers to cultivate and fructify the fat fields and fertile plains of the country. But, is this presumption sustained by facts? From the census tables of the government it appears that in 1840 there were in the United States 3,717,756 persons employed in agriculture; while in 1850 there were but 2,400,583 persons thus employed; which, so far from showing a ratio of increase in proportion to the ratio of increase in the population, exhibits a *positive diminution* in the number of persons employed in the agriculture of the United States in these ten years, from 1840 to 1850, of 1,317,173 persons! But, certainly it would seem safe to presume that our own State of Ohio, productive, as it is, to the measure of a proverb, and all the markets of the continent within ready reach, would be filling her fertile farming-lands with thronging thousands of intelligent husbandmen. But it is not so! In 1840, Ohio had 272,579 persons employed in agriculture; in 1850, she had but 270,362 persons thus employed: instead of a gain, we actually lost, 2,217 persons from such employment, in the lapse of that single decade.

And now, what of the other departments of industry, in this particular? In 1840, the number of persons in the United States, engaged in commerce, manufactures, and mining, amounted (in round numbers), to 925,000; in 1850, the number thus employed amounted to 1,600,000:

* Note the growth of our cities and more important towns in ten years:

New York,	population in 1840,	371,000,	in 1850,	516,000.
Philadelphia,	"	"	220,000,	" 340,000.
Cincinnati,	"	"	46,000,	" 116,000.
Cleveland,	"	"	6,000,	" 17,000.

showing an aggregate *increase* in these branches, of 675,000 persons. In 1840, the proportion thus employed, was 54 persons to each thousand of our whole population; while in 1850, the proportion thus employed amounted to 156 persons to each thousand—an *increase of almost 300 per cent.* in those ten years! And just about the same ratio of increase is observable, during the same time, in the number of persons engaged in what are called “the learned professions.”

From all this it is manifest that agriculture, the great interest of the Commonwealth, has suffered in no small degree from this unwise neglect, and this unjust preference, in the public consideration, for other pursuits, and which have operated as a lure to draw numerous thousands of our promising young men upon the fatal rock. And this leads us to ask, where have the tens of thousands of immigrants, that flock to our shores, fixed themselves? The answer is obvious—the village, the town, the city, have received nearly all these, in addition to their accessions from our “young men and maidens.” Hence, while the cities grow, the country dwarfs; and in view of such results, we can scarce refrain from adopting the sentiment of Mr. Jefferson, that, as to the body politic, “great cities are great sores.”

Perhaps there is not a man in the community—certainly none who procures his domestic supplies from the public markets—who has not repeatedly asked himself and his neighbor, *what is it that keeps the prices of agricultural products so unusually high?* For years they have been growing higher, still higher, and “the end is not yet.” It is attributed to the frosts of one year, to the extreme drought of another, to the extreme wetness of the third, and to the unusual supplies demanded by foreign wars—to everything, indeed, but the true cause, viz: *that our domestic population of consumers has so vastly increased beyond the ratio of producers.* The demand thus swelling beyond the ordinary ratio of supply, must needs swell the prices to a rate above all precedent. And this is the answer that Political Economy returns to the universal question, as to the cause of high prices. But, it may be said, that the last year was crowned with an unwonted abundance: and so it was; for which we may well be thankful—for so exhausted had the country become of all reserved supplies, that, had the hopes of agriculture been disappointed in 1855, national want, and universal destitution, would have marked the advent of 1856! Hence, nothing is found in that most blessed circumstance, to reduce the scale of prices to their former moderate standard; and prices still are high. And this forewarning should forearm us against the possible occurrence of a succeeding season of scarcity. For, the inference is direct and irresistible, that,

even with all the abundance of that most abundant year, still the aggregate of our agricultural productions did not *then* equalize the ratio between consumption and production. For attesting this, let us look again into our official tables, and we will find that the quantity of vegetable food, which forms the basis of all animal life, has not increased in proportion to the increase of our population. In 1840, our population was 17,069,453; in 1850, it was 23,191,876; the increase of population was, therefore, about 36 per cent. Now, the question resolves itself into this: did our supplies by agricultural production increase in the same ratio of 36 per cent.? The following table will exhibit the supplies produced in 1840 and 1850, with the several rates per cent. of excess and deficiency, as well as the aggregate variation from the standard rate of 36 per cent. of increase:

	1840.	1850.	Increase.	Bushels.
Wheat, bushels,	84,823,272	100,485,944	20 per cent.	15,000,000 deficit.
Corn, " "	377,531,875	592,071,104	57 " "	76,000,000 excess.
Rye, " "	18,645,567	14,188,813	(minus quantity)	11,000,000 deficit.
Oats, " "	123,071,341	146,584,179	20 per cent.	20,600,000 deficit.
Hay, tons,	10,248,108	13,838,642	36 " "	(ratio equal).

From this it appears, that, so far from increasing in the same ratio with the increase of population, those staple productions, excepting corn, which is in excess, and hay, which is equal, have fallen behind to the aggregate extent of 32 per cent., showing thereby an aggregate deficiency of 46,000,000 of bushels in our production of wheat, rye, and oats in 1850, as compared with 1840.

Nor could this deficiency in the relative proportion of vegetable food, fail to produce a corresponding diminution in the production of domestic animals. We accordingly find, that, while the ratio of increase in population (as before stated), was 36 per cent. from 1840 to 1850, the relative increase of domestic animals, was as follows:

Increase of Population, was.....	36 per cent.
Then " Horses,.....	14 " "
" Cattle,.....	23 " "
" Sheep,.....	13 " "
" Swine,.....	15 " "

These are very instructive facts. They point unequivocally to the principles and causes which have been silently operating to enhance the market prices of all the staple productions of agriculture to a rate unprecedented in the history of the country.

But, it may be suggested that this is all very well — that, inasmuch as high prices accrue to the benefit of the farmer, this state of things is rather to be desired than otherwise. And certainly no one can fault the

farmer for securing the best prices for his products. Indeed, we commend his prudence and judgment in thus faithfully adhering to and prosecuting his agricultural pursuits, which too many have unwisely abandoned. Still, no country can be considered as permanently prosperous when pursuing such a course as shall operate to pour its benefits into the hands of any one class. To this, agriculture forms no exception; for even its prosperity depends on general prosperity. It is not, therefore, a sound argument that, because we wish well to the farmer, we must advocate a scarcity in supplies, in order to secure high prices for his products. For, by this course of reasoning, it would come to be maintained that the nearer we could bring our people to starvation, the better it would be for agriculture, because then the higher would be the prices for agricultural products. The dignity and welfare of agriculture need not stoop to any such fallacy as this. Its patriotism is too sincere, its philosophy too sound, its philanthropy too wide, its position too independent, for the employment of any such narrowness of views. And, through all these attributes, it will look beyond the mere mediate question of particular "prices," to the more important consideration of the public good, in making ourselves secure of abundance in public supplies. And the main point for determination is, how is this national plenty to be secured?—secured not for one abundant season merely, but permanently, and beyond all ordinary contingencies? Europe is calling on us for supplies to an extent never before known. By the genius of mechanism, the intervening ocean is become but a ferry; hence the millions of her consumers are brought into competition with ours, and our population of consumers is rapidly increasing, while so far from gaining in a corresponding ratio, our producers are actually diminishing: hence, the ratio of increase of our supplies has fallen at least 45 per cent., in the aggregate, short of our increased ratio of demand. We can not wonder, therefore, that prices should advance; indeed, in view of all the circumstances, the only query is, Where shall the prices stop? What shall be their limit?

Nor is there any remedy for this but in a renewed attention, and an increased application of labor, to agricultural employments. The tide of industry must turn and flow toward agriculture as the source of production. This is, in fact, all that can save us from national bankruptcy; because, as a people, we are, literally, living beyond our income; hence, our capital is necessarily diminishing. Our bankruptcy, under such a course of procedure, is, therefore, simply a question of time.

And, from all that can be gathered from present indications, we are induced to believe that the tide of public industry is about to turn and

seek the channels of agriculture. As a department of industry, it is becoming more thoroughly educated; and as it becomes educated, it is more highly respected, until, though still neglected by government, it is honored by our people. And, in this behalf, no one knowing the predominating characteristic of the "universal Yankee nation," will be unprepared to hear propounded their universal question, "*Will it pay?*" And, in reply to this, let us turn from a consideration of the *prices* to an examination of the *profits* of agricultural products; and, in our exhibit of this, we must premise, that we aim only to present an approximation to general results, to which there may be numerous particular exceptions; which results we reach, however, by the collection and careful analysis of a great number of official tables, whose range of statistics reaches from Maine to California, and from Oregon to Florida.

In the first place: Our whole territory, of 3,307,000 square miles—almost as large as the whole area covered by all the *fifty-nine* empires, kingdoms, dukedoms, states and republics of Europe—is almost altogether susceptible of cultivation. Of this immensity of fertile lands, only about *one-sixth* is under any form of cultivation; hence, a monopoly of the soil is obviously impossible: and, washed by two oceans, interlaced with railroads, and channeled by rivers navigable to an extent that would thrice girdle the globe, markets will eagerly wait on the advancing footsteps of the producer. Hence, with fertility for producing, and facility for selling, extending *everywhere*, the voice of agricultural industry can never complainingly say, "*There is not room.*"

The profits arising from agricultural products are, of course, determined by subtracting the cost of production from the market value of the article produced. Let us look, first, into the profits of wheat growing. By the official tables, it appears that the average value of wheat at Albany, N. Y., for sixty years past, from 1793 to 1853, was \$1 25 per bushel. But we will take the western States of Kentucky, Ohio and Michigan, as furnishing, perhaps, a fairer basis for our estimate, and the table is found to stand as follows:

										PROFIT.
Kentucky—	Average cost of producing wheat, per bushel, 44 cts.; av. value, 85 cts.	93	per cent.							
Ohio—	" " " " " " 48 " " " 95 "	98	" "							
Michigan—	" " " " " " 45 " " " 100 "	122	" "							
New York—	" " " " " " acre, \$13 " " " \$26 " 100 "	"	"							

Thus, the table shows that in the whole range of the four wheat-growing States, the average range of profit in the production of wheat is about 103 per cent. This estimate includes the rent of the land, *i. e.*, the use of the capital. Now, let a *merchant* be assured of a profit of 103 per cent. per annum, and he will be assured that his fortune is

speedily made, though he employs no larger capital than the farmer. But it may be said that the uncertainty of seasons will materially diminish the per cent. of profit: and so it will; but this risk, after all, is not greater than attaches to every kind of mercantile and manufacturing pursuits, in the shapes of fire, flood and unavoidable decay of the commodities.

Again, as to *Barley*: This cereal manifests great flexibility of character in its adaptations to climate. It is a native of warm regions, but ripens in great perfection in all our temperate zone. In 1840, we produced 4,000,000 of bushels; in 1850, 7,000,000; and yet a considerable quantity is imported to supply our demand. The average cost of producing it is 35 cents, its average value 75 cents per bushel, the profit at the rate of 113 per cent.

As to *Oats*: Of this crop, we produce about *two hundred millions of bushels!* and export none. We consume the whole crop, and need more. The range of estimates shows that twenty bushels to the acre will pay expenses, and that the average yield is about forty bushels to the acre. The profit is, therefore, 100 per cent.

But, *the great agricultural product of America is the INDIAN CORN.* Essentially a "Native American," it seems sturdily determined to make itself perfectly at home in all the zones and latitudes of our continent; and, truth to say, we find it most cordially welcomed wherever it comes, but, withal, so patriotic, that it refuses to yield its stores when removed from its native republican soil. It attends upon the Mississippi along all its mighty flow of three thousand miles from North to South—flourishing on the deltas at its mouth, and ripening in the mountain vallies at its source; and its lordly tassels and pennon-leaves are seen rustling in the summer breeze in all its genial journey from the plains of Texas to the mountains of Maine! The nutritive character of this imperial grain is but just beginning to be known and appreciated by the population of Europe; and since 1849, when impending famine made them familiar with its unpretending merits, they are yearly increasing their demands on our supplies. In Asia, too, the American corn is beginning to be most warmly welcomed, and the *three hundred and fifty millions* of China's population are eagerly demanding it as an article of food more healthful and nutritious than their own indigenous rice. The foreign demand for this grain is, indeed, but just beginning, and will continue to increase to an unlimited extent. Appropriating to its flexible character an area of territory so ample, the immense amount of this grain annually produced in our country may not excite surprise; and yet the crop of 1855, amounting to about *eight hundred millions of*

bushels, can not fail to fill us with amazement at the capacity of our country for the production of this royal boon to mankind. The profits of this crop may be seen from the following tabular estimate:

	PROFIT.
In Ohio—Average cost of raising corn, per bushel, 15 cents; average value, 35 cents, 133 per cent.	
In Indiana— " " " " " 12 " " " 30 " 160 " "	
In Kentucky— " " " " " 15 " " " 33 " 120 " "	
In Illinois— " " " " acre, \$4 " " " \$22 450 " "	

Turning from the cereal products, let us examine the figures in relation to the rearing of live stock. The cost of raising cattle in the Western States is from \$10 to \$12, to bring them to the age of three years; value then, from \$20 to \$25; profit is about 100 per cent. Cost of rearing horses to four years old, from \$40 to \$50; value, from \$80 to \$100; profit, about 70 per cent. The cost to rear mules to the same age, about \$40; the value then, \$80 to \$100; profit, about 120 per cent. Cost of rearing swine, \$2 per 100 pounds; average value, \$4.50 per 100; profit, 125 per cent.

Look, also, into the profits of the orchard products. Apples, as it is shown, can be grown for $2\frac{1}{2}$ cents per bushel. With the orchard, there is no interest on the value of land to be considered while the orchard is growing, inasmuch as its uses, aside from this, are of sufficient value to pay the interest on the capital invested in the land. The value of the fruit itself is well known to all; and when compared with the cost of production, the profit is enormous—so great, indeed, that it becomes manifest that our supplies of fruit bear no just proportion to the demand in the country. Under appropriate culture, an orchard of apple-trees will yield, in seasons of ordinary abundance, an average crop of eight bushels to the tree; fifty trees can be well cultivated on an acre; this gives, as our product, *four hundred bushels to the acre*. The cost may be stated thus:

Cost of one acre of land, say.....	\$40 00
" fifty apple-trees.....	10 00
" setting out.....	5 00
	<hr/> \$55 00
Annual interest and tax on this, say.....	5 00
Add for annual care and cost of manure.....	10 00
	<hr/> \$70 00

And at an average value of thirty cents per bushel, the yield from one acre thus *permanently stocked* is \$120 per annum—about four times as much as can be realized from the same ground in grain. And this estimate is certainly low, as can be shown by many well-attested instances. R. J. Hand, of Monroe county, N. Y., sold, in 1845, \$440

worth of the Northern Spy and Roxbury Russet apples from one acre of land — almost *four times* the amount indicated by our estimate. The same statements might be made in relation to the other fruits of the orchard. Nor is there any danger of a glut in our markets from our supplies of those products. In 1820 we exported more apples than we have ever done since ; and for the thirty years past, while the quantity exported is gradually diminishing, the prices at home are gradually increasing, showing that our domestic demand outruns the supply. There has not been any diminution of prices even for the perishable summer fruits, and fifty times the quantity of *winter-keeping* fruit would find remunerative markets among our own consumers. A single city is no longer the limited market for the keeping fruit ; the whole country is open ; railroads carry them to any part of the Union ; steam-ships transport them to the illimitable markets of Europe. A single orchardist on the Hudson sold, in one year, *twelve thousand dollars'* worth of Newtown Pippins, a large part of which were profitably sent to London and Liverpool. But the present amount sent to Europe, compared with the quantities destined to flow there when our orchards are multiplied and facilities for transportation increased, is but as the dripping rill to the mighty river.

In view of all this, and much more that might be said bearing on this point, we may certainly declare that agriculture will *abundantly pay*.

In all these estimates, allowance must be made, of course, for the contingencies of seasons, &c. But when every allowance is made, there remains a large margin of handsome profits accruing to the farmer — sufficient, certainly, to offer the greatest inducements to the industry of the country to embark its energies in that channel. And to this may be added the further important considerations of physical and moral health, happiness, length of life, and contentment, that agricultural pursuits afford, and that rural retirement cultivates.

WHAT IS DYSPEPSIA ? — In nature, it is a cross between a tiger and a hyena ; in temper, it is savage ; in appetite, ravenous. It gets into the pulpit, and says dreadful bitter things sometimes ; it gets into the kitchen, and scolds the cook. It is long-visaged, sour-faced, and melancholy. It feels as if the world was made on purpose to be found fault with. It sheds bushels of tears, and “speaks cross to the best of husbands ;” it has the head-ache, the back-ache, the toe-ache, the tooth-ache ; it don’t know what ache it has, nor what ache it has not !

COLONEL BISSELL'S RETREAT AT BUENA VISTA.

WHEN speaking of "action in the tented field," and discoursing of what "pertains to feats of broil and battle," it is the custom of historians, as the world well knows, to give all prominence to the high-ranked chieftain, and accord to him all the success of strategy, and all the achievements of valor. But how vain would be the bravery of him who bears the *baton*, were there no heroes bearing bayonets! To show the force of this, and to give due honor to the brave, we record the following scrap of history, detailed, originally, by one who witnessed Col. Bissell's heroic charge, and not less heroic retreat.

He says, "When the aid on duty (Col. Churchill), gave Col. Bissell the order to retreat, the Indiana regiment was in rapid flight, in rear of Bissell's, scattered over half a mile of ground, each man evidently thinking the battle lost, and trying to save himself; and, as soon as Bissell's should be faced about to fall back, those flying men would be in full view, and of course the panic they were under must naturally influence somewhat those who stood. Six thousand Mexican infantry were pouring down upon the devoted regiment, in steady advance by column, in front and flank, assailing them, within point-blank distance, with a steady hail-storm of iron and lead; four thousand cavalry were looming up behind these columns of infantry, waiting for a favorable moment, at the least sign of wavering on our part, to charge, and complete the work of destruction; three pieces of artillery were thundering on them their death-messengers of grape and canister, tearing through their ranks like a hail-storm of vengeance; and they seemed to stand alone, exposed to all this concentrated attack, determined on their own annihilation.

"To the aid Col. Bissell replied: 'I am not ready to retreat yet,' while his regiment continued returning the fire of the Mexicans. In a few moments the Colonel ordered, 'cease firing!' 'shoulder arms!' 'dress!' The fire was abated; and then, for at least two minutes, did that noble body of men stand under a steady galling and raking fire of Mexican artillery and musketry, with an overwhelming force of infantry and cavalry advancing upon them, unblenching, and unwavering, without firing a gun.

"Not a man moved, while their Colonel's eye ran along the line to see if any one quailed! 'About face!' 'dress!' 'forward, march!'

They moved off in common time. ‘Quick time, march !’ and the regiment retired under circumstances which have never failed before, in the history of war, in causing a panic. The Mexicans considered themselves certain of victory, and with ‘vivas’ and ‘hurrahs,’ on came their splendid cavalry, surging down in their green and scarlet, their plumes waving, and their lances gleaming in the sun, with their thousand gay streamers catching the glistening beams as every breath of the air fluttered them like leaves of a fairy forest, upon that apparently devoted body of men.

“Two hundred yards quickly passed, Bissell’s men reached the spot designed for them to hold. The lancers were preparing for the last charge, which was to hurl our brave fellows into the ravine before them. ‘Halt !’ ‘dress !’ Coolly, and calmly, as if on parade, did those ‘Suckers’ obey the command, while the thunder of squadron after squadron, on the slope they had just left, told that the enemy were upon them. They could not see them, but they could hear the horses’ hoofs, the jingle of sabers, and the clatter of lances, the inspiring charge of the bugle, and the ‘vivas’ of the men, as they rushed on to the seemingly easy victory ; and no doubt many a heart fluttered, and many an eye glanced involuntarily around — for it is a fearful thing to know that an enemy is upon your back — but not a nerve swerved.

“‘About face !’ ‘make ready !’ ‘fire !’ and a volley of musketry rolled upon those huzzaing cavaliers, which silenced their cheering ; and as column and rank went down before that deadly fire — as their numbers lessened and their chargers swerved from this serried line of men, who knew no defeat — their column wavered, trembled, as it were, slackened in speed, and broke in confusion. Rallying back in tumultuous retreat upon the infantry, the whole Mexican division was involved in inextricable confusion, and in disorder left the field. Thus was the tide of battle turned on that eventful day, and less than half a full regiment in numbers defeated ten thousand of the flower of Santa Anna’s army — and that too, when the enemy were rushing in, flushed with victory, and encouraged by the flight of one regiment — saving the credit of our arms, and the lives of the thousands that stood there with them.”

It is estimated that there is now invested in the Ice business, in all parts of the United States, between \$6,000,000 and \$7,000,000, and that it gives employment, during the winter months, to 10,000 men.

CULTIVATION OF TASTE AMONG FARMERS.

THE following truthful sentiments, beautifully expressed, we copy from "*The American Farmer*," and commend them to the attention of all readers, as "words fitly spoken." Says the "*Farmer*":

"It is to be feared that many of even the more enlightened class of citizens, have little appreciation of the refined and beautiful in nature. Farmers, who enjoy peculiar facilities for studying nature, and who ought to read her intelligible forms with peculiar profit, too often look on forests and meadows as valuable only to furnish food for cattle, and fuel for fire. Nor is it strange. They who have to grapple with necessities, come naturally to think those things only useful, which minister to their bodily wants. We were well acquainted with a gentleman who among cattle or in the field, had an admirable taste, but who was quite indifferent to the beauties of a flower-garden. We used to take him into the garden, and pluck some choice flower, with "See here, isn't this a beautiful thing;" but he always smiled and said, "What do you think I care about it, I had just as lief look at a dandelion;" and away he would go, looking at the cucumber vines. Now, he had not so much an unnatural as an uncultivated taste. For the rich plumage and graceful flight of birds he had an excellent eye, and could listen to their notes with extreme pleasure: but he looked on ornamental shrubs and flowers as equally superfluous and useless. Like many others, he much preferred to see the ground adorned with ornamental beets and cabbages.

"But it is a wrong opinion to suppose that the excellence of things lies only in their utility. The Creator, it is evident, had something else in view when he made the world; nay, even loves beauty for itself alone. Else, why the delicate and varied hues of innumerable insects that float in the air; or why the beautiful organic structure of mosses and sea-weeds; or the systematic arrangement of chemical atoms! These are invisible to us except through the microscope, but they are perfectly apparent to nicer perceptions, and no doubt administer delight.

"But if farmers take delight only in building fences, and plowing fields, and rearing cattle, this, they should remember, can afford but little pleasure to their wives. Their appropriate sphere of action is, or ought to be, about the house. It matters little with them, whether their husband's farms be enclosed with a stone fence or a hedge, whether it be stocked with Devons or short-horns; but it does matter greatly whether her flower-garden be set off with tulips or twitch-grass. Her nice and

delicate nature must have smooth lawns, and handsome trees, and laughing flowers. Such things delight her more than all the improved cattle in Christendom. But if every time she looks from her window, her eye falls on piles of brush, and ugly burdocks, and aspiring pig-weeds, what wonder that she takes more delight at her neighbor's house than at home. The truth is, her tastes if reasonable, should be gratified. A neglected garden is just as repugnant to her nature, as a neglected farm to that of her husband. How often have we seen farmers' wives digging up a little spot of ground with a case-knife, because their husbands had no time to prepare it for them, or thought it useless. An hour's labor would have been perhaps, all that she needed, and might have been the source of how much pleasure! It might take a little time, and might not add a dollar to the purse; but it will bring what gold can never do—a strong attachment, and pure love between husband and wife. It constitutes the soil in which grow the finer sensibilities.

"Cold and selfish natures may laugh at these things, but we pity that man who can range God's heritage from year to year, and think of nothing but granaries of grain. There is in waving fields a higher magnificence than mere grain. Grasping, miserly eyes may not see it, but it is there; and to those of high thoughts and pure conceptions, it speaks in the most forcible and eloquent language. No; if we have a shadow of skepticism, we would sooner take one stroll across the fields, and over the hills, than read volumes of books.

"There is something in the dancing air, and bending grass, and waving woods, that ought to scatter doubt, like chaff, to the four winds. And farmers are just the men to study and appreciate these things. Alive to the beauties of nature, what lesson might they not learn from her spiritual teachings. How many things there are, to subdue pride, to restrain melancholy, to cherish reverence, to inspire love! Truth, and beauty, and humility, and joy, beam as visibly from every plant and flower as stars in mid-heaven, not dim nor speechless, but clear and eloquent as language and pencil can make them.

"If farmers would only study these things, they would find them imparting an ease and refinement to the mind, which lends a charm to every thing, and without which the best natures are rough and untutored.

Some one looking at a rich man, said, "Poor man, he toiled day and night until he was forty, to gain his wealth, and he has been watching it day and night, ever since, for his victuals and clothes."

THE ATMOSPHERE A SOURCE OF TIMBER-GROWTH.

A RECENT work of science gives the following novel experiment, which settles a question of some importance in philosophy:

"Two hundred pounds weight of earth was dried in an oven, and afterward put into an earthen vessel. The earth was then moistened with rain water, and a willow tree, weighing five pounds, was placed therein. During the space of five years the earth was carefully watered with rain water, or pure water. The willow grew and flourished; and to prevent the earth being mixed with fresh earth or dust blown to it by the winds, it was covered with a metal plate perforated with a great number of small holes, suitable for the free admission of air only. After growing in the air for five years, the tree was removed, and found to weigh 169 pounds and about three ounces; the leaves which fell from the tree every autumn were not included in this weight. The earth was then removed from the vessel, again dried in the oven, and afterward weighed. It was afterward discovered to have lost only about two ounces of its original weight; thus, 164 pounds of woody fibre, bark and roots were certainly produced; but from what source? The air has thus been discovered to be the source of solid element at least. This statement may at first appear incredible; but, on slight reflection, its truth is proved, because the atmosphere contains carbonic acid, which is the compound of 714 parts, by weight, of oxygen, and 338 parts, by weight, of carbon."

PRESERVING BUTTER.

FARMERS of Aberdeen, Scotland, are said to practice the following method for curing their butter, which gives it a great superiority over that of their neighbors:

"Take two quarts of the best common salt, one ounce of sugar, and one ounce of common saltpetre; take once ounce of this composition for one pound of butter, work it well into the mass, and close it up for use. The butter cured with this mixture appears of a rich and marrowy consistence, and fine color; and never acquires a brittle hardness, nor tastes salty. Dr. Anderson says: 'I have eaten butter cured with the above composition, that has been kept for three years, and it was as sweet as at first.' It must be noted, however, that butter thus cured requires to stand three weeks or a month before it is used. If it is sooner opened, the salts are not sufficiently blended with it, and sometimes the coolness of the nitre will be perceived, which totally disappears afterward."

G I V E.

BY MRS. L. H. SIGOURNEY.

"It is more blessed to give than to receive!"

GIVE prayers : the evening hath begun ;
 Be earlier than the rising sun ;
 Remember those who feel the rod ;
 Remember those who know not God.
 His hand can boundless blessings give ;
 Breathe prayers ; through them the soul shall live

Give alms : the needy sink with pain ;
 The orphans mourn ; the crushed complain ;
 Give freely ; hoarded gold is curst,
 A prey to robbers, and to rust.
 Christ, through his poor, a claim doth make ;
 Give gladly, for our Saviour's sake.

Give books : they live when you are dead ;
 Light on the darkened mind they shed ;
 Good seed they sow, from age to age,
 Through all this mortal pilgrimage.
 They nurse the germs of holy trust ;
 They wake untired when you are dust.

Give smiles, to cheer the little child,
 A stranger on this thorny wild ;
 It bringeth love, its guard to be—
 It, helpless, asketh love of thee.
 Howe'er by fortune's gifts unblest,
 Give smiles to childhood's guileless breast.

Give words, kind words, to those who err ;
 Remorse doth need a comforter.
 Though in temptation's wiles they fall,
 Condemn not — we are sinners all.
 With the sweet charity of speech
 Give words that heal, and words that teach.

Give thought, give energy to themes
 That perish not, like folly's dreams.
 Hark ! from the islands of the sea,
 The missionary cries to thee ;
 To aid him on a heathen soil,
 Give thought, give energy, give toil !

On the Fertilizers for Fruit Trees.

THE following article, from the pen of MARSHALL P. WILDER, of Boston, Massachusetts, is worthy the attention of all fruit raisers. He says:

"In relation to appropriate fertilizers for fruit trees, a diversity of opinion prevails. All agree that certain substances exist in plants and trees, and that those must be contained in the soil, to produce growth, elaboration, and perfection. To supply these, some advocate the use of what are termed 'special manures;' others ridicule the idea. I would suggest, whether this is not a difference in language, rather than in principle; for, in special fertilizers, the first make use simply of those which correspond with the constituents of the crop; but are not the second careful to select and apply manures which contain these elements? And do they not, in practice, affix the seal of their approbation to the theory which they oppose? Explode this doctrine, and do you not destroy the principle of manuring, and the necessity of a rotation of crops? Trees exhaust the soil of certain ingredients, and, like animals, must have their appropriate food. All know how difficult it is to make a fruit tree flourish on the spot from which an old tree of the same species has been removed.

"The great practical question now agitating the community is, How shall we ascertain what fertilizing elements are appropriate to a particular species of vegetation? To this two replies are rendered. Some say, analyze the crop; others, the soil. Each, I think, maintains a truth; and both together, nearly the whole truth. We need the analysis of the crop to teach us its ingredients; and, if the soil does not contain them, what fertilizers must be applied to supply them. Thus, by analysis, we learn that nearly a quarter part of the constituents of the pear, the grape, and the strawberry, consists of potash. This abounds in new soils, and peculiarly adapts them to the production of these fruits; but having been extracted from soils long under cultivation, it is supplied by wood ashes or potash, the value of which has, of late, greatly increased, in the estimation of cultivators.

"Among the arts of modern cultivation, universal experience attests to the great advantage of 'mulching' the soil around fruit trees, as a means of fertilization, and of preservation from drought and heat, so common with us in midsummer. In illustration of this, experiment has proved that on dry soils, where the earth has been strewn with straw, the crops have been as large without manure as they were with it where evaporation has disengaged the fertilizing elements of the soil."

[For the *Cincinnatus*.]

The Effects of Frost on Dormant Vegetation.

[THE following excellent article presents to the notice of our readers some striking thoughts upon a subject which, perhaps from its being a subject so common to our observation, has received but little attention from scientific writers. And, while we are not prepared to adopt all the views here presented, in their full extent, we would, nevertheless, commend them to the attention of readers and *thinkers*, with a hope that an interest in the subject may result in furnishing to the public a greater collection of authentic facts for the guidance of science in the consideration of the questions involved. The writer is a gentleman of fine scientific attainments, and presents his views in a clear and agreeable style.—Eos.]

The extreme, and, in this region, entirely unprecedented severity of the weather, has spread alarm among all our horticulturists; the prevailing opinion among them being that by the effects of the long-continued hard frosts, not only are the prospects for fruit the coming summer entirely destroyed, but that a great majority of the trees and vines themselves are killed. To one accustomed to notice the effects, or rather the non-effects, of frost on vegetation in a more northern latitude, these fears seem, in a measure, groundless.

This subject has not met with the attention from practical horticulturists which it deserves. The results of many experiments and observations made by scientific men on this point, have been laid before the public, but they are not generally known and have scarcely been noticed in popular works on Botany, or the cotemporary Agricultural or Horticultural Magazines. It seems to me that this is a fitting time to call the attention of practical men, through the medium of your periodical, to this subject, so as to induce them either by committees of their societies, or as individuals, to institute such experiments and take note of such phenomena, as will tend to illustrate the effects of freezing and thawing on vegetable life. I will therefore endeavor in as brief a manner as possible, to notice some of the experiments and observations that have been made, and such as have come under my own cognizance.

Among the first notices of these phenomena, are those of Mr. John Hunter, presented to the Royal Society of London, in 1775 and 1778, in his article on the "Heat of Animals and Vegetables." From his experiments on vegetables, he concludes that a tree can not be frozen until life is extinet; that as long as the living principle remains, sufficient caloric is generated to resist the action of frost: consequently every tree that

is frozen is killed. This conclusion is proved to be erroneous by more recent observations; it will not even stand the test of his own experiments. By a series of connected operations made at different times, he found that the temperature of a tree was always "a degree or two" higher than the surrounding atmosphere. As, for instance, the atmosphere being at 29° , English poplar was $29\frac{1}{2}^{\circ}$, oriental plane 30° , walnut 30° , etc.; or the atmosphere being at 16° , English poplar, oriental plane and other trees were 17° . This difference has been corroborated by subsequent observers, and as a fact may be taken as granted. Again, he found, that the sap of the walnut froze at 32° when taken out of the tree, and yet he asserts that the heat of the tree may be reduced to 17° , i. e., to 15° below the freezing point, *without freezing!* He does not state how he knew that the tree was not frozen at that temperature; so we are left to presume that he so judged from the fact that it survived. The excess of heat in the tree compared with the atmosphere, may be accounted for by its receiving warmer juices from the unfrozen soil in which its roots are imbedded; aided, perhaps, by the non-conducting power of the layers of bark, and the minuteness of the capillary vessels containing the fluids. These causes may act to a certain extent, but can not resist a great degree of cold. The heat derived from the soil can not be expected to exert much influence in the small branches and twigs, nor will they receive much protection from the thin films of bark that surround them; and the minuteness of the capillary vessels can only have a resisting influence against cold so long as they remain at *perfect rest*. Water in capillary tubes resists a low degree of temperature under that condition; but the moment it is disturbed, it is congealed. Such a freedom from motion we can not obtain in trees, as the power of winds would constantly produce sufficient to prevent such effect. That the tree is actually frozen when the temperature is reduced a few degrees below freezing point, scarce admits of a doubt. It can be easily seen by cutting a transverse section of the wood with a cold knife: when placed under the microscope, the surface will show a vitreous, icy appearance; and in some of the more porous woods, minute crystals of ice can be picked out with the point of the knife.

All the trees, vines, etc., even in our climate, must, therefore, be completely frozen every winter, and yet we know, by experience that their vitality is not in any way injured or destroyed by it.

The native plants of any region are, by the wise direction of an overruling Providence, perfectly adapted to its climate. Vegetation does not

suffer, even in Siberia, where, as at Yakutsk, the ground is perpetually frozen to the depth of four hundred feet, and which the few months of summer can not thaw to a greater depth than three or four feet; and yet, says Erman,^{*} "vegetable life continues not merely uninjured, but favored in the highest degree by the equable and very rapid increase of heat."

In the colder regions of our own country, it is by no means uncommon for large trees to be cleft from top to bottom on one side, in severe weather, with a very loud report. This is, no doubt, caused by the contraction of the wood already frozen, by its sudden subjection to a more intense cold. These cracks generally close up when the weather moderates, producing merely a "shake" in the tree, unfitting it for lumber. In many cases of this kind which have come under my own observation, I have never known a single tree so split, to be killed by the intensity of cold.

Several years ago, when living in Northern New York, we received a lot of young fruit trees too late in the winter to set out; they were placed in a room the temperature of which was repeatedly during the winter as low as 20° below zero. They were thoroughly frozen, root and branch, and yet when planted, the usual proportion of them lived. The same result in trees taken up and transported has been noticed by others.

Many instances might be added to the above, but it would be needlessly occupying your pages, as I think enough have been given to convince any one that *the mere freezing of plants in winter will not destroy their vitality.*

Our wonder at this is greatly diminished, when we consider that even some forms of animal existence possess the same power of retaining vitality when they have been completely frozen. Frogs, reptiles, and some species of fish, can be resuscitated after having been frozen for a length of time. Grubs, caterpillars, the larvae of insects, the ova of the silk worm and other low forms of animal existence exhibit the same phenomena. I have repeatedly frozen trout, perch, and pickerel, after they had been caught with the hook, to such an extent that their fins on being bent would snap off like glass; and yet, on being thawed, a majority of them revived; and those that did not were either injured by the hook or exposed in the air so long as to kill them before they were frozen. Such being the case, how much the more ought we to expect to find a much greater power of resistance under an intense degree of cold in plants, whose functions of vitality, though perfect in themselves, are not of as high an order as those of animals?

^{*}Travels in Siberia, Am. Ed., vol. 2. p. 279.

The examples I have given, are of the action of frost on plants while they are in a dormant state, in winter. If plants are killed by frost at all, we must look, for the cause, more to the *spring frosts*, after the sap has commenced running. The circumstances attending the thawing may also have a considerable influence in producing their resuscitation, or death. To these two points, and any other phenomena which may be exhibited in their transition state, in spring and fall, I would earnestly call the attention of farmers and horticulturists, for their systematic and accurate observation; in which they would find the frequent use of the microscope in the examination of buds, sections of wood, etc., of very great importance.

Why should not premiums be offered by our horticultural and agricultural societies, for the best essays on such subjects, as well as for big corn, or cabbages, which are as often the result of good luck, as of skill.

ANNANDALE.

Cincinnati, February 15, 1856.

SPRING WORK.

Now that earth's chains are relaxed, and all nature begins to show signs of re-animation, it is well to ascertain and keep before us, from day to day, *what avails to be done*, and be well advised as to the manner of doing properly every work in its season.

And now is the time to commence various and important operations, belonging respectively to the farm, the garden, and the orchard.

In order that every work shall be *performed with pleasure and profit*, the *mind* and *hand* must be alike employed. Farming, under such circumstances, would cease to be called, or esteemed, a drudgery; horticulture would afford real pleasure, and be invested with new and constantly increasing delight.

Our present remarks will be confined to the orchard—to pruning and grafting.

PRUNING.

Now is the time to use the chisel and pruning-hook, upon the first flow of the sap. In pruning, a few principles must be kept constantly in view, such as the general form that it is desirable to give the head of the tree, and the amount of growth that is to be dislodged or removed, and from what portions to be taken.

As to the head, or top of a tree, it should be kept open, for the ready admission of light and air. A free circulation of light and air has much to do with the proper maturing of fruit and wood. The hemispherical form is to be preferred. The pruning should chiefly be confined, especially upon old trees, to the smaller branches. If it is necessary that large ones be lopped off, it should be done judiciously, and not too much be taken off at once, which will surely result in a profuse growth of water sprouts, and consequent exhaustion of the vital force of the tree. It is often thought, that as soon as a tree begins to decline, and becomes moss-grown, or has suffered from long neglect, that it is necessary to use the saw unsparingly upon the main branches, and cut off, as is often seen, one-half of the wood the same season. This is *wrong*—*grossly wrong*. For, besides leaving scars, which soon, by rapid decay, admit moisture, and thus destroy the tree, it paralyzes the functions of healthful growth, by destroying the equilibrium between the spongioles of the roots and the proper office of the foliage—the leaves being necessary for the suitable elaboration of the sap, loaded with nutritious elements, taken in by these spongioles. The leaves not being sufficient to perform the work required, stagnation or congestion must follow. And this result is uniformly seen, where pruning is carried to excess with trees, young or old. To renovate a tree, then, we must attend carefully to these physiological principles, viz: removing, as a general thing, portions of the outer growth, and all such branches as come in contact, or prevent free circulation, as well as those that are diseased, or on the decline.

The pruning of the cherry, peach, and plum, should be upon the shortening-in mode; in which there may be taken from one-third to two-thirds of the last year's growth, especially after the trees begin to bear freely. Before this, you are chiefly engaged in forming the head, and your pruning will be directed to those branches which are irregular, and too confined. The shortening-in method will promote the growth and proper development of fruit-buds, and tend to keep the tree from exhaustion when it begins to bear freely. Mr. Laughery, of Adams county, one of the most successful growers of the peach in Ohio, as many of our citizens know, informed us that last year he not only removed from one-third to a half of the previous year's growth, but that he took pains to remove three out of five of the fruit-sets; and that he was satisfied that he had profited greatly by it, both as respects the health of his trees, and the amount of his crop. Many peach trees last year failed entirely to mature their crop, and the trees themselves perished, or were so enfeebled they will never recover. This year, the pruning-knife should be used more freely than common, and the branches cut back as far as

the wood is seriously injured by frost; and this may be known as soon as the sap begins to flow freely. If branches are removed with the saw, they should be smoothly pared around the line of bark, and covered with wax, or a mixture of gum shellac and alcohol, which may be applied rapidly with a brush.

G R A F T I N G .

Now is the time to select choice fruits, prepare grafts, and begin your grafting. Your grafts being cut and labeled, and their ends inserted in sand, or friable earth, not too moist, get ready your grafting-wax. Be not too sparing, for what is left will, like old wine, be better by age.

Wax for putting on with the hand, should be made as follows:— Make it of seven parts, or proportionals; of these, three rosin, three beeswax, and one tallow; some add two of tallow, making the proportionals eight. I prefer the former number. Pour into water, and work like shoemaker's wax, or molasses candy. If to apply with a brush, and while warm, you may increase the rosin some two or three proportionals. In grafting the cherry or plum, or the branches of old trees, use a bandage of muslin, wrap in two or three folds, and seal with a small portion of the wax. This will prevent the air and water from entering the cleft upon the cracking of the wax, which often takes place on the first expansion of the graft. This bandage, thus sealed, need not be removed until the next season; and often the rapid growth of the branch will unseal, and render unnecessary, its removal; and the envelope often protects the graft from being blown out by the wind.

Commence with your cherry grafting, while the buds of your graft, and the sap of the tree, are yet quiescent. It is almost useless to do it afterward, especially on old trees. An old cherry tree, if thrifty, may be as successfully grafted as an old apple tree, if the proper time and proper manner are observed: in other words, if nature's laws are not violated.

The cherry, peach, and plum, are the first fruit trees to start in the spring. The formation of the buds of stone-fruits is peculiar. They stand out more prominently than those of seed-fruit, and are attached to the stem by a delicate filament, which, as soon as the sap enters, becomes distended, and being thus independent, to some extent, of the stem, where the bud has started, at the least check of the vegetative process, it withers, and life is at once extinct. If the sap is flowing freely in the tree, and the graft is quiescent, though success is more certain, yet, before it is supplied to the graft, or the graft is ready to receive the sap, the sap-vessels of the branch become desiccated, and the graft perishes.

Insert, if you please, your cherry grafts in February—certainly by

the first of March, no difference how cold, and if frozen afterward it will not injure the grafts. We speak from experience, and the most complete success has been had in grafting cherries in February, in freezing weather, when the cold afterward was so intense that the mercury fell below zero. The point to be observed here is, to have your grafts taken and inserted while the grafts and tree are yet in a quiescent state. The plum, and all stone-fruits, should be grafted early, on the same principle.

Apples and pears may be grafted from March until June, with safety and success. It is necessary to take the grafts while the sap is quiescent. The reason why the grafting of apples and pears, and seed-fruit generally, is more successfully done after the sap has started, is this:—The cortica is thick, and full of nutrition; the bud is closely attached thereto, and is thus sustained for days without being dried, and the current of sap, in the meantime, finds its way, before the desiccation before-mentioned, takes place.

Do not destroy your old apple, cherry, or pear trees, if they are healthy. Re-invigorate them by grafting; not by cutting them too close to the main-trunk, where the branch is too large to heal, and by which the vital forces of the tree are impaired. But go out upon the branches until you reach a suitable size—say from an inch and a half to half an inch, according to size of tree, etc.; here continue to cut and graft until the entire top is dislodged. I know there is a different theory in practice, and one having the sanction of high authority; but it will not be found the most judicious, or successful in practice.

If you graft but a part of the tree, under pretext of preserving the vital forces, you dwarf your grafts by directing the current into the unlopped branches—and having grafts of different ages on the same tree, you never can form so symmetrical a top. By going out sufficiently far upon the branches, you are encouraging an equal flow of sap to all parts, which being checked for a time, will push out shoots all along the amputated limbs; the graft soon starts; then rub off, for a few times, these shoots, until the graft has fairly begun to move; then you may leave them, if you please, until the next year, when you must prune them closely, and cut-in your graft well, leaving it from two to three feet, according to strength. A skillful grafted will thus change the top of a large tree in two or three hours, inserting some thirty or forty grafts that in two years will form a top as beautiful and symmetrical as the original, and your tree is rejuvenated. One of the oldest apple trees in this country was dealt with by us in this way, some twelve years since, and the tree seems more vigorous now than twenty years ago. It is now over forty-five years old, and produces annually some five or six barrels

of the finest pearmains. Save your old apple trees, and cherry trees too, if healthy. A twenty year old seedling apple tree, in good health, is worth at least twenty dollars, just for re-grafting, and by the third year after grafting, will yield as many, and perhaps more, apples than before.

If you have too many of one kind, or any worthless kinds change them thus. Or, further, if you want to increase your variety, without increasing your trees, this is the best mode; or should you wish to test before propagating, an untried and boasted variety, perhaps altogether worthless for your locality, put it on some bearing tree, and you will accomplish your object by the third year. These remarks will apply equally to the pear, and to some extent to the plum, cherry, quince, etc.

If you have not made selection of trees, shrubs, vines, etc., that you intend to set, do it by all means immediately; don't defer until all kinds of work presses upon you, and then this important work must be done in a hurried manner, which had better be left undone entirely, than be illly done. The time to set a tree or shrub, is while it is yet in a quiescent state; if then properly set it will thrive; if not, your time and money are generally thrown away. Let every thing be done systematically. Let your trees, grafts, shrubs, all be labeled as you go on — not postponed till some future day.

Under-Draining--Its Beneficial Effects.

We cheerfully give place to the following excellent essay, read by Wm. W. Rice, at a meeting of the "Farmer's Lyceum of Green Township," Hamilton county, Ohio, January 23d, 1856, and by them requested for publication.

In the cultivation of the soil, there are three grand objects to be effected, which are of paramount importance to the attainment of the great end of all cultivation, the maximum of productiveness, viz:

First, The proper application to, or preservation in, the soil of all those substances, which are necessary to the most perfect development of vegetable growth. *Second*, The thorough breaking up, loosening, and pulverizing of the soil. And *third*, The use of the best system of drainage. For, without the first, the soil must rapidly depreciate in fertility, and become reduced to such a state of barrenness, as to be totally unprofitable for cultivation until renovated. Without the second, much of the advantage of a fertile soil will be lost, by reason of the inability of the plants to push

their roots through it in search of the necessary food. And, without the third, much of the cost and labor of the other two will be thrown away.

These propositions I consider to be susceptible of the very clearest demonstration, if not entitled to be classed as axioms. But it is with the third that I have more particularly to deal on the present occasion, viz: Drainage. And in a spirit of strict adherence to the subject before us to-day, for discussion, it is my intention to confine my remarks to that branch of the general subject designated by the term *under-draining*.

Standing water, upon or near the surface of the soil, is universally admitted to be so detrimental, (not to say fatal), to general and profitable cultivation, as to render it indispensably necessary that some means be adopted to get rid of it; even the cultivation of the southern rice plant, which so much delights in water at suitable intervals, not furnishing an exception. Hence, it is readily admitted by all, that swamps and other lands, of such a conformation as to hold water until it is evaporated by the heat of the sun, are benefitted, and indeed reclaimed, by thorough draining.

But it is not so readily admitted, that other lands than those just mentioned, need draining. Indeed, by the many the idea is utterly rejected. There seems to them to be something utterly inconsistent, if not ridiculous, in the idea of draining rolling or hilly lands, when the water, at any rate, soon leaves them, and seeks its level in the swamps, creeks and rivers.

This proposition, however, I shall endeavor to substantiate, viz: That all lands are benefitted by artificial under-draining, except such as have a sub-soil of sand, gravel, alluvial deposit, or otherwise of a porous nature. And, in doing so, I shall confine myself to stating briefly some of the effects, which this process is the means of producing upon the soil, and through that upon vegetation.

Under-draining is preferable to surface, or open draining, from the fact that the drains in the former method are laid so far below the surface of the soil, as not to interfere with the passage of the plow in the deepest cultivation, thus saving all the space necessarily taken up by drains according to the latter plan. For this reason, among others, under-drains ought always to be used, except when the volume of water is too great to be removed by them.

This process removes speedily, all surplus water, whether above or below the surface of the ground, above the level of the drain. And who that has noticed the stunted vegetation, sickening and dying on the wet spots in his own or his neighbors' fields, will deny that such localities would be benefitted by under-draining? If, then, it is admitted to be

in such cases beneficial, may we not conclude that all lands are materially improved by being speedily relieved of all surplus water, that is, of that which is not necessary for the promotion of vegetation? Indeed there is a sufficiently obvious reason for this, in the fact that a soil saturated with water soon becomes cold and sour, and unhealthy for plants; and this must be the case to a greater or less extent, after every heavy rain in summer, with clay lands, such as ours, unless properly drained.

Much of the best of the soil, the very cream of the land, is lost to us, by being washed away by the force of waters accumulating and running off upon the surface of the ground, after every rain, so that we are pained to see the condition of our fields at such times. But the under-drain induces the water, as it falls gently upon the earth, gently and harmlessly to soak down through the soil, rejoicing to do good, which is unmixed with evil; and to make its way from the outlet pure and sparkling, seeming to laugh and dance, as it leaps into the rivulet, that in its flow it is carrying away nothing but what is its own.

Nor is this all: The chemist informs us that the atmosphere becomes fraught with gaseous substances, which are given off during the various processes of vegetable and animal decomposition, among the chief of which are ammonia and carbonic acid gas, both powerfully promotive of vegetable growth. These *impurities*, as they are called, combine with the watery particles as they float through the air, in the form of clouds, and as they descend in showers. Thus the rain washes the atmosphere of these substances, which might otherwise become offensive and hurtful to men and animals, and reaches the earth laden with abundant stores of nourishment for the growing plants. But in order to get the full benefit of these manures, thus freely furnished by nature, our soil should be well pulverized by deep plowing, and our land under-drained. For in passing off through the soil, the rain water (and the snow water when the ground is not closed by freezing) parts with these enriching substances, which are absorbed by the roots of the plants, or by the soil itself, to be held in readiness for them.

Under-draining facilitates the operations of the cultivator. As a consequence of the speedy riddance of the soil from surplus water, the farmer or horticulturist may commence operations two or three weeks earlier in the spring, and will gain several days after each heavy rain; while for the same reason, his season will be extended much farther into the frosty months of autumn and winter. The spring rains, besides, come down tempered with a more genial warmth than the yet chilled earth, and their waters percolating through the well drained soil,

speedily raise it to the temperature necessary to cause the seed, cast into its bosom, to germinate, and the sap to begin to flow through shrub and tree. This warming of the soil, so important at all times during the season of vegetation, is assisted, too, by the penetration of the atmospheric air among the particles of well drained soil, which is always more porous than one not so treated.

But if under-draining relieves land from the evils of too much wet, it also prepares it to endure extreme drought, with almost if not perfect impunity—always presuming deep plowing to accompany this process. The land is never so thoroughly drained, but that there is a sufficiency of moisture left at the time, for all necessary purposes in the vegetable economy. And as this supply is exhausted, in the absence of rain, much moisture is drawn up from the sub-soil, by capillary attraction. Then we see and realize the benefit to be derived from aiding nature in the performance of her kind offices. For, the atmospheric air being admitted with greater facility, as I have before stated, to penetrate such a soil, as it permeates among the earthly particles, being warmer than they, imparts to them the much coveted and life-giving moisture with which it is charged. Thus safe from its injurious effects, we may rejoice in the benefit to our soil from drought. This same moisture which rises, as we have seen, from the sub-soil, brings along with it in solution those hidden treasures, (salts of different kinds), of which our frequent cropping exhausts the stirred soil.

Neither would I omit to mention that the atmospheric air, in passing through the soil, not only imparts warmth and moisture to it, but, also, those enriching gases, with which, as before stated, it is more or less impregnated. And even itself may be decomposed, and its very component parts, oxygen and nitrogen, made use of in the numerous chemical changes which nature is constantly developing in the soil, and in the growing plant.

Not only do blessings follow this beautiful treatment of the soil through all the growing season of the year, but even in cold and ice-bound winter its beneficial effects may be seen. It is a well known fact that when the ground is frozen while full of water, the tendency is much greater to heave out plants and young trees than when the soil is comparatively dry. Under-draining then, by removing speedily the surplus water obviates this great evil.

These are some of the good results attendant upon the under-draining of all such soils as are not provided by nature with porous sub-soils. And they are not untried theories, but have been fully tested by practice.

In regard to the best form of drains, their cost, how much under-draining increases the yield of land, and how much must be the value of the yearly product of land, before it will pay to under-drain it, I leave to others to say.

From the New York Observer.

SOME PASSAGES IN THE LIFE OF DEACON GOODMAN.

WHEREIN IS SHOWN THE INCONVENIENCE OF NOT HAVING THE "MUSICAL EAR."

DEACON GOODMAN was extensively known, not merely in his own parish, but through several miles of the surrounding country, for his amiable disposition, active benevolence, and unquestioned piety. So thoroughly was the Deacon's character established, that when the people of the neighboring towns saw him passing by, they would say, "that man was rightly named, for if there ever *was a good man*, he is one." And from this there was no dissenting voice. Nay; I am wrong in saying that; for there are some who never hear any body praised without an interposing and qualifying "but;" "He may be well enough on the whole," they will say, "but," etc., etc.; and then they will go on and make him out "anything but a clever fellow."

The qualifying "but" must be interposed even in the case of Deacon Goodman. He had a fault. He *would sing in meeting*. "Call you that a fault?" saith the reader. Well then, kind reader, call it a misfortune. "But why a misfortune?"

I will tell thee. Nature has so formed us, that some have the musical ear, and others not. Now this "musical ear" has nothing to do with real character, moral or intellectual; but yet the persons who have *not* the "musical ear" ought never to *sing in meeting*. If they do, they will be sure to annoy others, and make themselves ridiculous. Deacon Goodman had *not* the "musical ear." Whether it were the "Messiah," or the "Creation," or Jim Crow and Zip Coon, it was all the same to him, so far as music was concerned; it was just so much *singing*. Whether the artist were Sivori, or Ole Bull, or poor old John Casco, it was just so much *fiddling*. He had *not* the "musical ear," and still less, if possible, the musical voice; but yet he *would sing in meeting*. And the gentle and respectful remonstrances of the choir leader were met with the unvaried reply, "Singing is praying: you might as well ask me not to pray; *I shall sing in meeting*."

It is now proper for the biographer to hint at another trait in the

good Deacon's character. He was rather "set in his way;" or in other words, he was dreadfully obstinate in what he thought a good cause: and he was generally correct in appreciating the merits of the cause.

We all know that musical people are apt to be sensitive, and sometimes a little capricious; and who has ever known a theatrical orchestra, or even a village choir, that had not a regular "blow up," at least once a year? Beyond all doubt, Deacon Goodman's singing was a very serious grievance to the choir, and no small annoyance to the congregation. Yet in consideration of his great merits he was *indulged*; and his regular Sunday performances often drew forth the remark, that if music-murder was a sin, Deacon Goodman would have much to answer for. But there is a point beyond which forbearance is no longer a virtue. Great pains had been taken by the choir in getting up a new Anthem (selected from Mozart), for Thanksgiving day, and the very gem of the piece was a solo, which had been assigned to the sweetest voice, and the prettiest little girl in the village. All who attended the rehearsals were perfectly delighted with the solo, as sung by "little Mary." It was very difficult. It was marked from beginning to end, "Andantino," "Dolce," "Affetuoso," "Crescendo," "Piano," "Pianissimo," with changing keys, and flats and sharps springing out from unexpected places; but she had conquered it all. Three or four accomplished singers, who had come from Boston to pass Thanksgiving in the country, and who attended the last rehearsal, were in raptures with little Mary's singing. They had heard Tedesco, and Biscaccianti, and Madam Bishop; and yet they said, "for a country girl, she is a prodigy."

In due time Thanksgiving day arrived; and while the "second bell" was ringing, news came to the village that a very serious accident had happened to the Universalist minister. His horse had thrown him, and either his leg or his neck was broken; the boy who had brought the news had forgotten which. "I hope it is not his neck," said the rich and charitable old church member. When Deacon Goodman heard that remark, he held up his hands, and exclaimed, "I never!"

Now, the Deacon dearly loved good preaching, and the meeting-house was to him a "house of feasting." But his religion was of a very practical kind, and although he thought but precious little of his good works, he took care to do a good many of them, and was far from believing with Amsdorff, that "good works are an impediment to salvation." So, said he to Mrs. Goodman, "do you go to the house of feasting, and get all the good you can, and I will go to the house of mourning, and do all I can." And away he went to see, and if possible to relieve, the Universalist minister.

In the mean time the congregation assembled, and the worship proceeded in the usual way.

Now, Deacon Goodman always made it a rule, when any accident had detained him until after worship had commenced, to come in very softly. How different from the fashionable flourish! All were intent on the solo. None heard, and but few saw Deacon Goodman enter his pew, and take up the sheet on which the words of the anthem were printed.

Unlike that of many singers, the articulation of "little Mary" was perfect. The Deacon soon found the place, and to the astonishment of the congregation, indignation of the choir, and the perfect horror of "little Mary," he "struck in," and accompanied her through the whole solo. Accompanied!! "Oft in the stilly night," accompanied by *Captain Bragg's battery*, would give some notion of it. Poor "little Mary" was sick a fortnight. "Why don't you cut that old fellow's tongue off?" said one of the Boston singers. "What good would it do?" said the choir leader, "he would howl through his nose." They were all very cross. As for the Deacon, he looked around as innocent as a lamb, and thought he had sung as well as any of them.

Immediately after meeting the choir leader called on the minister. "Sir," said he, "this must stop. If Deacon Goodman sings again, I do not."

"Oh, I know it;" said the minister, "I have long felt the difficulty; Deacon Goodman is a most excellent man, and his only faults are that he is *rather set in his way*, and *will sing in meeting*."

"But Deacon Goodman is a reasonable man," said the choir leader.

"*On most occasions*," replied the minister.

"Do go and see him, sir, for my mind is made up; if he *sings in meeting*, I do not."

"Deacon Goodman," said the minister, "I have come on a delicate errand; I have come to present the respectful request of the choir, that you would not *sing in meeting*."

The Deacon was thunderstruck; but he soon recovered. "Singing is praying," said he; "they may just as well ask me not to pray: *I shall sing in meeting*." And on the next Sunday, sure enough, he did; louder, and, if possible, more inharmonious than ever. The men singers looked daggers at him; the girls hid their smiles behind their music-books. Little Mary was not there.

"This *shall stop*," said the choir leader. "I will go and see him myself."

"Deacon Goodman, we all most highly respect you, as you must well know: but you *have not* the musical ear, nor the musical voice, and it

is the earnest wish of the choir, and many of the congregation, that you do not again *sing in meeting*."

The Deacon was again thunderstruck, but soon recovered. "Singing is praying," said he, "and they might as well tell me not to pray. I shall *sing in meeting*."

The good Deacon was dreadfully set in his way, and so it went on again week after week, in the same old way,

But an incident occurred, which contributed much to bring this singular case to a crisis. About two miles from the Deacon's comfortable dwelling, there was a wretched hovel, which imperfectly sheltered the wretched wife and children of a still more wretched drunkard.

On one of the most inclement evenings of a New England January, the Deacon and his family were cheerfully and thankfully enjoying a glorious hickory fire; Mrs. Goodman was sewing for the family, and her daughters for the Missionary Society. His son was reading the Massachusetts Ploughman, and the good man himself was just finishing off a sermon by a distinguished divine of his own denomination, when bang went the front door, and in came his good neighbor and own beloved and respected Minister. "Why! I never!" said Deacon Goodman, "what has brought you along in such a night as this?" Now, this Minister had his peculiarities as well as the Deacon. Among others, he was very close mouthed about his own good deeds. He merely answered, "I have been about my duty, I hope." The fact was he had been to visit, and to talk, and pray, with a poor dying negro. "'Seems to me you are rather crusty," said the Deacon, "but I suppose you are half frozen, and so sit down and thaw yourself out." "I thank you," said the Minister, "but I merely called to tell you that I have just left a scene of misery; and I want you to go there as early as you can in the morning. On my way here and home, I passed that wretched hovel which we all know so well. I felt it my duty to stop and learn the cause of the terrible uproar within. I found the wretch beating his wife; and her screams, and his horrid oaths made my blood run cold.

"Put old Mag in the wagon." "Deacon, don't go to-night," said Mrs. Goodman. "Do wait till morning," said all his daughters. "Let me go," said his son. "Mind your own business," said the Deacon to all of them, "I shall go to-night." When it came to that, they knew there was no more to be said. He was dreadfully "set in his way." He took a bag and a basket, and went down cellar. He filled the bag with potatoes. He took a piece of pork from one barrel, and a piece of beef from another, and put them in the basket. He went to the closet, and took a brown loaf and a white one. He went to the wood pile, and took

an armful of wood, and told his son to take another. All was put in the wagon; he not forgetting six candles and a paper of matches. Deacon Goodman needed no *secondary* motive to Christian duty; yet historical truth demands the concession, that the wife of the poor drunkard was his first love. She jilted him; or as we Yankees say, "gave him the mitten," in favor of the abject wretch who was now become her tyrant. And this was the way he "fed fat the ancient grudge" he owed her! The truth is, Deacon Goodman knew nothing about *grudges*, ancient or modern. The old Adam would occasionally flare up, but he always got him under *before sun-down*.

All was ready, and in five minutes the Deacon was "exposed to the peltings of the pitiless storm." But what did he care for the storm? I am going on God's errand," said he to himself. "I am going to visit the worse than widow and fatherless." The next thing he said was, "Oh, get out." That he meant for the promptings of his own proud heart.

Misery, misery, indeed did he find in that most miserable dwelling. The poor wretch himself was dead-drunk on the floor. The poor pale woman was sobbing her very heart out. The children were clamorous; and but few were the words of their clamor. "I am cold,"—"I am hungry,"—and that was all. The Deacon brought in the wood; made up a fire; lighted a candle; and emptied the bag and basket. The poor pale woman wept and sobbed her thanks. "Oh, you varmint," said the Deacon, as he looked at the husband and father, and broke off a piece of bread for each of the children. The general commotion aroused the poor wretch from his drunken stupor.

"Hallo, old music," said he, "are you here? give us a stave, old nightingale. Sing as you do in meeting. Sing and scare the rats away." "Why, what on earth does the critter mean?" said the Deacon. The poor, pale, grateful woman smiled through her tears. She could not help it. She had been a singer in her better days; she had also heard the Deacon sing.

I do not record these incidents merely because they are honorable to Deacon Goodman, but because they are particularly connected with my story. In this errand of mercy the good Deacon caught a very serious cold; it affected his throat, and his nose, and even his lungs; and gave to his voice a tone not unlike to that of the lowest note of a cracked bass-viol alternating with the shriek of a clarionet powerfully but unskillfully blown. On Saturday evening he soaked his feet in hot water; drank copiously of hot balm tea; went to bed and said he felt comfortable. "Now Deacon," said Mrs. Goodman, "you are dreadful hoarse;—you *won't* sing to-morrow, will you?" "Singing is praying—

and—”—he dropped asleep. And sure enough he *did* “sing to-morrow,” and it surpassed all that had gone before. “This is the last of it,” said the choir leader, “I have done.” In the afternoon, the choir was vacant, some of the singers absent and others scattered about in the pews. The Minister read three verses of a psalm; and then observed, “the choir being absent, singing must necessarily be omitted.” But Deacon Goodman saw no such necessity. He arose, and sung the three verses himself! He stopped six times to sneeze; and blew his nose between the verses by way of symphony! The next day he was sick abed. A parish meeting was hastily called, and a resolution unanimously passed, that “Whereas the solemnity and decorum of public worship depend much on the character of the music: resolved, that hereafter, no person shall *sing in meeting*, in this parish, without the approbation of the choir!” Rather a stringent measure; but what could they do? The Minister called on Deacon Goodman, and handed him the resolution. He read it over three times: He then calmly folded up the paper and handed it back to the Minister. “This is a free country yet I hope.” “*I shall sing in meeting.*” He said these very words! He was dreadfully “set in his way.”

“Then, Deacon,” said the Minister, “I have a most painful duty to perform. I am instructed to tell you that your connection with the society must cease.” The Deacon here started from his seat. Had the full moon split into four pieces, and danced a quadrille in the heavens—Orion singing, and the Northern Bear growling bass—he could not have been more astounded. He was silent. Emotion after emotion rolled over his heaving spirit. “At length tears came to his relief,” as they say in the novels. He spoke, but almost inarticulately. “I know I am a poor, unworthy creature, but I hope they will take me in somewhere.” The Minister wept himself. How could he help it? The Deacon’s cold was nearly cured; and about an hour after the interview, he was seen mounted on old Mag, heading due north. Four miles in that direction lived the worthy minister of another parish. The Deacon found him in his study, where also was his daughter copying music. She was a proficient in the art, and played the organ in her father’s church. She had heard of the Deacon’s musical troubles, and had also heard him sing. “Sir,” said he to the Minister, “there has been a little difficulty in our parish, which makes me feel it my duty to withdraw; and I have come to ask the privilege of uniting with yours.” (At this moment the young lady vanished from the room).

“I much regret the difficulty in your parish” said the Minister, “and hope it will be amicably settled. But if you finally conclude to with-

draw, we shall be most happy to receive you ; and when it shall please the Lord to take good old Deacon Grimes to himself, (and a very few days must now give him his dismission), we shall expect you to sit in his seat." After half an hour's pleasant conversation, the Deacon arose to take his departure. At that moment, a boy came in and handed a billet to the Minister. He glanced at the billet, and "Deacon, sit down one moment," said he. He read the billet, and, after some hesitation, said, "I have received a singular communication from our choir leader ; he has somehow or other heard of your intention to join our society ; and has heard of it with very great pleasure; but, he adds that it is the earnest and unanimous wish of the choir that you will not *sing in meeting.*" The Deacon was again electrified, but had got used to the shock ; "Singing is praying ; and I join no church where I can not *sing in the meeting*—good day, sir," He was very "set in his way."

Five miles *west* of his own dwelling, lived the good Pastor of another flock. The Deacon found him shelling corn in his crib. This Minister, although eminently pious, thought it no harm to be a little waggish in a good cause and for a worthy object. He also had heard of the Deacon's musical troubles, and shrewdly suspected the object of his visit. "Deacon Goodman, I am glad to see you," said he, "this is not exactly ministerial labor, is it ?" "I am of a different opinion," said the Deacon, "any honest and useful labor is ministerial labor; I hate all dandies—the Lord forgive me, I don't like them ; and I like a dandy Minister least of any." "You and I are agreed there," said the Minister ; "come walk into the house and see my wife ; she says she is in love with you for your honesty and your oddities." "I never !" said the Deacon, "but I thank you, I am in something of a hurry ; and have a little business which we can just as well settle here. There has been a little difficulty in our parish, which makes me feel it my duty to withdraw, and I have come to ask the privilege of joining yours." At this the reverend gentleman looked as if he were very much surprised. "Is it possible," said he ; "well, Deacon, though an ill wind for them, it is a good one for us ; for it has blown you hither. We shall be most happy to receive you, especially as our choir leader has followed the multitude and gone West. We have been looking about for a competent man to take his place. Our singers are all young and diffident, and each one is loth to take the lead. We hear that you sing the most difficult music, and——"

"Why, mercy upon you," said the Deacon, "I don't know one note from another. I know that singing is praying, and I sing in meeting as I pray in meeting."

"Excuse me, my friend," replied the Minister, "it is your modesty that now speaks; you do understand music, you must understand music; or you never could sing Mozart with proper expression, and did you not sing that most beautiful solo, which is worthy of an angel's ear and voice?" Now, this was all Greek to the Deacon, and like a sensible man as he was, he always said nothing when he had nothing to say.

"You say truly," continued the Minister, "that singing is praying. But to those who know nothing of music, it is praying in an unknown tongue, and I am sure you are not Papist enough to approve of *that*; music is a language, and like other languages must be learned before it can be spoken. When the deaf and dumb attempt to speak our common language, they make strange noises, and still worse noises do we make when, without the musical ear or the musical voice, we attempt to sing."

Thus sensibly did that good Minister speak. The Deacon was a good deal "struck up;" though *set in his way*, he was not a fool; and only needed to be touched in the right place. "It never appeared to me in that light before," said the Deacon, thoughtfully.

"And yet, my friend, it is the *true light*," said the Minister. "And now let me give you a word of advice: Go home, and take your old seat on Sunday; and never again attempt to *sing in meeting*. For if your heart is right, your ear is untuned, and your voice, though kind, is any thing but musical." The Deacon "said nothing, but thought the more." He mounted old Mag. The angel of reflection came down, and sat upon her mane, and looked him full in the face. Reader, does that seem incongruous? Is the old mare's mane an improper seat for an angel? I am afraid you are proud. Who once rode on an ass?

He approached his own village. The reason for his errand abroad had been strongly suspected, and they were all on the look out for his return. There stood the choir leader. "Welcome home, Deacon," said he, "hope we have not lost you yet." "Get out," said the Deacon, with a good-natured but rather sheepish look; and on he went. There stood the Minister. "Welcome home, Deacon, I hope we have not lost you yet." "Get ——;" he was just going to say get out, but habitual reverence for the Minister cut him short. He looked at the Minister, and the Minister looked at him, and both burst into a fit of laughter. The choir leader came up and took the Deacon's hand, and joined in the merriment. At the front door and windows of his own house, were his wife and daughters, and two or three of the singing girls, "all of a titter." They had seen and heard his interview with the Minister, and knew that all was well.

Deacon Goodman took his old seat on Sunday, but since that day's adventure has never *sung in meeting*. Once, and but once, did he attempt to raise a psalm on his own private account. He was in his barn putting some hay in his cow's manger. Now, the neighbors were always ready to do a good turn for Deacon Goodman; and before he had finished the first verse, two of them rushed in and asked him if his cow was choked! He never sung again.

OUR WINTER COVERINGS.

We clip the following paragraph, on the "Philosophy of Keeping Warm in Winter," from the *Cincinnati Gazette*, where it appeared last week without any acknowledged paternity, and we feel compelled to use it, not as an orthodox text to preach *from*, but as an "abominable heresy," to preach *against*:

"WINTER COVERINGS.—There is one fact in the philosophy of keeping warm in the winter which is not so well understood anywhere as in Russia. The lower classes of Russians wear coarse but closely woven canvas, almost impervious to water and air. The object of clothing is not to keep cold out, but warmth in; to prevent the heat of the body from being abstracted by the cold atmosphere. For this reason, nature thatches animals with fur, that their animal heat may not escape. Canvas is largely used in Russia, because it is a home manufacture, and the cheapest. Any closely woven fabric will answer the same purpose; but the main requisite is not weight, but imperviousness. Those of the humane who visit the poor will do them a great favor by carrying this practical philosophy to them, particularly as regards bed clothing. An old piece of table oil-cloth, a fragment of an old sail, a remnant of thick carpet, anything closely woven, or with its interstices filled with paint or rosin, thrown over the outside of a bed, will preserve warmth better than 'coats enough to smother nine.' It is not weight, we repeat, but imperviousness, that is wanted. Are there India rubber bed spreads made? If they could be deodorized, they would be a capital invention; light and warm—not to the touch, perhaps, but certainly warm as an outside spread."

Were we to set about the compilation of a chapter of solemn nonsense, we would make the above paragraph to constitute the first verse! For, it would seem impossible to conceive of a series of statements so blundering, and of propositions so utterly erroneous, as these few sentences contain; every doctrine stated is directly opposed to well settled principles of philosophy, and to the well ascertained laws of the animal economy.

And how it found its way into the columns of the *Gazette*, thus wearing the "fool's cap and bells," is to us a matter of no small wonder; for it would seem that even *their* "devil" ought to have known more about the "philosophy of keeping warm" than all that amounts to. Coverings, "*impervious to water and air!*" "not weight, but *imperviousness* wanted!" Now, that the Russian serf may wear "closely-woven canvas, almost impervious to water and air," we can conceive of as possible—especially when we come to consider that he can probably get nothing else; but, that an *impervious* covering is wanted for any human Christian to wear, or to sleep under, is a proposition so hugely absurd as to be almost sublime; yet lacking of this but one step—it becomes simply ridiculous.

If this "philosophy of keeping warm" be sound, then tin, or sheet-iron would make the best bed clothes imaginable, to "keep the warmth in," because they are "*impervious to water and air!*" Therefore, upon going to rest, a person had better just *can himself up!*

The writer, moreover, adduces the fact—certainly most hostile to his theory—that "nature thatches animals with fur, that their animal heat may not escape." Yes, and for a similar purpose, man should be *similarly* "thatched;" but for *such* a purpose, nature has never yet been detected in the blunder of covering an animal with a "thatch" *impervious to water and air!* Hence, it is obvious, that the mode proposed by this *sapient* writer is the very opposite of nature's "philosophy of keeping warm."

To his mind it seems never to have occurred that the adult human body is daily giving off about *forty ounces*—two and a half pounds—of effete and excrementitious matter by elimination through the skin and lungs; and that a check to this eliminating process of transpiration, by any impervious covering around the body, forces this effete and carbonaceous matter back upon the circulation, by absorption from the surface, to the unavoidable detriment of the vital functions of organic action. Thereby are induced fevers, catarrhs, congestions, consumption, and almost "all the ills that flesh is heir to." Hence, philosophy, guided by an enlightened physiology, directs that our coverings, so far from being *impervious*, should be *porous*—just like the furry "thatch" of animals, and like that also, should be non-conductors of heat and electricity, in order that the "animal heat may not escape." In this principle is found the marked superiority of those fine and soft, but *not* "*closely woven*," blankets—commonly called "rese blankets," sometimes known as "Quaker blankets"—as the winter covering for our beds. With cotton or linen sheets between their woolen surface and the

sleeper, and some light and ornamental "spread" a-top, no more agreeable nor more healthful winter coverings can be found than such blankets, with their soft tissue and porous texture, afford.

And finally comes that profoundly philosophic suggestion of our author, that "*capital invention!*" an "*India rubber bed-spread!*"—"light and warm"—and "*deödorized,*" forsooth! Such a "*capital invention*" might well serve the purpose of capital punishment! And how long would it remain "*deödorized*," while receiving and retaining the excrement of the skin, at the rate of *an ounce* per hour? Let him who knows something of the offensive effluvium that will arise from the hands of a person when wearing the "*India rubber pruning gloves*" give us the answer!

It is, indeed, most obvious that the author of that remarkable paragraph understood neither the philosophy of things, nor the physiology of man; and we call attention to it simply because we hold that such heresies should not go unrebuked.

For the *Cincinnatus.*

Reflections by a Resident of the Hill Side

[The following "*Reflections*" are warmly welcomed as most appropriate, in their tone and tenor, to the purposes of our pages. They indicate a mind in the writer attuned to the harmonies of nature, and point out some of the exhaustless sources of delight which the quiet pursuits of agriculture and horticulture afford, and which, as the writer truthfully remarks, "money can not buy."—Eds.]

STRAWBERRIES.

MUCH has been written about strawberries; their qualities and manner of cultivation. The subject may be considered rather hackneyed by some, and by others that much more is still to be written. We confess to a peculiar affection for the strawberry; indeed, of all the fruits, great or small, we cherish for this a singular idolization. It is our favorite. In autumn we love to place the saw-dust or tan-bark around and about the surface of the plants with our own hands. We like to see them well clothed and prepared for the icy fangs of winter; as well, also, to have them in a condition to resist the capricious affections of "*Jack Frost*" in the early spring; at least to such an extent that their "*fantastic roots*" may not be thrown too high.

Two or three beds, and as many varieties, of this delicious fruit have

graced a corner of our little garden for several years. And even in the dreariness of winter do we love to go out and look over these beds, until our imagination sees the peeping crowns, and ruminates, on from their fecundation, until the very fragrance of a "McAvoy Superior" graces our sense of smell, and the delicious taste insinuates itself into our very mouth. These beds are sacred; and we never trust any rude mortal to mulch, hoe, transplant, or dig around the tender plants.

Perhaps if we were the owner of "broad acres," instead of the circumscribed space in a city suburb, our affections might find other objects upon which to bestow some of its intensity. As it is, every thing, save and excepting our roses, tulips, hyacinths, and a few annuals, is centered upon the strawberries. Not a morning in the month of May but we go to our chamber window, with half finished toilet, and look out upon the strawberry bed, and note the progress of growth made through the night. What is more enchanting to a lover of nature than to see the fresh green foliage all covered with dew, that sparkles like gems, or diamonds, more rich than the treasures of Golconda! Hour after hour is beguiled away from the cares of business, in the spring, in watching the progress of their whitening bloom. They seem to have a face full of little starry eyes, and look up at one with such placidness as betokens the truest affection. Then the myriads of flies, winging about from pistilate to stamineate, and from stamineate to pistilate, all seemingly busy in their dainty employment of forwarding the process of impregnation, at once attracts our undisguised attention. Reader! are you a skeptic? If so, just place yourself here beside us for a few moments, and watch these winged insects. They are small creatures, it is true, but there is nothing in the universe of God too small to demand our special notice. See this fly as he lights upon a "Longworth Prolific," and after a moment's apparent rest, how he sails upon a "McAvoy Superior," bearing upon his tiny feet the pollen, or fecundating dust, which is mechanically distributed upon the pistil, which insures its fruitfulness. Can you explain all this? Are you still a skeptic? You seem to waver.

You have held many arguments with the learned and the wise, and always claimed a victory in debate. You can not surely falter now, or acknowledge yourself out-argued by these little silent monitors! Then look aloft! We are glad from our heart of hearts to hear you exclaim that, "*The hand that made us is Divine!*"

How anxiously do we watch our plants from their flowering to their fruiting. Every change, from the little green formed berry, every shade, hue and tint until ripe, is carefully and most cheerfully seen. And then, what re-unions among one's friends. First, the little birds

claim a due proportion of the luscious fruit ; and we never allow their demands to be abridged or curtailed. We should as soon think of driving our little children from under the paternal roof as to drive one of these little warblers away from the strawberry bed. That cat-bird, and those little pe-wees at first seemed to go about the beds on the sly, or rather to work by stealth. At last, however, when they learn how we duly appreciate their soft notes of morning music, they gain confidence. Our sense of obligation once acknowledged, for the early song, these little birds soon become inspired with fresh courage, and mingle in the strawberry beds, and among the boughs about our window, as familiarly as if we had given them *special invitation*.

At last, when the fruit is fast ripening, we look over the beds and behold the cheering sight. The fragrance of the rich strawberry is inhaled at every turn. Our heart begins to expand. We thank the Good Being that He has bestowed upon us such bounteous luxuries, and think of our friends in the city, who are deprived of such blessings as we are about to enjoy. A few of the most intimate flit across the imagination. They must be invited to the feast !

We set about picking the ripest fruit, the birds bearing us company, though they do not add any to our swelling plate. Evening arrives, our little company comes in ; the oldest boy is dispatched to Madam Louderback's for some of her choicest ice cream, and then what a sight ! How delightful to the eye and the taste ! Ice cream and strawberries ! And how well the vanilla scented cream seems to harmonize with the "Longworth Prolific" and the "McAvoy Superior." One, at such an hour, would scarcely think there should be such a thing as "strawberry quarrels," or even a difference of opinion on the delicate subject. It would seem a fitting occasion to have Hovey, Prince, Longworth, Warder, Stoms, and all the quarrelsome gentry together, that their difficulties might be settled without even a *sour* look of one at the other. On such an occasion just imagine the cheerfulness of one's friends ; their absolute mirthfulness ! At the same time the fragrance of a trumpet honeysuckle is wafted through the open window as we partake of the voluptuous fruit which, with every thing around, conspires to make the time and place quite an elysium. But stop, says one of your cold, stoical, calculating individuals, "your berries cost more than if you were to buy them in market." Very well, we admit all you say, and more too ; but don't you see that our berries are not soured from having been picked some twenty or thirty hours, and carried eight or ten miles to market ? And then, we have just recited a list of pleasures in their growth and cultivation which we take especial pains to inform you, *that money can not buy*.

THE HONEY-BEE-PATENT HIVES, ETC.

THIS interesting little insect has engaged the attention of naturalists as well as agriculturists and horticulturists, certainly as far back as the time of Virgil.

Perhaps more has been written on the habits and economy of this tiny creature than of any other *animal* employed in agriculture, and certainly, for the most part, to as little purpose.

Loudon, in his "Encyclopedia of Agriculture," says: "After all that has been done in England, France, and Italy, the bee is still more successfully cultivated, and finer honey produced, in Poland, by persons who never saw a book on the subject, or heard of the mode of depriving bees of their honey without taking their lives." And certainly, notwithstanding the numberless patent hives, and the boasting and parade about them by sundry inventors, the enormous products from bee-feeding, and bee-breeding, the same may be said to be, to a great extent, true in this country of Yankee invention.

In relation to many of these would-be improvements that have been palmed off upon the public, for the better management of the honey-bee, we feel ourselves pretty well posted.

One sets forth that he has found a most successful preventive to the moth—the bee's greatest enemy; and he is ready with his hive to warrant complete success against its depredations. And, after all, instead of a moth-trap, it proves the veriest moth-palace, to protect and preserve its deposits, that could have been invented.

Another has made the discovery that it is natural for bees to work *downward*. Another to work *upward*. Another to work sidewise. And hives are presented in conformity to each of these methods, with a bundle of certificates from A, B, and C, to show the respective claims of these several modes, and exhibiting, uniformly, results more or less exaggerated. Another has found out a plan (and this is the greatest humbug of all) for manufacturing honey rapidly, by working his bees in a grand confederacy, and feeding them upon a cheap kind of food, made according to the following recipe: Take Cuba honey, or common wild honey, and an equal amount of brown sugar, and add as much, by weight, of water as you have honey and sugar; boil together, and feed. And the statement is, that you will have seventy-five per cent. of honey, such as will sell readily for twenty and twenty-five cents per pound. If you want a superior article, use loaf instead of brown sugar; and if you

wish a delicate flavor, scent as you would ice cream, with vanilla, or rose, or lemon. You may thus, say they, manufacture an *article far surpassing the nectar from flowers!* Statements are now in our possession, showing that a *confederacy* of three hives have produced a *thousand pounds* of beautiful honey in a single season!

Then these bees, on the community plan, are kept strong and healthy, says the learned *savant*; and they will increase much faster, and consequently be able, by their increased numbers and increased strength, to keep their enemies effectually at bay, etc., etc. We will not delay to expose these ridiculous fallacies.

The game appears to be this: a company in New York city have sent out an agent to sell rights of a certain patent for constructing a large or small apiary on this community system; connected with this feeding process, they sell the honey in great quantities, and at a great advance, and, while the agent sells the rights and they the honey, between them do a thriving business.

The agent made to us the statement that he had sold *seventy-five thousand* of these rights in the single State of Ohio (be it true or false, we give it as received). After having gone the entire round of bee patents, while we have found them all alike unprofitable investments, and will not pay in a pecuniary point of view, yet we have derived, at every step, valuable information, and have satisfied ourselves in relation to many interesting inquiries; so that, if we offset the pleasure, and the numerous interesting facts ascertained, against the pecuniary losses experienced, we feel ourselves still the gainers by being well humbugged.

We have, by our experience, expensive as it has been, learned some things which it will be well for every practical bee keeper to know and observe.

And first, to rest satisfied that the simpler his hive is constructed, the better.

As to its construction, we recommend that it be made of good seasoned pine lumber, one and a half inches thick; and as to its dimensions, it is not material, so that it shall contain at least the space of a cubic foot; it should not be smaller, and larger is unnecessary. There should be space above the main hive for storifying—say six inches—which should be occupied with two boxes. The rear of the main chamber and the boxes should be glazed, so that you could see the state of the hive at any time. This is simply the old fashioned hive, with the back board of the hive hung to inclose the glazed side. No new principle is involved. In the next place, you want no miller-traps or miller-catchers. If a hive is in a good healthy condition, it will resist the encroachment of the

miller; and this can be readily seen by a little practice. We mean, by a healthy condition, having the presence of a prolific queen, and an ordinary amount of bees—which it will have if such queen be present. Such a hive will *never* be taken by the miller; if they are not in such condition, no vigilance can keep it out.

Again, your bees need the closest attention just after they have ceased swarming. They are then often left for a time queenless, and in such a state as to be unable to rear a queen. If so, the honey should be taken at once, or your hive, however strong it may have been, and however well supplied with honey, will either be robbed by the surrounding bees, or taken by the moth—and that very soon. It often happens that, being left without a queen, they must depend on raising one; and, if the queen cell has yet to be commenced over a worker-egg, it will require fourteen days from the egg state to hatch one, and it may be some days more before her fertilization takes place, especially if it be cloudy and rainy, which will keep her from sallying out. This event must take place in the open air; and before she is installed queen, the hive is very liable to attacks by the miller, and from the surrounding bees, which, while feed is scarce, as it generally is at this time, are very likely to break through and steal.

Our recommendation here is, if a hive has swarmed out until very weak, to take the honey at once, leaving the few bees in the hive to shift for themselves. For where there are a great many hives and the swarms have been numerous, there will be more or less robbed, or taken by the miller.

As to feeding, the chief object to be gained is the strengthening of weak swarms. This must be done early in the fall, say in August and September; and may be done in the simple hive recommended, by removing the boxes above, and placing the feed in a box or pan, with a float constructed for the purpose. Care should be had, in feeding, to keep the bees of other hives from entering. To this end, it is well to give the feed in the evening, after the bees have entered their hives.

The past winter will prove as destructive to the bee as it has to the fruit, and but a small proportion will survive; and the prudent apiarian will avail himself of the first opportunity to strengthen his bees by regular feeding, when it is sufficiently warm. The best feed is honey and sugar, in equal proportions, with the same weight of water; in other words: four proportionals, one of honey, one of sugar, and two of water. Put them in a pan, and boil and skim, giving it while yet a little warm; and at first, before they have been attracted to it, pour a very little into the body of the hive from the aperture above. If they are very weak, you

lift up the hive, and pour a half pint down through the combs, turning the hive gently about, that it may adhere to the comb's surface, and sides of the hive. If you have no honey, make as above, a sirup of sugar in the same way. It will be good healthful food; and, what is remarkable, can be elaborated into comb at the same time that other portions are deposited in the cells in the form—as our honey-makers would say—of "*pure honey*"—as we say, *of sugar and water*; very pleasant, indeed, if the sugar has been clarified, and the water pure.

But our article has swelled already beyond the limit intended; we will add more anon, and would be pleased to answer any proper questions that may be propounded on this subject.

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THE SWORD-BLADES OF DAMASCUS.

PERHAPS the most famous of all the manufactures for which the city of Damascus has in every age been so renowned, were the sword-blades and sabres which were produced there in the early centuries of the Christian era, and which became celebrated throughout the world for their beauty, the hardness and keenness of their edge, and the very extraordinary strength and elasticity of their temper. A Damascene blade became, in fact, a proverbial expression. The praises of these weapons were sung by bards, celebrated by princes and warriors, and were immortalized in history. In the romantic accounts given in those days, of the deeds of knights and crusaders, most extraordinary tales were told of the feats performed with these magical blades, of the cutting off of heads and limbs, and the cleaving down of skulls, and even of the sundering of bars of iron. They could be bent into a circle and retained in that position at pleasure, and then, on being released, they would restore themselves, by their elasticity, to perfect straightness as before. They would stand the roughest usage, moreover, without being blunted, or indented, or otherwise in any way marred. The art of manufacturing this famous steel was supposed to be lost from Damascus when Tamerlane carried the captive artisans away with him to the East; and though the fabrication of swords was afterward continued there, and is carried on still, the modern weapons do not at all enjoy the fame which tradition assigns to those of ancient manufacture. The most extravagant value was attached to the possession of one of these ancient swords by the soldiers of the Middle Ages. They were sometimes sold at a price nearly equal to a thousand dollars of our currency.

The interest which was attached to these famous weapons was increased by a peculiar appearance which characterized the steel of which the blades were composed. The surface of the steel was marked by waving lines, extending parallel to each other in curious spiral convolutions, from the hilt to the point of the sword. These mysterious lines were objects of great curiosity and wonder to all who examined them, and many fruitless attempts were made to discover by what means they were produced. Grinding the blade would remove them for the time being; but on applying an acid to the fresh surface thus produced, the variegation would immediately re-appear—showing that the effect was not superficial, but that it depended upon some cause pervading the substance of the steel.

A great many attempts were made, from time to time, in different parts of Europe, to discover by what means this peculiar metal was formed, and to manufacture sword-blades, in other places, in imitation of it; but these attempts were never entirely successful. Some supposed that the effect was due to original peculiarities in the grain of the steel used at Damascus; while others imagined that it was produced by combining alternate plates or bars of iron and steel, and welding them together, and then *twisting* the compound bar when hot. Some imitations of the Damascus blades were made in a tolerably successful manner, during the last century, by French armorers, under the direction of an officer of artillery in that country. His method was to take a number of bars of steel of two kinds, differing from each other in color and lustre, and laying them side by side in alternation, to weld them all together, so as to form one compound rod or bar. This bar was then heated to a red heat, and twisted into a spiral form, by fixing one end into a vice and then turning the other by means of strong pincers. Three of these twisted rods were then laid side by side and welded together, and the sword-blade was then forged out of the doubly compounded bar thus formed. On grinding and polishing the weapon thus produced, the surface was found to be marked by waving variegations similar to those of the Damascus blades; but the manufacture never attained any great celebrity. The Damascus steel thus retains, and will probably always retain, its traditional pre-eminence; though it is doubtful, after all, whether the very lofty reputation which it has enjoyed is not due more to the spirit of exaggeration and extravagance, in respect to every thing connected with feats of arms, which prevailed in the age in which it was fabricated, than to any real superiority of the metal over that produced by the artisans of modern times.

SPONTANEOUS PLANTS.

It is, perhaps, well known to our readers, that the marshes on S. Boston Bay, between Roxbury and Boston, have been "filled up" within a few years, with gravel brought in railway cars from Quincy. This gravel, or a large portion of it, was taken from a hill where it had remained undisturbed for many centuries. Yet this large tract of "made land" is now covered with a dense vegetable growth, embracing a great variety of plants, most of them of common varieties, the seeds of which are compact, hard, and heavy, and covered with an enameled shell, all of which would seem to preclude the idea that they could have been wafted from a distance, through the atmosphere. How could these plants have originated? Were the seeds deposited in the gravel and soil, many ages ago, and have now germinated on being exposed to the action of the atmosphere and heat? Or is there some other process of nature by which vegetation, under certain circumstances, may be produced without any apparent cause?

Indeed, there are few things more extraordinary, or have been a greater puzzle to naturalists, than the appearance and development of certain plants, in certain circumstances. It is sometimes the case, that when a deep pit or well is dug, the earth, thrown up from a great depth, fifty or a hundred feet, and which has been for many ages buried far beneath the surface of the earth, on exposure to the atmosphere, and heat of the sun, will give forth myriads of plants, of a certain description, which perhaps have not been seen in that vicinity for many years. It is stated on good authority, that after the great fire in London, in 1666, the entire surface of the destroyed city was covered with such a profusion of cruciferous plants, the *Sisymbrium irio* of Linnæus, that it was calculated the whole of Europe did not contain so many plants of it! It is also a well ascertained fact, that if a spring of salt water makes its appearance, in a spot at a great distance from the sea, the neighborhood will soon be covered with plants peculiar to a maritime locality; which plants, previous to this occurrence, were strangers to the country!

These circumstances are singular, and furnish a vast field of speculation for the natural philosopher.

AN old lady reading an account of the death of a distinguished lawyer, who was stated to be the father of the Philadelphia bar, exclaimed, "Poor man, he had a dreadful noisy set of children."

OUR VIEWS AND REVIEWS.

PUBLIC NOTICE

The Spring Exhibition of the JUNIOR CLASS of Farmer's College, will be held in the College Chapel, on the evening of Tuesday, the first day of April, 1856. Our patrons and the public are invited to attend.

"MOORE'S RURAL NEW-YORKER."

This standard agricultural journal and family newspaper is warmly welcomed to our table of "exchanges." Its matter is always well prepared and judiciously selected; while its agreeable miscellany of "Facts, Figures and Fancies," imparts to it an air of vivacity, delightful to both old and young. We warmly commend it to the favorable notice of the farmers of Ohio.

OUR METEOROLOGICAL REPORT.

This Table is fully and faithfully prepared each month, by our Professor of Natural Science; but as the Report can not, of course, be fully made up till the close of the *last day* of the month, we find that its publication for the month immediately preceding will necessarily detain the issue of the *Cincinnatus* too long beyond the first of the succeeding month to be satisfactory or proper. We, therefore, must omit the report for last month in this number. The April number will, however, contain the February Report, and so on, regularly throughout the year. And, inasmuch as these reports are designed more as a record for reference in future years, than for current news, this postponement of their publication for the month will not diminish their value in the slightest degree.

"Ten Years Among the Mail Bags; or, Notes from the Diary of a Special Agent of the Post Office Department; by J. HOLBROOK; with illustrations. Philadelphia: H. Cowperthwaite & Co. 1855."

A pretty large duodecimo, very well executed as to typography, etc., etc., and a book that contains a little to instruct, and much to warn, those who may be exposed to the peculiar temptations of post-office business. A few of the sketches are drawn with considerable graphic force; but most of them are rather tame, and some are positively puerile. The author's purpose of publishing what might be called a "thick book," under a "takings title," is too manifest to escape the most superficial attention. His frequent attempts at punning—at best but "mechanical wit"—are never fortunate, and often failures. His sketch of the lives of the Post Masters General is valuable. The book is "readable," but not remarkable.

For sale by Moore, Wilstach, Keys & Co., Cincinnati.

THE CINCINNATUS.

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APRIL 1, 1856.

No. 4.

DIFFICULTIES AND DISCOURAGEMENTS IN THE ESTABLISHMENT OF INSTITUTIONS FOR THE PROMOTION OF SCIENTIFIC AGRICULTURE—PLAN TO BE PURSUED.

In the first number of the "*Cincinnatus*" the defects of our present system of agriculture are briefly stated, and its remedies considered. In that discussion we were led to the conclusion, that to *science*—to *applied science*—we must look for any radical or salutary reform; and, consequently, before agriculture can realize what is desired, we must have *institutions*, manned with efficient and able instructors, who shall be provided with text-books, libraries, apparatus, and a sufficient quantity of ground to test, experimentally, the principles and doctrines taught.

We now propose to notice "*some of the difficulties and discouragements in the way of the successful establishment of such institutions, and the plan to be pursued*" in view of them.

It can not be denied, that of the true principles of tillage, the greatest ignorance and indifference prevail, and that the evils consequent are aggravated and wide-spread, and constantly increasing; and while experience has satisfied incredulity itself, that knowledge is as needful to the agriculturist as to any other class of society, it must appear passing strange to every reflecting mind, that a pursuit having such intimate connection with physical science, predicated so uniformly and so exclusively its practice upon its principles, should have commanded no more attention, even among those of scientific experience and research. True, our leading statesmen and political economists have frequently adverted to this subject, and urged its importance upon public attention; but to what

purpose, let the history of the past, and the condition of the present, furnish the reply. It must appear palpable to the political economist, indeed to every reflecting man, that upon the proper consideration of this subject, and timely action in its behalf, depends the welfare of these States, and the permanent prosperity of this great nation.

It will not be a half century from this day when the United States will contain a population of eighty millions. Then, as now, from the very nature of our soil and climate, three-fourths of this vast multitude will be engaged in the pursuit of agriculture.

The question — What shall be the characteristics of this commanding interest? must be regarded as one of paramount importance. Shall the many errors now prevalent in practice, and the consequent and constantly accumulating evils, be propagated from generation to generation? Shall the science of agriculture, embracing in its comprehensive range *all science*, and which in its subjects, bearings, and relations, is literally limitless, continue neglected and unheeded as hitherto? Some are ready to ask, may we not, amid the difficulties and discouragements which have thus far attended the efforts put forth, look with hope and confidence to the progressive spirit of the age — a spirit awakened and sustained by the progress of science as applied to the arts — to accomplish for agriculture all that is desired?

It would seem indeed plausible, that those potent influences which have so revolutionized society, and waked the universal mind from its night of centuries, would be adequate for the accomplishment of the work in question. Let but these influences be successfully brought to bear and the work is done. But can we expect its accomplishment through the means and instrumentalities now employed? Can science, which is to be the acknowledged remedial agent, pervade society through the slow and uncertain system of percolation, going on through the instrumentality of fairs, agricultural journals, farmers' clubs, or here and there a straggling lecturer? We answer, emphatically, No. They have their proper mission; these means have done, and are doing, much. But they stop infinitely short of the object; they go upon the supposition, that the soil upon which the seed is thus sown, is prepared for its reception, and that all we have to do is to await the harvest. An experience of over sixty years of unexampled national prosperity should satisfy us that such hope must continue to prove illusive. No: we might as well expect to "gather grapes off thorns, or figs off thistles" as to expect to reap a harvest of scientific results from the seeds now sown, the instrumentalities now employed.

The very *declaration*, that the farming community, as now educated,

is capable of great progress, with no better means of scientific analysis or experiment, with minds entirely undisciplined for proper classification or arrangement of facts, with no knowledge of the first rudiments of science, is simply absurd and ridiculous. Especially must this be the case in relation to a science, as is that of agriculture, the most complex, the most profound, and one into which so many disturbing and modifying circumstances enter. How often is it the case that we see two farmers, with the facts which have come under their respective observations, arrive at widely different if not opposite conclusions—perhaps both alike contradictory and absurd. And it is by no means unfrequent for those making pretensions to scientific knowledge, and large experience, to differ materially in practice.

The conclusion must be obvious, that, to supply the great need, *we must have extensive experiments, and analyses*, based upon numerous well attested facts, conducted by persons thoroughly versed both in theory and practice, *men of science*, with time and means to carry on their investigations, to ascertain the true principles of tillage, and so to elucidate them as to render them easy in general practice. But, say many, *public sentiment is not prepared for such a work*—we must postpone it, forsooth, until the physical atrophy, now silently but surely going on, shall impel the people, by a kind of blind necessity, to resort to the proper correctives; yes, we must wait until our prairies and wild lands shall have been exhausted, as are now large portions of our eastern States; in other words until starvation shall stare us in the face, and want clamor at our doors! We believe that the time to begin this work *has come*; and that while science, applied to the various arts, is exhibiting such benign influences, and the rattle of machinery, and the rumbling of the rail car, are constantly reminding us of its triumphs, shall not the farmer summon to his aid its potent agency, and experience similar beneficial results? Now, these multiplied facilities, furnished by modern science, so far from improving our agriculture, are stimulating industry to the highest pitch, and thereby drawing more rapidly the elements of fertility from the soil, rendering its impoverishment the more speedy and certain. Now, our farmers seem to have taken but additional encouragement from the fact that, after they have plundered and wasted the elements of fertility in the land which they are now cultivating, so that the crops are no longer remunerative, it is only a few hours ride to a prairie of supposed inexhaustible fertility, and that any quantity of it may be had for two dollars an acre, a less sum than they can realize from the farm now under their unskillful hands. Hence we may see multitudes pulling up stakes and moving west, to pursue the same Vandal course; to run

over again, on a large scale, the same improvident round of tillage. If any more potent motive were sought, or urgent necessity pleaded, for immediate action, than the one furnished in the startling fact, that we are worse than wasting the capabilities of the soil now under cultivation, to an extent not less than three hundred millions of dollars (\$300,000,000), annually, (so say our patent office reports), I know not where it can be found. And were it possible to find such motive, it would be alike inoperative as long as a bare subsistence could be obtained; and if the call for an adequate remedy were made when starvation was upon us, it would be as useless as it would be impracticable. To fold our hands, then, in inactivity, under the plea that we have millions of acres of unoccupied and unwasted domain, and want is yet in the distance, in reserve for generations yet to come, is as unwise as it is improvident and wicked.

But our objector still urges the plea, that the public mind must be better prepared before we enter upon this work. To show *how slow* our progress has been amid the multiplied facilities so often appealed to for effecting the proper preparation, we will delay a moment to notice a few of the ideas and sentiments in this particular, expressed by some of our leading statesmen, from the origin of our republic to the present.

And first we find, that Washington, himself, recommended that a national institute be established, on which subject he used this language: "Your young military men, who thirst to reap a harvest of honors, don't care how many seeds of war are sown; but for the sake of humanity it is devoutly to be wished that the *manly and dignified employment of agriculture*, and the humanizing benefits of commerce, should supersede the waste of war, and the rage for conquest." And Judge Peters informs us that it was in contemplation, and that his object was well nigh carried into effect in the year 1796, to bring before Congress a grand plan of engraving the subject of agriculture into a national system of education, and of placing the cultivators of the soil, and their instruction, under national patronage. Had this been done, what advances would have been made in the sciences of chemistry, botany, and geology, in their agricultural and horticultural relations! What dignity and position would the farmers of this broad land now have rightfully secured to them.

James Madison adds his testimony as follows:—"To the due success of agriculture, both theory and practice are requisite; they reflect light on each other. The former, without the tests of the latter, is a vain science; the latter without the precepts of the former, is generally enslaved to ancient modes, however erroneous. In no instance is habit

more unyielding, or irrational practice more prevalent, than among those who cultivate the earth. And this is the more to be lamented as *agriculture is still so far below the attainments to which it may fairly aspire.*"

The late Gov. Silas Wright, of New York, says:—"It has scarcely occurred to the agriculturist, that the study of the principles of his *profession* had any thing to do with his success; or that what he had demanded from *his soils*, should be considered in connection with what he is able to *do for them*, and what he is about to ask them to perform; in short, that a profound science underlies agriculture, which demands his closest study, his patient investigation."

Once more: we quote the language of our excellent ex-governor Trimble, while member of the State Board of Agriculture:—"We are in advance of any State of our age, and many older, in the means we have provided for the literary culture of our youth, but while we have numerous academies, and many well endowed colleges, we have not a single institution in the State which prepares a young man for understanding, as a farmer, the natural elements with which he deals, and for creating and applying artificial elements for the improvement of the soil."

These are only specimens of the views of our great ones, in relation to the demands of this greatest of all interests. To collate them all would fill a volume. And yet what is the fact? While there has been no more popular theme, and politicians have been enthusiastic in praise of the "Farmer," though presidents, governors, and statesmen of every grade, have recommended more attention to the great agricultural interests of the country, and have advocated the establishment of institutions for the promotion of scientific agriculture; while men of science have petitioned Congress for aid but to endow a single professorship of agricultural chemistry, in some of our colleges; while hundreds of secular presses, as well as those especially devoted to agriculture, have advocated this important measure; and yet again, while the people of these States have endowed and now sustain over three hundred colleges, not one such institution of a high character, has, heretofore, been established, no, not even a professorship created, to elevate, dignify, or advance directly and immediately, this noble pursuit; while millions have been expended upon our army and navy, and millions more improvidently squandered out of the public treasury, the pittance doled out to agriculture, in connection with the Patent Office, though exerting an immense influence for good, is scarce worth the mention. Yet, while this destitution has been pointed out, and is seen, and by many deeply felt, we are told that the time has not come to enter upon such a work: we must wait till public sentiment is ready.

Again we are told, and told truly, that while our farmers are sufficiently numerous to do by their votes and money what they please, they are still indifferent to the fact and slow to apply the remedy. The blame rests not entirely with them. The facts before them, and from which they reason, justify the position which they take. They look upon all the literary institutions in the country averse to their interests; for in their organization, management, adaptations, and results, the tendency is to draw the minds of those coming under their influence, away from the pursuit of agriculture, and place them upon something in their estimation more honorable and commanding.

The college was framed, and continues still, the type of its original, adapted to those who have in prospect one of the three learned professions, Law, Medicine, or Theology; and if the Farmer is led to patronise the existing college, as he often is, by sending his ‘Premium Boy,’ he has been taught to think while at home, and the impression is deepened at college, that he *must* pursue one of these professions; or otherwise that the merest rudiments of the English language, is amply sufficient for him. Hence, the most liberal course prescribed for those who are to follow farming, is reading, writing, and arithmetic; and, by way of extras, a little grammar, and a little book-keeping by *single entry*. The argument being, that, ‘Father has got along very well, *with nothing like this amount of learning, and made money.*’

Thus, have the educated and the uneducated alike, degraded and rendered undignified a pursuit as noble, a profession as honorable, as any that God ever made necessary for man to follow. There is not one that admits the possibility or affords the materials of a richer and more varied culture, or a more profound and thorough development of all that constitutes the *true man*, and the **TRULY GREAT MAN** too, than this very same pursuit. An intelligent gentleman related to us this fact in regard to a son he desired to fit, as he said, for the profession of farming. He sent him to a leading college in Indiana, with this instruction to the President: “I wish my son to study those sciences which will best fit him for the profession of a scientific farmer, viz: Chemistry—Elementary and Agricultural—Botany, Geology, &c.” After having entered upon his studies, and receiving his full quota of Latin and Greek, the president sent word to the father that he had a *very promising son*, and that he had better qualify him for a profession; that they did not teach Agricultural Chemistry, and that there was no *profession of farming*. The president in this case stated to the old farmer a plain fact, and simply pursued the ordinary course; and without entering in this article into the merits or elements of the course of study marked out in these

institutions, I would state, without fear of successful contradiction, that here lies one of the chief difficulties to be encountered, and all attempts must, under the system pursued, fail to educate farmers *as farmers*. Underated as this pursuit now is, in the estimation of the educated, and uneducated; and with the prestige of antiquity in favor of the old literary and highly classical course, to the utter exclusion of any other, the completion of which shall entitle the individual to equal honor, reform or change must necessarily be slow; and in order to this change, the mind of the agriculturist must have some more adequate conception of what a thorough and liberal scientific education consists in, and what are its benefits; and the educated must yield the point, held with so much tenacity, that in order to develop successfully the human mind, and properly discipline its powers, there is but *one course* of study by which effectually to do it; no difference what are the tastes, talents, or disposition, or what is to be the pursuit of the individual to be educated. But reform can not be had without the effort; and one institution successfully established, the work would advance more rapidly. And here another difficulty meets us in the first establishment of such an institution in answer to the question, whence are to come the instructors? Are there none among us possessing the necessary scientific knowledge united to the practical, to be able instructors and successful manipulators in this department? True, there would be some difficulty at the outset, as the department is yet to be literally built up in all its parts; but here, as before stated, there must be a beginning, and certainly the time has come for the incipient steps, at least. There are men of profound scientific attainments, men of research, who have never made application of the principles, or witnessed the results, who could keep in advance of those under their instruction; and who, in the prosecution of their investigations, would more effectually inspire their pupils with zeal, and at length would become eminent in their profession. Another and hitherto insurmountable difficulty has been to secure a sufficient amount of funds, to provide the means and appliances necessary for making a successful experiment, such as land for experimental purposes, library, apparatus, shops, lecture and recitation rooms, etc. As the public utility has been the chief object in enterprises of this kind, the appeal for such aid has been to the State, and thus far without success. In this State, the effort has repeatedly been made; also in Massachusetts, and Connecticut, while in New York, the effort has been unremitting for thirty years past. This is, as might be expected; and dependence upon this source must be vain, so long as no proof shall be exhibited that such outlay would be judicious. If, by individual effort, results of importance

and value shall be exhibited, we may expect the State will come to our aid.

The only practicable plan then of attaining the desired end, in our judgment, is by opening a department, embracing a course of instruction adapted to this great industrial pursuit, on the university plan, liberal, and extensive, with honors appended to its completion, inferior in no respect to those usually conferred upon those who pass through what is called the regular classical course. This course should embrace so much of the practical as to test by a series of experiments, the theories and doctrines taught. Through the instrumentality of the frequent and rigid analysis made, and the various experimental tests applied, on the farm, and in the garden, the mind would be inured to close investigation, patient thought, and constant resonings; and they would induce a habit of scanning profoundly every subject entered upon, so that instead of sciolists, the tendency would be to make sound thinkers, and active and efficient men in every department of life. It would greatly tend to correct the now too prevalent opinion that the *ne plus ultra* to be gained is not sound scholarship, but the ability to declaim fluently and with effect.

That the establishment of one such institution is a desideratum, can not be questioned; and one such, *permanently established*, must prove a triumph that would redound to the highest interest of Agriculture, and Horticulture, and tend to give to that department that honor and dignity of position, which its importance justly and imperiously claims for it. And we are gratified in being able to state to the patrons and friends of "Farmers' College," that *one hundred thousand dollars* have been raised to accomplish this object in connection with this Institution.

One hundred acres of good land have been purchased for a model and experimental farm; a separate Laboratory is now in progress of erection, that will contain rooms for recitation, cabinets, workshop, and a large lecture room, etc. A Botanic Garden of twelve acres is being laid out upon a portion of it, which will contain an arboretum, embracing every variety of forest growth, shrubs, etc.; also, conservatory, greenhouses, viney, apiary, etc. The farm will be partitioned into small lots to show the most approved rotations, to test the various grains, grasses, vegetables, etc. Also, fruitages, to experiment in various fruits, test their qualities, fix their names. In short, the whole arrangement will constitute a grand laboratory, by which the science of Agriculture and Horticulture will be permanently advanced, and their great interests promoted. Already there have been set upon the farm, over two hundred varieties of the pear, sixty varieties of the cherry, besides numerous varieties of the peach, plum, etc. Thus it will be perceived, that the

department is now open, and progressing as rapidly as can be expected. The work has been here commenced under the full conviction and in the belief, that progress will be slow ; and that if we wait until all obstacles are removed, another half century will have elapsed before any successful effort shall have been made, and evils will then have been entailed that centuries more could not remove. We would here briefly enumerate the reasons influencing the Board of Directors of " Farmers' College," to found and fund such a department :

First, It has been a leading feature of this Institution, from its origin, to furnish, in addition to its classical course, a *curriculum* of study, eminently practical ; and, many of its patrons being farmers, to give special attention to Agricultural Chemistry, Geology, and other sciences, having an intimate relation to this pursuit.

Secondly, Because it is for the highest interest of the country to bring agriculture to the highest state of perfection.

Thirdly, The cultivation of the earth and all its processes involve the use of natural laws ; and, therefore, to render it most successful, requires an extensive knowledge of the physical sciences.

Fourthly, Attempts to cultivate the soil without the aid of science, must necessarily lead to waste and loss of much time and labor, by counteraacting natural laws, instead of co-operating with them.

Fifthly, Improvements in the science of agriculture have heretofore been much neglected, and have never received that public attention bestowed upon the arts, and other branches of industry.

Sixthly, Such improvements require not only a knowledge of the sciences, but also, a practical application of their principles to all the various modes of working and treating soils ; and in consequence of the constant advance and disclosures of science, numerous and difficult, time-consuming experiments therein have become necessary, which can be satisfactorily tried only when and where ample preparation is made for them ; such experiments farmers generally have neither the time, means, nor qualifications to conduct ; and, if made at all, they must be made by a combination of effort, under the supervision and by the direction of men of profound scientific attainments.

Seventhly, In an institution or department such as is proposed, may be taught to the best advantage, everything calculated to render the business of farming more flourishing, prosperous, and productive ; such as enriching and draining soils, preserving and restoring their fertility ; the application of mathematics to mensuration, surveying, leveling, drawing, drafting, garden designs, the laying out of grounds ; also, zoology, entomology, and natural history in general, political economy, and many

other branches, a birds eye view of which, can only be gained in the time devoted to what is called the ‘regular classical course,’ and with which, every liberally educated scientific farmer should be thoroughly acquainted.

Eighthly, This Institution, being a pioneer in reform, should be situated where most would see its doings; and hence, the vicinity of Cincinnati is the most favorable of any point in the State, or the great West. The farm and garden with its varied improvements would be visited by more people than anywhere else; here, also, it could be supplied with all kinds of seeds, plants, etc.; for these and other reasons, the Board have prosecuted thus far, with zeal and liberality, the establishment of this department.

OUR EXPERIMENTAL FARM.—ASIATIC SEEDS.

In view of beginning active and extensive operations in the agricultural department of the Institution on the opening of spring, arrangements had been made for obtaining from both Europe and Asia, the seeds of such plants as might be deemed new and important to the agriculture of America.

Through the kind attentions of the Rev. D. M. WILSON, formerly of Ohio, now connected with the American Mission in Syria, we have been favored with a most valuable package of seeds sent from that remote land. They have come to hand, too, in excellent order; and by means of our Experimental Farm, we purpose to establish their *habitat* in this region of the new continent.

In thus attempting the adoption of such plants and vegetables as other regions of the globe supply for the uses of man, with a view of domiciliating them here, we feel encouragement from various considerations. One of which, is the fact, that, like every other useful art or science, agriculture is essentially cosmopolitan. Its aims and efforts are not bounded by the limits of a continent, not confined by the geographic divisions of empire, not circumscribed by regions nor races. Another is in the belief, certainly not unreasonable, that as in our Indian corn and the potatoe, America has given to other continents, and to mankind, two of the most valuable products known to agriculture, so we may yet find in the products of other and far off lands, some reciprocating products, that, if here domiciled and adopted, may add still other blessings to mankind, and weave yet another wreath in the chaplet of honor to Agricultural Science. And still another consideration for encouragement is, that, situated as we

are, and aim to be, with a Model Farm, devoted to scientific experiment, with a full corps of scientific men, devoted to the systematic prosecution of those experiments, with laboratory and apparatus for testing all problems that those experiments present, we can be assured of proceeding onward by the light of science to the goal of practical truth. And even when our experiments fail to produce profitable results, the failure itself becomes a source of gratification, inasmuch as it is a source of information that may save others from loss, where loss might prove ruinous. With us, failures are expected ; yet, those failures afford us a kind of negative demonstration as reliable for evidence in a scientific pursuit as are our affirmative conclusions, because it oftentimes becomes as important for farmers to know what *can not* be done, as to be informed of what *can*. Indeed, it frequently occurs, that as to science and scientific truth, we know what is right by discovering what is wrong. Hence, we are continually taught to succeed by failures in our attempts at success. By learning where and how we diverged into error that led on to failure, we learn to shun the divergence, and thus make our way onward to truth. In fact, no insignificant portion of all his knowledge, and much of the most valuable, man has acquired from his mistakes.

It is in this spirit of philosophy that our experiments are to be conducted ; and, therefore, aiming more to demonstrate the real and the practical, than to exhibit the fanciful and the ornamental.

We have taken the liberty to premise this much as matter introductory to the Rev. Mr. WILSON's interesting communication, addressed to the Principal of our Department of Agriculture, and which accompanied the seeds sent:—It is as follows:

Homs, Syria, Dec. 22d—1855.

MR. F. G. CARY—*Dear Sir:* Your request for some seeds of Syrian produce came to hand some months since, and I have been waiting to hear from you again in reference to the best mode of putting up the package. The public posts are not very regular in winter, and if you receive the package, it is of course desirable that it be in time for your spring operations; I therefore send them without further delay. Hence, you will probably be disappointed in the arrangement of the package; but you will please bear in mind two facts—The first, being one set down in the geographies, that Syria is a *half* civilized country; and the second, that my location in the land is not the very best for collecting a very extended variety. Eight years absence has made me a stranger to the arts and sciences in the Miami Valley, and no doubt some of the seeds sent will remind you of the story of sending ‘figs to Athens.’ But

the rule with agents is to obey orders though they break owners; and even if you do not derive the measure of gratification you have anticipated from the import, there will be at least this consolation, that it has not cost so much as the capture of Sebastopol!

I have numbered the various kinds and append such brief hints and explanations as may seem to be in place. It has seemed to me hardly worth while to send many seeds of any one kind, as a few will serve your purpose of giving them a fair trial in your soil and climate. Should there be found any thing encouraging in the result, and should I remain a year or two longer in this land, I will with great pleasure aid you in enlarging the experiment.

SEEDS SENT—NOTES.

No. 1. WHEAT: — This is of the kind called “Hamath Wheat,” and is, indeed, the only kind produced in this region of Homs and Hammath, the great granary of Syria. The only other kind I have seen is of a reddish hue, and a smaller kernel. I have not seen the Hammath Wheat growing, but suppose it is beardless, and therefore not easy to shell, and of course, hard to thresh.

No. 2. BARLEY: — The Barley is used for horse food mostly; yet now, as in the days of the Saviour, the ‘barley loaf’ is here no marvel. Barley is never brewed in Syria. Both this and the Wheat are sown in the autumn; but it would do no hurt to try a few seeds in the spring as an experiment.

No. 3. MASH: — The name is Persian; and the seed, being nutritious and easy of digestion, is regarded as very good for persons recovering from wasting sickness. It is not grown in large quantities, but is for sale in all our cities. It seems to be not improbable that this constituted a part of the food of the good man Daniel, when he ‘refused the king’s meat.’ I have seen it growing in the field, and it appeared as though it had been drilled in planting. It produces pods in clusters suspended on a single stem—the pods close together, parallel, and in the same plane. The plant resembles a bean.

No. 4. BAYA: — This is of the same general nature, but of a larger bean than the Mash. It is used for food, and probably grown in the same way.

No. 5. DUCHEN: — This is a field plant, grows higher than barley, and with a sprangling top. It may be sown broad-cast; but, when ripening, will need to be guarded from the birds, for so great is their fondness for its seeds that they seem literally crazy for it. Its grain is sometimes used for food, but is here principally devoted to the use of

fowls. But even for that purpose it might be well to give it a trial in your soil.

No. 6. THE SYRIAN APRICOT: — I think it probable that these fruit stones may grow in Ohio. If you plant them in the spring, the better way, perhaps, would be to crack the stones before planting. I am not certain that the natural fruit will be very good; but these stones are from the most delicious of all the *tree* fruits in Syria. Here, the peach is always grafted into these Apricot stocks. The fruit when fully ripe soon becomes too soft for handling. Here they are dried with the stones in; and, as peaches and apples are never dried in Syria, the dried *Mish-mosh*, as they call this Apricot, is almost the only sort of dried fruit we have besides the fig, which is too sweet for daily use.

No. 7. A GOURD SPECIES: — This is eaten, like the cucumber, while yet immature. It sometimes attains to the length of *four feet*. Its vine climbs upon a trellis.

No. 8. A WATER MELON: — This species of the Water Melon is here call *Jebas*. It flourishes in the region of Homs, and is quite distinct from the Jaffa Melon. In appearance it resembles your citron, though much larger. Protected from frost it would continue sound in Ohio till New Years; indeed it can be preserved in its natural state with even less care than the Pumpkin.

No. 9 POMEGRANATE: — This grows here in places as cold as the latitude of Cincinnati. Both externally and internally it is a *magnificent fruit*. The tree is very hardy and comes forward rapidly. It is always small here, because the Arabs never trim their fruit trees, unless it be when in want of fuel! The root is regarded as a valuable medicine.

No. 10. CASTOR BEAN: — The Castor Bean is here a perennial, when allowed to have its own way; yet it is often planted as in America. I have seen *trees* of this a foot or more in diameter, and as high as the peach tree. It is a determined, hardy plant that will grow anywhere, and grow very fast. Many suppose it to be identical with Jonah's Gourd [or Jack's, the Giant Killer's fabled Bean Stalk? Ed.]. Nothing can be more agreeable to the eye than the deep green of its foliage.

No. 11. BLACK EGG PLANT: — The "*Btenjan Asicad*," as the Arabs call this plant, is used everywhere. Plant it like the Okra, and if the soil and culture be good, it will grow from four to six feet in height; the fruit hangs from the horizontal limbs. It has a smooth, glossy skin. To my taste it is, however, an insipid sort of trash; but the people here could scarcely dispense with it. They dry immense quantities of it for their winter use. In its natural state it may be stewed; but it is usually

fried in olive oil, and constitutes a great reliance in times of the oft-recurring, and I may almost say the never-ending fasts of the Greeks and Greek-Catholic Churches.

No. 12. CUCUMBER SEED:—I send this because it differs from the kinds I used to see in America, in having an exterior as smooth as an apple. It is not quite so hard as the American kind, and not quite so good for pickling—its taste about the same. Cucumbers quartered, unpeeled, are here regarded as a greater delicacy than apples, peaches, or pears, to set before company. Truly, tastes differ—and *why*, who can tell?

No. 13. WILD FOUR O' CLOCK SEED:—This lives from the root; and, in its line, is really a gigantic affair. Any spare garden corner will answer for it; and every night and morning, for months, its flowers are legion!

No. 14. SIMPSOON:—This is quite an article of commerce in Syria. I do not know all its uses; but the most common of them is, to sprinkle it upon the dough of bread, just before going into the oven. Let the loaves be made quite thin, with this baked upon them, and when the bread is piping hot I assure you it is not hard to take! Many Franks are extremely fond of it.

No. 15. ADIS, or LENTILS:—These are sown like peas in field culture, and are a solid, nutritious sort of bean, and not unpalatable. *Esau's pottage?*

No. 16. LETTUCE:—This seed is from Homs, where the plant is found superior to any I recollect of having seen elsewhere. It grows much higher than the kinds I was accustomed to see in America; and the inside leaves are very tender, juicy, and sweet.

No. 17. RADISH:—I know of no peculiarity in the products of this seed, except that it grows larger than anything of the kind I ever saw in the United States. The turnip-shaped radish I have never seen here.

No. 18. MA-ATE:—This is a species of cucumber, growing much longer than the common kind, and generally crooked. They are very solid, and I think must be excellent for pickling. They are more common here than the other species, since they will grow on poorer ground and without watering. The vine is a rough one, and the fruit has a fuzz like the peach. In all probability this is the cucumber alluded to in Isaiah, 1 : 8.—Nothing can be more appropriate or intelligible than the allusion in that verse.

No. 19. THE PUMPKIN:—I can not recommend the Syrian pumpkin,

as I have never yet found a sweet one in this country. Perhaps by transplanting its seeds to a land of liberty its character may be redeemed.

I would like much to send you some cuttings of the better sorts of our Syrian grape vines—but they should be cut in the winter, just the time we never travel unless compelled to. Bhamdom is one of the best places I know of for good grapes. Yours,

D. M. WILSON.

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A LITTLE EXPERIENCE IN GARDENING.

THE following ‘experience,’ given by a correspondent of the *Rural American*, demonstrates the advantages that may be secured by the application of the common principles of science to agriculture.

“In the summer of 1853, I occupied a little cottage in one of the villages of Central New York. There was about half an acre of thin, shaded, and worn-out ground attached to it, notorious for never producing any thing but yellow dock and tory burs. The earth was hard and baked, not having been cultivated the previous season, for its sterility was such that the former occupant declared that the proceeds would not pay the cost of plowing. When I moved there in February, and intimated to a neighbor that I intended to fix up my little garden, he laughed merrily at my “greenness,” and advised me to buy a tun of guano and a hundred loads of manure before I began my enterprise.

I commenced my horticultural operations by throwing together the family urine and the house ashes, daily, into good barrels; the ashes being an absorbent and preventing the escape of ammonia from the urine, and also neutralizing the odor of fermentation. In this way I filled two barrels with well saturated ashes before gardening time came round. When spring opened, I had this material spread upon the ground, and immediately plowed in. The plow was run eleven inches deep. After duly harrowing the plat, it was, in due time, planted with potatoes, peas, carrots, beans, tomatoes, beets, and other usual garden stuffs. No barn-yard manure was put upon it, for I had none, and no other dressing than the urine and ashes was used at this time.

I then sank a tight barrel half way into the ground, at a distance of twenty feet from the kitchen, and built a gutter from the door to the barrel. Into this gutter, and thence to the barrel, all the dish-washings, soap-suds, and other liquid slops of the house were thrown. The

top of the barrel being well covered, and the whole situated in a shady place, not the least unpleasant smell was ever perceived, and better, our kitchen door had no unsightly slop spot beside it to draw the flies. A half-barrel of washings was thus accumulated every day, and as the sun went down, I dipped it out with an old pail, and distributed it among my vegetables. Potatoes, peas, beans, etc., were all alike supplied, the whole of the little plat being gone over in the course of every nine days the season through. Besides this, I continued to save the ashes and urine, which I put around the several articles of produce just as a rain seemed to be approaching, that the substance of the compost might thereby be washed into the earth, and none lost by evaporation. The whole ground was well cultivated with the hoe.

The result of this management was most gratifying to me, and quite surprising to my neighbors. Every article planted in my garden grew fast and stout, and bore earlier and more abundantly than any in the neighborhood. One gentleman, who had a most beautiful, soft, and rich piece of ground, upon which he had put all desirable quantities of well-rotted horse manure, and who was looked upon as the most skillful gardener in the town, confessed himself greatly surprised at the success of my "experiment," and acknowledged that for once he was beaten.

Whether in potatoes, tomatoes, turnips, or cabbage, the kitchen slops and chamber ley treatment proved the superiority of their fertilizing and stimulating qualities. On a patch eighteen feet square I had five bushels of noble ruta bagas; from twelve tomato vines I gathered fourteen bushels of fruit, and my potatoes yielded a bushel to every six hills. And this return in a very dry season and from a "condemned" garden plat. Verily, thought I, this is good for an early experimenter, and "book learning" and agricultural papers deserve patronage, for from these I learned what little I knew of gardening."

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A V A L U A B L E W I N D I N G S H E E T .

IN making excavations for a railroad in Peru, the workmen recently discovered an Indian rolled up in a shroud of gold. Before the engineer was informed of it, the workmen had cut up the sheet, and divided it among themselves. He judged that the weight of the entire shroud must have been eight or nine pounds.

SPRING WORK.**THE DOOR YARD AND LAWN.**

EVERY mind, sensible to the beauties of nature, rejoices in anticipation of the joyful days of spring, the fragrant flowers of summer, and the golden fruit of autumn. Joyful emotions fill every breast when, after many weary winter days, the earth shakes off her snowy covering, and vegetation bursts forth with renovated strength. The favorite garden surrounding a country home becomes at this time a place of great interest, and its careful cultivation affords peculiar pleasure to its proprietor. It should be his aim to do all that can be done to secure neatness and comfort around his place; every portion of his lawn and pleasure ground should receive careful dressing; all the straw and litter used for the covering of delicate plants and shrubs during the past winter should be at once removed. Borders and beds where flowers are to grow should receive a ‘donation’ of decomposed manure, and a careful spading and top-dressing with the rake. Groups of young trees and shrubbery should be spaded and dressed. The ground around the trees of the lawn should be stirred and put in order; the ornamental shrubbery should receive a general inspection, and where the shrubs are acquiring a size disproportionate to their purpose and surroundings, the pruning knife should be freely used to dislodge the redundant branches; all dead limbs must of course be removed. Great pains should be bestowed upon the lawn to encourage the luxuriant growth of the grass; and, to level all inequalities of surface, rake and roller must be freely used. Judicious manuring will add much to the rich verdure of the lawn; much precaution must be observed in this, however, during the early spring, so as not to smother the grass by the surplus of manure. Fine and well rotted manure should be employed for this purpose, and this should be thinly and uniformly spread over the grass. Borders of walks and carriage drives should receive a careful dressing and pounding; they should not be allowed to rise more than two or three inches above the level of the walk; every irregularity of surface should be carefully corrected. Their outer margin must be trimmed with a sharp spade in order to have it present a true and unbroken outline. The garden walks and drives should be carefully examined, and every break or deformity caused by the frost and wet of winter be mended. A new layer of gravel, sand, or tan-bark, is to be

uniformly spread over the surface and rolled with a heavy roller. The proprietor should aim to make a yearly enlargement of his collection of shrubbery, flowers, and fruit trees, being careful, of course, not to crowd his grounds by a surplus of shrubbery.

As for the greenhouse and pit, where the tender plants are kept, and their growth forwarded, it is to be observed that plenty of fresh air should be admitted, and a bountiful supply of water administered to the plants. By following the above suggestions, the proprietor will find that the pleasing appearance of his grounds and garden will be greatly enhanced.

There is, however, another class of rural homes, if homes they can be called, which present a most forbidding aspect to all beholders. For notwithstanding all that has been said and written in favor of ornamental grounds, of the exalted motives which ought to prompt every one to beautify his home, and of the innumerable pleasures connected with a lovely garden spot, still many a wealthy man's door-yard and garden yet remains in a state of dirt and disorder, filled with mud in winter, and overgrown with vile weeds in summer; where nothing has been done to surround the family homestead with those lovely neighbors, trees, shrubs, and flowers. To such places, a snowy winter, like the one just past, has proved a material blessing. Nature, for many weeks, has kindly spread a pure and unsullied covering over all those dreary and desolate scenes, and for once at least, renders them clean and comely. But since this concealing agency has disappeared, what a sight is revealed to the spectator's gaze! and this question is prompted — are weeds, rubbish, dirt, and disorder, to be permitted to reign around the mansion and over the grounds of a civilized family, till another winter shall bring its snowy winding sheet, wherein to enshroud these ghastly remains, and bury them out of public sight? Let every farmer and gardener, for himself, answer this question; and let him consider that 'now is the accepted time' for putting all this in order, so that throughout the summer he may enjoy its beauty and its harmony. It is no prodigious trouble to scatter the accumulating ash-heaps to the four winds, as a manure; to remove all weeds, litter, chips, etc., to the distant and hidden manure pile, and with mattock and shovel to bury in the ground all minor nuisances 'a fathom deep,' if need be. This done, then plough, or spade, and harrow, or rake, and make mellow the soil; then sow blue-grass seed upon it. And in a short time the dwelling will be surrounded with a verdant carpet of turf, requiring neither labor nor expense to keep it clean and beautiful.

From the gate to the house, a solid and well-constructed walk or drive should be made, which will be found to add materially to the comfort and

neatness of indoor housekeeping. To complete the simple yet tasteful improvements, plant some lofty shade-trees around to give comfort and coolness in the heat of summer. Let the honey-suckle, the trumpet-flower, the vine, etc., grow around the window and over the door; and by all means secure a choice place near your window, for roses and fragrant flowers, whose beauty and perfume may gladden the rooms and regale the senses. Such improvement will not only effect a cheerful change in the dwelling place, but also, with the first successful attempt at rural embellishment, a love for further embellishment will be begotten, and the mind can not rest contented till all parts of farm and garden are correspondingly beautified; and thus the hand of industry, guided by the eye of taste, will surround the owner with an elysium of beauty, ennobling and refining to the feelings, joyous to the senses, and adding new and unlooked-for pleasures to rural life.

Thus far our improvements and adornments are easily prescribed and may be easily executed. But one step further, and we arrive at an obstacle somewhat difficult to surmount, where we encounter the rigidity of particular taste, or individual caprice, and which often causes no slight disturbance of our quiet progress. Our work is no longer a simple, private, unquestioned undertaking; but a jealous Science, and a fastidious Art, now come in to superintend our proceedings. The scientific art of laying out grounds, Garden Architecture, Landscape Gardening, or whatever it may be called, demands the right to criticise our endeavors, to disapprove or commend our procedure. To proceed with greater certainty, we generally deem it best to consult some professional Landscape Gardener; a number skilled in the principles of this Art are at hand—the English, the Scotch, the Irish, or the German, may be selected; which shall be chosen? (Americans but seldom devote their attention to this line of business, as it *does not pay* very abundantly!) With the professional gardener's cultivated taste, the latest London fashions, and the newest Parisian patterns are presented, by whose magic, the loveliest forms and most arcadian scenes are to be wrought and made so perfect that one would imagine that the world was created most hugely imperfect. An admiring crowd wonders at the new creation of human genius and skill, and it is fondly hoped that future generations will remember and revere the gifted Artist's name! A little experience however, will convince any one that, like other Artists, Landscape Gardeners are fault-finding personages, and do not agree on many essential points. Hence, if all their various opinions are considered and pursued, the owner will find his trees and shrubs, his flowers and plants, dancing about in a

confused *polka*, after every new tune that every new Artist will command to be played, and he will obtain neither rest nor satisfaction in the use of his grounds.

To the question—why can not these men agree—and why not work on the same principles, and by similar rules? we have to answer—that the true principles of Taste are not universally understood. We may solve the problem of many disagreements by considering that the man of good taste not only seeks to gratify his own fancy but to please others at the same time, and that the person who possesses the least is the most jealous of what he has, and therefore, the most obstinate in his views. We should remember, also, that those Landscape Gardeners, coming from different countries and forming their ideas from different celebrated gardens and parks, must here bring their peculiar German, Irish, and English notions into contact with each other; no wonder that pertinacious, and even pugnacious disagreements occur. But, happily for the Art in America, a bright genius here and there, towers amid the crowd, exhibits the true scientific principles on which the Art is based, and leads straight onward to that distinction which assuredly awaits those pioneers of Taste on the new continent, who are to give to America a system of Rural adornment—not English, nor French, nor German, but essentially *American!*

Whatever, therefore, may be the opinion of the Landscape Gardener, whatever Loudon or others may have written, let the owners of grounds measure their suggestions by the rule of *common sense*; let him take into consideration his own position, his means, the country, its soil, its climate, its native scenery, etc., and he will never become a copyist of foreign grounds—he will never attempt a miniature imitation of an English earl's park, on a half-dozen acres of land; he will never make a copy of a Dutch Flower Garden, with all its odd fancies and gimcracks. It is NATURE that the gardener is required to follow, and not to adopt any foregone patterns that man has cunningly devised. Let every 'country gentleman' and farmer but study nature, and attentively observe the charming scenes, the stately groves, the giant forests, the rolling rivers, the smiling plains, that adorn our land; and, with those glowing pictures and faultless patterns before his mind, he may wisely commence the work of beautifying his grounds, in a manner consistent, first, with his own true comfort, and second, with their picturesque beauty. Let him but combine both, adding the exotic products of the hot house to the native forest growths, and we shall soon behold most important changes in the scenery around our Rural Homes.

THE ORCHARD.

As it is now time to make your selection of fruit trees that you propose to plant, the query will naturally arise in many minds, what varieties, among the many now under cultivation, should be selected? What kinds have been fully tested, etc.? This depends much upon taste, yet more upon the character of soil, the extent of ground you would plant, and something as to your object, whether for the market, or merely for family supply.

The soil best adapted to all our hardy varieties, is a clay loam, such as is furnished on the sides and upon the summits of the hills around Cincinnati. This soil is strongly impregnated with lime, being underlaid with fossiliferous limestone, of the old Silurian. The peach, the pear, apple, plum, and cherry, all thrive well on this soil.

It is useless to set the finer varieties of cherry upon our bottom lands, or sandy or gravelly subsoil. The difficulty seems to arise from the early maturation of the buds, and a consequent early dropping of the leaves; which is pretty sure to be succeeded by a second flow of sap, and expansion of fruit-buds, and thereby filling of the sap-vessels with a return flow, which upon freezing are burst asunder, and the following spring the tree perishes.

Peaches do not thrive so well upon a sandy or gravelly subsoil, being more severely affected by drought. The plum succeeds better; the pear not so well.

When the soil is adapted to fruit, no crop will pay better. Mr. Laughery, before named, sold last year four thousand dollars worth of peaches off of eleven acres; and Mr. Davis, of Clermont, realized from three crops of peaches, of successive years, over forty thousand dollars.

The best varieties of Fruits for a FRUITAGE of limited extent.

APPLES.

Early — Prince's Early Harvest, Large Sweetbough, Early Strawberry, and Summer Rose.

Summer and Autumn — Summer Pearmain, Drap d' Or, Fall Pippin, Cooper, Maiden Blush, Porter, Wine.

Early Winter — American Golden Russet, White and Yellow Belleflower, Newtown Spitzenberg.

Late Winter — Green and Yellow Newtown Pippin, Rawle's Jannet, Wine-Sap.

There are many other excellent and well tested varieties, not included in the above (and some, perhaps, that would be preferred by many), some of which I will here append, that should be added to every large collection: Rhode Island Greening, Roxbury Russet, White Pippin, Jonathan,

Canon Pearmain, Esopus Spitzenberg, Rambo, Gravenstein, Roman Stem, Rome Beauty:

And for Northern Ohio, New York, and New England, the Baldwin, Northern Spy, Gate, and some others, are considered *number one*. Experience thus far, in the neighborhood of Cincinnati, has not proved them such. They are now being tested by good cultivators.

PEARS.

Of these there is a great variety. Five of the best, well-proved, kinds for this locality, are Bartlett, Flemish Beauty, Seckel, White Doyenné, Fondante d' Automne.

CHERRIES.

Early May (most productive), Mayduke, Black Tartarian, White Bigarreau, Napoleon Bigarreau, Elton Black Eagle.

Of my thirty-five kinds now in bearing, I prefer the above. There are many other excellent varieties.

PLUMS.

Three best — Green Gage, Washington, Imperial Gage.

PEACHES.

Early York, Crawford's Early and Late, Coolidge's Favorite, Honest John, Royal Kensington, Troth's Early, Heath Cling, Heath Free, Baltimore Rose, President, Columbia. There are many other excellent kinds.

We can not dismiss this plain and practical topic, without the remark that we are exceedingly gratified at the zeal and industry manifested for the introduction and cultivation of choice fruits, of every variety, in this region and neighborhood. And, in view of what has been, and is now being effected in this behalf, and the instrumentalities most efficient therein, we can not refrain from our public commendation of the persevering and well directed efforts of the "CINCINNATI HORTICULTURAL SOCIETY." Composed of men of large means and enlarged views, in whom the scientific mind is combined with the skillful hand, they presented, at their annual exhibition last fall, such a display as the American continent has never before witnessed. Radiating from this, it is to be hoped that the same commendable spirit will soon pervade Ohio and the West.

Moved by this spirit, the "Nurserymen" about Cincinnati have judiciously and carefully supplied themselves with all the choicest and most desirable varieties of fruits now under cultivation; and being now domesticated in our soil, and adapted to our climate, these are not subject, by any means, to the casualties and loss that must always attend the transplanting of trees that have been imported from abroad.

"The Effects of Frost on Dormant Vegetation."

[THE article by "ANNANDALE," under the above title in our last number has been the means of calling out several able communications, from correspondents of distinction in both scientific and practical Agriculture and Horticulture. This is as we desired; and, indeed, as we expected; for, it seems scarcely possible to present a subject of greater interest than this, where the phenomena are so familiar, and the facts so abundant, and which, at the same time, presents so many points of view, in both its scientific and practical application. And these considerations will, as we think, be sufficient reason for giving our readers a succession of articles on this topic.—Ebs.]

GLANCING over the various climes and countries of our globe, we discover two classes of plants which may be said to meet at the freezing point. One class, natives of the tropics, is invariably doomed to destruction when exposed to a temperature below the freezing point; while the plants composing the other class have the power to endure cold, to even extreme degrees. We find that a wise Creator has furnished every zone with such vegetables as will find support in its soil, and endure the vicissitudes of its seasons. Suitable soil and appropriate temperature of the climate are the chief conditions to which the vital action of the plant is subject. The divine spirit of life within the plant is, as to its essence, entirely unknown to us. We see its effects and wonderful workings, but science will never be able to discover its source; for this reason it has never explained why this vital power of some plants is speedily extinguished by frost, while in others it remains unhurt, if in a dormant state, through intense and long continued cold. It is true, however, that we may know the mechanical alterations that occur in the tissues of the plant, causing its destruction; but the mystery still remains unsolved, and the question, Why does it occur in one plant, and not in another? is yet unanswered.

In like manner, it is fully understood that some of what are called "hardy plants" are often destroyed by a degree of cold which does not in anywise disturb other individuals, in the same spot and of the same species, size, and age. This phenomenon is explained by the specific nature of the tissues of the plant. Mr. Decondolle says, on this subject, 1st. "all other things being equal, the power of each plant, and of each part of the plant, to resist extremes of temperature, is in inverse ratio to the quantity of water it contains. 2d. The power of each plant to resist extremes of temperature, is directly in proportion to the viscosity of its fluids. 3d. The power in plants to resist cold, is in direct ratio to the

rapidity with which their fluids circulate. 4th. The liability to freeze, of the fluids contained in the plants, is greater in proportion to the size of the cells. 5th. The power of plants to resist extremes of temperature, is in direct proportion to the quantity of confined air which the structure of their organization gives the means of retaining in the more delicate parts. 6th. The power of plants to resist extremes of temperature, is in direct proportion to the capability which the roots possess of absorbing sap, less exposed to the external influence of the atmosphere and the sun."

Taking the above statements for granted, we shall have to ask the question, By what agency are plants enabled to resist cold at all? This important question has given rise to many controversies. For a long time the opinions of persons skilled in vegetable physiology have been divided touching this point. By some it was claimed that vegetable life is supported and protected by a certain degree of warmth generated within the plant itself, similar to the generation of heat in the animal economy. This doctrine seems to have been received, in a former period in the history of natural science, as an axiom in vegetable physiology. Having been founded on given causes and supposed facts which could not stand the test of closer observations and more rigid analyses, this doctrine was subsequently rejected, and finally abandoned, like many other attempts to establish philosophic theories upon supposed parallels and resemblances in the functions of animal and vegetable life.

In close connection with this doctrine of an independent vegetable heat, of former years, we find the strange opinion prevailing, about the same period, that freezing the fluids of the plant would most certainly prove destructive to its life and well being. This idea is plainly contradicted by every winter day's experience; though it is true that the fluids of many plants are found to freeze and so remain for a long time without injury to their future germination and growth. Various other proofs were presented by the advocates of an independent vegetable heat, to sustain its doubted existence. It was stated that a higher degree of heat is required to congeal the fluids of a plant, than is necessary to freeze ordinary water. Ice was found to melt when brought into contact with living plants; and the interior of trees showed a higher temperature than the surrounding atmosphere.

In relation to the first of these statements—that a greater degree of cold is required to freeze the contents of a plant than common water, the fact is clearly accounted for, by simple laws of physics, without any appeal to vegetable organism; if so, it is in no wise to be received as a proof of heat, inherent in the plant as such. Dr. Lindley, speaking of

this, says—"Salt and water freeze at different temperatures according to the density of their mixtures, from four degrees to twenty-seven degrees; oil of turpentine freezes at fourteen degrees; oil of bergamot at twenty-five degrees; milk at thirty degrees; and water, the standard, at thirty-two degrees; olive oil at thirty-six degrees; oil of anise at fifty degrees; and it is not to be doubted, that in like manner the fluid contents of plants, which we know are differently constituted, and therefore variously modified, will resist the action of cold in very different degrees."

Entirely unsatisfactory, also, is the statement that ice when brought into contact with living plants is found to melt; for the same result was readily found when the ice was placed in contact with portions of the dead plant. Again, the higher temperature of the exterior of trees, as compared with the surrounding atmosphere, can not be caused by heat from within; but it must be governed by the simple physical capacity of the wood to conduct the heat or cold. The very accurate observations of Prof. Nau, have shown that the temperature of a tree must be entirely dependent on the temperature of the soil, and the degree of cold or warmth previous to the time the observation was made. He observed that the temperature of a tree, immediately after a sudden falling of the temperature without, was warmer than the air; and he invariably found it colder than the air, immediately after a sudden rising of the atmospheric temperature. This statement is fully accounted for by the fact, that wood, in general, is a slow conductor of heat; more or less time must elapse, therefore, before the temperature of the tree and the temperature of the air can be set *in equilibrio*. In conformity with the above, Prof. Nau found that the temperature of trees partakes of the moderate changes of the day and night-time in summer. At from nine to ten o'clock in the morning they retained the lower temperature imparted to them during the previous night; while, at from eight to nine o'clock in the evening they still retained the higher temperature imparted to them by the warmth of the day-time. In all cases of a rapid sinking of the temperature in winter, he found the trunk of a tree to be warmer than the air, the root warmer than the trunk, yet colder than the soil.

In view of these and other cognate facts, Prof. Nau rejected the doctrine of the generation of independent heat in plants, and pronounced it as his opinion, that their temperature depended solely on the temperature of the surrounding air and soil.

The observations of another well known and eminent botanist, Prof. Schübler, seconded and supported Nau's opinion on the subject. He found trees both in winter and in summer, to be warmer than the air,

Trees of the largest dimensions exhibit this difference more clearly than smaller ones, and the lower part of the tree more than the upper portions. The extremes of heat and cold, such as frequently occur in winter days, in the temperature of the air, he could never discover to have occurred in the interior of trees. The monthly average of the temperature of the air and that of the trees corresponded, however, within the trifling difference of from one-tenth to three-tenths of a degree. Various kinds of trees manifested the same results in this respect. He also found, from close observation, that the average temperature of trees was somewhat lower — from 0.74° to 0.24° — than the temperature of the air. This he ascribed to the powerful respiratory process of the leaves, whereby, in conformity with well known physical laws, some degree of cold must be produced. In the spring months of March and April, the temperature of trees was, however, found to be higher than that of the air — 0.7° to 0.38° . This difference was doubtless caused by the agency of ascending fluids, taken up from the earth by the roots.

That plants partake of the heat contained in the soil, has long been received as a settled principle in vegetable physiology. The benefits derived from the application of *bottom heat*, so often exhibited in agriculture and horticulture, seem to confirm the opinion, that heat, brought into the vegetable organism by the ascending fluids, must be productive of a vigorous vegetation. If plants, therefore, do not possess that degree of heat within themselves, which would be necessary to secure the resistance against cold from without, we have, as mentioned above, to look for the true cause in the mysterious and inscrutable principle of *vital power*.

But before dropping the subject of vegetable heat, let us propound a question in conclusion. Do plants possess or originate within themselves no heat at all? Our answer to this is, that they do possess some degree of heat; but it is so feeble and insignificant that it for a long time escaped all scientific observation. Indeed, so minute is this development, that in the single individual plant it could never have been perceived; but, by taking many individuals together, their aggregate amount of heat is clearly appreciable and demonstrable. For example, it has always been known that a pile of germinating seeds evolves a great degree of heat; and this has been attributed to the process of incipient fermentation. Closer investigation has, however, shown that this heat results, not from fermentation, but from the strongly excited *vital action* of germination. Fermentation is significant of death, and is a process of decomposition; but this is significant of life, and is a process of re-production. Besides heat, the natural products of fermentation

are vinegar and mold; with germinating seeds no such conversions occur, under ordinary circumstances. If this germinating power is from any cause, now destroyed, and the seeds are exposed to warmth and moisture, then the process of fermentation will speedily ensue, because the seeds will speedily decay. The objection, that heat might be generated by the chemical process of converting the *amylum* of the seed into sugar, was controverted by the simple experiment of drying germinating seeds, whose *amylum* was altogether converted into sugar, and exposing them for a second time to the conditions of germination — when it was discovered that the same degree of heat was produced at the second time as at the first. In like manner a considerable degree of heat is produced in a pile of small onions, as soon as vegetation begins to develop roots and leaves. A quantity of green plants, heaped together and surrounded by a non-conductor of heat, will show a much higher degree of temperature than the air.

The cause of this manifest heat in plants is, as yet, a problem to which science does not seem to have given us an explicit answer; the most probable cause that we can assume is, that this heat is caused by the process of nutrition in plants themselves. For we know that heat is generated, or evolved, by the conversion of fluid matter into solid; and we also know, that the economy of vegetable nutrition consists in the constant conversion of fluids, taken from the soil by the roots, into the solid tissues composing the vegetable organism.

G. M. KERN.



QUICK DIGESTION—HEALTHY FOOD.

Of all articles of food, boiled rice is digested in the shortest time — an hour. As it contains eight-tenths nutritious matter, it is a valuable substance for diet. Tripe and pigs' feet are digested almost as rapidly. Apples, if sweet and ripe, are next in order. Venison is digested almost as soon as apples. Roasted potatoes are digested in half the time required by the same vegetable boiled, which occupy more than three hours and a half — more than beef or mutton. Bread occupies three hours and a quarter. Stewed oysters and boiled eggs are digested in three hours and a half — an hour more than is required by the same articles raw. Turkey and goose are converted in two hours and a half — an hour and a half sooner than chickens. Roasted veal, pork, and salted beef, occupy five hours and a half — the longest of all articles of food.

[For the *Cincinnatus*.

KATE OSBORNE.

BY PHILO BURRITT.

ON a bright and balmy morning in the spring of 1853, a fine looking, lady-like woman, wearing the sable weeds of widowhood, alighted from her carriage in front of the Post Office, in the city of Troy, New York; and standing before the grim-looking mouth of the capacious "letter-box" which, "though forever receiving, nothing gives," she hesitated a moment as if in dread or doubt; then, lifting a snowy hand, a "letter missive" glided from her fingers into the insatiate receptacle of "postal matter."

As Kingsley would say—what a "muddle" is a mail bag! What an amalgam of the vulgar and the refined, the false and the true, the sublime and the ridiculous, the delicate and the rude, the gentle and severe, the sorrowful and the joyful, of the angry and the affectionate, is compounded within its leathern limits! Therein the poet's web of golden thought is pressed close down upon the banker's draft; the mother's kind epistle, filled with fondness, to a loving daughter, is face to face with the querulous merchant's angry dun; the tender *billet doux*, traced by delicate fingers on "rose scented note," is jolting along side by side with the butcher's greasy bill of lading for the consignment of a "lot of sheep-pelts, cow-hides, and horns!" Verily, what 'a muddle' is a mail bag!

But, among all the motley mass of epistolary missives that day dispatched from the office of our modern Troy, there was but one that concerned ourselves: 'Twas the same the handsome widow had that morning mailed; and that ran thus—as Asmodeus doth depose:

TROY, N. Y., May 17—1853.

Dear Brother John: It affords me pleasure to inform you that Kate is looking remarkably well, and is in blooming health. Possibly my partiality for her as my namesake-niece, may influence my opinion, but really I think her beautiful: amiable I know she is. Under Mrs. Willard's efficient training, she has rapidly improved in her education, and now ranks high among the most gifted pupils of the Seminary. To me she is a great solace in my bereavement; and by her gentle gaiety and tender sympathy, she seems to fill my lonely home with sunshine and gladness. I shall miss her society greatly when you summon her to your western home.

We have received no letter from you from some time; your last was mailed from Chicago, where we presumed you were visiting, or on business, and contained your remittance for Kate's last quarter's bills. Pray, write soon again, and tell us all the news.

Your affectionate sister,

CATHARINE SINCLAIR.

To Mr. John W. Osborne, Grassy Grove, Illinois.

P. S.—I ought, perhaps, to say to you, that Kate has evidently made a conquest of a young Trojan's heart, here in our goodly city. He is a gentleman of fine attainments, good sense, very agreeable, irreproachable character, and has just completed his professional studies at the Albany Law School. He seems very devoted in his attentions to my niece, and I rather think our "Prairie Flower" likes him. But, as you charged me to keep Kate from all society of young gents, I feel it my duty to apprise you of matters before too late to break up their attachment, should any be formed. But, really, Brother John, I think Mr. Clinton a most estimable young man, and not unworthy of even our darling Kate.

Yours in haste,

CATHARINE S."

Three days after the foregoing epistle had been dispatched on its "tell-tale errand," there sat in the grateful shade of his cottage porch, a hale old Farmer of the Prairie State. Partially concealed within the borders of a timber grove, that skirts a lovely landscape scene where the gently rolling prairie

"Stretched in boundless beauty lies,"

the ample cottage of the Farmer, nestled in shade and seclusion beneath the flowers of o'erarching vines, and the foliage of o'ershadowing boughs. Seated in his capacious easy-chair, with newspaper in hand, and spectacle on nose, the sturdy farmer was "nooning" in genial quiet, when his man Peter came up from the road and handed him a letter.

"What's this, eh? Peter, where does this come from?"

"Dis from de Bost Haus komer," answered the Teuton, and went about his work rejoicing that he was able to give an answer so explicit to a question so precise. Turning the letter around twice and over thrice, the farmer satisfied himself that it was plainly but delicately addressed to "Mr. John W. Osborne, Grassy Grove, Illinois." "That's all right," muttered he to himself, "that's me: I guess it's from Kate; wants more money, I 'spose: how like splinters these little school-girls

make the cash fly ! well, thank fortune, I've got plenty of it ; and Kate's a good girl—so she shall have all she wants."

The Farmer muttered this in detached phrases, while he proceeded, rather awkwardly it must be confessed, to open the bright buff envelope that secured the self same Trojan letter that we have seen mailed on the banks of the Hudson. And, as the process of its *development* went on in his hands, they trembled a little—a very little—with eagerness ; and the heart of farmer Osborne grew warmer and warmer toward his only and motherless child, till, by the time the process of unfolding was completed, Kate's bills to any amount, would have been unhesitatingly honored.

But, fixing his "specs," and glancing at the top, he saw, "Dear Brother;" and exclaimed in subdued but quickened tones—"no, not from Kate ; 'tis from Katy ;" for thus he distinguished his sister, Mrs. Sinclair, from his daughter. He immediately added with some anxiety—"Kate's not sick I hope !" Now, farmer Osborne, by reason of being much by himself about his prairie farm, had acquired, or rather fallen into, the habit of talking much to himself, to relieve the tediousness of lonely hours; and not unfrequently addressed his spoken thoughts to his cattle and stock, as he rode among them out on the grassy plains, keeping up a kind of monologue that gave fluency to his thoughts, and afforded partial relief from this sense of solitude.

Hence, as he eagerly, but tardily perused Mrs. Sinclair's epistle, he muttered comments as he read :—"No, not sick : 'blooming health'—That's all right : 'name-sake-niece'—yes, Katy likes her—who wouldn't : 'improved in studies'—yes, dare say ; Mrs. Willard's good teacher—charges like—! no matter—That's all right : 'solace in bereavement'—glad of it—poor sister Katy—her husband was a fine man—sorry he's dead—left Katy well off, though : 'sunshine and gladness'—them's just the words, Katy ; she had better education than me—she can tell things better : 'miss her society'—yes, so do I !" and a big bright tear just then came up and rolled over the brimming eye down upon the bronzed cheek, and dimmed the farmer's 'specs.' Wiping them clear, and brushing the big bright tear away, he again read slowly on : 'got my remittance'—well, that's all right : yes, wrote from Chicago last, when I sold my last lot of hogs : 'write soon again'—well, don't know—my hands are kind o' clumsy—can't write very soon—after harvest, maybe. 'Affectionate sister Katy Sinclair'—yes, that's all right—not a word about more money—mean to send her a hundred, though : But here, what's this great long apostrophe, or postscript about ? Just like a woman—they must always hitch on something in a postscript, like a "tender" to an

engine. Well, let's see—‘conquest of Trojan’s heart’—what’s a Trojan? some kind of North River fish I reckon: ‘gentleman’—hem! ‘agreeable’—eh? ‘Law School’—a journeyman lawyer! I knew ’twas a fish, a *land shark!* ‘devoted’—‘attentions’—‘attachment’—‘break it up’—yes, by zangs! (farmer Osborne never swore—never used profane language—never!) A lazy Yankee pettifogger, courting my Kate! ‘Break it up?’ yes; zangs—I’ll smash *him* up! Kate shall come home! ‘yes, Katy, I’ll write soon!’ And jumping up from his seat, and striding to the end of the porch, he shouted “Peter! Peter!” in the voice of a Stentor, that went rolling for a mile over the prairie. Peter came: “here, Peter,” said the farmer, “ride to the post office, and take this letter—oh, ah—zangs! ’taint written yet! Well, run, get the horse—run! why don’t you *run*!” And going within, he prepared, without much delay, a letter that needed no postscript to interpret its meaning; it ran thus:

GRASSY GROVE, Illinois, May 21—1853.

KATE— Come Home.

Yours to serve,

J. W. OSBORNE.

With this epistle so full of “pith and moment,” and whose brevity excelled even the tri-worded dispatch of Cæsar, Peter *did* run; for the Farmer’s unwonted energy and excitement seemed to signify that a literal compliance with his orders in this particular was quite judicious; and soon the mandatory missive was speeding onward toward the Hudson.

What a “muddle” is a mail bag!

The last days of the flowering month of May were yet lingering as though loth to exchange their beauty and their brightness for the “leafy month of June.” It was evening; the balmy air was redolent with the mingled fragrance from ten thousand buds and blossoms. In the handsome parlor of Mrs. Sinclair were seated our Trojan trio—the widow, Kate, and Mr. Henry Clinton. An air of neatness and comfort, rather than of elegance, pervaded the apartment; and the toilets of the ladies partook of the same characteristic. The widow, though pale, was nevertheless, lovely; Kate was beautiful, and well became the soubriquet of “Prairie Flower,” which her school-mates had bestowed upon her; and Henry Clinton was a fine, intelligent, manly looking fellow. Such was the group gathered about the center table on the evening in question; all looked happy, though the widow was pensive. The ladies’ hands

were armed with needle and equipped with thimble, as though a general charge upon the ranks of muslins and laces was about to be ordered. An open book lay before Mr. Clinton, from which, it seemed, he had been reading; but they were now engaged in earnest conversation, which, from the heightened bloom on her cheek, and the lively light in her lustrous eye, seemed to interest Kate in an unusual degree.

—“But, jesting aside,” said Mrs. Sinclair, as though in continuation of some previous remark, “do you really mean to be understood, Mr. Clinton, as saying that you would actually prefer for yourself a farming life and agricultural pursuits to the professional career on which you have just entered?”

“Such is precisely my meaning,” said Clinton; and, smiling a little awkwardly, he added—“that is to say, were a suitable farm or plantation within my control. But, since it so happens that the greater part of my money-means has been spent in acquiring my education, collegiate and professional, I might as well, perhaps, for all practical purposes, be understood as expressing an ideal sentiment rather than as sketching any actual plan for my future years: for you know, Mrs. Sinclair, that farms hereabout are not “as cheap as dirt!”

The ladies’ smiled at the young man’s significant application of the “low priced” proverb; and, after a moment’s hesitation from timidity, Kate remarked—“But why deem it necessary, Mr. Clinton, to secure a plantation on the Hudson? Many young men, with but limited means, though with a large capital of energy and industry, are yearly securing for themselves handsome farms in our Great West, where lands are cheap, and of unbounded fertility. I presume, nevertheless,” she archly continued, “that the business of farming, with his plantation adjoining the city of Troy, or of Boston, or of New York, would be quite attractive to almost any disciple of Coke and Kent!”

A hearty mellow laugh betokened the young lawyer’s appreciation of this delicate thrust at the fashionable folly of “fancy farming;” and he, good humoredly replied, “In truth, Miss Osborne, your sarcasm is keenly pointed and well aimed; and to the general count of your indictment I can only plead ‘guilty,’ and throw myself on the mercy of the court. But, in extenuation of my fault, and for mitigation of my sentence, permit me to state that my attachments are strongly linked to these historic localities whose very legends have become classic. For, indeed, by its connection with the leading acts of our revolutionary drama, the Hudson with its mountain scenery, has been made as historic as the Rhine.” “Certainly,” said Kate, with a countenance a-glow, “there is much of the picturesque and the beautiful in the rocky frame-work of the majestic

Hudson; much of the historic and the legendary in the associations connected therewith. But, Mr. Clinton, if you would behold the mingled beauty and grandeur of earth, you must gaze out upon the wide-rolling prairies of the West; you must stand alone, like some sea-traversing vessel, surrounded by those grassy oceans stretching away from horizon to horizon, whose lillowy undulations come rolling on, you know not whence, and go rolling off, you know not whither—bearing on their bosom an enchanting archipelago of timber-groves; and whose wavy surface is clothed in a rich drapery of the softest verdure, and decked with all the prismatic beauties of the floral world, that there beam, and glow, and sparkle, like gems “of purest ray serene,” yielded up to sunlight, from the unfathomed depths of fertility which those vast prairie-oceans bear. Nor are they destitute of historic and legendary interest: The frontier conflicts, the hidden ambush, the midnight attack, the expert strategy, the heroic defense, the hand to hand struggles between the savage and the civilized, for the possession of that ‘promised land’ of the Red Man, abound with all that is heroic in action or thrilling in story !”

Catching a glimpse of the admiring and self-forgetting gaze with which Clinton was regarding her, Kate suddenly checked herself; and as the thought of the enthusiasm, so unexpectedly kindled by her recollection of her Western home, flashed through her mind, the lustrous light in her kindling eye was veiled by a downcast lid, while the glow on her cheek now mounted to temple and brow, and her fingers sought hasty employment among the laces and lawns of her needle-work.

Observing her niece’s embarrassment, Mrs. Sinclair, smiling, remarked that ‘Kate is a zealous defender of the superior beauties of the West, and hoped Mr. Clinton would excuse her enthusiasm.’

The young man, roused from his absorption of thought by the widow’s remark, though but half comprehending its import, simply ejaculated, as if to himself, “I must look upon that West !”

“Then I presume,” said the widow, smiling archly, “that we shall, in due time, see ‘Henry Clinton, Esquire, Attorney and Counsellor at Law, and Solicitor in Chancery,’ converted into plain ‘Farmer Clinton,’ holding, in fee-simple, houses, lands, tenements, and hereditaments (as I believe you lawyers phrase it) on some such Western paradise as Kate’s fancy has just sketched before your imagination !”

At this quiet sally of her aunt, Kate both blushed and smiled; but the young man thoughtfully replied, “Indeed, Madam, nothing more probable.”

Now, it must be known that this inclination of young Clinton’s mind

was not exactly a-plumb with the good widow's plans. Kate was a school-girl, to be sure; but, then, she would soon enter society; she and Clinton were evidently well pleased with each other; and the affectionate aunt sincerely loved her niece; she, therefore, desired to 'settle' her niece in her own city for the sake of her companionship, and to secure Kate's advancement in social position; of her final marriage with Clinton, the good widow did not harbor a doubt, though not an intimation of such a thought had she ever let drop from her lips. Hence, this new discovered *penchant* for farming life in Clinton did not exactly suit her purposes; and this led to her playful contrasts of the titular dignities of the 'Esquire,' with the unpretending name of 'Farmer;' for Mrs. Sinclair was a lady too sensible and intelligent, to attach any importance to the contrasts she had herself presented. And, when Clinton remarked that 'nothing was more probable' than his pursuing the plan she thus proposed, she at once gave the conversation a more earnest turn by saying to Clinton—"But, as you have intimated, that you do not possess a fortune, how could you surrender the prospects of an ample income and ultimate wealth which professional pursuits hold out?"

"Your question, my dear Madam," replied Clinton, "seems to assume that the pursuits of agriculture do not proffer remuneration equal to the professions. If so, then you must pardon me for dissenting from your conclusion by dissenting from the premises; for, I do not know that the position your question assumes as true, has ever been so determined. Indeed, I am inclined to the opinion that the economic question of 'prices and profits,' is resolvable altogether in favor of the agriculturist, as between him and the learned professions, so called."

"How can this be so, Mr. Clinton," responded the widow, "when it is proverbial that the profession of Law is the road to wealth and distinction?"

"This proverbial idea," said Clinton, "as I must beg leave to assure you, is founded, like many other popular proverbs, on the seeming rather than on the true. And your own observation, if so directed, will doubtless suffice to convince you that lawyers seldom leave large estates acquired in strict professional practice. And the dazzling effect of a single successful professional career, glaring athwart the public mind, leaves there the impression that the attainment of this result is the *rule*, instead of being the *exception*: and, thus, such examples only 'lead to bewilder, and dazzle to blind.'

"But, if the worthy and eminent in your profession," persisted the widow, "can achieve these 'exceptions,' as you are pleased to call them, who can have greater promise of this success than yourself, to whom,—

without purpose of flattery I say it—all men already concede distinguished talent and ability?"

"I believe, Mrs. Sinclair," replied Clinton, "that I did not speak of the 'worthy and eminent' in the profession; I was speaking only of the *rich*; and, unfortunately, it so happens, that the eminent and most worthy are most seldom among the rich of our profession. A few of the more miserly, or unscrupulous, acquire wealth; and those instances, occupying the whole field of public vision, impress the public mind with the belief, that before the lawyer lies an *el dorado*, whose golden coast his '*argosie*' can not fail to find; while, in truth, a great majority of even the worthy and the eminent are found in moderate, nay, even in humble circumstances of pecuniary fortune. Such men, with minds absorbed in their studies of this stupendous science, and their time consumed in the business of others, can command neither time nor thought for attention to their own; and thus they rise to eminence, more frequently at the expense of fortune than by its acquisition."

"And is not that very eminence itself worthy of the loftiest ambition of noblest manhood?" said the widow, warming with the interest of the conversation.

"If you speak of *true eminence* in the science of law—most assuredly it is," Clinton earnestly replied; for his mind, too, was becoming thoroughly roused. And he continued—"To grapple with the sturdiest principles of logic, and wrest therefrom the soundest principles of law; to smite the flinty and frowning front of the Horeb of moral science with the master rod of philosophy, and from its pure and peaceful fountains draw the grateful elements of social right and reciprocal duty, and apply them to the wants and welfare of men—is the noblest prerogative of human genius: and this is to be a *LAWYER*:—such were Cicero, and Holt, and Hale, and Kent, and Marshall! But, to be a *pettifogger*!" and here again the delicate lip of the speaker slightly curled, as he repeated, "to be a *pettifogger*, is to lurk in an ambush of technical forms, to lie in wait in the tangled under-brush of precedents, in order to waylay and assassinate the spirit of legal truth; it is to yelp and bark, like some querulous cur, at the heels of the law, only hoping to make it stumble by distracting its attention from the straight onward course of justice. And, as the *pettifogger* is ever the most turbulent and officious, ever the most querulous and quibbling, ever the most bustling and browbeating, the uninitiated public gapingly deem him the ablest, and accord to him professional eminence. Now, dear madam, I leave you to judge, whether, in a life-long contest with such competitors as these, the eminence itself be worth the tedious and toilsome winning."

It became Kate's turn, now, to listen and admire. The thread of conversation had passed from her hands unobserved, and her needle-work had slipped from her fingers unnoticed; her whole attention was engrossed by the earnest, yet delicately conducted, conversation of the interlocutors before her.

"Certainly, Mr. Clinton," resumed Mrs. Sinclair, "I must not venture to controvert your sentiments in relation to the 'inner life' of your profession. But, permit me to ask, if, in exchanging it for the pursuits of agriculture, you would not feel conscious of great sacrifice as to refinement of tastes, cultivated as yours have been by long familiarity with literature and the arts?"

"On the contrary," said Clinton, "I know of no profession that man can follow, so signally adapted to the cultivation, and so susceptible of the application, of refined tastes as that of the agriculturist. Understand me, madam: I do not speak of that perversion which we designate as 'cockney taste,' consisting of the flashy, the fanciful, the foolish, and the fillagree; which, as to both mind and heart, only vitiates, while it enervates:—But, of that taste which enables us to perceive the endless harmonies of the Universe, to appreciate the beauties of its order, and the loveliness of its symmetry, the blended melody of its myriad sounds and the blended splendors of its myriad colors—to associate, with uprising devotion, with fruits and foliage, with bud and blossom, those "floral apostles, that weep without wo, and blush without a crime:"—all-ennobling while they refine—all-strengthening while they purify."

"But, Mr. Clinton," objected the widow, "how does it happen, then, that farmers, as a class, are not more refined in their tastes?"

"Simply, because their minds have not had opportunity for cultivation, in this particular," said Clinton. "By this I mean, that no direction has been given to the channel; and like the gentle fountain flowing out beneath withered leaves and forest garbage, it is choked back upon itself, or perverted at its outlet from its standard course. But, also, in this particular, we must be careful not to confound the matter of mere *manners*, which is acquired only by mingling in society, and conforming to its ways, whether worthy or unworthy—with the matter of *taste*, which consists in the training of our intellectual sense of the beautiful and the harmonious, the orderly and sublime. This, the farmer, though unlearned in books, often has developed by his profession, to a degree that his rude exterior of manners would by no means indicate."

"Your remarks seem to signify no small intimacy with the characteristics of this worthy class; may I ask how you became thus informed?" the widow naïvely inquired.

"Certainly, madam: Sixteen years, just two-thirds of my life," answered Clinton, "have been spent on the farm; and you know," continued he, smiling, "how difficult it becomes to eradicate the germinals of thought implanted in the mind of childhood."

"But now, really, Mr. Clinton," persisted the widow, her fine countenance bearing a bloom almost youthful, which the excitement of her conversation had lent, "really, do you not think it a waste of time to have spent so much in the acquisition of sciences that, as a farmer, can be of no use to you?"

"Allow me, madam," Clinton smilingly replied, "to exercise, for once, the privilege that must be accorded to my New England pedigree, of answering your question by asking another: and pray tell me what science there is in the whole curriculum of human knowledge not useful to the agriculturist?"

The widow remained thoughtful but silent, and Clinton continued: "I know of none—I can think of none. Even my law knowledge could not fail to be of service to me in the countless contracts and business transactions that must attend such pursuits."

"But your dignity, Mr. Clinton; think of your dignity!" mischievously exclaimed the widow, in a kind of mock-heroic, semi-tragic tone.

"There, too, my dear madam," said Clinton, "I must join issue on your demurrer. But if you mean the adventitious dignity of pomatum and patent-leather, of white hands and black gloves, this I confess must be sacrificed. But I must maintain, that in this profession, so far as profession can at all affect it, the true dignity of genuine manhood is most unequivocally promoted. Man aspires to the exalted rank of 'lord of creation'; to attain to this, he must first become master of himself. And, in their course to the attainment of this, the race must first learn to tame the plants of the earth, then to tame the beasts of the field, next to tame the powers of nature, and lastly, to tame themselves. To all these agriculture directly tends. So striking are its influences, so manifest its blessings, in this particular, that all nations of antiquity worshiped, with grateful adoration, the givers of grain, as the gods themselves. The old Germans looked upon their giant Thor as a tiller of the soil that he had wrested from the hands of Winter, in spite of all his storms and tempests. He had brought his beloved children the precious grain, and with it came order and peace. Demeter, crowned with ears of golden corn, was the great goddess of the Greeks, whom they worshiped, in awful mysteries, as the giver of law and virtue; and Ceres held the same rank among the Romans. Indeed, every nation has its legend of similar import; and the Christian prays for the millenial period

when swords shall be beaten into plow-shares, and spears into pruning-hooks. Then, only, can man become truly master of himself, and become truly the ‘lord of creation.’ ”

A startling summons from the front door bell—postmen always knock or ring as though the *old* “Uncle Sam” was at the door—at this moment interrupted their conversation. Directly a servant entered, bearing a letter addressed to “Miss Kate Osborne.” On receiving it, Kate exclaimed, “From home! from father!” and excusing herself, withdrew for its perusal.

Her nimble fingers quickly stripped it of its envelope, and she saw her father’s well known signature, while the whole ample page contained only the words “*Kate—come home.*” She was astounded, grieved, frightened, vexed, all in rapid succession of tumultuous emotion. “Was father sick? angry? unfortunate? What *could* have caused him thus to write?” were questions rapidly propounded to herself, and as rapidly dismissed unanswered. Her thoughts seemed lost and laboring in a mist, in which were seen, ambiguously blended, the forms of father, aunt and Clinton; then of Clinton, aunt and father! But a few minutes, however, had elapsed before the mist began to disperse from Kate’s naturally clear mind; her thoughts were “called to order,” and she promptly reflected that her *father* summoned her home, and while desire said “linger,” duty said “obey.” Kate was a dutiful daughter; her decision was made, and thereupon her equanimity soon returned. Then, collecting herself, she returned to the parlor, with the letter in her hand. Her aunt had waited somewhat nervously, for her re-appearance, well judging the probable import of the letter’s contents.

On entering, Kate quietly placed the letter in the widow’s hand. A glance sufficed to take in its contents; and Mrs. Sinclair’s brow reddened a little at the sententious curtness of the paternal mandate. But forcing herself to composure, she politely excused herself to Mr. Clinton, and with an effort to appear at ease, proceeded to inform him that Kate had received a summons from her father to join him in Illinois. Instead of reddening, Clinton’s brow grew sensibly pale at this announcement; and his thoughts, too, seemed lost and laboring in a fog, wherein Kate, and her aunt, and her father, and the whole State of Illinois, were, for a moment, marvellously mixed! After a minute’s struggle for the dispersion of this mental fog-bank, he ventured to ask, in tones tolerably steady, “When Miss Osborne proposed to set out for the West?” “This is Friday evening;” said Kate, considering; then firmly added, “I shall go on the Monday morning’s train.”

Mr. Clinton expressed the hope that her father was well; and was

told that the letter contained nothing to the contrary! And his politeness forbade further inquiry.

Each one of our tripartite company, being busied now with personal thoughts, in vain essayed to support the conversation, which, accordingly, flagged, and fell from the zenith of interest to the nadir of mono-syllabic frigidity. The evening was wearing away; the silver bell of the *or-molu* time-keeper on the marble mantle had sounded a musical hint for Mr. Clinton to make his bow to the ladies, say his *bon soir*, and depart. But still he tarried. At length, starting gracefully from her cozy seat on the sofa, by side of Kate, the widow exclaimed, *sotto voce*, but loud enough for all *practical purposes*, "Bless me, Kate! the interest of Mr. Clinton's conversation has rendered me quite forgetful of my canned fruits, that Bridget and I were to examine this evening, to see if there were any signs of fermentation among them. Excuse me, dear; excuse me a few minutes, Mr. Clinton:" and she quietly withdrew, while Kate was still wondering what unknown fruits her aunt alluded to. But, bless your heart, dear girl! Mrs. Sinclair had no more call to examine preserved fruits, than an Icelander had! And we, too, the Chronicler, must "go out" with the widow: for it begins to be somehow manifest, that the presence of a third person would jar the harmony of that *duett* that Dan Cupid is so earnestly prompting Kate and Clinton to perform. So that nothing more can we relate, than that *somewhat*, when the widow, after the lapse of a *few!* say some fifty or sixty minutes, returned to the parlor, Clinton was found occupying her former seat on the sofa, near to Kate, looking a little excited, and hugely happy; while Kate, leaning toward the arm of the sofa, looked as though she had just been leaning toward another arm, that was still lying, *very carelessly*, on the back of the sofa; her bosom heaved deeper, her cheeks wore a deeper carnation, her dark eyes were darker, deeper, moister, than when the widow withdrew to look after those apocryphal fruits! The minds of both were again in a tumult, but not in a mist; order had come out of the confusion, and all was sunlight—though Kate still thought of father, aunt, and Clinton, while Clinton thought of Kate, aunt, father, Illinois, and all the other United States, including the state of matrimony! The widow saw all, but said naught.

Clinton soon rose to depart; extending his hand and bowing gracefully to the widow, he bade her adieu in the parlor; and she knew full well — what 'knowing' persons all young widows are! — that her matronly dignity required her to remain there; while Kate knew — and what 'knowing' persons all young ladies are! — that maidenly politeness required her to bid Mr. Clinton 'good night' in the hall — and at the

front door — and on the front steps: and just the moment before the front door closed, the widow, standing very still in the parlor, thought she heard something that sounded like — Well, Kate returned to the parlor with the reddest lips that man ever kissed, or that beauty ever pouted! As she entered the parlor Kate's quick glance caught the eye of her aunt fixed on her face, and saw that a faint, funny smile was dimpling the widow's handsome chin — wherefore, she knew not. But the widow, without speaking, opened wide her arms, and Kate, moved by an impulse that she could neither define nor resist, ran within their embrace, and hid her blushing face on her aunt's kind and sympathizing bosom. Soon seating themselves, a long conversation ensued, deep-toned, tender, and absorbing. What the theme, you may guess; but we will not tell, and would not if we knew.

Sure enough, the next Monday morning, Kate left the Hudson for 'Prairie Land.' 'Her aunt accompanied her — I presume, to protect her?' Well, possibly; but we rather think not, inasmuch as that good lady was seen the same afternoon taking an airing, in her modest little carriage, on the banks of the Hudson: besides, Kate had both sense and spirit, and could, therefore, protect herself. 'What, Kate travel alone?' exclaims our immaculate eatechist. Well, we don't know — can't tell positively — rather think not. We only know this much about it: *i. e.* to wit, namely, *v. i. z.* — that on Tuesday, the morning after, a portly, well dressed, old gent., with spotless vest, and snowy frill — we do dearly love to see *old* men wear clean linen — whose gold headed cane, gold 'spees,' and ponderous gold watch-seals, betokened him one of the 'solid men' of the city — a very Hector, perhaps, among these modern Trojans — was seen entering the law office of H. Clinton, Esq., and anxiously inquired for the presence of that young jurist. But he could not be found; and the sable guardian of the outer portal of that legal sanctuary, could "only inform de gemman dat Mister Squar Clinton he went away yesterday, dat's Monday mornin', to Chicago; — 'tink he went to buy water-lots in dat town, or to ketch prairie-hens — don't know, zackly, which: — say he be back dis week. Any 'ting I shall tell de Squar for dis gemman?"

"No!" was the curt response of the Trojan Heetor to this African Ajax; and the portly gent., muttering everything but benedictions against young lawyers in general, and young Clinton in particular, who, he muttered, has now lost a 'fat fee,' by leaving his office to go kiting off to the West, after water-lots and 'prairie-birds;'" (take care, old

duke Hector, too near the mark !) "No telling when a client may want his will drawn—young lawyers ought therefore to eat and sleep in their offices; to watch and pray for fat clients, like a busy spider in his web, watching to prey on some plump old blue-bottle." The pun, though somewhat fished-for and far-fetched, seemed, nevertheless, to put the old Trojan in a good humor with himself, and this was soon reflected on Clinton, and he muttered out, "well, well; I shall not die till the young dog comes home, and we'll have it drawn then; at all events, it's not my will to trust any body else with my will!" And this second attempt of the old punster made his heart quite gleeful and his face look gladsome.

(CONCLUDED IN OUR NEXT.)

[For the *Cincinnatus*.

"THE EFFECTS OF FROST ON DORMANT VEGETATION."

MESSRS. EDITORS:

Gentlemen—In the last No. (for March), of your journal, among its other interesting matter, there is an article on "The Effects of Frost on Dormant Vegetation," over the signature of "*Annandale*." The subject being one of deep interest to horticulturists, just at this time, I perused it with no small interest.

As a general principle I would not animadvert on the views of a writer on horticultural matters, over a *fictitious signature*, and I should not do so now only for your indorsement of the writer's scientific attainments. No doubt your correspondent possesses all the high attainments you ascribe to him. I must, however, confess my disappointment and regret that his article affords no new light, but is confined to a mere statement of some facts, and arguments on them, to prove what, it is to be presumed, every intelligent horticulturist is familiar with, so far as applies to frost on dormant vegetation.

Your correspondent sets out with the supposition, that there is much "alarm among all our horticulturists," and for which there is no serious cause. That the "subject has not met with the attention, from practical horticulturists, which it deserves." That "the results of many experiments and observations have been laid before the public, but they are not generally known, and have scarcely been noticed in popular works on botany, or the cotemporary agricultural or horticultural magazines," etc. As a proof of this he refers to the experiments of Mr. John Hunter, as "presented to the Royal Society of London, in 1775

and 1778." These experiments, it seems, unfortunately, are not correct, in the main, and are not, therefore, reliable; and of course they throw no light on the subject. Yet he occupies time to show their falsity, leaving us in the dark on the reliable experiments referred to in his introduction, and then proceeds to say, "that the tree is actually frozen when the temperature is reduced a few degrees below freezing point, scarcely admits of a doubt," etc. That "all the trees, vines, etc., even in our climate, must, therefore, be completely frozen, every winter, and yet we know by experience that their vitality is not in any way injured or destroyed by it."

What are the public to infer from the statement of this well-known, and admitted fact? Are we to understand, that no degree of temperature, however low it may fall, will destroy the vitality, or vegetable life, because it is not harmed by the usual exposure? This would seem to be the natural inference from the arguments and mode of your correspondent's reasoning. If this be his position, I must take issue with it. I do not so understand vegetable physiology. And while I perfectly assent to the proposition, that "the native plants of any region, are, by the wise direction of an overruling Providence, perfectly adapted to its climate," I can not assent to the idea, that *exotics*, from a foreign clime, or those on which the science of man has operated to enfeeble and impair the health and constitution, from their original condition, are capable of enduring any amount of cold, without perishing thereby, because they pass unharmed through our usual winters; or that even native plants may not be destroyed by unusual and extraordinary low temperature. Any other position than this, it seems to me, is unphilosophical, and not worthy to consume time on.

The fact, that "frogs, reptiles, and some species of fish, can be resuscitated, after having been frozen for a long time," are not parallel cases, or are so, only so far as re-animation is concerned, after the vital functions had been suspended, by frost, in either case. This is their nature, as much as it is for some animals, such as the bear, "to lay themselves up in caves or hollows for the winter, which they pass in a dormant state, and without taking food." Yet, will your correspondent say, that these and other animals do not sometimes freeze to death, and this in their native climate, and, too, with their usual protection? Then why say, that trees and plants are not, under the pressure of certain low temperature, destroyed, or frozen to death. We might as well say, that a man will not drown by the overflow of an unusual and extraordinary flood, if he remains in the position which is not reached by ordinary floods, though the water may surround and overwhelm him. The one has about as much reason to sustain it as the other.

Vegetable Physiology teaches us that all plants possess an organization and structure to capacitate them for the objects of their existence; that this is always adapted to the soil, climate, and peculiar locations for which they were originally created; that this remains unchanged in every essential point, throughout their existence. That they can not be subjected with impunity to extraordinary changes of temperature, without receiving more or less harm, though these extraordinary changes may occur in their original location. There is no system of cultivation known to man, by which an individual variety of the peach, cherry, pear, or other varieties, can be changed in their individual character, so as to capacitate them to a greater endurance of temperature than they originally possessed. There is no such thing as *acclimating*, or that a plant may be made more hardy by cultivation, and a gradual exposure to a more rigorous temperature. Climates may, and do change, but the structure of plants in their normal condition does not. No progress, in a thousand years cultivation of the fig, or the orange, has been effected in their hardiness. They remain the same, and will always freeze under the pressure of certain temperature. This has been proven a thousand times over.

It is freely admitted, that climate and soil do affect under certain circumstances, *temporarily*, the hardy woody plants, to a limited extent in their growth, and from this cause they are sometimes in a better or less favorable condition to resist sudden and low temperature. This is especially the case with our partly hardy *exotics*, such as the peach, cherry, pear, etc.; but the same rule applies to all, and everywhere. For example, the same plant grown in a moderately rich soil, under a less exciting temperature to growth, having fully ripened up its wood, is in a better condition to resist the effects of sudden and low temperature, than if grown in a rich soil, under a continued exciting atmosphere and warm temperature. To a late period of the fall, the wood of the latter is less compact, more porous and soft, and is thus illly prepared to resist the rigors of winter. Still, the character of the plant remains unchanged; it is only brought under the effects of extraneous causes, which produce only a temporary effect. It is not unfrequently the case that a temporary suspension of the vegetable functions is produced by a drought in mid-summer, and from which it is roused by rain and mild state of the atmosphere in the latter part of summer, which continues until overtaken by severe frost. In such cases, it requires no particular decrease of temperature beyond the usual winters, to do much harm to such trees and plants.

While we, therefore, theorize on natural causes, operating in a natural

way, we must not lose sight of the fact, that this is also the result of climate. That the tree has been operated on by *natural causes*, exerted on it, however, at an *unnatural period*. That it is hence in a condition to be destroyed by the same agency operating on it in an opposite direction of temperature; from this then, it will be seen, that it does not necessarily follow, "If plants are killed by frost at all, we must look for the cause more to the *spring frosts*, after the sap has commenced running." Either case must be viewed as an exertion of the elements at an unnatural period. They certainly are not in harmony, or no hurtful results would be the effect.

The most important subject however, for our consideration just now, is the action of the temperature of the past winter on our fruits and the tree. Have they been harmed, and if so, what has caused it? Facts are before us, and we can not get rid of them, though our theories may lead us in a different direction.

Last summer and fall were peculiar for the uniformity of growth, by reason of continued and seasonable rains, which gradually ceased, as the winter approached, and the trees shed their leaves, ripened up their wood and went to rest, and were never in a better condition to resist the effects of ordinary temperature.

It is true, the winter came in suddenly and very severe, but it was not on an immature and unprepared vegetation. It is also true, that no change did take place after its commencement, to this day, to stimulate and excite vegetation, which is sometimes the case in our climate, and the cause of the destruction of our fruit. No summer was ever more uniform in its general vegetative action, and preparation for the dormant state. And the winter has been remarkable, perhaps without a parallel in our country, for its uniform and low temperature; not a day that could excite vegetation, from the time it set in to this. Still, the fruit-buds of the peach, most of the cherries, and pear, are dead, and some of the trees also. And Horticulturists generally are agreed that it is from the effects of the extreme low temperature of the winter. If this is a mistaken view, as your correspondent seems to suppose, will he have the goodness to assign the true cause, and very greatly oblige, I doubt not, thousands of anxious enquirers.

Before I leave the subject, permit me to go back and ask your correspondent—when speaking of the young trees received while in New York, and which were exposed to a temperature of 20° below zero, and the other trees, "which were taken up and transported," of which, the usual proportion lived when planted—what are we to understand—that they were thus exposed without protection to the roots, or were they well

packed in moss? If the latter, it is no new discovery. Such protection, or packing to the roots, acts as the earth does, if permitted to remain undisturbed, until by the natural process of temperature, the frost is drawn out. A tree, however, with its roots exposed to hard freezing, without protection, will assuredly be destroyed as if exposed to a hot sun for any considerable time. There is an appropriateness in all organized existence, which we may not transcend with impunity, and this is nowhere more apparent than in vegetable life.

Very respectfully yours,

A. H. ERNST.

Spring Garden, March 11, 1856.

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INTERESTING PHILOSOPHICAL QUESTIONS.

SOME curious questions in the obscurer branches of science have been recently debated at the London Royal Institution. Dr. Tyndall has been examining the subject of tones emitted by masses of heated metal while cooling. He proved by repeated experiments the incorrectness of the explanation hitherto received, but was still unable to assign the phenomena to their true cause. Another was on some most extraordinary effects of motion, which the Rev. Badin Powell, though he interested his auditors in the experiments, could not satisfactorily explain. One of the effects is this: Let a beam, free to turn in all directions, be balanced horizontally on the top of a standard; then put a small wheel on one end, cause it to rotate rapidly, and the beam will still retain its horizontal position, notwithstanding the weight of the wheel. It is as though motion nullified gravity; but as some of the most ingenious English philosophers are examining into the phenomenon, it is hoped an explanation may ere long be found. Another interesting subject is that brought forward by Professor Edward Forbes, who has started an inquiry as to the depth of primeval oceans, and who believes it possible to throw light upon it by a study of the color of fossil shells. The shallower the water the more intense the color, is the experience gained by dredging in the seas of the present period; and, reasoning from analogy, we may infer the same law prevailed in earlier periods. Ehrenberg, too, contributes more to our knowledge of ocean life; he has examined specimens of mud brought up from the depth of six thousand fathoms, and finds them to contain *living* infusoria.

METEOROLOGICAL TABLE.

Observations made at Farmer's College, College Hill, Hamilton County, Ohio, Latitude $39^{\circ} 10'$, W. Long. $7^{\circ} 24' 45''$, for the month of February, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.

BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.				OPEN AIR THERMOMETER.				CLOUDS—THEIR COURSE AND VELOCITY.				WIND—DIRECTION AND FORCE.				RAIN AND MELTED SNOW.			
7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	Hour Began.	Hour Ended.	Amt' Inches	
1 28.877 28.810 28.918	28.868	27.0	30.5	15.3	24.4	2	0	10	W. Snow.	0	0	W. 1	W. 5	N. W. 5					
2 29.023 28.956 29.004	28.987	- 4.0	12.5	3.5	6.0	0	0	0		0	0	W. 1	N. W. 1	N. W. 2					
3 29.131 29.136 29.178	29.148	- 17.5	0.0	- 6.5	- 12.0	0	0	0		0	0	N. W. 1	N. W. 2	N. W. 2					
4 29.220 29.214 29.288	29.241	- 16.5	4.0	0.0	- 4.2	0	0	0		0	0	N. W. 1	S. W. 2	N. W. 1					
5 29.441 29.480 29.491	29.471	- 9.5	13.0	5.0	2.8	0	0	0	Cirri.	0	0	S. E. 1	S. E. 2	S. E. 3	3½ P. M.	In night.	0.680		
6 29.458 29.214 28.969	29.214	8.0	30.0	29.0	22.3	4	Haze.	10		10		S. S.	W. 2	N. W. 1					
7 28.862 28.925 28.987	28.925	33.0	33.5	24.0	30.2	10		8				N. 1	N. W. 1	N. 1	10 A. M.	2 P. M.	0.100		
8 28.990 28.395 29.000	28.962	17.0	26.5	20.5	21.3	10		8	Snowing.	10		N. W.	N. 1	N. 1	0				
9 29.080 29.025 29.076	29.060	14.0	25.0	18.0	19.0	2	W.	0		0	0	W. 1	S. W. 2	0					
10 29.073 29.020 29.025	29.039	2.0	42.5	35.0	33.8	4		0		0	4	Mist.	S. W. 4	S. W. 1	W. 6	8 A. M.	6 P. M.	0.500	
11 28.864 28.606 28.640	28.703	38.0	35.5	33.0	35.5	10		10	Snowing.	9	W.	N. W. 2	N. W. 2	N. W. 2	0				
12 28.783 28.880 28.975	28.879	16.0	21.0	17.5	18.2	0		4	N. W. 3.	9	Haze.	N. W. 2	S. W. 2	0					
13 29.051 29.155 29.244	29.147	5.4	11.5	2.5	6.3	10		2	N.	0	0	N. E. 1	S. E. 1	W. 1					
14 29.088 28.956 28.962	28.935	2.0	22.0	16.5	13.5	8		10		0	10	O	S. W. 2	N. W. 2	0				
15 28.760 28.558 28.565	28.628	17.0	37.5	35.5	30.0	10		9		0	0	S. W. 2	W. 3	W. 2					
16 28.372 28.333 28.661	28.457	35.5	38.5	22.0	32.0	10	Rain'g	10		10	Snow.	N. W. 4	N. W. 3	N. W. 4					
17 29.048 29.043 28.975	29.024	8.0	21.0	22.0	17.0	5		8		5		W. 4	W. 4	W. 4					
18 28.995 29.063 29.250	29.103	24.0	34.0	23.0	27.0	0		3				W. 5.	0	0					
19 29.327 29.253 29.145	29.242	11.0	36.0	30.0	25.7	3		10				Mist.	10	Mist.	0				
20 29.047 28.990 28.950	28.996	30.0	38.0	34.0	34.7	10						Mist.	10	Mist.	W. 2				
21 28.892 28.845 28.882	28.873	32.0	40.0	35.0	35.7	10		0		0		0	0	0					
22 28.912 28.843 28.760	28.838	24.0	46.0	39.5	36.2	0		0		0		0	0	0					

REMARKS ON WEATHER.

1. A few flakes of snow this P. M.
 6. Snowed hard this eve.
 10. A warm, pleasant day.
 12. Wind went down at 4 o'clock, and clouds prevailed.
 13. About 2 inches snow last night.
 14. Snowed a little between 3 and 6, P. M.
 16. Snow squalls during evening, rain & snow in morning.
 20. A few flakes of snow at 7 A. M.
 21. Faint indications of breeze from N. E.
 22. Snow about gone.
 26. A lovely spring day.
 28. A few flakes of snow last evening.

MONTINTY EXTRMES.
MINIMA.

E X P L A N A T I O N.—The state of the sky is indicated in the above table by numbers from 0 to 10; 0 signifies perfectly clear sky, 10, that it is entirely covered with clouds, and intermediate numbers show the number of tenths clouded. The direction from which the wind blows is shown in the initials of the points of the compass. Its force is indicated by numbers; 0 meaning a perfect calm, and 10 the most violent hurricane.

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	7 A. M.	2 P. M.	9 P. M.	Montu.	7 A. M.	2 P. M.	9 P. M.	MONTH.
Barometer,	-	February 6th. 29.458	Feb. 5th. 29.480	Feb. 5th. 29.491	Feb. 16th. 28.372	Feb. 16th. 28.338	Feb. 15th. 28.565	28.338
	-	Feb. 23d. 41.0	Feb. 26th. 54.0	Feb. 26th. 44.5	Feb. 3d. 54	Feb. 3d. 0.0	Feb. 3d. -6.0	
Thermometer.	-				-17.5			-17.5

R E M A R K.—The barometer (as will be seen) has ranged unusually low. The mean temperature is about 7 deg. warmer than January.

OUR VIEWS AND REVIEWS.

S E E D S T O R E .

A good Seed Store is a good 'Institution.' Such a one is our friend's, J. M. McCULLOUGH's, on Main street, just above Fourth; where our Agricultural and Gardening friends may find all manner of seeds, roots, cuttings, bulbs, and agricultural implements, numerous enough and curious enough to stock a museum! while the frank and friendly manner of the Proprietor will make his customers feel at home with him in less than no time.

We are not paid for this notice; which we mention as a sign of our sincerity, in thus commending the 'Institution.'

“T H E S A N D U S K Y R E G I S T E R .”

THIS sterling and ably edited paper is welcomed to our table. In vigor of character it contrasts most favorably with many other papers of the day, aspiring to prominence, while the excellence of its editorial style almost persuades its opponents to accept its doctrines, however hostile their prejudices, or deep-seated their counter-convictions.

“T H E P E N A N D L E V E R .”

THE third number of the first volume of this weekly has come to our 'exchange.' It is published by E. P. HUDSON & Co., Washington; and partakes, in some degree, of the character of the '*Scientific American*,' in its attention to patents, and mechanical inventions. In this particular it seems to manifest much ability, and will doubtless be found useful.

T H E S U M M E R S E S S I O N

OF FARMERS' COLLEGE, will open on Wednesday, April 9, 1856 — continues twelve weeks — Commencement on Wednesday, July 2d.

THE CINCINNATUS.

Vol. I.

MAY 1, 1856.

No. 5.

Observations on the Flora of the Western States.

(CONTINUED FROM PAGE 84.)

WE propose to consider, in this number, that department of our flora which consists of herbaceous plants. For the sake of giving some degree of method to our observations, we would here distinguish between the "prairie flowers," the "sweet wild-wood flowers," and the *naturalized* weeds, and treat of each class in order. Few observers of nature are so careless as not to understand the propriety of these distinctions. The language of poetry attributes beauty to the first, sweetness to the second, and noxiousness to the last. With the naturalist, however, these epithets have no signification, and in his view all these classes are exalted to the same level of interest, seeing in all an equally wise adaptation to the circumstances in which they vegetate, and the ends which they were intended to subserve.

The beauty of the prairie flowers is proverbial. Bred and nurtured in the sun, they partake in general of a brilliancy of coloring, a hardiness and vigor of growth which the wild-wood flowers, nurtured only in the shade, do not possess. With the former, flaming red and golden yellow predominate, while the snowy white and empyrean blue are said to prevail among the latter. As the forests are the homes of the trees and of every woody growth, so the prairies are the peculiar and appropriate nativity of myriads of herbs. Here they find all the requisite conditions for their rapid multiplication and growth, although their *diversity* is measurably limited by the uniformity of soil and surface. As prairies are unknown in the Eastern States, those species of plants which make

the prairies their homes are, of course, not likely to be found in those States. This circumstance alone, occasions a wide diversity between the herbaceous plants of these two regions, which diversity is still further widened by the contrasts of their geological formations. The botanist whose researches have been always confined to New England or the East in general, when first introduced into the prairie, in one of the floral months, imagines himself in a new world. Gay and beautiful forms of vegetation, all apparently strange and new, appear in splendid profusion on every side; and it is not until after a minute and special examination, that he recognizes among them, here and there, a species common to his own native hills, under the disguise of a superior and more beautiful development. A more intimate acquaintance still, will show him that this vast profusion, so much admired, consists rather in the number of *individuals* than of *species*—that the species which adorn the prairies are less numerous than he had at first supposed, while the individuals are multiplied to immensity.

This fact accounts for those remarkable transformations of color which occur almost daily in the spring and summer robes of the prairies. Since every plant belonging to any special species appears in blossom simultaneously, and different species at different dates, it follows that the same wild prairie which to-day glows with purple as far as the eye can reach, may, on the morrow, shine to the same extent in resplendent yellow. We have watched this succession of colors from the purple of the Phlox in early spring, brightening to the hue of the gilded Coreopsis in summer, and fading at length to the somber hues of the Aster in autumn.

The native *grasses* of the prairie bear but a low proportion to the rest of the flora, and the term *grassy*, so often applied to it, is therefore inappropriate in its wild state. The few that it produces are of the coarser sort, and never form a turf. Those tallest spires, so conspicuous upon the plain, thinly scattered, are known by the significant name of *forked-spike* (*Andropogon furcatus*). With them are occasionally seen clusters of the rank *Spartina*, the scented *Eragrostis*, the rough *Hystrix*, etc. *Timothy*, *red-top*, and *blue-grass* (*Phleum pratense*, *Agrostis vulgaris*, *Poa compressa*), do indeed flourish abundantly upon the settled prairies, never upon the wild. They require the hand of cultivation for their introduction, but after having thus gained a footing, they soon eradicate nearly every native plant from the field which they occupy.

Among the early spring flowers of the prairies, we have already noticed the Phlox, which genus is wholly native of the United States, and almost universally cultivated for ornament. They are, however, not

peculiar to prairies, but found also in woods, hills, and river banks. Conspicuous among the spring flowers, and well known to the florist, is the *American pink*—the Dodecatheon of Linnaeus, so called from the fancy that its twelve flowers were twelve divinities. It is indeed a plant of rare symmetry and modest beauty, and is very nearly related to the *primrose*, having, as the botanists say, “its leaves all radical, and its flowers on a scape.” Humble and delicate, it seeks to conceal from your view its “twelve flowers” of snowy white, reflexed petals, and purple stamens, beneath the shade of the taller herbs.

The *Phalangium* is another early flower, of much interest. Its bulbous root resembling a small onion, lies deep in the soil, and from it arises a taller spire of pale blue flowers, with narrow, grass-like leaves. On account of its esculent bulb, it was well known to the Indians, and by them called *quamash*. Several species of *wild indigo* (*Baptisia*) appear in spring, with their bluish foliage, and large, white butterfly shaped flowers. *B. leucophaea* and *B. leucantha* are both conspicuous herbs in their season, the former in April, the latter in June. Many other leguminous plants will also be noted by the passing botanist as characteristic of the prairies, such as the indescribable *Desmodia*, the nondescript *Psoralea*, the curious *Dalea* of blue spikes, and the pretty *Petalostemon* with spikes of white and violet flowers.

June comes crowned with flowers, no less upon the prairie than elsewhere. Then the magnificent *prairie rose* (*Rosa setigera*), begins to bedeck itself in a thousand blossoms, of every varying shade of purple to pallid white. Then, too, the sandy or the river-prairie is seen tinted all over with the soft sun-lit carmine of the *Spiraea lobata*—one of the loveliest in all the floral train. This herb, slender and erect, some four feet in height, bears at its top a panicle of small, numerous and exquisitely colored flowers. Under cultivation it improves every way, becoming taller, more profusely blooming—the chief attraction of the garden.

With midsummer commences the reign of the *Compositæ*, an order of plants more numerous upon the prairies than any other, indeed whose flowers seem to outnumber, from July to October, all other tribes together. The color which their rays assume, with many honorable exceptions, is the plebeian yellow. Among the earliest of this great family, appears the *Actinomeris*, sordid and ragged, with half-formed rays, aping the sunflower—plebeians among plants. The various species of *Coreopsis*—some rough and rayless, others polished and elegant—next appear, making amends for the deformity of their relations. First, the tall, three-winged *Coreopsis* (*C. tripteris*), expands its brilliant rays to the sun. Long time have you watched its smooth and slender

form arising above the surrounding weeds, its rounded head-buds clothed with polished scales, and impatiently waited the slow expansion of its flowers, that you might apply the test of analysis, and learn the name and rank of the stranger. Meanwhile, the coarser species of the *sun-flower* (*Helianthus*), have begun their career, cheering the prairies and barrens alike, with their starry heads. Here is the patience of the botanist put to trial in the analysis of the numerous and almost undistinguishable species of *Helianthus*!

Conspicuous in their season appear the tall tribes of the *Rudbeckias*. Yonder rolling prairie has suddenly become variegated with large patches of yellow, where myriads of the *R. hirta* are basking in the sun. Each flower-head consists of a central cone of dark purple florets, surrounded at its base by about fifteen expansive, shining rays. Here, then, is the peculiar home of the *cone-flowers*, although we had previously met with a few individuals here and there at the East. Then follow the *R. fulgida* and *R. speciosa*, in succession, all showy, but coarse and rough, crowning the autumn. Strongly akin to these, but more refined and elegant, is the *Lepachys pinnata*, arising, with an erect and slender stalk, to the stature of a man, and bearing at the top a few heads, so remarkable as to distinguish it at sight from all its congeners. The purple disk is an elevated cone, and the dozen long rays hang lazily pendulous from around the base. Another conspicuous object in the late summer is the tall *purple cone-flower* (*Echinacea purpurea*), whose disk and rays are both bright purple, and whose "chaff" terminates in sharp spines.

We must not forget to mention here, the soft dignity of those floral queens, the various species of the *Liatris*. These are all prairie-born, distinguished in royal purple, exhibiting their bright flowers in erect or nodding plumes of more than royal beauty. The earliest, *L. spicata*, appears in July and August, in such numbers as to impart its own rich, purple hue to all the wide plain, as far as the eye can reach. Now, when from this fair flower we turn to contemplate the coarse *Sylphium*, how wide the contrast! Unmitigated yellow again meets our tired vision, rough and slovenly herbage our recoiling touch! But this is the famous polar plant, and we must not fail to notice it. Often ten feet in height, it stands stiffly erect, all parts of it redolent of turpentine. The large flower-heads, usually nodding, are said to look toward the sun at all hours of the day. This, however, appears to be a mere fancy, as we have seen these flowers looking simultaneously toward all parts of the heavens. Five species of *Silphium* are natives of our prairies, all abounding in resin, and when they burn, vast volumes of smoke roll before the flames.

And now hurrying past the purple Gerardias, the aromatic Monardas, and Pycnanthema, the anomalous *button snake-root* (*Eryngium*), staying not even for the Trantvetteria, on whose broad, white corymb we fix our gaze for a moment, we notice, at last, a huge weed, yonder, twelve feet in hight, stout and branching like a tree, bearing thousands of minute, unsightly flower-heads. In astonishment, we ask, what in Flora's name can this be? And our surprise is in no wise diminished, when at length we recognize, in this giant weed, the humble *Erigeron Canadense*, or *flea-bane* of the New England hills, there usually limited to the hight of a few inches! Such is the comparative strength of the virgin prairie soil.

Our sweet wild-wood flowers are worthy of a more extended notice than we can now devote to them. The near approach of spring reminds us first of the *Erigenia*, spring's eldest daughter. What botanist, or even florist, does not welcome this little messenger, expanding its tiny blossoms in the vicinity perhaps of some lingering snow-bank? The bosom of the forest, long so cold and desolate, will soon once more glow with beauty as a garden, for the early native flowers generally survive the effects of foraging, in consequence of ripening their seed before the domestic birds commence their ravages. In this profusion of floral beauty, the *Meconopsis* will flaunt its spotted sea-green leaves, and its golden yellow flowers, in countless numbers. But the dainty *Jeffersonia*, retiring to some choice corner, as if disdaining to associate with common plants, there spreads its bifoliate leaves, its large white flowers, and elaborates its snuff-box seed-vessels alone.

We scarcely need mention the *blood-root*, the *spring-beauty*, the *squirrel-corn*, etc., since these are common throughout the country; but the *Iodanthus*, a beautiful crucifer, with violet-purple flowers, and the *Synandra*, a curious labiate, with large white flowers, we may claim as peculiarly Western. The latter was exceedingly common in this region when Nuttall surveyed it, but is now fast disappearing from our woods. We yet occasionally see in the borders of our woods, *Hedyotis purpurea*, the very emblem of modest beauty, and worthy of the choicest place in the flower garden. Along the banks of streams, and in meadows, are found the *pride of Ohio*, and the *Miami mist*, either of them seldom growing beyond the limits of the great valley. The former, *Collinsia verna*, is a tender, opposite-leaved herb, whose lip-shaped corollas, are variegated with white and blue; the latter, *Cosmanthus Purshii*, yet more delicate in structure, has regular, pale blue corollas, cleft all around into a highly ornamental fringe.

Deep in the solitude of the widest barrens of Indiana, the exploring naturalist may again some day behold the tall and stately form of the

black-flowered poke, or Wood's Veratrum (*Veratrum Woodii*). Surrounded at its base by a copious rosette of large, smooth, radical leaves, the smooth and slender stalk stands full six feet erect, bearing a spike of a hundred flowers, frowning darkness, as if indignant at the intrusion. A *jet-black* flower is unknown, but these approach so near to blackness as to show no tint of purple, except when reflected in the direct light of the sun. This remarkable plant, first seen by us in Indiana, has recently been sent also from Iowa, and we doubt not, will be found abundant in the wilds of Kansas.

PRACTICAL EDUCATION.

A NOBLE ancestry is now regarded of little value by him who seeks the patronage of his fellow men. Time has demonstrated the fact that poets, philosophers, and statesmen, the most eminent that mankind have seen, had their origin in obscurity. The world knew them not, and saw them not, until as stars of the first magnitude, they took their position among the constellations of the great, and emitted a steady, but increasing light from their own original source. Instead of looking back, over the catalogue of our parentage, to find some noble name as our passport through life, we look into ourselves—examine our own resources, in order that we may ascertain what we can do.

To be able actually to *do*, rather than to tell what our fathers *did*, has doubtless drawn the attention of a great portion of the community to the idea of a PRACTICAL EDUCATION. There seems to be a demand for such changes in the old courses of study, as will adapt them to the wants of the active. This demand has met with an echo from many of the learned of the land, and some important modifications have been made, thus to meet the wants of the public.

This idea is an important one, involving no less than the entire educational interests of the country; and, as it takes possession of the public mind, will affect the very foundations of education. It will direct the first steps of those who build our institutions of learning, and control the elements from which must spring all systems of public instruction.

There is, perhaps, no word in the English language less understood than "PRACTICAL," and yet there is no other more frequently considered and discussed in this emphatically progressive age, when the avenues to

wealth and honor are open to all, and the glittering prizes dazzle and gleam in the distance, filling the entire vision of the soul, and creating within it longings that can never be satisfied short of actual possession ; and the great question, especially of the American youth, is how this can be done in the shortest possible period.

In their eager haste suddenly to amass wealth, which is generally the fruit of years of toil ; and to reap honors in the spring time, while yet unused to the sickle, many young men, advised by those who should act the part of wiser counsellors, neglect those preliminary exercises—that rigid intellectual drill, in the school of discipline, that will give nerve and vigor, solidity and depth, to the mind, and thus make it an engine of power, to accomplish whatever it wills to do. Without such training, man is like the noisy brook, waiting for no tributary, but rushing down the mountain brow, only to be lost in the sunshine and soil of the plain ; but with it, he resembles the mighty river, moving majestically onward to the ocean, bearing before it and on it every opposing force.

When the human mind wakes into a consciousness of its existence, and observes the relations which it sustains to the external world, it discovers that earth, air, and water—indeed, that all the elements in nature may be controlled, and, in many important respects, made subservient to its interest and pleasure ; and hence, when any new object is discovered, the inquiry is at once made : “ To what use can it be applied ? ” So also, when any new subject is presented to the mind for investigation, or any study proposed for its improvement ; when any new proposition is to be demonstrated, or rule learned, even in the more elementary studies, the practical utility is the first thing that is to be investigated ; and when the mind conceives this to be demonstrated, it will pursue the study with alacrity.

When we look at the languages of Greece and Rome, in which are embodied great thoughts, which breathe, even now, as their living soul—when we look forward into the winding labyrinths of mathematical science, whose principles are never applied by the merchant in computing the value of his merchandise, or by the farmer in estimating the value of his products—when we consider that in order to master these, years of toil must be spent over paradigms and formulas, not one of which will ever be applied in the practical business of life, we shrink back from the Herculean task.

While it is true that every study which cannot in some form or other be made to bear upon some important good ; while action, vigorous and useful action, is the great end of life in our present state of existence, still we should so discriminate while using our literary pruning knife, as

not to lop off those branches which, if carefully trimmed, will afford the richest, and most delicious fruit. And though with good reason we may reject the useless and senseless propositions of the Schoolmen, yet the thought that nothing is good or important or *practical*, unless it can actually be applied to the commonest affairs of life, should be at once and forever discarded. Such a spirit of utility, pursued to the fullest extent, would change all that is beautiful in the earth, all that is grand in mountain, hill, and valley, rivulet, river, and ocean, into one monotonous plain. The Alps and the Appenines would be leveled, the bending rivers would be made straight, that they might in less time accomplish their journey; all that is beautiful in art, or lovely in nature, would be lost sight of; the world would be one great farm, and man, having expunged from his nature one of its noblest attributes, would become a sordid chancer of money.

Mind holds all forms of matter in a great degree subservient to itself. The lightnings of heaven and all the elements have been harnessed to do its bidding; still it must be remembered, that in order to maintain this supremacy and control, the mind must not only be furnished with important facts, but it must be so trained, that it can combine them, and develop principles to an indefinite extent; so that when it selects any individual object from the great laboratory of nature, it may compare it with all other objects, notice its agreements and differences, analyse it, examine all its properties, and then give it a place in its appropriate order and class.

Neither steam nor electricity can ever shorten the process of mental discipline, nor can they in any form be applied to the education of mind, unless perhaps, by means of the galvanic battery, applied to the senses, we might rouse its dormant energies, and cause it to move on thenceforth by its own inherent power! It is equally true, that there can be no substitution of natural endowments and sagacity, for the result of hard study and patient research. Instead of submitting to severe labor in making his own deductions, man may take the results of other men, and thus failing ever to come in sight of those great and original principles which have been evolved by those men who have penetrated far into the temple of science, as mere copyists, intellectual cripples, they hobble on their crutches, only whither their great masters lead.

It is not proposed now to point out any course of study best adapted to the full development of all the mental power, nor to recommend the study either of the ancient classics, the mathematics, or natural sciences. These have had their advocates and their enemies. The very citadel of the classics has been stormed by men who obtained their weapons from the

armory they now attempt to demolish. The point for which we contend is, that *study* should be made a discipline. When this is the case, the manner, rather than the *matter* or *amount*, will be taken into consideration, and thoroughness will characterise all the efforts which the student makes. Let him look into himself, not to examine or explain the nature of that mysterious chain that binds the spirit with the material organism, but to examine the workings of his own immortal nature. When this is done, when he has laid the foundation broad, deep, and firm, when he has the complete control of his own mind, it matters not whether he understands the technicalities of any particular profession or not, he can be, if he will, eminently practical. O.

CRANBERRY CULTURE.

THE following statement, which we take from the *N. E. Farmer*, is from the Middlesex (Mass.) Agricultural Transactions, and was made by ADDISON FLINT, of North Reading:

In the autumn of 1843, I built a dam and flowed the swamp from that time till August, 1846; then let off the water.

The following October, burnt over the swamp, and set the vines. The vines were cut up with a sharp hoe or shovel, and set in hills, three and a half feet apart; the bunches about the size of a quart measure.

In raising from the seed, I planted in October, 1846, about half an acre; crushing each berry between the thumb and finger, and placing it just under the mud; single berries in a hill, three and a half feet apart. Also, sowed broadcast a number of bushels the following spring. Very few vines appeared from them for two or three years; no berries till 1852, then very small; in 1853, good size, in quantity, worth picking.

My practice has been to stop the water in October, and keep it on till May, or until the weather is warm enough to start vegetation; then lower it down to the top of the vines, and keep it on them until I think the spring frosts are over; then let the vines be fairly out of the water until the berries are grown—say from the 10th to the 15th of August—then draw it off for ripening and picking.

We found three or four small beds of native vines on the swamp, after we let off the water to set the vines, and a few very fine berries; there is now probably a dozen beds that bear berries.

In 1850, we picked seventeen bushels of berries on the swamp; in 1851, twenty-eight bushels; in 1852, ninety-three bushels; in 1853, we estimated them at one hundred and fifty bushels.

In 1852, the native vines produced by estimation, before selling, forty bushels; the transplanted vines, sixty bushels; the increase this year is, principally, from the transplanted vines. I now give you a statement of the proceeds:

1850	picked	17	bushels, sold	15½	bushels for	\$ 26,20
1851	"	28	"	26	"	70,00
1852	"	93	"	93	"	300,00
1853	"	52	barrels,	52	barrels,	380,00
1854	"	47	"	47	"	305,00
1855	"	50	by estimation, probable value			500,00
						\$1581,20

REMARKS.—Since the above statement was made, we have learned from Mr. FLINT, that he had just fifty barrels of cranberries as his crop in 1855, which he sold for *thirteen dollars* a barrel, delivered at the depot two miles from the house, making the pretty sum of *six hundred and fifty dollars*, as the product of two acres of what was quite recently an almost worthless bog meadow. Mr. FLINT also states that in looking about he notices a good many tracts of land apparently as good for the cranberry crop as his, and that some of the pieces might much more readily be flowed and reclaimed than his own.

A S I N G U L A R F A C T.

When a lake happens to dry up, the surface will always be soon covered by a vegetation which is peculiar, and entirely different from that which flourished on its former banks. In M. de Brebisson's work on the useful mosses, this botanist states that a pond, in the neighborhood of Falain, in France, having been rendered dry, during many weeks in the height of summer, the mud in drying was immediately covered, to the extent of many square yards, by a minute, compact, green leaf, formed by an imperceptible moss, the *Phaseum avillaire*, the stalks of which were so close to each other, that upon a square inch of this new soil might be counted more than five thousand individuals of this minute plant, which had never previously been observed in that country!

[For the *Cincinnatus*.]

A WORD FROM THE WEST.

[We willingly give place to the following, from our friend CROWLY, of Illinois. His sketch of the modes of farming too much in vogue, shows the great need there is of Educated Farmers in the land.—Eds.]

OUR farmers here pursue the same ruinous course that has marked their career elsewhere. Emigrating from the barren rocks of New England, where the soil is so poor as to scarcely sprout a pea, they are elated with the huge ears of corn and great yield of wheat our rich prairies produce. But they adopt no means to preserve this bountiful supply of nature's stores; and the consequence is, that farms which ten years ago produced thirty-five bushels of wheat per acre, and which by careful management would produce forty-five, now yield scarcely twenty-five bushels to the acre. Among them the idea seems prevalent, that if they penetrate the soil more than about six inches below the surface, they are trespassing upon some other one's land! The plain truth is, they all own too much land for thorough cultivation. Fifty acres well cultivated, will actually yield more than two hundred acres, half tilled. When spoken to on the subject of improvement, they tell us it is best to follow in the paths beaten by our ancestors. But, do they do this? Ask the man who praises the good old ways, to use the same kind of a plow as that with which his great-grand-father breke the soil, and he would scout the idea. No doubt but that the man who first sharpened a crotched stick, and shaped it into the rude similitude of a plow, wherewith to tear up the ground, was denounced as a dangerous innovator, more daring than a Mapes or a Mecchi, of our times! Old fogies gravely shook their heads, predicted that such an erratic genius must come to some bad end, and wondered why he could not be content to dig and scratch the ground over with rude hoe and spade, as generations before had done. Those same conservators, nevertheless, gradually adopted his invention, though fiercely struggling against others that followed; and thus the old fogy keeps about one generation behind the progressive. He will not use a plow like that of his grand-father, but is sure that this thing of draining, irrigation, and sub-soiling, is all a grand humbug; and scarcely is a passing thought given to manuring on the prairie soil. Their beds of muck, instead of being made a source of profit, often become a serious inconvenience to such farmers; and one such actually built his barn and stable in such position that the refuse and manure might be thrown into the adjacent creek, and carried away with its current!

If we in the West, can not obtain potash, guano, gypsum, phosphate, and other mineral manures, on account of the great cost of transportation, much can however be done to preserve the natural fertility, by steadily and judiciously applying the refuse that must necessarily accumulate on a common sized farm, ordinarily stocked. The most profitable foreign substance that we can introduce, is potash; and the most convenient form of applying it is in wood-ashes. Not more than one bushel, however, can be obtained, where twenty can be judiciously applied. Let every farmer save all his own; house it well, that the alkaline strength be not drained off by exposure to rains; and, being judiciously applied to the fields, it will richly repay the farmer for his care. Our soil in this region seems to be wanting particularly in the substance that the ash-manure supplies. Let our western agriculturists then, look to these things in time; and if they would not have their soil become as fruitless as was that of the old States they left, let them immediately adopt a wiser, a more systematic, and scientific mode of farming,

J. B. CROWLY.

Bellview Farm, Ill., March, 1856.

RAISING POTATOES UNDER STRAW.

WE clip the following from the "*Ohio Cultivator*," and deem it worthy of full experiment:

Several of our correspondents, within a year, have spoken favorably of the practice of planting potatoes and covering with straw, both as a less laborious and more profitable method of raising that crop. The idea is not new to us. As long ago as 1824, we saw this method practised in Vermont, and it was reported highly successful; but for some reason it has not come into general use. The experiments we saw tried were by selecting a short pasture field, dropping the seed at suitable distances over the ground, and then covering the whole with a coating of straw to the depth of a foot or more. In the fall the straw was raked off and the potatoes picked up, all dry. In wet seasons this plan was thought to be very effective. The editor of the *Pike Co. (Ill.) Free Press* has been presented with potatoes, raised the last season by a Mr. Shipman, of that vicinity, and details as follows:

"Mr. Shipman informed us, that he planted them in the usual manner, then covered them to about the depth of six inches with straw; after this no further cultivation was required — the straw kept down

the weeds, and the potatoes were not disturbed until they were dug. Not only has this method produced him a very superior potato, but it has this year brought him an extraordinary yield — four bushels to the square rod, or at the rate of *six hundred and forty bushels* to the acre!

"He has tried this mode of culture for three years past, and has in every instance found it to bring results superior to the common method. This year he has planted at three different times, with the following results:

"Early in April he planted Neshannoos in both ways, and Pinkeyes under the straw; all were in the same kind of ground. The Neshannoos cultivated yielded two bushels and one peck to the square rod; those covered with straw, three bushels and one peck, and the Pinkeyes covered, four bushels.

"Pinkeyes planted on the 24th of May, covered with straw, yielded two and a half bushels and four quarts to the square rod. They were the smallest potatoes.

"Pinkeyes, planted about the last of June, covered, brought two bushels and one quart to the square rod. These, although the smallest yield, were the largest potatoes, and of the best quality."

CHLORINE GAS, A RAT EXTERMINATOR.

In consequence of certain methods of building, extensively adopted in this country, it frequently happens that whole colonies of rats intrude into our dwellings, and make night hideous by the pell-mell onslaught of their Punic wars. And so riotous and so ravenous do they become as to, sometimes, constitute a most intolerable nuisance, and the most rigorous measures have to be resorted to, in order to rid house and barn of these offensive and destructive invaders. From an experiment given in the Philadelphia "*Farm Journal*," chlorine gas is found to be a most effectual remedy for ousting these vermin from our dwellings. This instrumentality the editor of the Journal describes as having been put into execution by a chemical friend in Boston, to expel an invading army of rats, after all other means of expulsion had failed. The Journal says:

"Raising a small board in the garret floor, our friend opened a communication between the floor and ceiling beneath, which interior communicated with the spaces between the side-walls and the laths and plaster over the whole house. In this opening he placed a dish containing

finely pulverized black oxyde of manganese, and poured over it a suitable quantity of strong hydro-chloric-muriatic-acid. The floor-board was then replaced. The effect of the chemical mixture of the black oxyde of manganese and hydrochloric acid is to disengage in the cold that most powerful, deodorizing, fumigating gas, chlorine. In common with all gases, it gradually diffuses itself through the air, but having a greater weight than atmospheric air, it accumulates at the lowest levels. The tendency of the gas liberated, therefore, was to penetrate every space between the walls and ceiling, and it at last found exit in the cellar.

It may be here stated that the quantity of gas so liberated can exert no injurious effect upon the house or its inmates; indeed the result is rather beneficial than otherwise upon the general health.

The chemical arrangement described had not been long in operation, when it became evident that something unusual was occurring in ratdom. "All night long, it would seem," says the narrator, "as if Bedlam had broken loose between the partitions of my house." Toward morning all had become quiet—the rats had vamoosed, big and little, and for a period of nearly three months not one was heard or seen on the premises."

We may add that, while the application of this remedy is exceedingly simple, the materials for evolving the gas are very cheap; indeed the whole cost would be quite trifling. And for the purpose of making the mode of obtaining this gas more plain we subjoin the following directions for the benefit of those who may desire to prove its practical efficacy as a rat exterminator :

Take one proportion of powdered black oxyde of manganese, and two or three proportions of hydrochloric acid—generally called muriatic acid—and mix them in an earthen or glass dish, and set the dish in such position that the gas, evolved by the chemical action of this mixture, may be directed to the quarters infested.

The materials above mentioned may be found at almost any drug store; and whosoever has at any time inhaled a full draught of this gas, will not be surprised that rats would turn in disgust from the domicil through which it is, for the time being, diffused.

We may remark that the gas will be evolved from this mixture when cold, but if it is desired to liberate the gas more freely, a little heat may be applied. As the editor of the *Journal* intimates, this gas is in no wise injurious to the healthfulness of the house, as it is frequently employed to give sweetness and purity to the sick-room, and for purifying damp and foul cellars; and if it will furthermore aid us in expelling rats from our dwellings and barns, its utility will be much more generally appreciated.

[For the Cincinnatus.

KATE OSBORNE.

BY PHILO BURRITT.

(Concluded from the April number.)

ON the next Wednesday afternoon, as Farmer Osborne was sitting down to tea, a hackney carriage, bearing trunks ponderous and band-boxes voluminous, was driven up to his broad gateway at Grassy Grove. Looking out, the Farmer caught a glimpse of his daughter as she sprung from the carriage with a fawn-like bound, and came tripping up the lawn ; he could not tarry and await her coming, but, running down the steps, he caught her slender waist in his stalwart arms, and raised her ruddy lip to his as though she were yet an infant ; while Kate, clinging around his neck, as in infancy she oft had done, both smiled and wept in the fullness of her joy. "Come in, my daughter ; come in," said the kind-hearted father. "Come in ; you must be tired and hungry. "Here, Peter," turning to his Teutonic attendant, and in the thoughtlessness of his joy, handing him a roll of bank notes of sufficient amount to have *bought* the carriage, horses, and driver, "pay that man his carriage hire ; bring in the luggage ; and tell the man to have his horses fed ; and then take him in to his supper." Farmer Osborne was a native Virginian, and on all occasions well sustained the characteristic hospitality of the 'Old Dominion.'

Having made a hasty toilette in her own little girlhood's room, Kate joined her father at the tea-table. But, as a very unusual occurrence, it must be noted that the good Farmer's appetite could not be tempted even by the delicate rasher of ham and his own chosen corn-bread, smoking at his side. His mind was too full of gladness, his heart too full of fondness, to yield any attention to the coarser claims of hunger. The meal was therefore soon dispatched.

So, as he had ordered, Kate had come home. And in the evening, as they sat in the cottage porch, the thought suddenly occurring to his mind, the Farmer rather abruptly asked—"I say, Kate, did you come all the journey alone ?" "Yes, well, no—not exactly ;" Kate demurely answered. "Fell in with some one you knew, perhaps ?" suggested her father. "Yes, sir ; a gentleman of my acquaintance was coming West as far as Chicago, and kindly took charge of my baggage, etc." "Oh, yes, yes ; that's all right," said her father ; "gentlemanly fellow, I dare say ; zangs, it shall be my oyster-treat when I meet him. What did you say his name was ?"

"Clinton," promptly replied Kate; "Mr. Clinton."

Poor Kate! little had she dreamed that her aunt's letter had made known to her father the name of this 'Mr. Clinton'—this lazy Yankee pettifogger.'

Farmer Osborne started as that name was pronounced; and, turning his face full upon Kate, sternly asked, "This Clinton's a lawyer, is he not?"

It was now Kate's turn to start; and stammering with surprise, she answered that he was.

"Well, now Kate," said her father deliberately, "mind now what I tell you. You are becoming a young woman, and some day will think of getting married—that's all right; but you know I hate lawyers; I've good cause to hate 'em. You know, Kate, I have not had very much education; that was all given to my sister, your aunt Katy, for, you see, in Virginny, they send the girls away to the best of schools, and keep the boys at home on the plantations; so our business has all to be done by these rascally lawyers. Well, some runaway Yankee pettifoggers cheated and fleeced me down in Virginny, till I had to sell off every thing, land, stock, old homestead, niggers, and all, to get out of their clutches. To be sure, I've done well enough here in Illinois; got well off again—worth more than I was in Virginny—that's all right; but, zangs, Kate, if any slick-pated long-legged lawyer ever darkens these doors to pay attention to you, I'll—" the Farmer hesitated, to determine on some condign punishment, that should be both desperate and terrifying, and at once continued, "I'll wring his infernal neck, and throw him out of the winder thar, as I would an ill-favored, half-feathered 'shanghai!' zangs I will!" And the Farmer's ponderous fist came down on his knee with an emphatic assurance of the certainty of his premeditated punishment. And he added, "so, now, just dismiss that Yankee pettifogger, Clinton, or be no daughter of mine, Kate; now, just mind that, will you!"

Astonished at her father's unwonted excitement, wherein he had revealed a portion of his personal history, new to her, and stupefied with wonder at her father's knowledge of her lover's name and profession, and well knowing that the ardent blood of the 'Old Dominion' made her father's prejudices impregnable and unyielding, Kate prudently remained silent; and this silence, the Farmer, not being expert nor experienced in reading thought and character, construed into acquiescence to his injunctions; and his good humor soon returned. But, some of the same blood, derived from 'one of the first families of Virginia,' was likewise flowing through the stout little heart of Kate Osborne; and,

though silent, she never once dreamed of sundering her plighted troth to Clinton. No, no; as to lawyers in general, her father might be right; but Mr. Henry Clinton was an immaculate exception!

With Kate's happy face and voice of song, the farmer's ample cottage seemed to him a paradise of joy and gladness. Occasionally, the thought of her mother, whom he had lain to rest in the bosom of Virginia, when Kate was yet too young to understand her loss, would come with sadening influence across his memory, and then he would wish that the loved and lost one were with him to enjoy the happiness and prosperity of his far western home.

Kate superintended all the domestic affairs of her father's household, yet found abundant time for amusement in the flower garden, and improvement among her books. Her father had made her a birth-day present — Kate was eighteen — of a fine, blooded saddle-horse, with all appointments to match. Mounted on this favorite, she would course widely over the boundless prairies, whose beauty and grandeur her mind instinctively drank in, while from their air, balmy and pure, she inhaled both fragrance and health. With this freedom of movement, and command of her time, Kate was directly 'accredited as bearer of despatches' between the Grove and the Post Office; but — the truth must be told — she bore many more despatches, both thither and from, than were ever deemed necessary for good farmer Osborne to behold. Unsuspecting old soul! himself regarding the writing a letter as a punishment rather than a pleasure — as an intolerable bore, to be shunned if possible, rather than as a delight, to be sought whenever practicable — he little imagined that his peculiar sentiments, and paramount prejudices, and parental prohibitions, concerning lawyers were all well known, to at least one of that proscribed fraternity, living as far off as the Hudson.

The month of June was about drawing to a close: its long days were throwing their profusion of sunshine over the rustling corn and waving grain-fields of farmer Osborne's wide-spreading domains. The farmer himself, with some three or four sturdy helpers, was 'nooning' in his cool, and airy cottage porch. And as he looked off on the dark green expanse of corn on one hand, and on the swaying acres of wheat on the other, and noticed that the warm breath of summer was spreading over the latter its ripening robe of golden russet, he thankfully considered that the harvest truly was great, and bethought himself, also, that the laborers were few. Dwelling in thought upon the latter item, he turned to Peter and asked if he knew where he could "get another good farm-hand?"

"Ich wishts nicht anuder man in all dis goundy," answered the worthy Teuton. Perplexed in view of this discouraging information, the farmer remained silent, wishing his annual wish, that, *at this season*, he could have a few 'field-hands' from 'Old Virginny.' But they never seemed to come for the wishing. While yet revolving some expedient for this emergency of his farm-work, the warmth of the day, the heartiness of his dinner, and the comfort of his easy chair, combined to entice the hale old farmer off into a most consoling noon-day nap. And while he yet slept the hour came for Peter and his confrères to renew their labor in the fields. Soon after their departure, farmer Osborne's slumber was disturbed by the voice of some one shouting to him from the 'big gate' opening from the highway on to the lawn, "Hillo, the house!"

Starting up from his sleep with a nasal explosion that combined all the euphonies of a cough, and a snore, and a sneeze, and feeling that both his nap and his dignity were by this freedom unduly disturbed, the farmer first rubbed his eyes, and then his 'specks'; and, having duly adjusted them to the required perspective, took a deliberate observation of the person who had so unceremoniously accosted him. His survey revealed to him a stout-limbed, broad-shouldered, and good looking young man, clad in a decent farming dress, a broad-brimmed summer-hat, with heavy boots now dusty from foot-travel on the prairie roads. A bundle, confined by a cotton handkerchief of the 'spread eagle' pattern, was suspended at his back by a stick thrust under the knot and placed across his shoulder.

Having completed his observation of the stranger, the farmer very deliberately removed his 'specks,' deliberately placed them in their shining steel case, deliberately put the case into his pocket, and then deliberately responded, "Well, stranger, what do you want with 'the house'?"

"Wal, I only want to know if you be the owner of these prairie diggins? Tarnation handsome country seat, this!" added the stranger, as his eye took in the wide range of the plantation around him.

Mollified by the stranger's commendation of his really splendid farm, Mr. Osborne mentally forgave him for the impertinence of his question, as to the ownership; and inasmuch as he sometimes permitted himself to quietly 'run a saw' at other people's expense, and was fond of practical jokes when others were the victims, he now saw proper to answer the stranger's question, by saying, "I am the owner, sir; do you wish to buy it for a 'country seat'?"

"Neow, yeou git eout! why, a feller might as well talk abeout buyin' the hull of Bosting, I guess!" was the response to this.

After a brief silence, the stranger resumed the colloquy, by saying, "I reckin' yeou don't know no person, hereabeouts wantin to hire a good hand, dew yeou, Squire?"

Now, to farmer Osborne the title of 'esquire' was extremely odious, inasmuch as it seemed to rank him among lawyers, the class of his particular abomination. But, ever mindful of the 'main chance' in business, he could not run the risk of losing the opportunity for securing good hand in the present hurry of his work, on account of an offensive title, which, after all, signified nothing; so he simply asked the stranger to walk in out of the sun. He complied; and seating himself, with his stick and bundle at his side, in the cool, pleasant porch of Mr. Osborne's handsome residence, the farmer said, "I am desirous of getting a good hand — how much a month do you ask?"

"Wal, neow, I guess a feller ought tew git ra-al good pay, this time o' year; the sun is all-fired hot, and the work is all-fired hard: heow much dew yeou give?"

"Fix your own price," said the farmer, "if reasonable, I'll give it; if not, I wont. So its all right."

"Jist so," replied the stranger; "then I guess yeou could afford to give me about \$45 a month, with vittels and clothes, and board and washin'."

"Whew!" whistled the farmer — "why, you charge like a lawyer — won't give any such price!"

"Wal, come neow, don't git riled; what will yeou give?"

"Oh, I presume we shan't agree, for I can't afford to give more than \$12 a month, with board and washing."

"Wal, neow, look here; yeou sec, I'm pesky fond o' good jokes, and so on — they kinder make the work go round lively; and I allers make it a reule to take as good as I send in that line; now if yeou'll let it be put in the artickle that we may bamboozle each other, as much as we're a mind tew, and not git mad about it, I sniggers I'll go it for \$12 a month. What do you say to that, kurnel?"

Now, while farmer Osborne disdained the civic title of squire, the cavalier blood of the 'Old Dominion' rendered his pride especially vulnerable to the approaches of military titles. The rank of 'Colonel,' therefore, so dazzling to all Virginians, united with his overweening confidence in his attainments in the science of 'bamboozlement,' led him at once to accept the yankee's offer, to which he promptly replied, "Very well, it's a bargain; that's all right. What's your name?"

"Wal, my name's Richard Quirkham; but, on account of my tricks, and bamboozlement of 'em, the boys allers called me 'Dick Quirk,' for short, you sec."

At this moment the voice of song came full, and clear, and gladsome, from a distant room within. The voice was Kate's — the song was Clinton's. Both father and stranger remained silent to listen, till the gushing solo ceased. Then the stranger broke the silence, by asking, "Whose is that patch of wheat, kurnel, deown the road by the timber, yender?"

"It's mine," replied the 'colonel.'

"Yeou don't say! But dew yeou call it good farmin' eout here in Illinois, to let four legged critters be in the wheat-field; jist afore harvest, tew?" asked Mr. Quirk.

"No, sir-ee," the colonel emphatically replied; "I don't allow any such thing."

"Wal, I swan to man, kurnel, I seen a hoss in that patch of wheat o' yeourn, as I came along," Mr. Quirk seriously affirmed.

"A horse in my wheat!" exclaimed the Col., "zangs and blitzen!" (The colonel never swore; never used profane language; never! The first word meant nothing, and the last he merely quoted from the vocabulary of his man Peter, and being in Dutch, he didn't know what it meant — so farmer Osborne never swore; never!) And with this ejaculation the colonel sprang from his easy-chair, and going to the end of the porch, shouted repeatedly, 'here Cato! here Bose!' which speedily brought into his presence two fine-looking Newfoundlanders, whose nooning nap' in the shade of the lilacs was thus as unceremoniously disturbed, as their master's had been by the stranger's 'hillo, the house.' Seeing his dogs eager, and anxiously looking for their work, the colonel called out, "Here, Kirk, Derk, Quirk; what's your name! see here, take these dogs and run down to the field, and chase that horse out, quick!"

"No, thank yeou; I'm much obleeged to you, kurnel, for your perlite invitation; but the artickle-aint signed yit," quietly remarked the imperturbable Mr. Quirk.

"Confound the lazy yankee, and his article! when the article is signed I'll make him move his boots for this!" muttered the colonel; and, jamming his broad-brimmed Panama down on his head, as if fixing for a race, sallied out toward the field with his dogs to rescue his premium crop of wheat from the trampling hoofs of some trespassing horse.

Left thus unceremoniously alone, Mr. Quirk's curiosity prompted him to make an examination of the inner adornings of farmer Osborne's cottage-mansion, and he accordingly walked deliberately through the open doors into the colonel's handsome parlor; for the Farmer was not one to reject the decencies, nor to despise even the elegancies of household arrangements; and therein he took delight in gratifying his own and his daughter's tastes. So Mr. Quirk was surprised, and stood quite still

in the middle of the room, gazing upon the neat decorations and tasteful furniture around him.

A minute after, the same clear and well-toned voice was again heard singing that self-same song. Mr. Quirk seemed to have ‘a musical ear,’ for he listened most eagerly; the voice was approaching; soon agile footsteps were heard; in another moment Kate, in her calico, as neat as a pin, and glowing with beauty, all-unconscious of the presence of an intruder, came tripping into the parlor, and singing as she came. But, on crossing the threshold and catching a glimpse of the stranger, her song was instantly hushed, and she was about to withdraw, when the stranger, respectfully removing his hat, she looked again; then, with uplifted hands, and dilating eye, she exclaimed, “Harry Clinton!” and ran straight into Mr. Quirk’s arms! Oh, fie! what a girl!

In a few minutes after, Kate’s voice was heard again; not, now, in song, but in the ringing tones of merriest laughter. She was standing a little way off, and contemplating the *tout ensemble* of “Mr. Quirk,” whom she persisted in calling Harry Clinton! At length, composing herself to some degree of gravity, she exclaimed, “Why, Harry, what *does* this masquerade mean? When last I saw you, it was all broadcloth and kerseymere, now it is all cotton-drilling and nankcen!” and the happy girl clapped her hands and laughed anew at the funny contrast presented before her mind. “Nay, nay, my dear Kate, you must not mock my humble costume,” said Clinton, in a tone of deep and touching tenderness, as he took her hand in his—“you must not mock my humble costume; for in it I come to woo and win a wife. It is not assumed as a mask to cover a pretended aim, but worn as a garb fitted for my settled purpose—to become a *farmer*. Being apprised of your father’s prejudice and prohibition, as to myself, I have resolved to win his esteem by the capacity and worthiness of my manhood alone. To this end, I have hired myself to him as a laborer, and as such shall abide with him for the season, hoping that I may yet obtain the prize I seek, with his willing sanction; for, be it known, my dear Kate, that, such is my reverence for the sanctity of the parental claim, however deeply I may love, Henry Clinton will never wed until the paternal blessing can sanctify the union that takes a daughter from her father’s embrace, and gives her to the bosom of a husband.”

As he began to speak, Clinton’s tone and manner at once dispelled all sense of the ludicrous from Kate’s mind; she saw only the lordly brow, the eagle eye—she heard only the eloquent lips of the man she loved; and, as he proceeded, her admiration rose almost to reverence, and feeling herself the object of this deep and manly devotion, her heart was too

full for words ; but the gentle pressure of her hand in his, and her tearful eye, yet smiling lip, made telegraphic answer of all her heart would say.

Clinton saw that his motives were understood and appreciated, and the consciousness of this put him at ease at once ; then, smiling, he resumed : " By our contract of hire it is stipulated between 'the high contracting parties' that each is at liberty to 'bamboozle' — so it is nominated in the bond,' to bamboozle the other *ad libitum*, as you musicians say, and no offense is to be taken thereat. Now, I must confess that I sent the 'kurnel'" — here Clinton made a quizzical face — " down to the wheat-field to look after a trespassing horse, that I saw lying in the fence corner, which, though he may be found '*couchant*,' will never be seen '*levant*' again, in this world ; and this, my first achievement in bamboozlement, as *per contract*, I trust you will pardon, when I assure you, my dear Kate, that it was with no worse motive than to secure this private interview, so necessary to the prosecution of my plans."

While Harry was thus making his explanations in the parlor, and Kate was telling him how becoming 'cotton-drilling and nankeen' were to his figure and complexion (!), farmer Osborne was striding along back from the field, very hot, very angry, and muttering quite audibly, 'I hope I'll ketch that yankee there yet ! Send me down here to drive a carrion out of a forty-acre field — what he calls 'a patch,' eh ? zangs ! I'll larrup the fellow, if it costs me a law-suit !'

Soon he approached the house ; there, in the porch, sat Dick Quirk, with stick and bundle on his knee, who, hailing the farmer as he drew near, inquired, " Wal, I say, kurnel, did yeou git him eout ?"

" No," growled the colonel, " but I'll get *you* out so quick it 'll make your head swim ! "

" Why, what on airth's the matter, kurnel ?" asked Quirk ; " You look a leetle excited : dew tell what has happened ! "

" I can tell better what 's going to happen ! I'm going to larrup you out of your confounded yankee hide ! Send me down to chase a dead horse out of the field, will you ?" and with clenched fists the enraged farmer drew near with evident design to execute his 'larruping' intent.

" Neow, dont git riled kurnel," said Quirk, " for yeou kneow it was in our contract to bamboozle, and not git mad abeout it."

" Yes, but 'the artickle aint signed yet,'" retorted the colonel, in mocking imitation of Quirk's previous objection to going to drive the horse out. At this Quirk gave a loud and hearty laugh, exclaiming :

" Wal, I never ! Kurnel, yeou've got me there ! haw, haw, haw ! I

acknowledge the corn, cob and all ! ha, ha, ha ! I gin up beat, kurnel ; yeour a little too much punkins for Dick Quirk ! " and he gave another resounding 'guffaw,' as if laughing at himself for his discomfiture. A hearty laugh, like 'a soft answer,' turneth away wrath. The colonel's ire was instantly cooled by this cachinatory compliment to his superior adroitness in 'bamboozlement,' and an awkward kind of smile came peeping from behind the sturdy frown that but a moment before betokened such 'larruping' results to Mr. Quirk. At that moment a smothered feminine titter was heard behind the blinds of the parlor window, and directly Kate was seen with agile foot-step skipping out of the parlor, and out through the back hall, with her face muffled in her handkerchief by both hands, as though she had a desperate attack of the tooth-ache !

After a few minutes of rather embarrassing silence on the porch, Mr. Quirk suggested that he would like to have their bargain completed, else he 'must be goin' on to find another situation, afore night.' "Very well," replied the farmer; "let us fix it up right off—that's my way—no use of palavering about it. My fingers are rather stiff and clumsy, though, to write the contract—can't you write it ? "

"Wal, no—I guess not very well; besides I've hearn say that artickles ain't lawful unless some other person writes 'em. And seein' that this is a purty big bargain, for four months work, it better be done right strong; hain't yeou got some one in the heouse that can write it ? "

"Confounded bother!" muttered the Col.; "Nobody but a yankee would ever want an article for such a trifling affair. Kate! hello, Kate! come here a minute !" called the father. Kate came. Now, as a gentleman of the old school of politeness, farmer Osborne was punctilious in the matter of manners; so, when Kate appeared, he presented her, with dignity, by saying—"my daughter, Mr. Quirk." Whereupon Mr. Quirk rose, and putting himself into a Yankce-schoolmaster's attitude, with the right hand extended *a la* pump-handle, and drawing the heel of his right foot into the hollow of the left, finally elaborated a profound bow, and stammered out an expression of his 'happiness in having the pleasure of making her acquaintance'(!) which civility Kate recognized by a courtesy much lower and more elaborate than even politeness would demand,—certainly more so than is usual for young ladies, just from boarding school, to bestow upon young gentlemen in 'cotton-drilling and nankeen.' But the Col. saw nothing of this, or, if he did, very naturally accredited it to Mrs. Willard's superior training of his daughter in the principles of etiquette.

"We want a little contract drawn, Kate," said her father, "and as your fingers are nimble you can do it better than we can, whose hands

are more accustomed to pitch-forks than pens; so bring a little paper, and set about it out here." With a glance at Mr. Quirk's comical countenance, Kate withdrew to smother her laughter and to procure writing materials. She soon returned, and with due legal gravity set about her work. "What shall I write?" asked Kate. "Why, that Mr. Dick Quirk, here, is to work for me on my farm, for four months, at \$12 a month—that's \$48," said her father. "Good gracious, kurnel!" exclaimed Quirk, springing from his chair, "couldn't yeou put in them other tew dollars, and call it even *fifty*? say neow, come dew, kurnel, come." Now the Col. cared nought for the two dollars; but calling to mind Mr. Quirk's quibble in refusing to drive the horse out, he said, "No, by zangs, I won't do it; a bargain's a bargain, whether in writing or by word o' mouth; and since you are so precise upon the subject, I'll be so too, and see how you'll like it."

"Wal, neow that's tew bad!" groaned Quirk. So Kate wrote as by her father directed, and asked if anything more remained to be written. The Col. said he believed not. "Oh, stop neow, kurnel," interposed Quirk; "yeou hain't got it in that we are to bamboozle each other, and not get riled abeout it—'a bargain's a bargain, kurnel, whether in writin', or by word o' meouth.'"

"Well, put it in, Kate," said the Col. rather scornfully; for he was not yet quite contented with the victory that Quirk had just accorded to him in the matter of the 'hoss in the wheat-patch.'

"How shall I write it?" asked Kate.

"Why, put it in this way," prompted Quirk, "that each party is to be allowed to bamboozle the other *ad libitum*." "Add what?" asked the Farmer, with a slight frown. "Why, I larned that word in our singin' books, when I used tew go tew singin' school deown tew Bosting, and it means, 'jist as you please;' so that when I used tew ask the girls if I could see 'em safe hum, they used tew say, '*ad libitum*.'" Then, turning to Kate, Quirk continued, yeou play on the pianer, Miss Osborne, I presume?" to which Kate, fearful of trusting her voice, replied by a bow of assent: "Wal, then yeou can explain it tew the kurnel; and I rayther guess, kurnel, that an artickle won't stand in law without it has *some* leetle latin in." Kate, by a hem—em, cleared her throat of an awful titter, and said that such was about the meaning of the phrase, in music; whereupon her father quite testily said, "well then, put it in '*add-lib-at-him*.'" And so the contract was speedily closed.

As soon as signed, Dick Quirk said, "Wal, neow, kurnel, jist show me where I am to put my bundle, and then I'm ready to go tew work."

The Col., always treating his hired men as members of his family, showed him to a small but neat and comfortable room, back of the spare bed-chamber ; where depositing his stick and bundle, Quirk then, accompanied by the Farmer, joined the hands in the field, and commenced his work as *per contract*.

The summer months passed quickly on. By his activity and superior intelligence, which gradually developed itself to the common hands around him, Dick Quirk had quietly taken the lead in all affairs of the field ; the hands willingly followed his cheerful steps, and really loved him for his kind words, and mirth-moving quips and quirks. It seemed, indeed, as he said, that 'when the jokes went round kinder lively, the work went round kinder lively, tew.' And often, as farmer Osborne, whom Quirk still called Colonel, was riding o'er the prairies, hunting up and salting his stock, he would hear the ringing echo of a hearty laugh resounding from some distant field, when a smile would come like a sunbeam across his brown but manly face, and he would mutter his thoughts aloud — 'There is that Dick at his quirks again—that's all right—what a funny dog he is though—but he has never practised any 'bamboozlement' on me since he sent me to drive that 'four-legged critter' out of the wheat "patch;" what a yankee he is to be sure; to call a forty acre field, a 'patch!'" The Col. could never forget that derogatory diminutive as applied to his premium wheat-field.

Never before had the work of the farm gone on so entirely to Farmer Osborne's satisfaction ; never before had his hands cultivated the corn so thoroughly ; never had the hay been so well cured nor better stacked ; never had the wheat been so nicely cut, and so handsomely housed ; never had his stock looked so healthful and so slick ; never had his hands been so cheerful and contented. And when thinking over his promising prospects, the Col. would mutter aloud, 'That Dick Quirk is one of the best farmers I ever saw—always has a sensible reason for everything he does ; sometimes from botany, sometimes from chemistry, and other things, I don't know the names of ; I think he must have been a schoolmaster—that's all right—pity he talks with that confounded yankee-brogue, though I think that's wearing off ; I wish the poor fellow had a farm of his own hereabouts—he would be a prize to our neighborhood—zangs, I've a notion to lend him the money to buy a thousand acres or two.' And never had the farmer's home been more cheerful ; Kate's housekeeping was matchless ; she did not ride on horseback so much—'twas so warm ;' she did not go to the post-office so often—'twas so far ; her flower garden was never before so brilliantly beautiful—she had 'one of the hired men' to help her ; and never before had Kate been so happy,

and never more beautiful. . She let none of her school-girl attainments rust away from her mind ; she had fixed hours for her reading, and fixed times for her music ; and often, when the day's work was done, and he dressed in his clean 'cotton-drilling and nankeen'—as his invariable custom at evening was—Mr. Quirk would be invited into the parlor to sing duetts with Kate, wherein his mellow, manly voice, lent harmony to her own ; and in this kind of music farmer Osborne took especial delight. Indeed, he himself, not unfrequently chimed in on the base with a tone as deep and rich as the tone of an organ.

But as clouds will come over the brightest skies, so trouble was soon to cast its shadow over the sunshine of farmer Osborne's happiness. The season had passed on into September, still the weather was warm, and the farmer was sitting again in his porch at 'nooning,' when a kind of semi-genteel citizen of the little village near by, rode up to the gate, and hitching his little pony of a horse, came in and was seated, at Col. Osborne's polite bidding. After a little chat, he pulled off his greasy seal-skin cap, and taking from its ample crown a bundle of greasy-looking papers, selected one from the mass, and handed it to the Col., saying that, 'being a constable, it became his duty to serve this summons on John W. Osborne, as defendant, at the suit of Robert Pelton, as plaintiff, pending before Esquire Ambrose.' How immensely formal constables always are—and this formality of manner astounded the farmer who sat holding the thin slip of paper, and looking at it without seeing it. He hated law ; not in the abstract, but he hated the trouble, the anxiety, the perplexity, the cost of a law suit : who does not ! Well, Bob Pelton did not ; to him it was a kind of necessary excitement ; he was therefore, much at law—he was litigious in his disposition, though a coward in his nature ; litigious persons always are—they are brave only when clad in a coat of legal mail ; and with such, this is generally 'black-mail !' Thus holding the copy of the summons, the farmer could only stammer out—"eh, what—Bob Pelton sued me ? what for ? what's this all about ?" In vain did he scan the thin slip of paper for information ; it only said, 'in trespass, damages, \$99 ;' And indeed the Col. had a great mind to go at once to his bureau drawer, get the money, and pay off the harassing claim without knowing for what it was. At length, rallying his thoughts, he asked the constable what this meant. "Well, of course, I know nothing about it," said the officer—what 'know nothings' constables are ! "But I believe it is something about a horse of his that was killed, as he says, in your wheat field some three months ago." "Yes," said the farmer, "the breachy brute, in trying to jump in, run a sharp stake into his body, and fell dead in the fence-corner, I

suppose — I saw him there." ('Twas the same 'four-legged critter' that Quirk had sent him to drive from the field !) " He says you chased the animal with a 'sharp stick ;' but of course he'll have to prove that you killed it, before he can get judgment." And with these wise and encouraging words the constable donned his scal-skin cap and departed.

Now that the nature of the charge was known, the farmer's 'Old Virginny' blood boiled up, and he said — he never swore, never — but he *said* — " zangs, he wouldn't give Bob Pelton 99 cents for his damages!" Just then Kate came tripping through the hall, which echoed her swelling notes of song. Hearing her, her father called to her; in a moment she was at his side. " Kate, old Bob Pelton has sued me about that dead horse ; I've only three days to get ready for trial, and as our village has not yet risen to the dignity of having either a barber or a lawyer, to shave people, I must go to the county seat to get some attorney to aid me in the suit, for I s'pose Bob will have at least three on his side, as he seems to be in league with the lawyers and the ——" The name of the other partner in the firm the Colonel left for inference, and told Kate to donn her riding equipments, and accompany him. The horses were soon ready, the journey soon made, a lawyer soon found, and Kate having bought some new music, etc., they returned to Grassy Grove about sundown. Soon after his return the Colonel communicated to Dick Quirk the trouble he was in, and the steps he had taken for defense. Mr. Quirk remained silent; the affair seemed too much out of his line for him to venture advice.

That evening, music was suggested, and Kate and Mr. Quirk went into the parlor to sing the new duetts. But the music was not familiar; it therefore had to be studied, and this, of course, accounted for the long 'interludes' of *silence* (?) that the outsiders observed in the entertainment!

Two days after, being the day before the trial, Kate remarked to her father that she had an errand to the county town, and with his permission would ride over that afternoon. " Certainly, my dear girl, certainly; and here's something to foot the bill with. But be careful, Kate, and keep a steady rein on 'Sir Harry ;' he's becoming quite coltish, lately." "Never fear, father," she archly replied, " I'll keep 'Harry' straight!" What 'Harry' did she mean — the horse 'Harry,' the man 'Harry,' or the 'Old Harry'? But soon she was seen bounding away on her horse 'Sir Harry.' Arrived in town she rode direct to the office of her father's lawyer, politely informed him that an arrangement of affairs had been made so that his attendance on the following day would not be necessary,

asked the amount of his charge for the trouble given him, paid it, whispered to 'Sir Harry,' who thereupon gallantly bounded away homeward with his mistress.

The day, the hour for trial came. Farmer Osborne was present in due season; his hired hands had been subpoenaed as witnesses; with a view of swelling the costs against Osborne, Pelton had demanded a justice's jury, and these were all present. Bob Pelton, sure enough, moved with an escort of three attorneys, full-fledged and unfledged, with whom Pelton joked coarsely, and laughed loudly. Attracted by the excitement of the suit, nearly the whole neighborhood had assembled; everybody seemed to be there, excepting Osborne's lawyer. What should keep *him* back? The farmer was uneasy, and the whole assembly seemed to sympathise with his anxiety. A group was gathered around Dick Quirk, who was a public favorite among the young farmers, and were listening and laughing at his quaint remarks and humorous anecdotes, told in the most twisting tones of his yankee twang. The hour was passing. Mr. Osborne begged for another half hour's delay, for the arrival of his counsel, who, good man! was earnestly occupied in his snug office, at twelve miles distance, recording this in his docket — 'Pelton v. Osborne, settled, and my fees paid, \$10.'

The half hour passed, but no lawyer came. The justice calmly, but firmly, told Mr. Osborne that the case must go on. The Farmer was covered with confusion and vexation, but remained silent. All eyes of the crowded room were on him, and pitying his position. Pelton made some remark about the absent lawyer thinking it a 'gone case' and declining to appear; whereat he and his triune attendants laughed immoderately. The Farmer was profoundly excited; he wouldn't be beat for five hundred dollars; he felt like 'larruping' almost everybody; yet not a word could he say, not a movement could he make. "What do you say, Mr. Osborne?" kindly asked squire Ambrose, "I think we can wait no longer." The Farmer had indeed nothing to say; and while undecided what answer to make, his man Quirk addressed him from across the room, in a very audible whisper, "I say, kurnel, let 'em rip: and as I am hired by the month to dew all kind of chores, why I'll help in this business, with no extra charge." At this the people snickered, and Pelton and his aids roared. Nettled by this, Quirk spoke aloud to the court, "I say, squire, I spose there's no law in Illinois agin my helpin' the kurnel in this case, if he's willin'?" "No:" said the justice, smiling, "any sensible person, who will observe gentlemanly decorum, may appear as counsel in my court." "There, now, kurnel, you see I'm admitted to this bar; and if I don't take care of your side, I'll

charge you nothing, and give you a month's wages to boot." A general laugh followed this, and a dozen voices, excited by the state of affairs, called out, "Let him try it, Osborne; let him try it." Osborne had, indeed, no alternative; and had become somewhat encouraged by Quirk's evident ease and self-possession before the assemblage; so, smiling in very desperation, he replied, "Well, as you say, Dick, 'let 'em rip.'"

The trial at once began. Pelton's witnesses were called, examined, and turned over with a sneer to 'lawyer Quirk'! for cross-examination. And *such* an examination! At first they scoffed, then blushed, then stammered, then got mad, then twisted, and squirmed, while Quirk sifted, and quizzed, and cornered them so completely that all began to stare, and none was more agape with wonder than Farmer Osborne himself. Pelton's attorneys objected, interrupted, swore, and tried to explain; to all which Quirk only said, "Keep cool in yeour skins, gentlemen, yeour turn 'll come, by'm by." They then essayed to overwhelm him with ridicule; but Dick was as cool as though he was out on the prairie, shooting prairie-birds, and every retort told on his opponents so effectually as to call out applause from the auditory, in spite of all cries of 'order.' The testimony closed, the arguments to the jury commenced. Pelton's case was presented by his leading counsel; and, when Quirk began, expectation was on tiptoe. After laying open the material points in the case, clearly and forcibly, Quirk began to warm in the argument and as he became roused his yankee idiom fell from him, and the crowded audience stood and stared with amazement, as from his lips there rolled the gushing tide of lofty eloquence — the clearest logic of thought clothed in the purest form of expression. His opponents were stupefied with amazement; so was the Colonel, who had forgotten that he was defendant, and as a spectator sat with staring eyes, and gaping mouth, as he listened to the orator whose words seemed to warm every heart with a love of justice, and to convince all minds of the attempted wrong. And when he turned the fiery arrows of his burning sarcasm on the corrupt witnesses, and the litigious Pelton, they quivered, and squirmed, and crept away from public view, like reptiles flayed alive. With a few closing words of high-wrought appeal he held all breathing silent, though every pulse of his auditory was bounding with intense excitement. And for the space of near half a minute after his voice had ceased, that silence reigned; then the spell was broken, and a shout of applause went up, that no court could silence! And lifting the gifted advocate in their stalwart arms, the delighted crowd bore him aloft and around in triumph. The plaintiff's Counsel essayed to reply, but after Quirk's it sounded vain and vapid; no ear listened — no mind heeded; and as soon

as it was closed, the jury promptly returned a verdict for the defendant. Then another shout went up, and the warmest friendly greetings of his neighbors were showered on Farmer Osborne. He was now too highly delighted to remain; he wanted to get home to tell Kate — to tell Peter — to tell ‘Bose’! so, calling to Dick to ‘come on,’ they rode homeward together.

As they proceeded the Colonel was lavish of commendation, and urged Dick to buy a farm and settle down in their neighborhood, offering to loan him all the money he needed to buy with. After a silence of some minutes, Quirk respectfully replied by informing Mr. Osborne, that a mutual attachment had sprung up between himself and the Colonel’s daughter; and begged to know whether, though poor himself, the father would consent to their marriage.

“The attachment’s mutual, you say? Well, then, by zangs, Dick, she’s yours; and then, you see, Dick, you’ll have a farm without buying it — a noble one, too — that’s all right!” Then, after riding on for a minute in silence, the farmer resumed, “All the objection I have, is to your name, Dick: how funny it will sound — ‘Mr. Dick Quirk — Mrs. Kate Quirk!’ That won’t do — it sounds like a sick gobbler’s soliloquy; but we can petition to have it changed, eh? Dick?” Mr. Quirk smiled and replied, that no doubt but that the difficulty could be remedied.

On reaching home Dick went immediately about his evening chores; and as soon as he reached the house the Colonel began to shout for Kate; she was not far off, and soon answered the call. A single glance sufficed to show her that, as her father expressed himself whenever intensely satisfied, ‘it’s all right.’ When Kate came, her father, seating himself, took his daughter upon his knee, as though she were yet an infant, and caressingly told her of all the marvels of the day, in a manner so picturesque and grotesque, as to bring tears of laughter and joy to Kate’s eyes. At length, as the topic of the homeward ride occurred to him, he lowered his voice almost to a whisper, and made known to his daughter Mr. Quirk’s request for his consent to their marriage: “He has it, Kate, always provided that such is your choice, my dear girl — is it so, my daughter?” Kate warmly kissed her father’s cheek, and hid her blushing face on his shoulder. “Yes — well, that’s all right. He is a splendid fellow, Kate, and will make a splendid farmer, and here’s a splendid farm for you and him. I’m glad, Kate, it turns out so; because now you are clear from the clutches of that lazy yankee pettifogger, that your aunt Katy wrote about. But now it’s all right, Kate; it’s all right.” Then Kate learned how her father knew Mr. Clinton’s name and profession.

Four weeks thereafter, on the day when Dick Quirk's contract for four month's work expired, a wedding feast was spread in Farmer Osborne's handsome mansion. Henry Clinton and Kate Osborne were united in the bonds of holy wedlock. And when the evening hours had come, when the merry-making was over, when the last guest had departed, Kate, as a beautiful bride, with her arm in her lordly-looking husband's, came and stood before her father, as he sat in his parlor easy-chair, and said, "Father, will you forgive us?"

"Forgive you? For what?" asked her father.

"Why, you know, father, that you positively prohibited my marriage with Henry Clinton; and now, I come to confess to you, that this, my husband," and Kate glanced fondly and proudly upon him as she spoke, "is the same Henry Clinton. Father, will you forgive us?"

Farmer Osborne never swore — never used profane language — never — but jumping up, he exclaimed, "Zangs and blitzen! Do you mean to say, that you have been bamboozling me all this time, to get my daughter — to take her away, and leave me alone on earth. Oh, Kate, Kate!" and the old man's chin quivered, as he uttered these sorrowful words. The manly heart of Clinton was touched, and he hastened to reply:

"No, not to take her away, my dear Colonel; but to remain with her, and aid her in the duties that, henceforth, she and I owe to you."

"Do you mean to be understood, that you are to sacrifice your profession, to follow the pursuit of farming, here with me?" and a smile of hope came peeping out from the old man's sorrow-stricken face.

"Such is, indeed, my purpose," said Clinton; "but call it not a sacrifice, to change my profession, and resort to that which no less a man than George Washington called the most manly and dignified of all human pursuits."

"There, now, father, instead of losing a daughter, you have gained you a son! Now, father, won't you forgive us?" pleaded Kate, amid smiles and tears.

"Forgive you! Yes, my daughter, and pronounce my blessing on you both!" said the Colonel, taking each by the hand, while a big, bright, joyous tear stood glistening in his eye. Brushing this aside, and filling its place with a smile, he said —

"What an old fool I've been, to be sure, to think that my brave and sensible Kate couldn't choose her own husband! Let's see — 'Mr. Henry Clinton — Mrs. Kate Clinton' — yes, that's all right! No need to petition the legislature to change that name! Now, good night, my children! God bless you both! It's ALL RIGHT!"

[For the Cincinnatus.

PRUNING IN SUMMER.

BY G. M. KERN.

HORTICULTURISTS and Gardeners unanimously concur in the opinion that pruning is an important operation. Different opinions, however, obtain among them concerning the manner in which this important operation may be most successfully and profitably performed. If we ask the industrious nurseryman or orchardist why he annually cuts off so many large branches, and twigs, and buds, from his trees, we are told that such procedure is necessary to obtain fine, straight, and thrifty trees, to secure well proportioned heads, and to produce therefrom a bountiful crop of fruit. The vegetable gardener and florist, also, freely employ the pruning knife. The one stoops down over his cucumber vines to make them accommodate themselves to the narrow limits of a hot-bed, in view of forcing them to bear an early crop; and the other tops and stops his plants in pots in order to obtain a bushy and profusely flowering growth. The vine dresser, too, finds it indispensable to trim his vines that he may produce an abundant harvest of the grape, and of "wine that maketh glad the heart of man." And, with the hedge-grower, pruning is the all important work which alone is able to render his endeavors profitable and successful; and he has yet to contend, it seems, with an endless multitude of opinions, countless queries, and innumerable vexations, resulting from the unsettled state of our general knowledge on this particular subject. In all these various branches of Horticulture, pruning aims to attain one common object; it must be the means employed to give us entire control over the *bona-fide* growth or vegetation of the plant or tree. And, as now-a-days, the light of science is beginning to shine in every quarter-reaching, we trust, every gardener's and farmer's soul—great pains are taken by various horticulturists to base all their practical operations upon a sure and scientific foundation, for which vegetable physiology furnishes them ample material. Great indeed have been the advances which horticulture has made through the agency of science applied to pruning; and greater, still, will be its progress when those engaged in horticulture shall come to the full understanding and appreciation of the essential principles of this department of science. We shall hope then, that, no one will be tempted

to study, as laws of vegetable physiology, that which, in reality, is but the *conditio sine qua non*, or, "common sense," of vegetable life.

To return to our subject:—It may be well to remark that we may distinguish two main purposes which all rational growers of fruit trees must keep in view to obtain the results desired: The first, of the greatest moment, and which may be said, in some degree to involve the other is—to control the equilibrium of the sap throughout all parts of the tree; and, second, to regulate adroitly the respective quantities of fruit-bearing and leaf-making portions. If the proper means for the attainment of this end are understood, the question at once arises—which form and habit is the tree to receive? In one case we permit nature to pursue her own course, allowing the tree to attain its natural shape and dimensions; in the other case we force the tree to grow according to our own pattern, a pyramid, an espalier, or even a hedge.

For a full understanding of the means to govern the equilibrium of the sap we must look to one of the principal laws of vegetable physiology, upon which all proceedings, in this particular, must be based. The fluid nourishment taken up by the root, ascends through stem and branches into the leaves, where it is altered, in its nature, by a process of breathing or respiration; from the foliage, as the lungs of the tree, the fluids descend again into the branches and trunk, to be deposited as a new layer between the bark and former wood, thus swelling the size of the tree, by depositing these layers, or, as they are familiarly called, "growths," from year to year; and a portion of this descending fluid, after having been thus elaborated and fitted for these functions in the leaves of the tree, passes into the germ to form and bring forth fruit to perfection. It is therefore manifest, that the breathing organs, the leaves, are most important agents in the vegetative process, and by the healthful quantity of its foliage the vital power and successful fruitage of the tree are governed. For this reason the shortening of branches becomes necessary when a tree is transplanted, by which operation the roots are always more or less injured. Roots and leaf-making branches must, here, be dexterously balanced. Every bud that develops itself, in spring, into a shoot with more or less foliage, is therefore a pump on the quantity of sap which the root is able to receive.

And here it is well to consider that the course of sap is always 'onward and upward'; the highest placed buds, therefore, naturally receive more than the lower ones. Every part of a tree, therefore, which has assumed too strong a development, at the expense of other parts, can be controlled, by depriving it of part of its buds—*i. e.*, by making that part shorter, while the weaker portion should be encouraged by being

left unpruned. But it is found that gardeners too often counteract this axiom in the science of pruning, and erroneously hold to the doctrine that a branch is made to grow stronger by shortening, while the long growth makes it weaker. This must not be confounded with the usual practice of shortening in branches with a view of uniting their whole supply of sap for the benefit of a few eyes, which must then, of course, take on a stronger development than if this supply had been distributed to many buds. On this principle, older trees, whose branches are disproportioned to the vigor of the roots, and which are frequently exhausted by heavy fruitage, are greatly benefitted by being 'shortened in,'—the vegetative capacity of the roots and branches being thereby adjusted to a fairer balance.

Passing on from the great number of high stemmed fruit trees, wherein nature herself provides for a general growth and uniform distribution of sap, to the class of the dwarf-trees, we find that the main purpose of the gardener should be, to bring the lower lateral branches to perfection. To accomplish this object, he naturally finds it necessary to shorten the leading top branches, allowing the lateral branches to remain longer, in order to form a well proportioned pyramidal top. The same object must be kept in view by the hedge-grower from the very beginning of his operations. To secure a proper density in the bottom part of his hedge is the most important item in his calculations. He aims to accomplish this by trimming, very closely, the ascending shoot of the previous summer; but, with increased vigor, new and stronger shoots burst forth, and, if no timely stop be made in their disproportioned upward growth, these again are to be abated in the coming year.

And here the great question arises,—what means are at hand to control this growth in summer and limit its development to the desired point?—for certainly it would be quite unreasonable to suppose that to be a sound and sensible horticultural practice by which the tree is allowed, during all the summer, to make as many shoots as its vigor may prompt, and which the gardener sees growing all the while with the pleasing prospect of cutting them all off the following spring. In view of such practice, well might we ask whether the vegetative powers of the tree might not be more economically managed? and, whether a fruit-tree must necessarily produce a heap of useless brush-wood before its energies can be directed to the production of fruit? And under such treatment, is it to be wondered at that many complain that their trees do not bear well, and in lugubrious tones repeat their granny's words,

“ Whoso planteth pears,
Planteth for his heirs.”

After the buds develop themselves into young shoots, the course of the vegetative process in the trees should be closely watched. The outline and ideal of a perfect and pyramidal dwarf-tree, with all its details, should stand out in a lively image before the imagination of the gardener; and, during the summer growth, it should be his aim to so direct the ample store of new production as to bring it, in the nearest degree possible, to a perfect tree, and to profit, by every means in his power presented by this redundant growth, to secure fruit for the ensuing year. With these considerations before his mind, his first efforts should be directed to secure for the tree a competent top-leader. If the shoot of the uppermost eye promises to become such, it may be preserved for that office. But, if inferior to some of its lower neighbors on the branch, some of the latter should be chosen for the leader; in which case the extremity of all other surrounding shoots should be carefully pruned off when about six inches long. By this means the leader will gain in strength, while the other shoots, which are to become the lateral branches, are, for a time, arrested in their growth, and thus their due proportion is preserved. It is, however, proper to remark that it may become important to stop the exuberance of growth in this leading shoot itself, when it seems to draw too largely on the supplies of its fellows; this is done, whenever it becomes necessary, by pruning off a few inches of the extremity. The leaders of the lateral branches should also be examined and treated in like manner in order to secure a suitable leader, well proportioned to the minor shoots of the same branch. Particular attention should be bestowed upon the small shoots which are to become the fruit-bearing branches. It frequently happens that their terminal shoot takes on too strong a growth, thereby losing its capacity for bearing fruit, and becoming but a leaf-branch. By resorting to this method of checking the strong-growing shoots, the gardener and orchardist is enabled to exercise a complete control over the development of his tree; though it may be necessary to repeat the operation over and over again. Under this treatment the fruit branches are greatly favored and strengthened, and even new ones are developed which, without this attention on the part of the gardener, would have become but useless leaf-branches. During these operations in summer every hazzard water-shoot (*gourmand!*) frequently sprouting on trees, should be removed; in general, only a proportioned number of shoots is to be preserved; all those which would tend to create excess should be taken off altogether. In this manner the sap and strength of the tree will be employed in the production of useful and valuable parts, securing abundant crops, and well proportioned healthy trees.

It is in the nursery that the beginning should be made to form the pyramidal tree. When the bud has grown to the height of fifteen or eighteen inches, it should be checked by pruning off the extremity. This check will cause the growth of smaller lateral shoots, each having a new and well proportioned leader. These lateral shoots thus developed, are well fitted to become the leading lateral branches. Care must be taken, however, to prevent them from becoming rivals of the upward leader. By this treatment the tree is really advanced for one year, inasmuch as the sap of the first year is turned at once to the best account in the production of branches, instead of cutting off the redundant growth as a useless switch, as is usually done, when the tree is transplanted.

For hedge-growing it is quite reasonable, also, to turn the vigor of vegetation, by repeated summer prunings, into the production of dense brush-wood to form the base of the hedge, instead of throwing it in the fire of the brush-heap the following spring; or of raising hedges, as too many are, which are dense enough *eight feet above the ground*, but open at the bottom where the greater density is needed.

This subject of ‘summer pruning’ is of great practical importance, and deserves a more extended exposition than we can now give it. And we feel assured that the horticulturist would find greater satisfaction and more enjoyment, to say nothing of profit, in the culture of his favorite orchard, when conducted with such considerate precautions and watchfulness over his trees as the philosophy of this subject suggests; and would experience as much delight in exercising his science and skill on his pear trees as he ever did on the strawberry hobby.



OUR WONDROUS ATMOSPHERE.

THE atmosphere rises above us, with its cathedral dome arching toward the heavens, of which it is the most familiar synonym and symbol. It floats around us like that grand object which the Apostle John saw in his vision, “a sea of glass like unto a crystal.” So massive is it that when it begins to stir, it tosses about great ships like playthings, and sweeps cities and forests like snow flakes to destruction before it; and yet it is so mobile that we have lived years in it before we can be persuaded that it exists at all, and the great bulk of mankind never realize the truth that they are bathed in an ocean of air. Its weight is so enormous that iron shivers before it like glass; yet a soap ball sails

through it with impunity, and the tiniest insect waves it aside with its wing. It ministers lavishly to all the senses. We touch it not, but it touches us. Its warm south winds bring back color to the pale face of the invalid; its cool west winds refresh the fevered brow, and make the blood mantle in our cheeks; even its north blast braces into new vigor the hardened children of our rugged climate.

The eye is indebted to it for all the magnificence of sunrise, the full brightness of midday, and the clouds that cradle near the setting sun. But for it the rainbow would want its "triumphal arch," and the winds would not send their fleecy messengers on errands round the heavens; the cold, either, would not shed snowy feathers on the earth, nor would drops of dew gather on the flowers; the kindly rain would never fall, nor hail-storm nor fog diversify the face of the sky. Our naked globe would turn its tanned and unshadowed forehead to the sun, and one dreary monotonous blaze of light and heat dazzle and burn up all things. Were there no atmosphere, the evening sun would in a moment set, and without warning plunge the earth in darkness. But the air keeps in her hand a sheaf of his rays, and lets them slip but slowly through her fingers, so that the shadows of evening are gathered by degrees, and the flowers have time to bow their heads, and each creature space to find a place of rest, and to nestle to repose. In the morning, the garish sun would at one bound burst from the bosom of night, and blaze above the horizon; but the air watches for his coming, and sends at first but one little ray to announce his approach, and then another, and by and by a handful, and so gently draws aside the curtain of night, and slowly lets the light fall upon the face of the sleeping earth, till her eye-lids open, and like man, she goes forth again to her labors till the evening.

THE SEVENTH TRIAL.

THERE has always been a mystic reputation for the number seven, and although the number of believers in such things may be less in these latter days than formerly, yet they will all notice that the French attack on the Malakoff was only successful on the seventh assault. The amiable Pelissier must believe in number seven, for his first start in life was when he was thrown, by request, into an Arab fort, from which the French troops had been six times repulsed. In the Crimea he probably remembered this; and the story of Bruce, who, when a prisoner, watched

a spider building his web; six times the spider attempted to fasten one of his supporting cables—six times the spider failed, but the seventh he was successful. The Scottish king took heart of grace from the perseverance of the insect. He had been six times defeated, but the seventh was the battle of Bannockburn, quite as important in that day, as the Malakoff. These coincidences are interesting, and convey a good lesson. There are Malakoffs in every man's path, and if he will but persevere till the seventh time, he will be sure to have them at last. Persevere to the end!—*Morning Herald.*

ASHES AS MANURE.

THE common wood-ashes of the hearth constitute one of our most important fertilizers. Yet no sight is more common than piles of ashes heaped up in some corner of the door-yard, and left to leach away the alkaline elements that might have greatly benefitted the soil of neighboring garden and field. In some portions of the country ashes can be easily obtained in any quantities, and at trifling expense. And such is their value as a fertilizer, that they should be taken from the hearths and carefully preserved, till corn and potatoes have risen two or three inches above the surface, and then cast a handful of ashes at the root of the plants, just before hoeing: the hoeing soon after, by covering the ashes, and mingling them with the soil, secures their qualities to the soil.

Ashes contain all the inorganic substances of the wood or plants consumed in producing them. Some of these substances are soluble in water, and some are insoluble; but it so happens that, in their combination, those which are soluble in water, form a proper solvent for those which would otherwise be insoluble. For instance, potash is soluble in water, and silica is not; but, when potash is dissolved in water, then this solution becomes a solvent of the silica contained in the ashes, and thus prepares it for glazing the stalks of cane, corn, wheat, etc. By leaching, ashes part with the greater portion of their potash, which is a positive loss of value in manure, and likewise deprives the soil of its appropriate solvent of silica—hence the value of leached ashes, as a manure, depends upon the lime and phosphoric acid that they still retain.

By their alkaline qualities, ashes neutralize acids in the soil, and

thereby render the cold and dense soil of mossy and wet places warm and porous; they are destructive to many ravaging insects; their alkaline elements expedite the process of breaking down and dissolving the dense vegetable fibres and stalks of the compost heap; and they are especially applicable to clayey lands, in order to render the soil porous and friable; while they supply to loamy lands the element of silica, so necessary to give hardness and stiffness to stalks of corn, and straw of grain, to prevent it from falling when the heads become filled.

Wheat contains a large proportion of potash; and about sixty per cent. of the ash of corn is found to be carbonate of potash; while one-half of the earthy matter of the potato is pure potash. This element is, therefore, demanded by our agricultural products in such abundance as to make its supply an object of the first importance in the consideration of every careful and intelligent farmer. And the potash, so essential to the full development of our most desirable crops, is not abundantly supplied to our soil in its geologic constitution; this element must therefore be, in a great measure, supplied by our manures. In granitic regions, potash is obtained in the soil by the dissolution of the feldspar; but here we have no such sources of supply. We should therefore save our wood-ashes with great care, and apply them judiciously and systematically to those crops in whose vegetable composition their elements are so indispensable, and our abundant reward will be found in the increased abundance of the harvest.

GRADUAL RISE OF NEWFOUNDLAND ABOVE THE SEA.

IT is a fact worthy of notice, that the whole of the land in and about the neighborhood of Conception Bay, very probably the whole island, is rising out of the ocean at a rate which promises, at no very distant day, materially to affect, if not to render useless, many of the best harbors we have now on the coast. At Port-de-Grave a series of observations has been made, which undeniably prove the rapid displacement of the sea-level in the vicinity. Several large flat rocks, over which schooners might pass thirty or forty years ago with the greatest facility, are now approaching the surface, the water being scarcely navigable for a skiff. At a place called the Cosh, at the head of Bay Roberts, upward of a mile from the sea-shore, and at several feet above its level, covered with five or six feet of vegetable mold, there is a perfect beach, the stones being rounded, of a moderate size, and in all respects similar to those now found in the adjacent land-washes.—*Newfoundland Times*.

Bad Effects of Grass on Colts.

[“*The American Veterinary Journal*,” edited by Dr. GEO. H. DADD, Boston, has come to our “exchange” table, where it is right welcome. For it is a journal of great usefulness, and ought to be in the hands of every man who owns, or expects to own a good horse. The editor is evidently a scientific man, and therefore has a reason for the faith that is in him; and his *Journal* is, consequently, free from that empiricism that has heretofore characterized too many of our works on the subject of Veterinary practice.

The following article from that journal we give to our readers, as containing some judicious and seasonable suggestions on a subject of much practical importance.—EDS.]

“WHEN horses are turned out to grass in the spring of the year, the succulent nature of the food causes them to purge, often to a great extent; this is considered by many persons a most desirable event—a great misconception. The herbage is overcharged with sap and moisture, of an acrimonious nature, to such an extent that all can not be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body; the superfluous fluid therefore passes off through the intestines with the indigestible particles of food, and thus the watery faeces are thrown off. Flatulent colic, or gripes is a frequent attendant. The system is deranged; but the mischief does not terminate here. If the purging is continued, a constitutional relaxation of the bowels is established, very debilitating to the animal, and often difficult to control. I am so decidedly opposed to unrestricted allowance of luxuriant grass to horses at any age, that nothing could induce me to give it to them. After the second year, hay should form a considerable portion of the daily food in summer, to every animal intended for hunting or riding.

“If a horse is supported entirely upon the grass which he collects in a rich pasture field, or upon that which may be cut and carried to him in his paddock, he must consume a much greater bulk than of hay, in an equivalent time, to afford nourishment to the system. Grass being very full of sap and moisture, it is very rapidly digested, consequently the horse must be continually eating it. This distends the stomach and bowels, and the faculty of digestion is impaired; for the digestive organs require rest as well as other organs of the body, if they are to be preserved in perfect condition. By the custom of grazing, the muscular system is enfeebled, and fat is substituted. This may escape the notice of superficial observers, who do not mark the distinction between the appearance of a fat, and a muscular animal; who conceive, that so the bones are covered, and the points are rounded, all that is requisite has

been attained. But that is a very fallacious impression. Let any person who is skeptical on this point, ride a horse in the summer, who has just been taken out of a grass, along with another kept on hay and corn, at the moderate rate of seven or eight miles in the hour; the grass-fed horse will sweat profusely, while the other will be perfectly dry. This proves that the system of the one eating grass over-abounds with fat and those portions of the blood which are destined to form that deposit.

"Those who will advocate grazing, will no doubt exclaim, 'Oh this is a test of condition, which is not required in young and growing animals.' I beg to state, that it is highly important, if the acme of condition is to be attained by animals of mature age, that the growth and gradual development of their frames should be composed of those healthy and vigorous elements, upon which the structure of future condition can be raised. Animal substances are, to a very great extent, subservient to the nature and quality of the food with which the individuals are nourished. I believe farmers would find it much to their advantage, if they were to consider this subject with reference to feeding cattle and sheep, so that they might select those kinds of food which abound with properties more conducive to the production of flesh than fat. There is no kind of food which the horse consumes which has not a tendency to deposit fat. It is a substance which must exist to a certain extent; but as it is muscular power, not a predisposition to adipose rotundity, which enhances the value of the animal, the reasons are obvious what guide should be taken in the selection of food.

"I have, on a former occasion, hinted the propriety of bruising the oats, and I will now state my reasons for doing so. The first I will mention is economy. Three bushels of oats, which have undergone that process, are equivalent to four which have not, and the animals which consume them derive greater benefit. Various schemes are adopted to induce horses to masticate their corn, all of which are ineffectual. Scattering them thinly over the surface of a spacious manger, mixing a handful of cut hay or straw with each feed, and such like devices, will not cajole the animal to the performance of mastication. A horse that is disposed to bolt his corn, however carefully it may be spread along his manger, will soon learn to drive it into a heap with his nose, and collect as much with his lips as he thinks fit, before he begins to masticate. Whatever food enters the stomach of any animal, and passes away in an undigested form, may be considered as so much dress, or extraneous matter, which, not having afforded nutriment, is prejudicial to the creature which consumed it. A mistaken notion of economy is often the incentive to turning horses out in summer, to be entirely dependent upon

grass for their support. A few remarks will surely dispel that error. Twenty-two bushels of oats—allowing one bushel per week from the 15th of May to the 16th of October—may be set down as the produce of half an acre of land, and half a ton of hay that of another half-acre, although a ton and a half per acre is not more than an average crop. It requires at least an acre of grass land to support a horse during the period above named.”—*Mark Lane Express.*

[From the Ohio Farmer.]

I M P R O V E D S U F F O L K H O G S .

BY PETER MELENDY, OF MT. HEALTHY, HAMILTON COUNTY, OHIO.

As this species of farm stock justly occupies much of the attention of the farmers of the West, at this time, I propose to devote a small space to this fine breed of hogs which is commanding so much attention. It would be well to see first what constitutes a good hog.

The head should be short, handsome, and sprightly, with thin, small, pointed and pendulous ears. The jowl should be medium size. The neck short, and not too heavy, fitting well on the shoulders; the shoulder not quite as high as the loin, thick, and of good substance, rounding well out; the constitution is generally in proportion to the capaciousness of the breast and loin. The brisket coming well down, and the distance between the fore legs as great as possible. The back broad and straight, and rather slightly arched than otherwise, and particularly no sinking immediately behind the shoulder. The ribs well arched, forming a good barrel, and supporting the belly well. The loin, as before remarked, wide and full, with ribs coming well back. The rump rounding off even; the tail well set on, small and tapering, and thinly haired. In the Suffolk breed the tail is curled like a cork screw. The ham must be of good size, round and plump, and swelling out so as to come in a line with the shoulder; such a formed ham will weigh well to its size. The hips, wide spread, and the twist coming well down; the flank deep and full; the belly roomy, but not coming too near the ground. The legs straight and fine in the bones, the muscles heavy, particularly in the thigh and arm; the hock pointed; the pastern joints firm and strong, not resting the dew claws on the ground, so that the animal has a bold and erect footing; a thick, fleshy leg will not carry a heavy hog to a distant market. The skin thin and gelatinous, and easy masticated,

soft and handling well, and free from eruption. The hair smooth, fine and soft. No bristle on the neck, shoulder or back. The above described form and qualities are those that in our view constitute a good hog.

The first thing in rearing swine is to select the right breed. And in my estimation the pure Suffolk will come nearer filling the above description than any breed that I have ever seen.

The prevailing idea at the West, has been, and is to some extent now that a large, coarse hog, requiring years to mature, weighing from four to seven hundred, is the only hog that can be raised to pay. In such pork, there is a great waste of offal; the hams are too large, and of bad shape, as also the shoulder; the sides, nevertheless, of this great size, are then in proportion. Now I contend, that such hogs will not pay; a hog that is to be fed two winters, never will pay for cost. A medium sized hog, for family use, and for packing, that matures from ten to twelve months old, is far preferable to an overgrown 'corn crib.'

John Mahard, an old and extensive pork packer, in Cincinnati, in speaking of large *vs.* medium size hogs, prefers the medium. He says it is fully as much to his interest, and that of every one else engaged in curing pork for market, as to the interest of the farmer, that the very best breed of hogs should be scattered over the country. He says he can make no use in that market, of hogs weighing from four to seven hundred pounds, even though they may be well fattened. A hog of proper form and quality of meat, that matures at ten or twelve months old, so as to fatten properly, and that weighs from two to three hundred pounds, is the sort for which they will give the highest price, because it yields them the greatest profit, and most assuredly it will pay the farmer the best. This is the testimony of an old pork packer.

A spring pig, killed in the fall, weighing two hundred pounds net, will certainly pay better than if the same pig had been kept over winter and killed the second fall at five hundred pounds net. Now, as I stated above, pork will always be a staple article of the West, and it should be a matter of considerable consequence to the farmer, as to what kind he breeds from. He should breed from those that are, upon the whole, most profitable to the producer and consumer.

As said before, I believe that the Suffolk is the best hog in the country for family use, or for packing, and comes the nearest to what constitutes a good hog. The Suffolk breed of hogs is comparatively of recent introduction into this country, so that they are not generally known, except by reputation. Before proceeding any further, it would probably be interesting to know the origin of the improved Suffolk.

According to Youatt, the breed originated in Suffolk, England. They

are a cross of the Chinese and old Suffolk. *Youatt* says there is no better breed of hogs in England than the Suffolk. Martin says that the breed stands first. Rham, in his Dictionary of the Farm says: "Suffolk pigs are perhaps, on the whole, the most profitable breed in England."

The greater part of the pigs on Prince Albert's farm are of this breed. It seems to be the general opinion of those who have kept this breed, that they produce more pork, in proportion to the food consumed, than any other race, and that they are less dainty, or squeamish about their food, than most other hogs. Having killed some of the Suffolks this winter, I find the pork of a superior quality, being firm, remarkably sweet, and tender; the lard is also excellent, very firm and white. The pork is very thick on the sides; the hams are full and plump; small bones, yet they do not lose the use of their legs on becoming very fat, as is the case with some other breeds. They have less rough fat than usual; their skin is very thin and soft. Dealers in the Boston market say that Suffolk hogs that weigh four hundred pounds will make fifty pounds more pork for the barrel than common pork. It commands, in Quincy market, two cents per pound more than any other kind of pork sold.

One good recommendation of this breed is, that it is remarkably quiet and peaceable, perfectly free from that savage disposition that often characterizes the hog, and makes it a term of reproach. This breed I find will keep on half the food that the common hog of our country requires. I have kept this breed some four years, and have tested its feeding quality, and can state, from actual experiments, that it is the poor man's hog; easily kept in fine condition, and fattens readily while young.

OUR VIEWS AND REVIEWS.

"*The Valley Farmer: a monthly Agricultural Journal, designed to benefit the Planter, Farmer, Gardener, Fruit Grower, and Stock Raiser.*" N. J. COLMAN, Editor and Publisher, St. Louis, Mo., and H. P. BYRAM, Editor and Publisher, Louisville, Ky., E. ABBOT, Associate Editor.

WE welcome this excellent journal to our list of exchanges, with great satisfaction. With the beginning of the present year it opened its EIGHTH volume; and we hope to be cheered by the light of its countenance, through many years of its prosperity and usefulness. Its editors are able and practical men, and the contents of their journal partake of the same commendable characteristics. And we cannot doubt but that the delightful and fertile agricultural region of Kentucky, Tennessee, and Missouri, will be essentially benefited by its publication; nor can we doubt but that the thriving and liberal minded planters and farmers of those States, particularly, will give to their "*VALLEY FARMER*" that "material aid" and comfort which its merits so richly deserve.

"Ancient History: containing the History of the Egyptians, Assyrians, Chaldeans, Medes, Lydians, Carthaginians, Persians, Macedonians, The Seleucidae in Syria, and Parthians. By EDWARD FARR." Four volumes, octavo. Moore, Wilstach, Keys & Co., Cincinnati, 1856.

THAT department of History which is, by common consent, denominated "ancient," and which includes all the known conditions and recorded doings of the human race, anterior to the advent of Roman Imperialism, has been almost exclusively occupied by the work of Charles Rollin, for about *one hundred and twenty-five years* — so long, indeed, that this popular history of antiquity is, itself, becoming an antique! And while the world has, for more than a century, done homage to the great learning and vigorous research with which Rollin's work is replete, it has long felt that a good modern work on the history of the remote past was a great *desideratum*; the more so, as our English versions of Rollin's work have no merit in point of ease, or elegance of style. This want is, we think, well supplied by this edition of FARR'S ANCIENT HISTORY, wherein the writer has availed himself freely of Rollin's material, and has industriously sought for all that could enlighten our minds in relation to the civil institutions and domestic conditions of those ancient nations whereof he speaks, that research and discovery, more recent than the date of Rollin's work, have been able to reveal to mankind.

One matter, of no small moment in the arrangement of historic works, we find has here received ample attention, that is, giving the topography of the countries spoken of, in conformity with the more modern geographic nomenclature. In the perusal of ancient history, explained only by *ancient* geography, the mind soon loses the localities, and directly fancies itself reading about the inhabitants of another planet; for those unfamiliar and unrecognised names of localities leave our historic ideas so confused and indistinct that we come to look upon the *loci in quo* as almost fabulous, and the historic personages who figured therein, as but little more than myths. The style of the present work is very pleasing; and with an eye to the philosophy of poetry, the author does not hesitate to draw largely from the ancient poets delineations of the countries, and illustrations of the customs and conditions of the people of whom his history treats. We regard the work as a valuable accession to our historic literature.

For sale by Moore & Co., 25 West Fourth street, Cincinnati.

"An Introduction to the Study of Aesthetics." By JAMES C. MOFFAT, Professor of Greek in the College of New Jersey, Princeton. Cincinnati: Moore, Wilstach, Keys & Co., 1856.

THERE seems to be, in our view, no subject demanding greater attention among American Educationists, than the Philosophy of Art. America can not be said to have a "School" of Art. All our aims have been to the cultivation of those intellectual faculties that may be summed up in mere *intellection*, for producing the practical man, and adapting him to business life. This is certainly all very well; but this is by no means all that we should aim to accomplish. The sense of the Beautiful should not be permitted to slumber. The aesthetic faculties should be duly cultivated, and properly educated. And we deem the present work by Professor Moffat, a book well calculated to serve as an "Introduction" to that very important and most neglected department of education — the "Study of Aesthetics." For sale by Moore & Co., Cincinnati.

METEOROLOGICAL TABLE.

Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 10', W. Long. 7° 24' 45", for the month of March, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.

BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.			OPEN AIR THERMOMETER.			CLOUDS—THEIR COURSE AND VELOCITY.			WIND—DIRECTION AND FORCE.			RAIN AND MELTED SNOW.		
7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Hour Began.	Hour Ended.	Amt's Inches
1 28.972 28.674 28.579	28.742 29.5 32.5	20.5	30.8 10 Sn'w'g	10 N. E.	10 Snow.	N. E. 2	N. E. 2	N. E. 2	N. W. 4	N. W. 4	N. W. 4	In night.	0.390	
2 28.742 23.825 28.995	28.854 22.0 28.0	21.0	24.7 10 N.W. 6	9 N. W. 4	10	N.W. 4	N. W. 4	N. W. 4	N.W. 3	N. W. 5	N. W. 5			
3 29.132 29.175 29.130	29.146 19.5 32.0	31.0	27.5 2 N. W. 6.	5 N. W. 6.	2	S. W. 5	W. 6	W. 6	S. W. 5	W. 6	W. 6			
4 29.011 29.173 29.258	29.147 10.5 35.5	23.0	33.0 2 S. W. 4	0	0	N.W. 1	N. W. 1	N. W. 1	N.W. 1	N. W. 1	N. W. 1			
5 29.20 29.050 28.915	29.055 17.0 38.0	37.5	30.8 0 0	0	0	0	0	0	W. 4	W. 6	W. 3			
6 28.856 29.049 29.180	29.028 33.0 36.0	20.0	30.7 8 N.W. 7	2 N. W. 6.	0	W. 1	W. 5	W. 4	W. 1	W. 5	W. 4			
7 29.154 23.895 23.918	29.010 14.0 41.0	40.5	32.8 0 0	0	0	0	0	0	1 m.	1 m.	1 m.			
8 29.055 23.085 29.040	29.084 27.0 37.0	27.0	30.3 0 0	0	0	0	0	0	N.W. 1	N. W. 4	0			
9 29.017 29.060 29.189	29.055 21.0 20.0	13.5	18.2 10 Sn'w'g	10 Snowing.	10	N.E. 2	N. E. 2	N. E. 2	N. W. 2	N. W. 2	N. W. 2	In night.	2 P. M. 0.220	
10 29.363 29.290 29.215	29.290 1.0 27.0	19.0	15.7 0 0	0	0	0	0	0	W. 4	S. W. 1	S. W. 1			
11 29.052 28.942 29.000	29.000 24.0 28.0	25.0	25.7 10	10	10	Cirri.	N.W. 1	N. W. 1	N. W. 1	N. W. 1	N. W. 1			
12 29.115 29.030 29.040	29.062 10.0 38.0	29.0	25.7 0 0	0	0	0	0	0	0	0	0			
13 29.067 29.020 29.130	29.072 23.0 30.5	27.5	27.0 10	10	10	0	0	0	W. 1	W. 1	W. 1			
14 29.214 29.165 29.173	29.184 25.0 39.0	35.0	33.0 2 10	10	10	0	0	0	0	0	0			
15 29.282 29.232 29.168	29.227 23.5 40.0	32.5	32.0 0 0	0	0	0	0	0	W. 6	0	W. 2			
16 29.147 29.148 29.223	29.173 26.3 35.0	23.0	29.8 10 N.Sn'g	1 N.	0	0	0	0	N. 1	N. 1	0			
17 29.236 29.183 29.170	29.196 26.2 46.0	35.0	35.7 3	4	2	N.E. 1	S. E. 1	S. E. 1	N. 1	N. 1	N. 1			
18 29.117 29.025 29.018	29.053 23.5 40.0	33.3	35.6 9 S. W. 2	10	0	S. E. 2	S. E. 2	S. E. 2	S. E. 1	S. E. 1	S. E. 1			
19 29.047 28.930 28.865	28.947 31.0 50.0	45.5	42.2 0	0	4	W. 6.	3	W. 6.	W. 2	W. 5	W. 2			
20 28.802 28.740 28.817	28.786 41.0 58.0	45.5	49.2 4	0	4	W. 6.	5	W. 2.	W. 2	W. 5	W. 1			
21 28.794 28.720 28.818	28.777 39.0 54.0	41.0	44.7 2 South.	3	3	Cirri.	4 N.W. 3	N.E. 1	N. W. 1	N. W. 2	N. W. 2			
22 28.881 23.908 29.010	28.933 35.0 49.0	35.5	39.8 9	4	4	N. E.	N. 2	N. W. 4	N. W. 4	N. W. 4	N. W. 4			

	Sums.	Means.
23 28.963 28.866 28.875	28.901 32.0 45.0	40.7
24 28.837 28.930 28.970	28.912 42.0 49.0	43.7
25 29.072 29.040 29.055	29.036 32.0 49.5	33.5
26 29.032 28.992 29.010	29.021 23.0 46.5	36.0
27 29.027 29.071 29.160	29.086 25.0 29.5	25.5
28 29.197 29.186 29.198	29.194 22.0 34.0	27.0
29 29.260 29.166 29.173	29.193 22.5 40.5	37.0
30 29.187 29.100 29.135	29.143 30.5 41.0	34.0
31 29.310 29.353 29.400	29.354 24.0 37.0	30.0
	900.681	1009.3
	29.055	32.5

REMARKS.—One of the coldest and dryest "Marches" ever known in this country. But little over one half inch rain and melted snow in the whole month.

REMARKS ON WEATHER.

1. Snow and sleet most of the day.
 2. Wind went down at 3 o'clock, but commenced with violence about 2 in morning.
 3. Wind went down about sundown. Snow melted in sun.
 4. Robins singing this morning.
 6. Froze the ground solid last night.
 8. A beautiful day.
 10. Therm. 54 in the sun.
 11. Snowed a little during day.
 15. Thermometer at 60° in the sun.
 16. Brilliant parhelia at 7 A. M.
 17. Parhelia again this 7 A. M.
 18. Snowed a little at 3 o'clock.
 20. Appeared much like a shower at 3 P. M.
 21. Appeared much like a shower at 3 P. M.
 22. A few flakes of snow P. M.
 23. Snow this A. M., melted as it fell.
 24. Dash of rain last night.
 25. Last vestige of old snow, been on the ground since Christmas, disappeared to-day.
 26. Tried hard to rain this P. M., but failed.
 7. A snow squall last night.

MINIMA.
MONTHLY EXTREMES.

MAXIMA.				MONTHLY EXTREMES.				MINIMA.			
	7 A. M.	2 P. M.	9 P. M.		7 A. M.	2 P. M.	9 P. M.		7 A. M.	2 P. M.	9 P. M.
Barometer,	March 10th. 29.363	March 31st. 29.33	March 31st. 29.400	March 31st. 29.400	March 2d. 28.742	March 1st. 28.674	March 1st. 28.579	March 1st. 28.579	March 1st. 13.0	March 1st. 28.579	March 1st. 13.0
Thermometer,	-	-	March 20th. 53.0	March 20th. 49.0	March 10th. 1.0	March 9th. 20.0	March 9th. 20.0	March 9th. 20.0	March 9th. 13.0	March 9th. 13.0	March 9th. 13.0

"TRANSACTIONS OF THE OHIO POMOLOGICAL SOCIETY,"

A HANDSOME pamphlet of sixty-four pages, is upon our table. The discussions reported are of much interest, and manifest a high degree of attainment in Pomological Science, fortified by very extended observations. The "Remarks on Apple-Tree Borers," by Mr. Batcham, are well timed and judicious. The discussion "On Growing the Cherry on the Mahaleb Stock, and Diseases of the Cherry-Tree," presents many points of great interest.

We trust that this Society will continue its publications, which embody so much of the practical and scientific united.

"THE OHIO JOURNAL OF EDUCATION."

THIS monthly greets us with a manifest improvement in both matter and appearance. The new editor in chief, Rev. A. SMYTH, is, in our opinion, just *the man* to make this journal what it should be — an honor to the State. He is aided by an able corps of associate editors.

I T E M.

A HANDSOME CHANCE TO SECURE A HANDSOME FARM!

Mr. P. Melendy's Premium Farm,

THIN-A-DIS-KA PLACE,

FOR SALE. SEE ADVERTISEMENT ON NEXT PAGE.

I T E M.

See Advertisement of

The "EXCELSIOR CORN AND COB MILL,"

ON ANOTHER PAGE.

THE CINCINNATUS.

Vol. I.

JUNE 1, 1856.

No. 6.

For the Cincinnatus.

Vegetable Reproduction—Sexual Characteristics of Plants.

BY G. M. KERN.

THE revelation of a famous strawberry secret (as it was considered,) has wrought an important and fortunate change in the culture of this fruit, so universally a favorite. So thoroughly is the doctrine of the male and female characteristics of the strawberry plant now understood, that it has become an article of faith in the creed of every amateur horticulturist and gardener, and is accepted as most orthodox by all intelligent readers of even an agricultural newspaper; and so great seems to be the value and importance now attached to this discovery in the *modus* of vegetable reproduction, that distinguished men are found arrayed into parties, and each party contending for the palm of honor for having first discovered and revealed the demiurgic truth to an unbelieving world; so, that with the Roman poet, we may say,

“*Inter utrosque volat dubiis pennis victoria.*”

We are told that Mr. Longworth's endeavors to spread abroad a general knowledge of the sexual characteristics of the strawberry plant have profited mankind to the extent of many millions of dollars, and we are justly filled with amazement on learning the immense number of bushels of strawberries raised hereabouts, and sold in the markets of our Queen City, under the encouragement of this new dispensation. But it seems that while our joyous pæans of triumph are echoing through the West, some *princely* eastern brother sends in his strawberry catalogue, which comes like a bombshell in our midst, creating no small consternation among our horticultural *savans*. Our boasting glory and cherished

hopes of pre-eminence are at once laid low; our distinguished leader, whose best energies have for many years been employed in the promotion of horticulture among us, is brought down to the position of a mere copyist; and the "blushing honors" of that renowned German female gardener are all blighted in their bloom! After much deliberation in the "strawberry council," it is at last unanimously resolved that such insults are not to be borne; the heaviest horticultural committee-gun is charged, aimed, and with thundering 'report' sweeps the usurper's pretensions into ruins. Mr. Prince has consequently experienced the fulfillment of Scriptural denunciation—he has sowed to the wind and reaped the 'Storms!' But as the warfare from without has now nearly ceased, some among us are prepared to find that the artillery of Longworth and Warder have at least stunned if not killed our unfortunate brother in the East; we hope, however, for our own conviction's sake, as well as for the sake of horticulture in general, that Mr. Prince is yet alive, and that his new varieties of strawberries so *extensively catalogued*, may put the productions of Longworth, McAvoy, Schnike & Co. to the blush!

But the great question still remains unsettled, which is—Is the 'strawberry question' now settled among ourselves? Do our horticulturists agree on the most important topics of culture and kinds? We are compelled to reply that *they do not*.

On this question, we must admit that father is against son, and mother-in law against daughter-in-law; and it seems the matter will never be put to rest, unless a change of fashion directs our controversies to some other plant, and our present strawberry furor is in some measure moderated. Nor should we wonder to see some intrepid genius harness this hobby to the chariot of some other patrician fruit; or, some red-republican in horticulture essay to attach it to the common 'go-cart' of the plebian pea-nut! Meanwhile, it will be quite appropriate and perhaps profitable for nursery-men and gardeners to boast and contend about such varieties as they may desire to sell. It is not my purpose, however, to meddle with this part of the great question, inasmuch as enough is being done in this direction from other quarters.

The sexual functions (so-called) of the plant being an important item in the economy of vegetable life, and a main starting point in Botany, it may be well to view this characteristic in the light which the science of various epochs has thrown upon it.

Death and corruption is the common fate awaiting all parts of animate nature; ample provision has therefore been made by the Creator for continuing reproduction. To the animal kingdom only is this reproduction ordained by a process of fecundation; and to the continuance

of each race, male and female individuals are indispensably necessary. And speaking of male and female plants, we might well suppose that the vegetable kingdom is to be governed by the same or a similar law. And, in truth, various strong indications present themselves in support of this presumption. In the greater varieties of plants, two organs, or instrumentalities, are requisite for the production of a seed capable of germination. - Those organs, the stamen with the pollen, and the germen with the pistillum, are differently located on different kinds of plants; and this may be assigned as the reason why some flowers, isolated from others of their kind, are unable to produce fruit and seed. This fact, as such, was recognised and understood in very early periods of civilization, and was employed in a practical way to procure the desired crop of fruit on certain plants. Thus, both Pliny and Theophrastus tell us that the country people who were engaged in the culture of dates "hung up flowering branches of one tree among the flowers of others of the seed-bearing forms, and thus caused the development of seed and fruit." And here we are compelled to pause for a moment, and wonder how this simple and old-fashioned truth, with this scientific record of antiquity continually open before us, could have been for ages ignored and forgotten among the horticulturists of America, till a friendly billow of the ocean bore to the shores of this great continent a simple-hearted and unlettered German woman, whose mission it seems to have been to remove this candle from under the bushel, and by its old light to teach the new world the great secret of successful strawberry culture! If this alleged fact rests upon historic truth, it presents, at least, one important instance wherein foreign immigration has proved profitable to America!

But leaving this distinguished benefactress of mankind "alone in her glory," let us continue our chronological examination of the doctrines and dicta of the science of Botany touching the matter under present consideration. And herein we find that in the most remote times, when the human intellect was first awakened to the importance, grandeur and scientific beauty of the vegetable world, the first rudimental elements of a subsequently wide-extended science were in danger of being lost in a planless seeking for extension. An endless diversity and variety of forms, habits, and laws, were then recognised in the plants that adorn earth's surface; no system was yet established to comprehend the whole race of vegetables under strict and uniform distinctions. Soon Linnæus arose and proffered to this confused period a system by which to not only comprehend with one glance the endless varieties and extent of the vegetable kingdom, but he also laid down in his "*Philosophia Botanica*," the true fundamental laws that govern the production and repro-

duction of the vegetable world. The duplex system of organs essentially necessary to the production of fruit and seed did not escape the keen scrutiny of his genius, and he adopted them as the pillars of his philosophical system. He accordingly denominated the stamen the male organ, and the pistillum the female organ. He divided the whole vegetable kingdom into two great provinces—the *Cryptogamia*, meaning plants with hidden flowers, and the *phænagamia*, evident-flowering plants. Of the hidden-flowering plants, Linnæus supposed that the ovary, so-called, was so minute that it could not be distinguished by the eye, though it existed notwithstanding. The class of evident-flowering plants he divided into three subdivisions: the *first* consists of all plants that contain stamens and pistillum in one and the same flower—these he called hermaphrodite. To form the *second* class, he comprised all plants whose stamens and pistils are contained in separate and distinct flowers of the same individuals. These he called single-house plants—*monœcia*. In the *third* class he included those plants whose stamens and pistils are separated in different flowers on different individuals. Of the various subdivisions of these three classes it is unnecessary to speak here, as they have no relation to the subject in hand.

With this sexual system of plants promulgated by Linnæus, a new epoch for Botany was inaugurated; and this doctrine, recommending itself by simplicity and accuracy of distinction, met with a speedy and hearty acceptance at the hands of every botanist, and soon became the common standard around which all the previously disconnected parties readily joined; and from this union and conjunction, the energetic efforts, that Botany has since put forth through a long period of time, originated. It was not the fault of its great originator that this system was indeed regarded by many of his followers as the corner-stone and ultimatum of a science, whose true mission was far from being comprehended by themselves. Greater weight and importance were undoubtedly attributed to it than it actually deserved—greater, indeed, than the great master himself had ever ascribed to it. In the minds of all botanists, an unhesitating belief in the existence of a true matrimonial relation between stamen and pistillum now obtained lodgment; and works on Botany abounded in authoritative enforcements of this fundamental doctrine. And, we may add, that the clearest demonstrations of more modern science have not been able to abolish this deceptive idea from among our older botanists and gardeners.

The doctrine of a close analogy in the sexual characteristics of the animal and vegetable kingdoms, has long been the favored “harp of a thousand strings” upon which botanists, philosophers, poets, and of

late, some of our Ohio newspapers, have played many funny and fanciful psalm-tunes! If we (profanely?) ask what is the ground on which this doctrine is founded? we are informed that there are well known facts in the economy of vegetable life, which, *combined with human fancy!* speak strongly in favor of the presumption. For instance, we know that no seed capable of germination can be produced by those flowers where either of the two organs, stamen or pistil, is missing. We also know that double flowers whose stamens are converted into leaves, are unable to produce seed. Again, no plant of the order of *diæcia* is capable of producing seed, without having within its reach an individual of its kind bearing staminate flowers; and, lastly, it often happens that nearly-related plants, flowering-side by side, produce bastards. For these reasons it has been maintained that the male and the female—the stamen and the pistillum—were united by a species of matrimonial connection. Making further inquiry, it is asked—what is the *modus* of their connubial affinities? By what means do they produce their progeny? and this brings us, really, to the “previous question.” To this the botanist replies, that the pollen is the fructifying (fecundating) agent, by which the ovule, (egg) deposited in the ovary of the pistillum, is fecundated, and the embryo formed. Then, how is this fecundation made possible, and how does the pollen reach the ovule? To this question, botanical science has given various answers; and the various explanations of this process agree in the fact, that the pollen must be brought in contact with the stigma; this is effected by various agencies, the wind, rain drops, insects, etc. A peculiar secretion of the stigma serves to retain the pollen, and under the action of the moisture of this secretion the pollen begins to grow, that is, to extend itself into a tube-form filament which penetrates into the loose cellular tissue composing the interior of the pistillum. For this reason the cellular tissue has been called “conducting tissue.” Bragniard, the celebrated French botanist, was of opinion that the pollen burst open in this conducting tissue, there discharging its molecule contents, called *fovilla*, which flows down to the ovule to fructify it. Robert Brown found that the tubeform filament of the pollen penetrates through the whole of the conducting tissue, to the very brim of the ovule, at which point it bursts to deliver its fecundating *fovilla*. According to these views, we certainly have a close connection and analogy with the process of fecundation observed in the animal economy; and, with these views, the comparison of the sexual characteristics of plants with those of animals, certainly becomes quite appropriate and correct.

This opinion has long been held as a standing axiom in Botany by

the most distinguished authorities in that science, among which the name of the English savant, Robert Brown, fills a foremost place. It should be remembered, however, that the latest periods of this science have been greatly progressive. Led forward by a distinguished band of physiologists and philosophers, Botany has of late materially changed its ground, and advanced its position in this particular. No longer content to walk, as in former years, in the glimmering faith of old traditions, and unwilling to be guided by the devious directions of obsolete authorities, its present pathway is illuminated by the new light which the improved microscopic lens sheds upon it. From the chilling and disheartening method of former times, depending upon a dry and artificial nomenclature, abounding in barbarous Latin and polysyllabic Greek, it has proceeded from the invention of names to the consideration of things—it has, in a word, become *inductive*—and has thereby penetrated many of the deep mysteries that formerly enshrouded the inward structure of the vegetable organism. By pursuing this inductive process, and aided by these improved appliances, in the investigations of modifications and details, a chain of observations, and a succession of discoveries, have been made, which enable the human intellect to comprehend more fully the *essence* of vegetable life. And, under this new illumination, vegetable life is no longer regarded as simply a lower order of animal existence, but as an independent and perfect whole, instituted and governed by eternal laws, which, though forever in operation around him, man is but beginning to comprehend and to realize. Theories of long standing, and seemingly consolidated by time, have vanished “like the baseless fabric of a dream” before the opening day of this uprising orb of science; and analogies, and parallels, and similitudes, hitherto supposed to be traceable between the organisms of plants and of animals, have been abandoned as but shapeless shadows cast from objects which the dawn had but feebly illuminated. In this period, among other things, the doctrine of the sexual characteristics of plants, and the laws of the propagation and reproduction of the vegetable world, have received additional and more accurate scrutiny. But, as plants were regarded as a kind of compound of animal and vegetable organism, and, of course, subject to a compound system of laws, they could not, in any wise, be adjusted to the orderly and fundamental principles of vegetable life. An accurate and full understanding of the nature of the *vegetable cell* alone could indicate a new and brighter pathway. To the celebrated German botanist, Professor Schleiden, science is indebted for first directing scientific attention in this direction. In his work, entitled “The Poetry of the Vegetable World,” on the seventy-sixth page of Wood’s

edition, he says—"The individual cell is endowed with the power of forming *new cells in its interior*, and thus, as it were, of *propagating itself*. Now the newly formed cells have also this peculiarity; they grow and arrange themselves conformably to the cell in which they originate. Thus the power is given to all plants to develop new plants out of any of their cells, when these come to be placed in favorable circumstances, and *by this power is explained the facility with which almost all plants may be multiplied.*"

Properly speaking, the simple plant consists merely of a simple stem and its leaves; but in the angles of the leaves and stem particular cells are regularly developed into buds. Now a bud is nothing more nor less than a repetition of the simple plant on which it is formed; and this foundation for a new plant consists, like the other, of a stem and leaves; and the sole substantial distinction is, that the new stem becomes intimately blended at its base with the substance of the mother plant, of whose vitality it partakes, and by whose nourishment it grows, but having no free and independent radical extremity, like that developed by a plant whose growth has sprung from the seed. Every bud or branch when separated from the mother plant and brought into growth, (as under favorable circumstances they sometimes are) is, therefore, a new and independent plant, though the power of making adventive roots is continually modified in the various plants.

In like manner such propagating cells are found in the leaves and roots of many plants; and these, under appropriate circumstances, produce buds, and therefrom new plants. In this simple and beautiful procedure in the economy of vegetation, we find the full explanation and philosophy of all the various operations of gardening by which plants are propagated by the various methods of grafting and budding, as well as by cuttings and by single leaves. All these modes of reproduction, as compared with the natural reproduction from seed, Schleiden denominates "irregular propagation." Of this, at page eighty of the work just quoted, he says,—"Every plant produces within itself a definite number of single, free, unconnected cells, which, at a certain epoch, spontaneously separate from the plant. It is the peculiar character of those plants which have true leaves, to produce these cells only in the interior of the leaves, which, at the same time, often assume a very different form, as, for instance, in the stamens. Only in the very lowest plants, flowering wholly under water, is the propagative cell naked; in all others, it is invested with a peculiar substance, which has not yet been chemically examined, but is mostly yellow and indestructible." * * * "The following are the two modes of development:

In the one case, the cells destined to the reproduction, are at once scattered on the earth or in the water where the new plants are to grow. Then either the whole cell is gradually transformed into a new plant, new cells originating in it and taking its place, in these others, and so on; which is the case in the Algae, Fungi, Lichens, and part of the Liver-Mosses; or, the cell expands into a longish utricle or tube, but only one extremity of this tube becomes filled with cells, which gradually grow up into a new plant, the remaining portion of the cell, meanwhile, decaying; this is the case in the remaining Liver-Mosses, the Mosses, the Ferns, Lycopodium, and Horse-tails. An example of this kind of development may be found in every hot-house containing ferns, for they may almost always be found germinating." * * * "In those plants which, with Linnaeus, we call Phænogamia, or evident-flowered, the matter is differently arranged. The reproductive cells, which are here called pollen, are formed in peculiarly metamorphosed leaves, the stamens. But other organs, beside the stamens, are found, either in the blossom of the same plant, or of another individual of the same species. These consist essentially of hollow and generally pear-shaped bodies, which have a small opening at the upper end. A body of this kind is called the *germen*, and the orifice the *stigma*. In the cavity occur little protuberances formed of cellular tissue, the *seed-buds*, to which the very inappropriate name of *ovules* was formerly given. In each of the seed-buds is one very large cell, called the *embryo-sac*. At the flowering period the pollen falls upon the stigma, and then commences the development of the reproductive cells. Each one extends itself into a long filament, exactly as in the Cryptogamia, and in this form penetrates to the cavity of the germen, to enter one of the seed-buds, and finally, into the embryo-sac. The extremity which has passed in, now becomes filled with cells, and these develop forthwith into a perfect, though as yet, simple and minute, plantule, the so-called embryo or germ. Simultaneously with the development of the pollen-cell into the embryo, the seed-bud is perfected into a seed, the germen into the fruit."

The truth and reality of these views of Schleiden, concerning the fructifying process of the vegetable economy, had, naturally, to undergo the sternest scrutiny and severest ordeals before Botany would recognise it; because it boldly assailed, and, if adopted, would entirely overthrow a mighty stronghold of the science as received, and which no one, in the course of centuries, had had the temerity to attack. Yet every one acquainted with the literature and spirit of Botany, as the science of the present day, knows that the most precise and skillful researches of

those most skilled in Botany, have confirmed the doctrine of Schleiden, which is now, we think, universally received. Obstinate or ignorance, perhaps both, have prompted some to reject and denounce it in a manner as ridiculous as it is to boast of a patent knowledge of male and female plants! But one objection arises against it seemingly quite independent, viz.: If the pollen is not the fecundating agent, but the embryo-forming organ, deposited in the seed-bud, (ovule) how are we to explain the bastard production of nearly-related plants?

To understand this phenomenon in its true light, we must bear in mind what was before remarked concerning the process by which the pollen, extending itself into a long filament, proceeds through the cellular, or conducting, tissue to the seed-bud, or ovule. It was stated that it penetrates the loose cellular tissue of the pistillum—and here it should be remembered that the way is often, comparatively, a long one—and more or less time must elapse before the utricle of the pollen arrives at the opening of the seed-bud. In this course, though long and protracted it may be, the membrane of the filament never diminishes in thickness nor strength, but rather increases. It is, therefore, not to be doubted that it is nourished by the secretion of the conducting tissue. This nutrition is effected by a process of intussusception. And here it is to be remembered, that no cell-membrane can be nourished by the secretion of the cells of another plant without having its contents and nature changed; and thus new compounds and formations are originated. In this manner it is, that the infinitely diversified bastard formations, so continually occurring, are produced. If we desire to secure a process of fecundation in vegetables at all, we must seek for it in this direction. In that case, the conducting tissue of the pistillum, being the source of nutrition, would become the fecundating organ, and the pollen would be the part fecundated, whereby, indeed, *the male plant becomes the female*. This, we know, is widely at variance with the old doctrine of the sexual characteristics of plants; but we deem it the true doctrine, and feel assured that it is fortified by unquestionable facts in the phenomena of vegetable reproduction.

And one fact in this connection should here be mentioned: We have no good reason to presume that nature has ordained any law over either single or double-housed plants, by which they are absolutely forced to produce one kind of fructifying organs and no other. It is true, however, that plants generally pursue a given order of succession in the manner of developing their fructifying organs. Yet many instances are known where outward circumstances have brought about a marked irregularity in this particular. Two of our well known double-housed plants, the

hemp and spinach, may serve as examples; for they frequently become single-housed, producing staminate and pistillate blossoms on the same plant. Our Indian corn, which, as all know, is single-housed, when luxuriantly growing, brings forth among its staminate blossoms some pistillates, which produce those imperfect grains often seen on the flagg of the corn, commonly called *suckers*. Another striking example of this we find in the family of the Cucurbitaceæ (Melons, Cucumbers, etc.,) which are single-housed plants; and where, if the staminate flowers are cut off, the plants frequently develop hermaphrodite flowers. Again, some individuals among the double-housed plants are occasionally observed to change their sex at once; and of which it has frequently been noted that the same tree will be one year male and another year female; this phenomenon has frequently been observed in the genus *Juniperus*.

And, in conclusion, I must be permitted to ask how is it, in this particular now, with that dear, delightful and aristocratic plant, the *Strawberry*? Owing to high culture and innumerable crossings, it has run into endless varieties which exhibit a great difference in their sexual characteristics. If we buy either one or the other of these new and much vaunted varieties, especially a pistillate, are we assured that it will always preserve its female character without variableness or shadow of turning? I most confidently believe that if any one trusts unconditionally to the perpetuity of the same sex in the same strawberry plant, he will be egregiously deceived. Changes of locality as to climate and soil, will often make their influences felt; and frequently the flowers of younger plants will appear hermaphrodite. McAvoy's Superior, at least, exhibits this changing tendency; a striking example of which can be seen, most unmistakably, in this vicinity—so unmistakably, as would be sufficient to convince any unbeliever of the error of his ways.

WESTERN GIANTS IN THEIR SLUMBERS.—The Burlington, Iowa, *State Gazette* states, that while some workmen were engaged, on the preceding evening, in excavating for the cellar of Gov. Grimes' new building, on the corner of Main and Valley streets, they came upon an arched vault ten feet square, which on being opened, was found to contain eight human skeletons of gigantic proportions. The walls of the vault were about 14 inches thick, well laid up with cement or some other indestructible mortar. The vault is about six feet deep from the base of the arch. The skeletons are in a good state of preservation, and we venture to say are the largest human remains ever found, being a little over eight feet long!

C O R N P O E T R Y.

THE West can boast of glorious streams,
And prairie's grandest lawn —
Of lake and forest old and green,
But most of Indian corn,
Large fields of Indian corn.

'Tis sweet when Summer suns go down,
When winds have ceased to blow,
To list its rustling, crackling sound,
And think we hear it grow;
It seems so glad to grow.

I love to pull it from the stalk
When it is in the milk,
And husk it out its sheath, and talk
Of its soft, shining silk —
Its glossy floss, its silk.

And when at noon aside we dash
Our work for bell or horn,
Give me a dish of succotash
Or ears of Indian corn —
Hot ears of Indian corn.

I'll take it with a true delight,
And costlier dishes scorn,
For nothing tempts the appetite
Like ears of roasted corn —
Sweet ears of roasted corn.

Then when its sheaves stand thick about,
And fruits the fields adorn,
How gushes out the merry shout
From huskers of the corn —
The yellow, golden corn.

Where freedom floats on every breeze,
And fields of Indian corn
Are spread out on the land like seas,
I joy that I was born —
Blessed land of Indian corn.

The Absence of Trees from Prairies.

BY PROF. D. VAUGHAN.

WHILE the physical wants of a vast multitude of living beings are supplied by the bountiful hand of Nature, man alone has been permitted to study her works, and to derive instruction and intellectual pleasure from her most distant realms. By the revelations of science, he is led to the contemplation of the scenes and wonders which transpire in the remote domains of celestial space; and he beholds in the crust of the earth, a vivid picture of revolutions which marked the eventful periods of geological history. Even the present condition of the earth's surface may reveal much curious information respecting nature's mysterious operations and laws; while, at the same time, the knowledge we obtain of the changes going on around us may greatly assist in ministering to our bodily wants, by supplying the necessities or the superfluities of life. Of the numerous topics which Physical Geography presents to our consideration, there are few that can be studied with more profit, than the health of trees in different localities, and their total absence from many vast plains of very considerable fertility.

The capability of all lands for supporting animal and vegetable life depends, in a great measure, on the rains they receive; and by a very admirable contrivance of nature, the atmosphere is enabled to dispense bountiful supplies of water to most parts of the habitable globe. By the influence of solar heat, water is incessantly converted into vapor, and rises from the ocean to the higher regions of the atmosphere; by the motion of the air it is transported to distant regions; and the wind furnishes a means of carrying on, not only the commerce of art, but the far more extensive and important commerce of nature. It is not to be expected, however, that all lands should receive an equal portion of the stores of water that float around the earth; for though very large, the supply is frequently exhausted before reaching the interior of continents. Accordingly, more rain falls in islands and maritime districts, than in places remote from the sea; and the amount is much greater near the equator, than in high latitudes. We may ascribe the sterility of the

deserts, which occupy the central portions of this continent and of Asia, to their great distance from the sea, and to the position of mountain ranges which intercept the supplies of aqueous vapor conveyed by the winds from the great oceanic reservoir.

It appears from meteorological observations, that high mountains increase considerably the fall of rain in their immediate vicinity, and cause it to descend in more frequent and seasonable showers. The effects of these pinnacles of nature can not be accounted for by the mere reduction of temperature which they occasion; and it would seem that part of their meteoric action arises from their discharging the upper atmosphere of electricity. In extensive plains, the lower stratum of dry and dense air serves as an insulator between the earth and the higher atmospheric regions; electricity, accordingly, becomes more intense at great elevations, and is discharged only when the air is saturated with moisture. The discharge seems to be the means of condensing and precipitating to the earth much of the aqueous vapor, as heavy rains and hail-storms are the invariable associates of thunder and lightning on an extensive scale. Professor Hare ascribes this effect to an indirect influence of electric action. As the air parts with its superfluous electricity, it is repelled from the earth; in ascending, it is released from a considerable pressure and expands; cold is the result of this expansion; the reduction of temperature which takes place causes the vapor dissolved in the atmosphere to return to a liquid, or often, to a solid form, and heavy rains or hail-storms are the consequence. As the lower atmospheric stratum is moistened by the descending drops, the escape of the electricity is facilitated, and the rain continues until the air is deprived of a vast amount of vapor it previously contained, and brought into an electrical condition more favorable to a state of repose.

In an article published in the *Journal of Man* for February, 1853, I advanced similar views, and supposed them to be original; but I subsequently found that the same doctrines had been broached by Dr. Hare some years before. The ascent of air during heavy rains, is also maintained by Professor Espy, but is ascribed by him to the heat produced by the condensing vapor. It must, indeed, be admitted that the heat arising from this cause may co-operate with electricity in disturbing the repose of our aerial ocean; and it seems extremely difficult to decide, with any degree of precision, the part which both agencies perform in meteoric phenomena. But independent of any theoretical deductions, all the results of observation and experience disclose the very remarkable peculiarity in the fall of rains, as determined by the physical features of the earth's surface. In very extensive plains, rains are withheld for

a long time, but when permitted to occur, they are always very violent, and the land is inundated with a deluge of water. In mountainous regions, rains are much more frequent but not so excessive; indeed, the districts occupied by the Andes receive their supplies of water, not in heavy showers, but in mists of several weeks continuance.

The green vesture of vegetable forms which adorn the surface of our planet, assumes peculiarities dependent on the meteoric influences which operate upon them, and every climate has the kind of plants adapted to the physical conditions it presents for their support. As the total absence of rain excludes all plants from deserts, it would be reasonable to expect that the vegetation on extensive plains should acquire a peculiar character, in consequence of the occasional prevalence of long drouths and excessive rains. Plants, like animals, are often the victims of disease; and my present object is to shew, that the unfavorable conditions to which trees are exposed on vast plains will be productive of so much disease and degeneracy, as frequently to cause them to disappear entirely from the soil.

Though much obscurity still hangs over several vital operations, the chief points connected with the growth of trees can be determined with considerable certainty. The vital fluid essential to vegetation, and corresponding to the blood of animals, is called the sap, and this rises along the woody part of the tree from the roots to the leaves, and returns along the bark and the space which separates it from the wood. By this circulation, nutritive matter is conveyed from the soil to every portion of the vegetable fabric; and it is gradually converted into wood, forming a new layer every year, and increasing the density of the wood of an earlier origin. We may accordingly, ascertain the age of a tree by counting the number of annual circles, each of which represents the growth of a single year. These remarks are only intended to apply to the trees of temperate climates; since, of those growing between the tropics, many have endogenous stems, in the interior of which, the woody tissue is deposited, and on this account, their age can not be determined with the same facility.

The causes which contribute to change the soluble organic matter which the soil supplies into wood, deserve special consideration. Though the leaves are concerned in producing this change, it is evident that the woody matter must be formed where it is deposited; and in this place, access is denied to the solar light, which is capable of exerting a considerable influence on several kinds of chemical and vital operations. But it appears, from the discoveries of modern times, that electricity serves as a very important instrument for performing chemical action,

and for transmitting chemical power. I have, therefore, been led to conclude that the elaboration of the sap depends not only on solar light but on the evaporation from the leaves; and that this gives rise to an electric excitement which extends to all parts of the plants, and serves to consolidate the organic materials which the sap holds in solution.

This theory was first announced in two essays, which I published in the year 1848, and my researches and observations since that time, have shown that it is confirmed by numerous facts, of which, I can here only notice a few. The change which evaporation from the leaves produces on the sap of trees, may be traced with great precision. Before their leaves are developed, the sap of the maple and hickory affords sugar, while that of the peach, plum, and cherry trees, chiefly consist of a solution of gum. But as soon as the leaves are formed, the sugar, gum, and other soluble matter composing vegetable juices, slowly change into wood. If a tree be deprived of its foliage during summer, or if a long continuance of dry weather causes evaporation to be interrupted, the formation of wood will be arrested, and the sap will return to its condition during Winter and Spring. After a long absence of rain, the exudation of gum from cherry trees takes place in the most copious quantities; and climates where such drouths are common, always furnish the most copious supplies of this article. The exudation of gum is also caused by over-pruning peach and cherry trees; as a small amount of foliage is adequate to the production of wood, only when rains are frequent, and evaporation subject to no long interruption. The juice of the Maguey plant, which grows in warm climates, undergoes fermentation if collected before the leaves grow, and it is used by the Mexicans as a palatable beverage. Its character is, however, altered on the formation of the leaves, and to render it fermentable during Summer, it is necessary to deprive the tree of its leaves several times. This course is often pursued, though it is found to cause the death of the plant in one or two years.

The most hardy members of the forest might be destroyed by a similar removal of their foliage. Even the health of every tree is impaired, and its age is shortened by every interruption which the elaboration of the sap experiences, either from excessive pruning or from a long absence of rain. The durability of wood depends, in a great measure, on the evaporation which takes place from the foliage of the living plant; and when the lignifying process has been imperfectly carried on, the tendency to decay will be unusually great. Now the decomposition of vegetable matter, like many diseases of animals, is contagious; and an imperfectly elaborated layer of wood, produced during a dry season, will not only decay prematurely itself, but will cause all contiguous parts of

the tree to undergo a similar change, and thus destroy the work of a century. It is somewhat different with the herbaceous plants which are renewed every season. The evils which they experience from a long drought are confined to the season in which it occurs; and these transitory occupants of the soil feel none of the calamities which a dry season may have inflicted on their predecessors.

An examination of the several instances of extraordinary longevity in trees, will show how much the health and durability of their wood is promoted by the frequency of rains. They always attain the greatest age in islands, in maritime districts, or in the vicinity of high mountains; and in a word, in all regions where rains are of frequent occurrence and long droughts rarely interrupt the elaboration of the sap. The oldest monuments of the vegetable kingdom now living in the Old World, are to be found in Great Britain, in the Island of Teneriffe, in Sicily, on the coast of Africa, and on the highlands near the Syrian coast. The cedars of Lebanon are said to have stood since the Christian Era, and many of the oaks and yew trees of England, are said to have attained an equally advanced age. A dragon tree, in the Island of Teneriffe, and the celebrated horse-chestnut on Mount Ætna, present still greater examples of longevity; especially the latter, which is said to measure one hundred and eighty feet in circumference at the base. It is said that this tree consists of five trunks; but, even on this supposition, it must have required over thirty or forty centuries to attain its present gigantic dimensions. The age of a tree growing near the mouth of the river Senegal, in Africa, has been estimated at over five thousand years.

India is equally celebrated for the frequency of its rains and the venerable age of several of its trees. It is said that the banyan tree which sheltered the soldiers of Alexander, is still living! Among the vegetable giants of the New World, the cypress of Oanica and that of Chepultipee, are the most celebrated; and California has produced many trees which rival them in age. But it is the forest of Guiana, situated in the zone of almost constant rains, that affords the greatest numbers of these patriarchs of the vegetable kingdom, notwithstanding the influence of a warm climate in promoting decay.

Lands which are subject to long droughts, either in consequence of their distance from the sea, and absence of mountains, or other causes, afford no examples of great arboreal longevity. European Russia, is a vast plain, not materially differing from the western prairies; and like them, it occasionally suffers much from a long continuance of dry weather. This condition of things affects, in a very conspicuous manner, the duration of vegetable life. Notwithstanding the vast extent of the Russian

forests, they contain no very old trees except in the neighborhood of the Baltic and Black seas, and in all other places the timber they furnish is very defective in durability. The dry rot prematurely attacks nearly all the Russian ships, permitting few of them to last longer than ten or twelve years, and their great liability to decay is a very serious drawback to the naval power of this extensive empire. Even on this continent, the timber of the Atlantic coast is much more durable than that of the Mississippi valley, and the number of hollow trees appear to increase as we retire from the sea-board.

As the same state of things is productive of degeneracy as well as disease, it would be reasonable to expect, that it should frequently cause trees to disappear from the soil in places remote from the ocean. This would be most likely to occur when the soils have great fertility; for in this case, they supply more nutriment to trees than can be converted into wood by the action of the leaves. Accordingly, extensive plains in the interior of continents should, in course of time, become destitute of woods except in places where the soil is comparatively barren, or along the banks of rivers, where they are favored by mists or heavy dews. Such peculiarities are to be witnessed in the Western prairies of this continent, the pampas of South America, and the steppes of Central Asia. Whenever meteoric influences are favorable to their health, trees have the advantage over annual plants in disputing the possession of the soil, and there the forest acquires an extensive dominion over the land; but the case is reversed on extensive plains; and here the herbaceous plants are successful in resisting the encroachments of the forest.

It has been generally supposed that the absence of trees, in these localities, is due to human agency; that the prairies were once cleared and cultivated, and that the growth of the forest was subsequently prevented by fires. But the Western prairies afford no monuments of the skill of an agricultural people of former times; while the extensive pampas of South America were, according to Humboldt, always avoided by the Indians, and contain not a single vestige of ancient civilization. The steppes of Central Asia are likewise destitute of wood, though the forest has established its dominion along the coast and around the mountains of that continent. It may, indeed, be possible to convert prairies into wood-land, by selecting hardy plants, by placing them at sufficient intervals to permit the expansion of their foliage, and by always introducing seeds from other regions to compensate for the effects of local degeneracy; but it is doubtful whether all these precautions will enable the wood to attain a proper degree of strength and durability to supply those localities with timber.

From the present theory of the action of the leaves, it might be naturally expected that precisely the same consequences should result from a diminution of foliage as from long intermissions of rain. This seems also confirmed by the result of observation. According to Loudon, the durable character of wood is much impaired by pruning, and long experience has shown the propriety of discontinuing the practice in Great Britain. Indeed, the premature decay of fruit trees generally results from over-pruning; and the effects of a dry season will always operate most injuriously on those trees which have been deprived of too much foliage.

And yet pruning is not without its advantages. The vegetable extract of the sap not changed into wood, though contributing much to the premature decline of the tree, is yet the proper nutriment for blossoms and for fruit. Indeed, many trees will fail to produce fruit unless they are pruned or stimulated by rich manures. Where rains are frequent, and, accordingly, where the tendency to form wood is great, pruning becomes more necessary; but it should be carried on with much caution, or entirely omitted in continental climates, where long drouths are of frequent occurrence. In the dry summer of 1854, it was generally remarked that those grape vines which were not pruned, produced abundantly; and an important fact recently communicated to me will throw much light on the subject. In a vineyard situated about two miles from New Richmond, Ohio, there were a few grape vines which were never pruned, and they remained wholly unproductive for several years, while all the rest bore luxuriant crops. But, during the dry season alluded to (1854),—the case was reversed—the unpruned vines bore for the first time an unusually large number of grapes; while the crop on the rest of the vines was extremely small. Several other facts may be adduced to prove the theory here stated respecting the agency of leaves in the formation of wood, and the necessity of rains to render their action effective.

EXTREME CAUTION.—Sometime last Summer, a number of ladies and gentlemen were visiting a garden, a short distance from this city. Among the articles growing were some hops, which, to one young lady of the party, were quite a novelty, and attracted her attention despite the more showy and brilliant flowers which were in the vicinity. Observing, among the hop plants, several differing from the rest, she inquired the reason. A gentleman informed her “that is the male hop, which——” “Bless me!” cried the young lady, “I never knew there was such a thing as the male hop before; I shall be very cautious how I drink beer in future!”

FOUNDER AND DISEASES OF HORSES' FEET.

THE following, which we clip from the *Ohio Cultivator*, is from Capt. J. C. Ralston, a graduate of the Royal Veterinary College, and will well repay perusal by all who esteem "the Horse." Capt. Ralston says:

The editor (A. B. Allen), in his preface, expresses a strong impression of the difference of management required for horses, in consequence of the difference of the climate and food of the two countries, (America and England). The writer, from what he has seen of both countries, is unable to recognize any marked difference. The more perfected care and stable discipline, and the improved shoeing of horses in Britain, would be attended with high advantages if introduced here. As to food, except that the British animal never partakes of Indian corn or fodder, there are small differences otherwise. The greater dryness of the climate is much in favor of the horses of this country. In fact America is qualified to produce the finest horses in the world; for while her varieties of soil fit her for either raising the heavy draft horse or the fleet courser, from the dryness of atmosphere she is peculiarly adapted for raising the latter. In this respect she possesses those advantages which have mainly conferred on the desert Arab his fine form, compacted tissues, speed, and unrivaled hardihood.

In regard to the effects of dryness of climate, there is an attendant drawback to shod or stabled horses, which inattention renders serious. In a horse's so artificial state, the horny covering of the foot—the hoof—is apt to become altogether too dry, hard, and inelastic. This evil is augmented by extreme dryness of atmosphere; and the confinement of that needful, but baneful defense, the shoe, greatly aggravates the mischief. Here it is that plank floors, as being bad conductors of heat, are objectionable. But for this, plank flooring (at least for the stalls,) when judiciously arranged for carrying off the urine, is excellent. And if the hoofs are skillfully prepared for the shoe, and the latter is good in form and properly adjusted, and if at the same time, proper stable care is resorted to, for the purpose of keeping the horn of the fore-feet cool and supple,—then, neither plank floors, stabled life, nor shoeing, need impair the feet, or produce chronic foot-lameness. There are, however, more horses suffering from foot-lameness in New York, than in any other part of the globe among three-fold the same aggregate number of horses. It is chronic foot-lameness, and the miserable form of fitting the shoes, that occasion the terrible falls and

injuries to horses daily seen on Broadway. The Russ pavement is very smooth, but still sound horses, in proper shoes, will never fall on it in the manner now daily done by hundreds. These allusions to the hoofs and shoes lead to a reference to the editor's objection to hoof-ointments. The judicious use of an eligible kind of an ointment for hoofs, the writer contends, is serviceable. The best is, perhaps, equal parts of tar and tallow, melted together, and kept for use in a jar. A thin brushing of this over the soles, bars, frogs, and walls, once a week, and for strong feet twice a week, is recommended. On the other days, the fore-feet should be stopped with pads of tow, kept moist, and a spongeful of water should be frequently squeezed over the hoofs. When a horse is to be taken to be re-shod, the tar dressing should be invariably applied over night, and the shoeing smith can then use his drawing-knife in a proper manner, and prepare the hoofs for the shoes as this ought to be done; that is, if this operative, who has so much to do with the best value and utility of every horse at work, be in possession of the right knowledge and skill, but which is indeed a rare event.

I now speak of Founder. It is necessary first to ascertain what may be meant by a term, which is truly an absurd one, derived from the horse-doctoring school. Some speak of chest-founder, and some of two kinds of foot-founder. The former idea is the product of ignorance, which assumes an effect for a cause. The shrunken state of the pectoral muscles, the wiry shoulders, and contracted cavity of the front of the thorax or chest, which are supposed to constitute the disease, are all, and in every case, effects of long protracted pain in the fore-feet—chronic foot-lameness. A horse suffering from this so universal curse of stabling, and shoeing, to-wit, contraction, coffin-joint-lameness, navicular-joint-disease, etc., ceases to go free in his action, and bend his knees; does not exert his muscular forces, or give them their full and rounded play; and goes near, or toeing the ground, and short in gait in every way. He may not drop at all in his step, unless the feeling is only in one foot, and which is not usually the case; and, hence, does not seem lame to the unpractised eye. The consequence of this is, in not a few cases, that the unexerted muscles, outside and inside the shoulders, fall away; the circulation through the lungs being decreased, the expansion of these organs becomes proportionately diminished, and the chest, at the brisket, falls in; and, in time, the fore-quarters altogether acquire that wasted look to which the sapient term "chest-founder" has been applied. In this country it is called "sweeney," an Irish piece of euphony.

By some, again, the contracted hoof and attendant chronic foot-lame-

ness, have been termed founder. But what is more ordinarily so termed is the permanent result of a very acute disease, viz.: "fever in the feet," or more properly, "laminitis." It was to the altered condition of the feet, which frequently follows an attack of laminitis, that the term founder appears to have been originally applied; and when the veterinarian adopts the phrase, it is in this peculiar sense. In the cases indicated, the animal treads with the toe of the hoof turned up; the horn of the sole is flat or pumiced, and resembling in appearance the outside of an oyster shell; and in front of the hoof seems as if caved in. It was to laminitis and its sequelæ, founder, that Professor Stewart was adverting, where the editor so curiously differs in opinion. Reference was made to only one phase of laminitis, and its consequences, founder, viz.: where the occasion of the fever might have been indigestion of food, and a gorged stomach; this is not a frequent cause; but if inflammatory action is going on in the coats of the stomach, and there is likewise local congestion from the organ being gorged with food, a revulsion of inflammation to the highly vascular laminated structure of the hoofs is, medically speaking, a probable enough result.

Any one acquainted with the anatomy of the foot and the specific disease which occasions its lapse to the peculiar condition designated founder, would readily comprehend the Professor's limited remark, as applicable to his then subject; but which was otherwise hurried and loose. It may not be amiss to seize the present opportunity, and present a brief description of the laminated structure of the foot, together with this acute fever to which the same is liable, and its frequent consequence, founder.

The external surface of the horse's foot, or, as more usually termed, the coffin-bone, is covered with a half muscular half membranous structure, denominated the sensitive or elastic laminae. This presents a series of leaf-like edges, something like the plaits on the surface of some paper lamp-shades, but far more minute and numerous. This structure is very vascular, and it circulates a very extraordinary amount of arterial blood. On the inner surface of the horny covering of the foot—the hoof—there is a reverse series of plaits, of a half horny, half ligamentous texture, resembling the inner side of a mushroom. These plaits, on the outer or convex surface of the coffin-bone, are interlaced or locked with those lining the inner or concave surface of the hoof; and on this union, or combination, every horse's weight and action is wholly suspended and hinged. There are about five hundred of these elastic plaits or laminae to each foot and they may be likened to minute coach springs. From the numerous blood vessels and nervous sensibility

of this structure, and the extraordinary tension it is subjected to in long continued exertion, it is very apt to undergo inflammatory attacks. The smallness of foot of so large an animal renders any greater influx of blood or inflammatory tendency very dangerous in so confined a cavity, and this is much increased by hard and unyielding states of the horn, and the binding of its iron defense, or shoe. Laminitis, or fever of the feet, is a violent inflammatory attack of the laminæ; usually of the fore feet, but sometimes all around. This usually runs an acute course of from twenty to forty hours, terminating either by resolution, (cure,) suppuration, or death. Suppuration is a very common result. When this ensues, the union between the sensitive laminæ and those of the inner surface of the hoof is dissolved, or relaxes, and the coffin-bone being no longer fully suspended, sinks down on the horny sole. If the violence of the fever now abates, and the animal should survive, lymph is effused between the laminated plaits, and they are retained together, but no longer elastic. The coffin-bone remains resting on the horny sole, and the hoof presents all the appearances described above. This is what has been termed Founder.

The causes of laminitis are most usually long continued exertion, and attended by excessive excitement of the heart and arterial system. As already observed, in reference to affections of the stomach, it is not unfrequently the result of revulsion or translation of inflammatory action from other organs; or what, in medical language, is technically called "metastasis." The writer has seen it supervene from inflammations of the bowels or lungs, and on occasions from influenzal fever, when this has run high and threatened to center in the lungs. It is a disease which requires instant and the most active treatment.

THE CALIFORNIA WHEAT CROP.—The late arrivals from California make it almost certain that the wheat crop in that State will be abundant beyond precedent. The late rains are producing the best effect, and fields all over the State are in the most flourishing condition. This will have the effect to entirely stop the shipment of flour from New York to that country. As the war is over in Europe, and the people are left to the undisturbed cultivation of their own fields, it is almost certain that prices will rule much lower in Great Britain and on the continent, than they have for the last two years. With these facts before us, and the additional one that the wheat crop never looked more promising in all parts of the United States, it is but reasonable to presume that prices of all kinds of breadstuffs will be low in the United States for the ensuing year.

Institutions for the Promotion of Scientific Agriculture—Proposed Advantages.

AMID the multiplied educational facilities now furnished, by our system of free schools, and numerous academies and colleges, the question is often asked, with an air of almost contemptuous defiance, "what need is there of any more?" and especially for that class whose mission is, *to till the soil—to work.*

The idea is well-nigh universal, that for the farmer almost no education at all, is sufficient; and this idea obtains alike among the educated and uneducated. If our articles on "*The Defects and Remedies of our present system of Agriculture,*" and, "*The Difficulties and Discouragements in the establishment of Schools of Science, for its promotion,*" in numbers 1st and 4th of "*The Cincinnatus,*" have been read and pondered, the advantages proposed by such institutions will be apparent, and our efforts in this direction will be appreciated and encouraged. These advantages will be discussed, at this time, first, in relation to the improvement of our Agriculture; and, second, in relation to the mental and moral elevation of those engaged in it.

Without stopping to discuss the merits of our present system of common or high school instruction, which is, perhaps, as free from defects, as any that has ever been devised, the fact is notorious that we have not, on the entire continent, an institution adapted to the demands of scientific agriculture; not one securing the facilities of a sound and thorough scientific and practical education to those who would become educated farmers, where they may learn, as agriculturists, the elements which compose the soil, and the laws which govern these elements. Another fact equally palpable, account for it as we may, is, that the course of academic and collegiate education at present pursued, positively disqualifies the student, mentally and physically, for this most noble and honorable calling, inducing him alike to avoid its toils, and deprecate its dignity and importance. Whether this be from the constant and universal practice of holding up before him other callings as more excellent, and honorable, and worthy of his ambitious aspirations; or inherent in the system of education itself, its subjects, and the honors appended to their completion, we will not decide; yet we have but to cast a glance at the results, or what may be called the fruits of the regular scholastic course of instruction, to be convinced of these facts, and be fully persuaded that if any progress is to be secured to scientific

agriculture, it must be from other sources than those now in existence. Hence, we see multitudes thronging our colleges and higher seminaries yearly, many of whom, yea, most, on leaving, enter upon the study of the professions, while not a few are thrown upon society as helpless as infants, and as incompetent to provide for themselves, or to serve their generation in any valuable calling, having acquired habits and tastes unfitting them for the industrial pursuits, and causing them to attach to these pursuits the idea of serfdom and servility. We come, then, to plead the necessity and importance of the introduction of a more thoroughly scientific and practical course of instruction to be ingrafted upon our present system if you please, and adapted especially to the wants of the great agricultural population. The curriculum of this course, in its full extent, should embrace such number and variety of subjects, as would give a training to the mind as liberal, *at least*, as any now pursued, and to its completion should be appended equal academic honors. Such a system Americans — republicans — it is believed, would receive at once, sanction and support; and instead of lowering, would elevate the present standard of liberal scholastic education, while the present is most obviously tending to the extreme of superficiality. We would at once and forever deprecate the sentiment now acted upon, if not entertained, that the *Encyclopedia of letters and science* can be mastered in the brief period allotted, and that the compass of human knowledge can be *boxed* in the short space of four years; or that other, equally erroneous, that one must be a classical scholar, or no scholar at all.

The number and variety of subjects now introduced into our catalogues, can not be thoroughly or even profitably canvassed in the short period of four years. If this time was spent upon a course of liberal training, when there was no Chemistry, no Geology, no Political Economy, in short, when there was almost no physical science at all, what can be said of the attainments now made when the subjects of investigation are treble, and no more time granted to the aggregate; when English literature, with its treasures of genius and wisdom, and the literature of cotemporary nations, their philosophy, their poetry, the light that their languages shed on the history and character of our own, are presented for our study and investigation. All must agree that though a familiarity with ancient literature is desirable, yet the man of the present day may be highly enlightened without possessing it. Besides, the result upon the mind, of one subject thoroughly mastered, is worth more than the whole course laid down but imperfectly gone over. The habit of examining a subject *profoundly* once *fixed*, and the mind, in an important sense, may be said to be educated; for everything afterward taken

will be sure to receive like investigation. If, then, letters be the object of pursuit, let no one stop at a mere smattering. If the sciences are to be studied, let their study not, as now, generally, be a mockery ; but let them be examined in their bearings and relations, and if practicable, let them be so applied as to give visibility and tangibility to what otherwise would be received as a mere abstraction of mathematics, and not so easily remembered — mere useless lumber. By such application, the habit alluded to will be most successfully gained, and its importance manifested.

If the time can not be increased, and in these days of railroads, it is to be feared it will be found impracticable, there must be discrimination as to what shall be studied, having some regard to the tastes, talents and pursuits of those who are to be instructed, instead as now of forcing the same studies and investigations upon all, indiscriminately, under penalty of exclusion from academic honors.

While the scope for mental discipline and investigation is so extensive, the fields of human knowledge so numerous, so rich and so varied, and our means so ample, we see no reason, if a proper course were pursued, why the number of zealous aspirants and seekers after knowledge, might not be greatly multiplied. Such result the genius of our government makes desirable, and the well-being and perpetuity of our institutions imperiously demand. We need, and must have, for the means of higher mental cultivation, and, at the same time, a manly, practical training of the sons of our American citizens, who are to live and act among the most democratic people on earth, *a class of institutions* different essentially from such as are now enjoyed by us.

Whatever may be said of individuals, there can be but a limited number, as facts abundantly attest, who are disposed to spend that portion of life set apart for study, in minute researches into the niceties of ancient literature, or the forces of Greek particles, or in the composition of Latin verse, even granting this to be the best means of mental discipline that can be devised. Against such employment of time, under certain circumstances, we have nothing to say. Neither would we undervalue the labors of the classic antiquarian and philologist, but regard them as far more important, and appreciate them more highly, than most are willing to admit. But what we would most protest against is, to compel all to travel the same road, or be regarded as inferiors, and treated as such, irrespective of the highest scientific and other attainments.

When we take into view our circumstances and condition, that we live on a continent new and fresh from the hand of God, amid trans-

formations the most rapid, and under a government not only recognizing the equality of our political, civil and religious rights and privileges, but such as encourages and cherishes the aspirations of the humblest to acquire wealth, and to seek position and power—is it not a matter of surprise that we have not thrown wide open the portals of science, and so far enlarged the circle of liberal attainments as to furnish scope and motive for the highest mental improvement of the greatest number?

We would not be understood to ask for an expansive and over-refined education, but for a thoroughly practical, useful, and, at the same time, liberal one. An education, begun and prosecuted to its completion, under the broad doctrine that man was not made simply *to know*, but *to know and to do*; that work, not mere knowledge, is the true condition of his manhood here, and is to be his glory hereafter.

This is the object for which we plead, and time would fail us to enumerate all the multiform and various advantages which would legitimately flow from such a benevolent and enlightened policy.

We propose to consider some of the advantages that would follow from schools of science, devoted especially to the interests of Agriculture. These may be classified under the denominations, physical and moral, or material and immaterial.

Agriculture is the embodiment of all the physical sciences, which, until recently, have been an unraveled mystery to the world, and hence the proper estimation and improvement of it must necessarily be connected with all that is called progress, and comprehend its vital elements. The advantages which have already followed the discoveries of modern science, may be seen in everything that pertains to human use and convenience; even the clothing of to-day is better and cheaper than that of former generations. In every department of business, which contemplates the supply of our wants, the steps of this progress are visible. Perhaps there is no department where progress is less marked than in that of farming—the great business of feeding and clothing men. This branch of human industry seems to have been overlooked, just according to its importance. Here, where knowledge united with economy most concerns every individual, it has been singularly lost sight of, though some beneficial changes have reached even the most plodding and hopeless of this class, yet by no means so extensive as are in keeping with the spirit of the age. However we may speculate as to the causes which seem to have retarded improvements in agriculture, it must be obvious to every reflecting mind that they must continue to be slow, without more extended means of enlightenment, and without greatly multiplying through these means the charms of the country, and the subjects of

interest which would be constantly more and more developed to a cultivated and inquisitive mind ; and by showing that its successful pursuit, either as matter of business or recreation, is not incompatible with the highest improvement of taste, and even a vigorous and successful pursuit of learning ; and where so prosecuted under favorable circumstances, it affords as fair a chance of rational enjoyment and quiet usefulness as any situation which the most lucrative trade, or the most successful political ambition, or even the highest professional eminence can command. And when science shall have accomplished for agriculture what it has done for other pursuits, no avocation will be more highly appreciated and honored. While but few advantages of a physical and material character have yet been realized in our own country, from science applied to agriculture, we may point with assurance to many which have taken place within a few years in Europe, that are astonishing, and almost stagger credulity itself. And these are uniformly realized from intelligence and enlightened skill, which are alone the instruments of success in every other pursuit. The product of the soil has in many places been quadrupled. They now regard fifty and sixty bushels of wheat to the acre, where formerly but fifteen were produced, as no uncommon yield ; and thirty tons of carrots have been produced upon a single acre. If such results can ever be realized in single instances, these instances may, by the same means, be greatly multiplied, may indeed become common.

Did our farmers more fully understand the composition of their soils, the materials on which they are to display their skill, and out of which they are to rear their harvests, what changes might we not expect ; changes both in quantity and quality ; changes beyond their present conceptions ? By thus acquainting themselves with the elements their soils contained in abundance, or its deficiencies, they would know what was necessary to secure a given crop. Now it is all involved in uncertainty, and can be known only by oft repeated experiments, whether the soil contains such elements as will produce a remunerative harvest. By analysis, he can tell what ingredients must be supplied, and how this can be done most economically. The farmer who does not know the chemical qualities of his soil should be considered as poorly fitted for his business as the smith who did not comprehend the qualities of the different metals, who would mistake copper for iron ; or the carpenter, who could not tell the difference between buckeye and white oak. The man who would attempt to raise a grain crop on a soil that had lost its potash, or its phosphoric acid, would manifest no less folly than the mechanic who should give you a pine plow-beam instead of an oak.

You would have the form and the semblance of strength in the one case, and you would have the stalks and even heads of wheat, but no grain, in the other. The poor man does not suspect himself of the vain attempt to rival the Almighty—to create something out of nothing—to gather a crop where the elements are not in his soil to mature that crop. Does he attempt to supply them, not knowing what they are, he is just as likely to go wrong as right; to use lime where lime is in abundance already, or to supply potash where some other ingredient is needed. Science places in his hand the key that unlocks the mystery, that reveals the proper restoratives in the proper quantities, and at the least possible expense. But farther, by a proper education he would know how to profit by what may be termed the mechanical preparation of his soils. The second farm, which most men own *beneath* the first, which has never been disturbed by the plow, would be brought to the surface, and its various elements diffused through the entire mass, instead, as now, of being imperviously hardened and consolidated. The roots of crops could then penetrate farther down and draw up moisture from this hitherto *terra incognita*. Besides, there are more or less of the elements of crops in this subsoil, some of the salts of the manures with which the surface has been supplied for ages, and which are now entirely useless. We venture to assert, that there is more undeveloped wealth of this kind in the subsoil of our farms than in all the gold mines of California. Education will put the subsoil plow into this mine of wealth, and afford the roots of plants opportunity to draw forth its treasures and wave them aloft in golden harvests.

But again, physically: Science will acquaint the farmer not only with the laws of the vegetable kingdom, but those which govern the animal, with the laws of reproduction among plants and animals. He will thereby be enabled to procure the best stock, and best know how to perpetuate and improve it; their treatment in sickness and in health, the feed most economical, and how supplied. And we may say, in short, a correct and intelligent system of agriculture lies at the very foundation of our individual, social, and national prosperity, in so much that he has been called a national benefactor who makes two spears of grass grow where but one grew before. Hence, to the political economist who would unfold to us the laws of wealth, the laws governing production in its varied forms, there can be no more fruitful theme than that of science in its application to agriculture. Indeed, it is a matter of universal interest how the human family may be fed, and clothed, and sheltered upon the best and most economical terms. And as we are to look primarily to the soil, to agriculture for all this, how does its improvement gather

importance and interest in view of the well-being of the present and the future of our race! And this improvement must originate from the application of mind, not chance or accident. The dull plodding laborer *originates nothing* any more than the beast which he drives. He goes over and over again, without varying a step, the beaten track of his ancestors, planting as they planted, and wasting as they wasted, the elements of production. How many once fertile portions of our country, east, west, and south, have been turned to a waste, upon which nothing can grow to sustain man or beast; and almost all over our older settled lands the staple crops are becoming less and less remunerative; and in despite of all that has been said and written, there seems no improvement. The tide of population is still sweeping westward, covering our prairies and filling our fertile valleys, depredating as they go, and like an army of locusts destroying in their march every green thing, leaving almost a desert in their track.

But without dilating further on the numerous material or physical advantages arising from the study of science and its application to agriculture, let us turn to those results of a moral and immaterial nature which would be consequent upon the educational facilities we propose. In the contemplation of these, there will appear to every reflecting mind a grandeur, and beauty, which will eclipse all those, however important, and they are important, that look to the mere consideration of dollars and cents—to the creation, accumulation, and distribution of what is called wealth, the devotion to which may be called the idolatry of the age. For never was the golden calf in the camp of the Israelites more devoutly worshiped than is mammon at the present day. It threatens to devour in the soul of man everything lovely and of good report, and even to turn the worship of the true God into hypocritical mockery. By the establishment of the institutions proposed, we would greatly elevate the present standard of man's intellectual and social condition. The man who finds little use for his mind in the prosecution of his own business, could not be expected to appreciate the value of education for any other calling or pursuit; if reading, writing, and a little arithmetic comprehend his entire catalogue of studies, and these fit him for the use of the hoe, and the plow, and enable him to *make money*, why should the merchant, or any other man, need more? Why should we have institutions of science at all? This has been the reasoning of many farmers, and the sentiment advanced is now but too prevalent. How absurd and ridiculous, that an employment necessary not only to the well-being but to the very existence of our race, and which God has destined that most should follow, and one surrounded with so much to expand and elevate the soul of man,

should place its occupants in the condition of serfs—mere beasts of burden! “He is going to be nothing but a farmer,” says the father, as he sends his son to school to get these simple rudiments of an education to fit him for his station; which shows how much he respects himself, and the measure of ability he regards sufficient for his calling, and what pernicious influence is thereby effected! We may see thousands of young men, blessed with education and fortunes adequate to supply all reasonable wants in the country, rushing into cities, exhausting their small means in the extravagancies and dissipations of fashionable life, crowding all the professions to repletion, pressing on with vexation and disappointment heaped on vexation and disappointment into all the avenues of political office and distinction, and into all the bitter strifes of political controversy, forcing their way into the pursuits of trade, without talents for their prosecution, and almost sure to involve themselves in bankruptcy and ruin. How different would be the course pursued, if agriculture, by some manner of means, were made more honorable and attractive? This can only be done by education.

But further, there is nothing more calculated to strengthen and invigorate the mind than earnest and deep inquiries into nature, the study of natural facts, and the observation and classification of natural phenomena; and there is no knowledge, as we have seen, fraught with so many practical and varied applications. The man of books and of mere book-knowledge is liable to be the slave of other men’s opinions, and his powers, thus trammeled, never go beyond certain prescribed limits; but he who goes for himself to the original sources, and draws water out of living fountains, will acquire a power of investigation and a vigor of thought which will grow strong by the nature of the aliment furnished, and multiply for himself the sources of his knowledge and consequently his pleasure, turning every object and occurrence which he meets into an instrument of instruction, and will find the world around him no longer a dull, desolate, inanimate chamber, but its walls all over radiant with lessons of wisdom, and every object with which it is crowded vocal with the teachings of a divine spirit. But in addition to the intellectual and social beneficial results which the mental elevation proposed would originate and furnish, there are those of a moral and political character no less important and desirable.

This system of industrial university education would impart a prestige and stability to our free republican institutions that nothing else could accomplish. Indeed, educated labor is the loveliest and grandest element of human progress. It is the moral dignity of educated labor which must exalt man from the degradation into which his evil passions, appe-

tites, and propensities have plunged him, and place him upon the vantage ground which Christianity and all its pure doctrines hold forth as his ultimate, his millennial condition, *when the sword shall be beaten into the plowshare and the spear into the pruning-hook*, and when the rage for war and conquest shall be exchanged for the peaceful and quiet pursuit of agriculture. The whole history of the prosperity of our country, whether general or sectional, social or political, demonstrates the assertion that not to soil or climate, to sea or land, to zones or temperatures, are we indebted for the wonderful display of genius and skill, but to the influence, the elevating influence of educated labor. This fact is attested from the first struggling condition of our early settlers to erect the empire they founded down to the present. Hands that never before toiled were required to toil upon the rugged shores they had selected as their home. By this very condition of things, a prestige and dignity were given to human industry which had not been connected with it in modern times. The Winthrops and Johnsons and Endicotts of that day would have given dignity to any station. And as we behold them toiling and striving to gain distinction and a subsistence, no less conspicuously do their genius and talents shine forth because seen in the shop of the mechanic or the field of the agriculturist. Corroborative of this, we boldly assert that the herdsmen and shepherds and tent-makers and fishermen of Judea, the sculptors and artizans of Greece, the plowmen of Rome, as well as the learned printers, shoemakers, stone-cutters, and blacksmiths of our own times, have exhibited more true mental power, and exerted a more deep and lasting influence for good on mankind, than all the critics, and orators, and sophists, and philosophers, and pedants, from Adam's day to ours.

What then might not be expected, if all the infinite practical sources of mental and moral culture which God has connected with agriculture were as fully developed and applied to the training of the better class of minds to be engaged in it, as even the sources in professional life now are? And we have been permitted to see there is much in this pursuit to which God has consigned the great mass of mankind, peculiarly favorable, instead of unfavorable as is commonly supposed, to the fullest growth and development of mind and manhood, had it not been for the pride of caste, and of ambition, of pedantry, and of power, of bigotry, and tyranny in all ages except in brief periods of the Hebrew commonwealth and in our own free republic, that have been turned away from it, and against it, and rebels who would not obey God, and eat their bread by the sweat of their brows, have, by one pretext or another, continued to rule the world. And much the same tendency is perceptible

at the present time, whatever may be said of the elevating influences that have as yet been brought to bear upon it in our own country. For farmers now, in their aggregate capacity, may be said to be an immense political machine in the hands of a few men of intelligence, and through this machine the educated few shape the policy and manage the affairs of our government. Any demagogue that knows enough to flatter their prejudices against wealth and aristocracy, and laud them as the bold and uncorrupted yeomanry, is entitled to crawl into power and use it for his own rather than his country's good. Give this class but the intellectual training which a thorough knowledge of their business would secure, and the reign of demagogues and political mountebanks would be over. Now every other interest is better cared for than theirs, and has more ample protection and patronage from the general government, and that, too, in face of the fact that this class is the numerical majority and their business most essential to the prosperity of all. Not only would the enlightenment of this class give them increased political influence for good, but it would impart a luster to our entire social interests and condition, and give a mental and moral elevation far beyond anything hitherto known or experienced; and we would thereby dignify labor in the only way by which it can be rationally accomplished. It is mind that controls matter. It is mind, educated mind, that governs the world. It is this that imparts a loveliness to the landscape, and sprinkles beauty as from an urn over all the universe. It is not in the light of setting suns, nor in the bright beams of morning that beauty dwells, but in the thinking, reasoning mind. It is this mind educated, its energies rightly directed, its tastes improved and refined, that must dignify and ennable any pursuit; and no place or work can long exalt him who is unworthy the reverence which his calling may demand.

America is now teaching the world a lesson with regard to popular sovereignty and man's inalienable rights. Among the people of all nations the popularity of American institutions is now great, and their influence is increasing. The corrupt aristocracies and titled governments of the older nations hate and revile that influence which undermines the foundations of their power. The people are acquiring information in relation to their rights and their dignity as men, which no other government than ours, on earth, can teach them. Now all must see as if written with a sunbeam, that there must, if the results we hope for, that we expect, shall be realized, that there must be a lifting up of the industrial classes to a new position and placing them in a better relation to manhood and to humanity than they have ever occupied. This process of the emancipation of human labor must undoubtedly go forward to

triumph whatever shall resist, or through whatever agitations it may be obliged to force its way. Talent-developed mind, united to industry and skill, under the protecting ægis of our government and the smiles of divine Providence, must go forth to gather the harvest of the earth. The poverty of Europe will never be alleviated but by the exaltation of labor. And vain will be the attempt to feed and satisfy their suffering millions while oppressive governments still grind the people down, and their doomed destiny and lot shall be ignorance, degradation, and neglect.

Let it be ours to exalt those who toil for humanity and not titled stations, to dignify assiduous industry and not idle repose, to elevate not the few but the many. And if our heraldry is in the hammer, the axe, and the plow, let us feel it to be far higher honor than dragons, and helmets, and skulls, and all the insignia of war. Let it be ours to give to the farmer, the tiller of the soil, amid all his labors a well-furnished, well-disciplined mind; ours to open for this purpose all over our land the portals of science, to pluck the flowers which bedeck the field of literature, or garner stores from the mines of thought which he may there explore; that when he goes abroad he may go to bless mankind. Let it be ours, in fine, to educate the whole man, physically, intellectually, and morally. Then may we expect that "the earth will again bloom as Eden, and the greatness of America shall know no limited zenith, and fear no tendency to decline."

THE EFFECTS OF FROST ON DORMANT VEGETATION.*

My article under the above caption, in the March No., has had the effect, which, with you, I very much desired, namely, of calling out others on the same subject.

Mr. Kern's article is a good one, but it merely proves that plants can be easily frozen, without bearing on the main point, namely: the *effects* of frost on vegetation. He clearly corroborates me in the opinion, that all trees, vines, etc., even in our climate, must be completely frozen every winter. The interesting experiments and observations of Profs. Naw and Schubler, and M. De Caudolle, as mentioned by him, prove beyond doubt, that "the tree is actually frozen when the temperature is reduced a few degrees below freezing point," and that the "strange opinion" that "freezing the fluids of the plant would most certainly prove

* This ought to have appeared in the May No., but press of business prevented me from having it ready in time.

fatal to its life and well-being * * * * * is plainly contradicted by every winter day's experience."

I was rejoiced to see attached to the other article such a name as that of A. H. Ernst, whose "high attainments" in practical and scientific horticulture are too well known to need "your indorsement." "I perused it with no small interest. * * * * I must, however, confess my disappointment and regret that his article affords no new light, but is confined to" mere scraps of information which, "it is to be presumed, every intelligent horticulturist is familiar with."

After animadverting on his wondrous condescension in noticing an article on such a subject "over a *fictitious* signature," which I fully appreciate and acknowledge the honor thus conferred upon me, he intimates that my expression of the "alarm among all our horticulturists," and that "the subject has not met with the attention from practical horticulturists which it deserves," were mere suppositions. By reference to the report of the meeting of the Horticultural Society, on 26th January, as reported in the "*Columbian*" of the 28th, it will be seen that there was considerable alarm. In frequent conversations with some of those interested, I found that the general opinion was, that there would *be little or no fruit this season*. If the subject had met with the "attention which it deserves," there would not have been so much alarm, and Mr. E. would not have made such a bad guess as that "the fruit-buds of the peach, most of the cherries and pear are dead, and some of the trees also," which he will now see is far from being the case. How often, also, after a severe winter, have thousands of trees, etc., been torn up or chopped down for dead, when only apparently so, as shown by the surviving of the few which were saved from the hasty hand of the "practical horticulturist?" How many have been thus destroyed this spring? The reports of the meetings of the Horticultural Society tell of some; and, I have no doubt, there are many others on which a coroner's jury would be very apt to return a verdict of "murdered through ignorance." A letter read before the same Society, a few meetings ago, by Mr. Mears, from a friend in the East, shows that the same "work of death" has been carried on there. Some of his neighbors had torn up many young trees, etc., which were *apparently* dead, while his own, which presented the same appearance, are now living. In a communication to the "*Horticulturalist*," in the April No., p. 170, Mr. Benj. Hodge states that in western New York, in the winter of 1844-5, during which the weather was unusually severe, the same "plan of operations" was carried on. After the severe frosts "many without further delay cut down the trees and cleared away the rubbish." And

one gentleman "cut down his whole orchard of some two thousand trees (peach) which, the autumn previous, had produced a bountiful crop;" "everybody was disappointed; the spring and early summer opened most propitiously, with genial showers and fine growing weather. The trees soon put on their summer dress, just as fresh and fine as ever." The same writer, speaking of the coming summer, says: "Everything now indicates a fruitful season." This premature destruction is, indeed, one of the greatest evils which a want of proper attention brings upon those who ought to know better.

I am still of the opinion (though, of course, I make no pretensions to infallibility,) that "the mere freezing of plants in winter will not destroy their vitality;" but that their resuscitation or death depends mainly on the circumstances attending the thawing of them after having been frozen. I refer only to *dormant* vegetation, though the same *may* also be true with reference to *active*. All vegetation, in this region, has been exposed during the past winter, to a temperature as low as 20 deg., i. e., 52 degrees of frost, and what are the effects? A walk through our gardens, orchards and nurseries will show how astonishingly small the damage has been. Mr. E., himself, admits that "the injury done to his fruit was not so great as he had expected." [See report of Horticultural Society's meeting, April 12, in *Commercial.*] On my own little spot, I have peach, cherry, and plum trees in full bloom, gooseberries and currants displaying their tiny fruit; and grapevines and rosebushes from whose stems, during the cold weather, I picked out crystals of ice with the point of a knife, developing themselves as if they had only had their usual winter's nap. Now, if 52 degrees of frost will not kill "our partly hardy exotics, such as the peach, cherry, pear, etc.," and their tender fruit buds, when in a dormant state, what degree of frost will kill them? What physiological change would ten or twenty degrees more frost produce in a tree so as to cause its death? I admit the truth of the old proverb, that "circumstances alter cases," and that vegetation was last fall "never in a better condition to resist the effects of ordinary temperature," or extraordinary either. Under different circumstances the effects of such a winter might have been disastrous enough; but this only goes to establish my point, that the mere freezing of *dormant* vegetables will not kill them.

Frost, say some, destroys vegetation, by separating the bark and concentric layers of wood, or bursting the cells containing the fluid, by expansion. This, however, is not the case, as the bark, wood, and each individual cell possesses an elasticity which prevents such effects. If such was, however, the case, young trees, whose cells contain most

fluid, would be more liable to injury than older trees, which are comparatively dry; but experience teaches us that the exact opposite is true. If some cells are burst in this way, we have no evidence that they do not heal up, as do the clefts in large trees, produced by frost, without injury to their vitality.

But with reference to *exotics*, it is well known that many tropical plants die, when the temperature is not as low as the freezing point. This cannot be attributed to frost, as none exists, but rather to the inspissation of the fluids of the *living* plants. I do not mean to say that *exotics* or even *native* plants will survive frost under *all* circumstances, but that frost does not *necessarily* kill them. If the true cause of the death of plants after (or, as is generally supposed, by) frost, was properly understood, means might be devised, in the manner of thawing them, which would save such as could be controlled. I do not profess to know how, or to give any "new light" on the subject, but wish only to call the attention of those most interested to it. Such a knowledge can only be acquired by close, constant, accurate and systematic observations, in fall, winter and spring; and if properly made by our practical horticulturalists, either as individuals or societies, may result in the saving of thousands of plants and trees annually.

I would be pleased to see another communication from Mr. E., explaining *physiologically* how frost kills plants, and how it does not kill them. If he has made observations which will throw light on this subject, which, I insist, is yet very much in the dark, it is not too late to present them through the medium of your periodical, without "consuming time" on this or any other article.

ANNANDALE.

THE WORSTED STOCKING.

A TRUE STORY.

"FATHER will have done the great chimney to-night, won't he, mother?" said little Tom Howard, as he stood waiting for his father's breakfast, which he carried to him at his work every morning.

"He said he hoped all the scaffolding would be down to-night," answered the mother, "and this will be a fine sight; for I never like the ending of those great chimneys — it's risky — thy father's to be the last up."

"Eh! then, but I'll go and see him, and help them give a shout afore he comes down," said Tom.

"And then," continued his mother, "if all goes right, we are to have a frolic to-morrow, and go into the country, and take our dinners, and spend all the day among the woods."

"Hurrah!" cried Tom, as he ran off to his father's place of work, with a can of milk in one hand, and some bread in the other. His mother stood in the door watching him, as he went merrily whistling down the street; and then she thought of the dear father he was going to, and then her heart sought its sure refuge, and she prayed to God to protect and bless her treasures.

Tom, with a light heart, pursued his way to his father, and, leaving him his breakfast, went to his own work, which was at some distance. In the evening, on his way home, he went round to see how his father was getting on. James Howard, the father, and a number of other workmen, had been building one of those lofty chimneys, which, in our great manufacturing towns, almost supply the place of other architectural beauty. This chimney was one of the highest and most tapering that had ever been erected; and as Tom, shading his eyes from the slanting rays of the setting sun, looked up to the top in search of his father, his heart almost sunk within him at the appalling height. The scaffold was almost all down; the men at the bottom were removing the last beams and poles. Tom's father stood alone on the top. He looked around to see that everything was right; and then, waving his hand in the air, the men below answered him with a long, loud cheer, little Tom shouting as heartily as any of them. As their voices died away, however, they heard a very different sound—a cry of alarm and horror from above! "The rope! the rope!" The men looked round, and coiled upon the ground lay the rope, which, before the scaffolding was removed, should have been fastened to the top of the chimney, for Tom's father to come down by! The scaffolding had been taken down without remembering to take the rope up. There was a dead silence. They all knew it was impossible to throw the rope up high enough, or skillfully enough, to reach the top of the chimney; or, if possible, it would hardly have been safe. They stood in silent dismay, unable to give any help, or think of any means of safety.

And Tom's father! He walked round and round the little circle, the dizzy height seeming every moment to grow more fearful, and the solid earth further and further from him. In the sudden paroxysm of terror, he lost his presence of mind, and his senses almost failed him. He shut his eyes; he felt as if, the next moment, he must be dashed to pieces on the ground below.

The day had passed as industriously and swiftly as usual, with Tom's mother at home. She was always busily employed for her husband and children, in some way or other; and to-day she had been harder at work than usual, getting ready for the holiday to-morrow. She had just finished all her preparations, and her thoughts were silently thanking God for her happy home, and for all the blessings of life, when Tom ran in. His face was as white as ashes; and he could hardly get his words out—“Mother! mother! he cannot get down!”

“Who, lad, thy father?” asked his mother.

“They've forgotten to leave him the rope,” answered Tom, still scarcely able to speak. His mother started up horror-struck, and stood for a moment paralyzed; then, pressing her hands over her face, as if to shut out the terrible picture, and breathing a prayer to God for help, she rushed out of the house.

When she reached the place where her husband was at work, a crowd had collected round the foot of the chimney, and stood there quite helpless, gazing up with faces full of sorrow.

“He says he'll throw himself down,” exclaimed they, as Mrs Howard came up; “he is going to throw himself down.”

“Thee munna do that, lad,” cried the wife, with clear, hopeful voice; “thee munna do that. Wait a bit. Take off thy stocking, lad, and unravel it, and let down the thread with a bit of mortar. Dost hear me, Jem?”

The man had made a sign of assent, for it seemed as if he could not speak; and, taking off his stocking, unraveled the worsted thread, row after row. The people stood round in breathless silence and suspense, wondering what Tom's mother could be thinking of, and why she sent him in such haste for the carpenter's ball of twine.

“Let down one end of the thread with a bit of stone, and keep fast hold of the other,” cried she to her husband. The little thread came waving down the tall chimney, blown hither and thither by the wind; but at last it reached the outstretched hands that were waiting for it. Tom held the ball of string, while his mother tied one end of it to the worsted thread. “Now pull it up slowly,” cried she to her husband; and she gradually unwound the string, as the worsted drew it gently up. It stopped—the string had reached her husband. “Now hold the string fast, and pull it up,” cried she; and the string grew heavy and hard to pull, for Tom and his mother had fastened the thick rope to it. They watched it gradually and slowly uncoiling from the ground as the string was drawn higher. There was but one coil left. It had reached the

top. "Thank God! thank God!" exclaimed the wife. She hid her face in her hands in silent prayer, and, trembling, rejoiced. The rope was up. The iron to which it should be fastened was there all right; but would her husband be able to make use of them? Would not the terror of the past hour have so unnerved him as to prevent him from taking the necessary measures for his safety? She did not know the strength that the sound of her voice, so calm and steadfast, had filled him with—as if the little thread that carried him the hope of life once more, had carried him some portion of that faith in God which nothing ever destroyed or shook in her true heart. She did not know, that, as he waited there, the words came over him, "Why art thou cast down, O my soul; and why art thou disquieted within me? Hope thou in God." She lifted up her heart to God for hope and strength. She could do nothing more for her husband; and her heart turned to God, and rested on him as on a rock.

There was a great shout. "He's safe, mother, he's safe," cried little Tom.

"Thou'st saved me, Mary," cried her husband, folding her in his arms. "What ails thee? Thou seem'st more sorry than glad about it." But Mary could not speak; and if the strong arm of her husband had not held her up, she would have fallen to the ground. The sudden joy after such great fear had overcome her.

"Tom," said his father, "let thy mother lean on thy shoulder, and we will take her home." And in their happy home they poured forth thanks to God for his great goodness; and their happy life together felt dearer and holier for the peril it had been in, and for the nearness that the danger had brought them unto God. And the holiday next day—was it not indeed a thanksgiving day?

THE WINTER IN MICHIGAN.

Mr. GEORGE LEFEVRE writing from Shiawassee County, Michigan, says:—"We have had a tremendous cold winter; the thermometer run down to *forty degrees below zero!* I do not believe that there is a living peach tree in Michigan. I had a beautiful peach orchard of about sixty trees, and every one was frozen to death. And the same is a general thing throughout the State, so far as I have been able to ascertain."

OUR CLIMATIC VICISSITUDES.

A BRIEF account of the most noted peculiarities of our climate was given on page 82. It was there stated, that the most plausible theory to account for our *sudden changes*, was the one which looked to the Rocky Mountains as deflecting northerly, the warm trade-winds of the Atlantic, thus producing our remarkably "warm spells," often followed by sudden "cold snaps," occasioned by the rapid descent of the cool upper western current.

We may here remark that this current from the west is, owing to its dryness, colder, in effect, than the thermometer would indicate. Dry air eagerly drinks in moisture; even ice will evaporate when exposed to its influence; but evaporation cannot go on without taking up heat, as every one knows who has been chilled by the drying of wet garments upon him. Hence, we often see the ground solidly frozen, especially when the western wind is blowing, although the thermometer is several degrees above the freezing point.

A few preliminary considerations will show the philosophy of this matter of the weather so plainly, that even those who have never given any attention to the subject, may have the key to the whole mystery.

"Our wondrous atmosphere" is a great water drinker, and, like the laborer, its thirst is in proportion to its warmth. Whatever it drinks is so completely assimilated, that the sharpest optics are unable to detect its presence in the pure pellucid ether, so that vast amounts of the liquid element are floating unseen in the firmament above. Or, to state it more technically, the amount of moisture air is capable of taking up is dependent on its temperature. One hundred and sixty pounds of air, at the freezing point, can dissolve one pound of water and no more; but if it be twenty-seven degrees warmer, that is, at fifty-nine, it can dissolve twice as much; and thus on, doubling the amount for every additional twenty-seven degrees of heat. Hence, it is evident, that if one hundred and sixty pounds of air, saturated at fifty-nine, should, by any means, be cooled to the freezing point, it would precipitate one pound of water; and should a similar portion at eighty-six be cooled to fifty-nine, it would precipitate two pounds, and in a like proportion for other degrees. A deposition of moisture in some form, then, will occur whenever two portions of air of different temperatures meet in such a way as to reduce them below the point of saturation. If the cooling occur suddenly,

with warm and moist air, then the rain will be violent; but if slowly cooled, the rain will distil gently. Should it be cooled but little below the point of saturation, then only clouds or fog will appear.

It is evident, from these considerations, that whatever moisture the western current may acquire in its passage over the Pacific, would be nearly all relinquished by the time it arrived at the cold tops of the Rocky Mountains; and as it plunges down into the warm regions of the Mississippi Valley, it would greedily drink of all water in its way.

This, then, accounts for the notable dryness of the American climate, as compared with that of England. There the western current flows over the warm waters of the Gulf Stream, becomes charged with moisture, and, as it strikes the chalky cliffs of Albion, gives out both warmth and moisture.

But some to whom this subject is new may inquire, "why it is, if the western winds are dry, that all our violent storms come from that direction?" By carefully noting the principles just given, the reason will be obvious. Previous to the storm, the air is close and warm; you look at the thermometer, and it indicates, we will say, 86 degrees, and full of moisture; for when you pour out a glass of cold water to quench your thirst, you notice that its outside is instantly bedewed; the air contains, then, if fully saturated, $\frac{1}{4}$ of its weight of water. The least exertion produces copious perspiration; for the full air refuses the exhalations. The birds cease singing — all is mute.

"We often see against some storm
A silence in the heavens: the rack stands still,
The bold winds speechless, and the orb below
As hush as death: anon the dreadful thunder
Doth rend the region."—HAMLET.

Then comes the dashing rain and wind; then the cloud passes, the sun breaks through, while the cool west wind blows and drives every cloud from the sky. Now look again at the thermometer; it has fallen, say, to 59 degrees. If so, then a quantity of water equal in weight to $\frac{1}{8}$ the weight of the air or thereabouts, has been precipitated to the earth as rain. No other storm will occur until the western wind ceases to blow.

Such is the history of the great majority of our violent storms. Now, what has caused the rain? Evidently the sudden intrusion of the cool western current upon the warm moist air, which had come to us from the Gulf of Mexico.

Sometimes the south-east wind, which also comes to us from warmer regions, is gradually cooled by its northern journey, and its moisture

condensed in a slow drizzling rain; but even then the weight of the shower comes on, when in the upper regions the western current has already commenced its work of condensation; and this generally happens before we have any suspicion that the occidental current has set in; for the base of any wind would be retarded by the friction of the earth, and its top leans forward in the direction of its course, and may be busy shaking down the rain over our heads, while its tardy base is miles behind the shower. In such cases we do not perceive the current that caused the shower, until the shower itself has passed. It is only in the *van* of the western current, then, that Jupiter Pluvium rules and *rains*, for as long as the west wind *steadily* blows, so long will drought prevail. But the fertility of our valley is insured by the frequent intrusion of the deflected trades with its wealth of refreshing waters.

But we must notice Espy's theory, which is somewhat different. He supposes that all, or nearly all, storms, are produced by an uprushing current of air, in the place where the center of the storm is raging. Some local circumstances first set this upward flow in motion, such as land heating faster than water under the sun's rays, or a valley becoming warmer than the surrounding country, or some soil heating faster than others, or great fires, or any such cause of sufficient intensity to initiate the ascending current. Then, he says, the development of latent heat by the condensation of the moisture in the upflowing air, will intensify the upward flow, and thus air will blow from all points toward the center of the storm, and drop its load of moisture as it mounts to the sky.

Believing this the true theory, he maintains that showers could be produced by building large fires, and proposed this remedy for drought. He tells of many instances of rain brought on by fires; and, among others, the following interesting account is given by George Mackay, who was, at the time spoken of, engaged in surveying in Florida, and in running their lines, they frequently encountered marshes, covered at the time (it being the dry season,) with large quantities of dried grass and reeds, which greatly impeded their progress, and to remove them, they would sometimes set them on fire. On one occasion, the narrator says, "We were now on the confines of a saw-grass pond, and a much more formidable one than any we had yet encountered. Being surrounded by a cypress swamp, we concluded that it had never yet been burned. My assistant, Capt. Alexander Mackay, who was standing by my side, mentioned his having, in a former conflagration, observed the formation of a cloud at the apex of the smoke. He added, that it had frequently since brought to his mind some account which he had read of Professor Espy's theory. He suggested that there could not be a better opportunity than

this to put the theory to the test; and, being fond of a joke, he said he would like to astonish the superstitious negroes, and to make them believe that he could call together the clouds and bring down rain. So we determined to make the experiment.

"When our party were all gathered at the halting place, complaints of the extreme heat went round, and all unanimously agreed that a more confined and oppressive day had never been known to them. To these complaints, the usual wishes for a 'little breath of air,' and 'a few drops of rain,' succeeded. 'Cut through this pond,' exclaimed the Captain, 'and I'll give you more than a few drops of rain; I'll give you a plentiful shower, and a breeze, too, that shall wake you up. Come, boys, cut away; and when you've done, you shall wash off the dust in a cold bath from the skies.' They stared up and around; not a cloud as big as a man's hand could be seen, and they looked back at the Captain with a good-natured grin of incredulity. 'Ho, ho! ha, ha! Captain, make cloud out o' nuffin; he, he! Captain bring water all dis way from de sea! ho, ho! ha, ha!' Whereupon, the Captain affected to be very indignant. To hasten his victory, I ordered the grass to be set on fire. The flames soared forthwith above the tallest trees; a dense volume of smoke mounted upward spirally; the grass soon disappeared; we crossed over. As the smoky column broke and the cloud began to form, the Captain traced a large circle in the sand around him, and placed himself in its center, making fantastic figures, and forming cabalistic phrases out of broken French. Still was the cloud unnoticed. All eyes were riveted upon the Captain, who stood gazing at the earth, and shaping outlines of devils there. At this juncture came a roll of distant thunder; every glance instantly turned upward; a cloud was spreading there. The thunders increased; the lightning flashed more vividly; the knees of the negroes shook together with alarm; already was the rain descending in torrents, though the clear sky could be seen in all directions under the cloud. The Captain meanwhile, maintained his mystical attitude, and continued his wild and extraordinary evolutions. Some of the whites, who were in the secret of the hoax, fell upon their knees, and were imitated by the negroes, whose fears, augmenting as the storm grew fiercer, with clasped hands, fastened upon the Captain a stare of awe and deprecation. In short, the scene presented a complete triumph of philosophy over ignorance."

Mr. Espy cites a number of cases similar to the above, at least as far as the production of rain was concerned; hence, he says, build large fires of acres in extent, and in the driest time rain will be produced. So it will, undoubtedly, if at the same time the air is warm and nearly

saturated, and no prevailing wind breaks the column of ascending air.

Mr. Espy has strongly urged the adoption of his plan for producing rains; and we think he has formerly petitioned the Legislature of Pennsylvania for a grant to furnish means to test his theory. But we have never heard of its being granted; and as there are so many contingencies, and the expense of fuel would be so great, we can not think his plan will be of much practical advantage.

The great currents of air, alluded to in a former part of this article, not only determine the amount of rain we shall obtain, but they modify, very materially, our temperature. The deflected trade-wind from the south-west assists the sun to give us tropical summers. Thus, the average summer temperature of this region is 73 degrees, while Spain, the land of the orange and vine, is only 70. 'Tis the cold northern and western current of our winters, which brings our yearly average so much lower than theirs, and which destroys the tropical trees that our summers would foster.

The fluctuations of temperature in this region, as shown in a former article, are, during the winter months, remarkably great; and the temperatures of the same month in different years, is anything but uniform. Sometimes, as last winter, we have the cold and dryness of an extreme northern region, while other winters are open and rainy. So with the spring and summer. The trees are sometimes clad in leafy green early in April; the next year, perhaps, their vernalation is deferred until May.

Our springs are wonderfully fluctuating in their average temperature, and in that of consecutive days. One day the light vestments of summer scarcely enable us to endure its warmth; the next, the thick dress of winter hardly keeps out the cold.

But, notwithstanding this uncertainty in the weather, it is wonderful to note how near the same degree the *yearly average* comes out. Observations taken in this neighborhood, commencing with the year 1814 and continued without interruption to 1849, have been kindly laid before us. From them we learn that no year of those thirty-five was above fifty-five degrees, or below fifty, of average temperature, except the solitary instance of 1831. Thirteen of those years, viz.; 1814, '20, '23, '24, '27, '33, '34, '40, '41, '42, '45, '47, '48, had a temperature of fifty-three degrees. Six, viz.: 1817, '19, '25, '26, '30, and '44, a temperature of fifty-four. Three of them, viz.: 1828, '39 and '46, a temperature of fifty-five. Three, viz.: 1815, '16 and '32, a temperature of fifty-two. Three, viz.: 1818, '29 and '37, a temperature of fifty-one; and five, viz.: 1822, '35, '36, '38 and '43, a temperature of fifty;

while 1831 is distinguished from all others by the low temperature of forty-three.

Many theorists are inclined to regard electricity as the great destroyer of meteorological uniformity. We know that it is an effect of violent storms, but whether it is in another form, an active agent in affecting temperature, is not ascertained. One fact seems clear, viz.: all our fluctuations are departures, upon either side, from a uniform mean of fifty-three degrees of temperature, to which they return as regularly as does the pendulum to the middle point of its vibratory arc. In spite of the recollections of "oldest inhabitants," there is no indication of a change of climate, in this region.



THE WESTERN ACADEMY OF NATURAL SCIENCES.

THIS Society held its annual meeting in Cincinnati on the 13th of May. Their election of officers for the ensuing year was then had, and resulted as follows:

U. P. JAMES, President.	U. P. JAMES,	}	Curators.
GEO. GRAHAM, Vice Pres't.	H. C. GROSVENOR,		
J. D. CALDWELL, Rec. Sec.	R. CLARKE,		
ROBT. CLARKE, Corr. Sec.	S. T. CARLEY,		

H. C. GROSVENOR, Librarian.

All communications, books, etc., sent by mail, should be addressed to the Corresponding Secretary. Boxes or parcels of minerals, or other specimens to the Academy, to care of ROBERT BUCHANAN, Cincinnati, O.



COMMENCEMENT WEEK AT COLLEGE HILL.

THE Commencement at FARMERS' COLLEGE will be held on Wednesday, the second day of July. The Literary Societies connected with the Institution will be addressed by the Rev. Dr. STORRS of Cincinnati, and President THOMPSON of the "Ohio Wesleyan University," at Delaware; gentlemen of eminent abilities, and well known to the public as distinguished orators and scholars.

The *Society of the Alumni* will be addressed by B. F. BROWN, Esq., of Cincinnati, a talented and brilliant speaker.

The Commencement exercises of the OHIO FEMALE COLLEGE will occur on Tuesday, the first day of July. We learn that the Rev. Dr. BUTLER, of Cincinnati, is to deliver the public address on that occasion. Dr. Butler's reputation as a pleasing writer and an eloquent orator, will, of course, be sufficient to attract a crowded attendance on that occasion.

METEOROLOGICAL TABLE.

Observations made at Farmer's College, College Hill, Hamilton County, Ohio, Latitude 39° 10', W. Long. 7° 24' 45", for the month of April, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.

BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.				OPEN AIR THERMOMETER.				CLOUDS—THEIR COURSE AND VELOCITY.				WIND—DIRECTION AND FORCE.				RAIN AND MELTED SNOW.			
7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	N. E.	S. E.	W.	S. E.	W.	Hour Began.	Hour Ended.	Amt. Inches
1 29.413 29.210 29.070	29.231	26.0 60.0	50.0	45.3	0	0	G'n mist.	4	W. 2	S. E. 2	S. E. 2	N. E. 2	S. E. 2	S. W. 5	S. W. 5	S. W. 3	6½ A. M.	10½ A. M.	0.378
2 28.908 28.710 28.740	28.860	44.5 52.0	52.0	49.5	10	S. 5 10	S. W. 8.	4	W. 2	S. E. 2	S. E. 2	W. 4	W. 4	W. 5	W. 5	W. 4			
3 28.816 28.890 28.970	28.888	44.5 44.0	43.5	43.8	5	W. 4 10	W. 6.	9	N.W. 7	S. E. 2	S. E. 2	W. 2	W. 2	W. 3	W. 3	N. 1			
4 28.951 28.988 29.030	28.973	40.0 42.4	35.0	39.5	10	N. W. 6.	10 Rain'g	10	N.W. 6.	S. E. 2	S. E. 2	W. 2	W. 2	W. 3	W. 3	N. 1			
5 29.147 29.107 29.090	29.098	34.0 56.5	41.0	43.8	10	N.	2	West.	4	0	0	W. 1	W. 1	0	0	0			
6 29.032 28.930 28.974	28.974	35.0 61.0	50.0	48.7	0	8	Haze.	4	0	0	0	S. E. 1	S. E. 1	0	0	0			
7 29.151 29.035 29.100	29.095	47.0 68.0	55.0	56.7	0	0	0	0	0	0	0	0	0	0	0	0			
8 29.216 29.155 29.163	29.178	49.0 77.0	61.0	62.3	0	0	0	0	0	0	0	0	0	0	0	0			
9 29.200 29.114 29.222	29.179	52.0 77.0	64.0	64.3	2	S. 1	8	Haze.	0	0	0	0	0	0	0	0			
10 29.370 29.320 29.245	29.312	45.0 58.0	46.5	49.8	4	0	9	0	0	0	0	N.E. 1	E. 1	0	0	0			
11 29.146 29.046 28.853	29.016	42.0 61.0	57.5	54.5	10	Rain.	9	0	0	0	0	Haze.	0	0	0	0	6 A. M.	8 A. M.	0.020
12 23.758 23.700 23.829	23.793	69.0 75.5	62.0	68.8	G'n mt	9	S. W. 8.	4	W. 5	S. W. 5	S. W. 5	W. 5	W. 5	W. 5	W. 5	W. 4	7 P. M.	8 P. M.	0.045
13 29.276 29.310 29.233	29.273	36.5 53.0	44.0	44.5	2	0	0	0	0	0	0	N.E. 2	N. E. 1	0	0	0			
14 29.066 28.903 28.847	28.939	43.0 75.0	69.5	62.5	5	Haze.	5	Sm'ky mist	8 G'n mt	S. E. 1	S. E. 1	0	0	0	0	0			
15 28.775 28.707 28.773	28.752	57.0 82.0	72.5	70.5	4	W. 5	4	W.	0	0	0	0	0	0	0	0	6½ A. M.	7 A. M.	0.500
16 23.925 23.881 23.793	28.870	65.0 83.5	70.5	73.0	0	0	0	0	0	0	0	W. 2	W. 2	W. 3	W. 3	W. 1			
17 29.017 28.965 28.913	28.975	55.0 63.0	58.5	58.8	10	W.	0	0	3	W. 5	W. 5	W. 2	W. 2	W. 1	W. 4				
18 28.916 28.862 28.946	28.908	52.0 64.0	47.0	54.3	0	0	2	W. 5.	0	0	0	W. 3	W. 3	W. 6	W. 6	N. 2			
19 29.000 29.015 28.982	29.000	41.5 47.5	44.5	44.5	3	N.W. 2	10	N. W. 5.	5	N. 4	N. 4	N.W. 1	N. 1	W. 2	W. 2	N. 2			
20 29.127 29.090 29.070	29.096	39.5 54.5	40.0	44.7	0	0	0	0	0	0	0	N. 2 N.	E. 4 N.	E. 2	E. 2	N. 1			
21 29.007 28.885 28.878	28.923	34.0 49.0	43.0	42.0	5	N. 4	4	0	0	0	0	N. 3	N. 2	N. 2	N. 2	N. 1			
22 28.707 28.730 28.773	28.738	45.0 66.0	57.0	56.0	0	0	0	0	0	0	0	W. 2	W. 3	W. 3	W. 3	0			

REMARKS ON WEATHER.

1. Faint indications of green grass.
 2. A thunder storm at 8 P. M., very brief.
 4. Frogs sing—small.
 7. A warm day,—max. ther. 70° at 3 P. M.
 8. A warm day,—max. ther. 79° at 3 P. M.
 9. A few drops of rain at 3 P. M.
 10. Sky cleared about 3 P. M.
 11. Gooseberry and lilac leaves half formed.
 12. A thunder storm at 7 P. M.
 13. Spring beauties in bloom.
 14. Daffodils in bloom.
 15. Violent thunder shower this morning, with gale from west.
 16. Grass well up.
 19. A dash of rain at 11 P. M.
 21. Min. ther. 30° , some ice formed.
 25. Strawberries and red-bud in bloom.
 26. Lilaes in bloom.
 27. Apples in bloom. A few drop of rain at M.
 29. Thunder in S. W. at 4 P. M., with a few drops of rain.

REMARK.—A very backward and dry April.

	MAXIMA.			MONTHLY EXTREMES.			MINIMA.			MONTH.
	7 A. M.	2 P. M.	9 P. M.	Month.	7 A. M.	2 P. M.	9 P. M.	2 P. M.	9 P. M.	
Barometer,	April 1st. 29.413	-	10th. 29.320	10th. 29.245	1st. 29.413	22d. 28.707	12th. 28.700	22d. 28.733	12th. 28.700	
Thermometer,	April 12th. 69.0	-	26th. 85.0	26th. 74.0	1st. 85.0	1st. 26.0	4th. 43.4	4th. 35.0	4th. 35.0	

MEMORANDA OF CURRENT EVENTS.

ON the 2d day of May, Dr. JAMES G. PERCIVAL died, at the age of 61 years. At the time of his decease he was State Geologist of Wisconsin. Mr. Percival was a poet of some distinction, and was eminent in the department of Natural Science. He was regularly graduated in the Medical Profession, and at one time held the Professorship of Chemistry in the Military Academy at West Point. He was a man of great amiability of character, and of the most exemplary life.—Hon. OGDEN HOFFMAN, a distinguished member of the New York Bar, died in that city. He was a midshipman of the U. S. navy, under Commodore Decatur, and distinguished himself by his bravery on board the Guerriere, under command of that officer, in his battle against the fleet of the Barbary Powers.—The President has recognized the Padre Vijil as the Minister from Nicaragua, commissioned by Gen. Walker's revolutionary government of that country; and this has led to a sharp and angry protest from Maroletta, the minister previously recognized and received at Washington.—The President has likewise dismissed Sir John Crampton, the English Minister, from his official position with our government at Washington, and at the same time revoked the exequatur of the British Consuls at New York, Boston and Cincinnati. This course has been resorted to on account of these officials having committed a breach of the Act of Congress for preventing belligerent nations from recruiting their armies within our territory. The measure has produced no inconsiderable excitement, and speculation is busy in relation to the result.—At the Blue Rock Coal banks, not far from the Muskingum river, in Muskingum county, four men, miners, were buried alive by the caving in of the earth over the entrance. Most energetic and persevering efforts were made by their fellow-miners and the citizens to extricate them. These efforts were continued, almost against hope, during *twelve days*; at the end of this time, and when just despairing of finding them alive, the workmen without were cheered by hearing a faint “halloo” from within. This of course roused those without to renewed and vigorous exertions for their relief. They were finally rescued after a confinement of fourteen days and twelve hours. They subsisted on the “dinner” that one had taken in his basket. In six hours after their rescue, full *fifty feet more* of the mine fell in.

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BREAD.

BREAD is a very essential article in the commissary department; the very "staff of life;" but, unlike other *staves*, its value is not in proportion to its solidity and toughness, unless as a last resort in time of war, the loaves might be needed as destructive missiles, why then the heavier the better. But in these peaceful times we regard bread only in connection with its legitimate use, the supporter and not the destroyer of life; therefore it becomes all its manufacturers, be they mistresses of households or bakers of the town, to see that they furnish us good staves for our weary, mortal pilgrimage.

Who was the first inventor of bread is not known; it is probable, however, that he flourished soon after that celebrated discoverer, the inventor of labor. We can not suppose that at the first, the quality was equal to our modern productions; for Pliny says, that Barley was the only species of corn first used for food; and even after the method of reducing it to flour had been discovered, it was long before mankind learned the art of making it into cakes.

The Cappadocians, Lydians and Phoenicians are said to have particularly excelled in the art of baking. Some of those earlier Orientals invented ovens, for the Jews and Greeks were familiar with their use.

Five hundred and eighty years after the foundation of Rome, the Roman army brought Grecian bakers into Italy. As these bakers had also to be their own millers, their shops were called Pistoriae, from the mortars in which they bruised their corn. In the time of Augustus, there were no fewer than 329 public bake-houses in Rome, almost all of which were in the hands of the Greeks, who long continued the only persons in that city acquainted with the art of baking good bread.

This art of civilized life traveled slowly; and so late as the sixteenth century, the only bread known in Sweden and Norway, was unleavened cakes, baked by the women. But now the art is well understood in all civilized countries; and to know how to make a good article is deemed indispensable to a country housekeeper; and, to their praise be it said, they generally far excel the professional baker in producing sweet and wholesome bread.

A few general principles, pertaining to the chemistry of the matter, may be given here.

The first requisite is, of course, good flour. In chemical language, it should contain its proper proportions of starch, gluten, gum, sugar, and water, chemically combined. The starch affords us those elements which are active in keeping up animal heat, and producing fat,—the gluten furnishes in addition that essential element of muscle, nitrogen, always present in nutritious food.

The gluten, too, by its viscid nature, imprisons each little bubble of carbonic acid, as it endeavors to escape from the rising bread, and is thus distended with cells, made light, fit to mix with the digestive juices of the stomach. Without this distension, baked gluten might answer for artificial horn, gutta percha, or gum elastic, but would hardly do for bread.

It is a singular circumstance, and one well calculated to impress us with a sense of the power of that “breath of life” which the Almighty breathed into the organic world, that its multitudinous products, in all their variety, are composed of only three or four simple elements. Who could believe, had not the analyst proved it, that the sweet sugar and honey, the bitter aloes, the fragrant strawberry, the nauseous henbane, the stimulating alcohol, the soporific chloroform, the nourishing starch and gluten, the poisonous strychnine and prussic acid, the former the sustainers of life, the others destroying it with lightning-like rapidity, are all made of the same materials? Some of them, indeed, of very different properties, are identical in composition; thus, starch, gum and sugar, are all made of twelve parts of charcoal and ten of water; or, in chemical language, carbon twelve, hydrogen ten, and oxygen ten parts. By the vital force, and by certain manipulations, the dry mealy starch can be readily transformed into viscid gum, or sweet sugar; but the gluten, as we have said, contains that muscle-making element, nitrogen, or azote, in its natural state a regular misanthrope. While many of the other elements rush together and form alliances which even death can not destroy, it seems desirous of standing alone, and therefore enters into few compacts, unless controlled by the vital force; and then under

its coercion, it forms the most essential parts of the living world. As soon, however, as life leaves it, it hastens to free itself from its chains. In leaving, it necessarily destroys the internal equilibrium of the body, and a revolution ensues; hence, we may call it a disorganizer, or red-republican element of the organic world. It cannot move actively, however, without water to convey it; hence, as long as flour or meat is kept perfectly dry, decomposition goes on very slowly. But moisten some flour with water, and set it in a warm place, and after a while bubbles of gas will rise, and the whole will have a sour, putrid smell. A little of this mixed with dough will cause it to ferment rapidly. This is the old method of raising bread with leaven. But a more expeditious method is, to take some of the ferment of alcohol or beer, or some highly-nitrogenized substance, as hops, mixed with Indian meal, which ferment rapidly on being mixed with warm water. During the fermentation, a small portion of the starch (of which wheat contains 70 per cent.) is converted into gum, sugar, alcohol, and lastly, carbonic acid. The tough gluten, which, by kneading, is thoroughly mixed with the starch, is, during baking, distended by bubbles of carbonic acid, while the alcohol escapes. Should the dough stand too long during this process, vinegar and lactic acid will be produced, and the bread be sour; therefore, the "skillful artist" must watch for the instant when the fermentation has continued long enough to make it light without being sour. In warm weather it frequently spoils by too long standing. It is much better to err upon the other side, and not strive to make the bread so exceedingly light as some endeavor to do. This is a fault too common. If the dough is placed in the oven as soon as the fermentation is fairly established, you get bread in which the transformed starch is converted only into gum and sugar, and must, of necessity, be sweeter and more nutritious than the usual frothy products of the bakery. It is only when no yeast is employed, that there is any danger of fermentation being checked too soon. In "salt raising" or "milk emptins" bread, we sometimes notice the dry, starchy taste, which shows that it was not sufficiently transformed into sugar and gum. As yeast is generally used, this defect is not often seen; but as too much fermentation is the usual trouble, Liebig recommends the use of lime-water as a remedy. This is readily made by putting fresh unslaked lime into water, and stirring it well; then let it stand in tight bottles, and use the clear liquid in wetting the flour. The acid formed by over-fermentation, will be neutralized by the small quantity of lime dissolved in the water.

Instead of the fermentive process, bread is sometimes raised quickly by carbonate of soda, or ammonia; but where time will permit, it should

be raised in the good old-fashioned way with yeast, for it makes a more wholesome and nutritious article.

There are differences in the quality of flour, which no analysis can detect. There may be the proper proportion of gluten and the other ingredients, but these differ among themselves in quality, in the "putting together" of their various elements; and it requires some experience to form a correct judgment of this matter. T. Royal, in a letter to the *Scientific American*, gives the following useful directions in regard to this and some other matters connected with bread-making. He says:

"Wheat sown in the fall, will produce grain much heavier than the same seed sown in the spring; and one hundred pounds of winter-wheat flour, will make more and better bread, than one hundred pounds of flour made from spring wheat.

"Millers find it economical to use large stones in grinding, but large stones injure the quality of the flour. No mill-stone should be over three feet in diameter. Flour from such a stone will make more and better bread, than flour made from a five-foot stone; so that one hundred pounds of winter wheat ground with three-foot stones, and baked by a regular baker, with the drugs and chemicals at present used, will make one hundred and seventy pounds of good bread. One hundred pounds of the same description of flour, baked as women bake for their families, will make one hundred and forty pounds of good bread. One hundred pounds of bad flour baked as women bake for their families, will make one hundred pounds of pretty good bread. By bad flour, I do not mean flour which has received any damage from heat or damp, or from any other cause; but I mean sound spring wheat, nicely and finely ground with large stones, five feet or more in diameter — flour that almost any one, except master-bakers, would pronounce to be 'superfine, A. No. 1.'

"One pound of dough, baked in an oven in *pans*, will make one pound of bread — nice, large, sweet bread — and almost entirely devoid of nutritious qualities; useful, principally, as a kind of vehicle to transport butter into the human stomach. One pound of dough baked on the bricks on the bottom of the oven, will lose two or three ounces in weight in baking, and will not look so nice, but it will be sixty per cent. more nutritious than the same amount of dough baked in the pan.

"This statement, in relation to baking in pans and on the bottom of the oven, may seem incredible to most people; and I would advise all persons not to believe what I have stated, until they choose to try the experiment themselves.

"In the army, we had issued to us every morning, sixteen ouncees of bread. Those who got their ration in pan bread, would eat it all for

breakfast, and hardly would be able to know what had become of it; while those that got their ration of oven-bottom baked bread would have enough for breakfast, dinner, and sometimes a little for supper.

"If good flour in barrels be stored in the same room with barrels of salt, or salted provisions, in warm weather, in three or four weeks the flour will become sour; but if it be then taken into a dry building, where there is no salt or salted stores, the flour will become regenerated, and will make good bread.

"When the flour is dry and not musty, and a baker wishes to judge of its quality in his own shop, he squeezes a handful of it tight, and if, on opening it, the flour retains the shape of the hand and fingers, it is a sign that it possesses the qualities I have mentioned above. If it crumble down on opening the hand, it will not make as much nor as good bread.

"When a baker is inspecting flour, not in his own shop, or in the presence of outsiders, he takes a handful carelessly, squeezes it tight, and then throws it back into the barrel; if the lump keeps its shape, or breaks only into two or three pieces, he will buy it; if, on the contrary, it goes into fine powder, he will not have it, because it will not make much or good bread."

HIGH AND DRY.

The following account of an act of moral heroism, in behalf of the Bible, is taken from *Rev. H. Stowell's* speech at the Anniversary of the British and Foreign Bible Society. He said :

"THERE is a beautiful, simple circumstance that occurred in the translation of the Manx Bible, 300 copies of which as I learned from the Report, have been forwarded to my native isle, and for which I offer my thanks to the British and Foreign Bible Society. My Lord, there is a beautiful circumstance connected with the history of the translation of that Bible. There was but a single copy of the translation completed, which was committed to Dr. Kelly, to convey to Whitehaven, that he might get it printed there. He took his passage in a little sloop. It so happened that the sloop got on a sunken rock near the mouth of the Whitehaven harbor, and there went to pieces. Dr. Kelly, regardless of his life in comparison with the precious trust committed to him, held it up in parchment, took it in his hands, and on a portion of the wreck he

floated till he reached a higher portion of the sunken rock, where he was just above water; there he held his precious trust in his hand, regardless of life itself if he might but rescue it from destruction. The waters rose higher and higher, and it was more than an hour before the boat could reach him. He was well nigh fainting from exhaustion, but his hand, rigid and clenched, was still held up above the waters; and neither peril of life nor force of weariness would lead him to relinquish his grasp, and he carried it safely to the shore, and it was printed. When good Bishop Hilsley got that first copy, he pressed it to his heart, and said, "Lord now lettest Thou Thy servant depart in peace, for mine eyes have seen Thy Salvation." The following Sunday, he preached upon death, and on Monday he calmly fell asleep, for his work was done. My Lord, the use I would make of this touching fact in reference to the Bible is, so let us do spiritually as he did physically. Let us hold up God's blessed book above the swelling waters of innovation, infidelity, Romanism, anarchy, and convulsions of whatever kind. Let us hold up the Bible. It will hold us up, it will float us through life's waters, and land us in the haven of eternal blessedness.

The Strawberry Seedling.

BY "EMILE THE ELDER," PHILADELPHIA.

THE prolongation of the fruiting season of the Strawberry, is a "consummation devoutly to be wished;" and if the statements made by "Emile," in the interesting article below be reliable, it seems that this result, so very desirable, is about to be reached. And concerning these statements, the editor of *The Horticulturist*, J. Ray Smith, in the June number of that excellent journal, whence we take the article, says:—

"THE SEEDLING STRAWBERRY, noticed in 'Emile' the Elder's pleasant story, we have cultivated for some years, from the stock of "Aunt Charlotte's" single seed. It is of the Alpine family, and all that Emile says of it we can confirm."

IN the autumn of 1846, if memory serves me right, our clever "Aunt Charlotte" was at Paris, with her two youngest daughters, and while boarding at pleasant quarters in the great French capital (and capital it surely is in the eating department), she was daily served with delightful strawberries for dessert; the advanced season, no less than the very fine flavor of the fruit, made them a great luxury, and Aunt Charlotte

expressed some surprise to her host, inquiring, at the same time, if the strawberries were from neighboring greenhouses? But being told that they grew in the open air, and were constant bearers, the idea immediately suggested itself of preserving some of the seeds for friends at home, and among these, a letter from Paris notified us that we should not be forgotten. Accordingly, our kind utilitarian Aunt crushed some of the finest berries upon thick brown paper, and, after exposing them to dry in the sun, carefully rolled up the paper, and placed it in one of her traveling trunks.

During that winter, our friend returned to the United States, by way of England; arriving at New York, her next destination was their homestead at New Haven, and there Aunt Charlotte took possession of her own furnished house, which had been rented for the term of her absence. Among the first duties, she ordered her newly-hired servant-woman (or, as the good people of Connecticut sometimes call them—"help"—probably because they allow their employers to *help* themselves), was to unpack the trunks, and put *the things* into the wardrobes and bureaus; finding, as she performed this task, a roll of common brown paper, she, of course, threw it into the fire, and, in another moment, the Paris Strawberry seeds were so many useless grains of ashes. Thus seemed to perish all the good intentions of our obliging Aunt Charlotte, who needed to be the cheerful and sensible Christian that she is, in order to bear patiently the heedless act of her Irish "help."

It was but a few weeks after this sad event when Aunt Charlotte came to visit us at "Clover Hill," and related the ill-fortune that had befallen her brown paper of seeds, some of which she had designed for us; and as she finished the account of her disappointment, the thought suddenly came to her, and she said: "*I have that very identical trunk here with me now, and I wonder if some of the strawberry seeds may not have been rubbed off from the paper, and remained at the bottom of the trunk!*"

She went to examine, and, accordingly, on very minute search in all corners and cracks, she returned triumphantly to the sitting-room with three little specks upon the palm of her hand, almost invisible to the naked eye, but which, she thought, *might* be some of the detached seeds. Handing them to me with a request that they should be tried, I went at once in search of a small flower-pot, and, spite of laughing doubts, filled it with light soil, and deposited the three grains of what seemed like just so much additional sand.

More merriment than hope attended my planting, and various were the speculations suggested, as from day to day I anxiously watched for

the result of what others thought to be a hopeless experiment. The dispositions display themselves on small as well as great occasions, and the inquiries from various members of our little family circle, sufficiently evinced the view each had taken of my proceeding, no less than of the feelings they associated with its promises.

"*How comes on the little pot of sand, to-day?*" greeted me from one quarter.

"*Have you any show of strawberries yet?*" said another.

"Please tell Rosanna to save all the cream, *in case* father should bring over a dish of Paris strawberries, this afternoon," was a playful order given in my hearing, as I was about visiting my little pot of sand. And still, I daily went to the hotbed pit to examine the result of my supposed seed-planting, and to sprinkle them from Lizzie's tiny watering-pot.

Our good-natured gardener encouraged me to hope, and, with his Irish blarney, would say: "*Anything will grow*, your honor, *in such an expose* to the south." "But surely, Patrick," I replied, "not unless I have really planted the seeds," which seemed to puzzle even Pat's politeness.

How tedious and almost endless are the days of doubt and watchfulness, and, at this date, I will not attempt to recall accurately the amount of time that gave a fixed number to those of my expectation; but, in the natural period required for seed to germinate, my patience met with its reward, in the appearance of what seemed to be a single embryo strawberry plant. And when once its first feeble green shoot was fairly above the earth, and its tiny leaves began to assume form, all doubt was removed, and it grew rapidly into a positive, undeniable individual of the Alpine family. Nor was it until this state of progress in the character and appearance of my little pet plant, that I gave tidings, at the house, of my success; but, when its existence was duly announced, all were eager to see and manifest interest in its growth, and I received many warm congratulations.

It seems almost needless to attempt telling how anxiously, from that date, I watched and cared for the tender solitary little life, that seemed like a thing of my own creating.

"As in the early spring
We see the appearing buds, which to prove fruit
Hope gives not so much warrant as despair
That frosts will bite them."

The seedling grew apace, and Patrick, the gardener, ere long placed another flower-pot by the side of the first, and the running vine soon sent a sucker to take root there; this simple office being again and

again repeated, ere the summer was spent we had about thirty plants of the same family, and were able to set out our beginning of a new Strawberry-bed in the open garden. There had been one or two blossoms on the original vine during its first summer's growth, but still the fruit was unknown, and also the ability of the plant to endure the climate to which it had been transplanted. These were matters yet to be developed, but, meanwhile, the new-born stranger must have a name—ay, and a christening!

After hearing an endless variety of suggestions, most of which had reference to myself—as “the ‘Emile’ Seedling”—“the Doctor Seedling,” etc.,—the ceremony of name-giving was duly and gravely performed—the sprinkling being still from Lizzie’s tiny watering-pot, pronouncing my bantling to be “The Clover Hill Seedling”—and thus rendering back to kind mother Earth the merit that belonged to her.

Strawberry time, the following spring, was most impatiently waited for, and when it came, our little bed did not disappoint us, for it yielded fruit, and the fruit was pronounced good; the berries, it was soon discovered, had one peculiarity most acceptable to those who unwillingly perform the task of hulling strawberries. “The Clover Hill Seedling” always leaves its hull upon the vine; indeed, it is almost impossible to pick them with the hulls on, and the fruit comes to the basket ready for the table, needing no second handling. It was soon ascertained, too, that our seedling possessed another great value or peculiarity, in being a constant bearer, from early strawberry time, until quite late in the autumn. The plants only take a rest of about one month in mid-summer, and I have seen the pale berries covered with snow in December, when the sun had not the needed influence to color them.

Four summers have now so much increased our bed that we have an abundance of fruit, and have supplied many plants to friends at a distance; two families, in Virginia, have largely cultivated the “Clover Hill Seedling,” and we hear, have extended it freely in their neighborhoods; it has also traveled to, and taken root, in New Haven (not exactly Phoenix-like, rising from its own ashes), and in New York, and already the rare fruit has more than once given unexpected pleasure to the sick and suffering. Poor little Harriet, an angel of patience and humility, and the victim of a slow consumption, was made happy during the last weeks of her feeble existence, by the enjoyment of these strawberries, so unexpected in the autumnal months; when all other food had ceased to be acceptable to her wasted energies, and benevolent friends no longer could find other delicacies to tempt her appetite. It was delightful to witness the gentle smile with which the good girl would still

welcome the “Clover Hill Seedlings.” She was too feeble to utter words, but her countenance recalled Talfourd’s lines:—

“ It is a little thing
To give a cup of water ; yet its draught
Of cool refreshment, drained by fever’d lips,
May give a shock of pleasure to the frame
More exquisite than when nectarian juice
Renews the life of joy in happiest hours.”

Late in the month of November, 1850, Jenny Lind was presented with a dish of fine “Clover Hill Seedlings” by little Lizzie ; it was difficult to determine which was made the most happy—the child, whose feelings and fancy had been greatly excited by catching some of the public enthusiasm, and was delighted to approach the “Queen of Song,” or the gentle woman, who, amid the extravagant attentions and adulation bestowed upon her, was surprised and charmed by the rare and simple offering from a bright little girl.

But even better than this, “Aunt Charlotte,” her children and grandchildren, almost annually enjoy the fruits of her single Paris seed ; and if it be true, as a wise man has said, that “he who plants a tree confers a blessing on his fellow-men,” may it not be equally true that he who plants three doubtful seeds in a pot of sand, may do good to others, and bring infinite pleasure to himself ?

Shall there be a moral to our story ? and shall it not point to the blessings likely to ensue from faith and perseverance ? It was the duty of faith to plant the supposed seeds ; perseverance watched over them with interest, and Heaven has rewarded the work.



THE CRYPTOGAMIA.*

THE whole vegetable kingdom is divided into two great orders, viz : the Phænogamia, and the Cryptogamia. The latter of these two, comprising by far the least number of plants, and the one which we now wish to consider, is especially remarkable, from the fact, that the plants of which it is composed, are almost universally deprived of flowers, by the endless variety of which the other order is so beautifully adorned ; and from this deprivation it becomes necessary, that they must

* A Class-Essay, by a Student in Farmers’ College.

commonly be wanting in the ordinary kind of seeds, for the reproduction of the species. But this want is supplied by what are called sporules; bodies which, in their physical construction, are nearly the same as the pollen of flowering plants, and in general appearance very much resemble the seeds of those plants, except that the pericarp is wanting—hence the tissue is left naked. We also remark another fact peculiar to the plants of this order alone, which is, that they are entirely composed of cellular tissue, from the root to the leaf, if we may call the expansions which we often see on them, leaves, although they do not answer the purpose that the leaf usually does. In order to prevent confusion, it becomes absolutely necessary to have a systematic arrangement of all plants coming under this head; thus we may pass easily from one genus to another, and from species to species, noticing all resemblances and dissimilarities, with entire satisfaction, and perfect clearness: consequently, this order has first been divided into two great classes, called Aerogens, and Thallogens; evidently so called from the manner of their growth. Thus, the name of the former implies, that they grow on the end or point, while not increasing in diameter; while the latter grow into an expansion, called the *thallus*. The aerogens include all those plants which in their structure approximate to the phænogamia; and the thallogens, quite an interesting class, is composed of plants of the very lowest species of the whole vegetable kingdom.

Under the head of aerogens, let us first notice the ferns: these plants are provided with fronds, or expansions, very similar to leaves in shape and color, but designed for an entirely different use; arising from the axis of the plant, like a stem, they bear sporules which are developed upon the external surface. We, in this country, are not so well acquainted with the beauty of these plants, as those who dwell in parts where they grow abundantly, as in the tropical regions. Gray remarks, in regard to this subject, that “although the ferns of the United States, and of all northern climates, have prostrate stems, and consequently do not rise more than three or four feet in height; yet in tropical countries their trunks are often erect, and frequently attain to the height of seventy or eighty feet. The tree-ferns of the tropics are said to be objects of incomparable beauty; their straight, unbranched trunks, often rising, like those of palms, as high as forty or fifty feet without a leaf.” But, let us hasten to notice the mosses which adorn the rugged trunks of our forest trees, and give a velvet coating to the dull weather-beaten rocks, to which they are attached by delicate, brown roots. These bear often a little urn, with an interesting cap upon it; and this urn contains those sporules, which in the ferns were produced upon the inferior

surface of the fronds. Gray also speaks of these, after this manner: "Mosses rank among the smallest of plants; they seldom exceed the height of a few inches, and many are so minute that they would wholly escape our observation, if they did not grow in patches. Several species indeed, are scarcely visible to the naked eye; and yet they have stem, leaves, fruit, and other organs, as the largest plants of the family."

There are some other families belonging to this class, but only one that it is worth our while to mention, and it is the Chara; a kind of plant that grows submersed in stagnant waters. They have a slender, jointed limb, destitute of leaves, furnished, however with whorled branches, jointed in the same manner as the stem. These are worthy of attention, only for the delicacy of their structure, and, sometimes, for the beauty of their colors.

Next the *Thallogens*. These plants become interesting, indeed, from no small reasons. They are the very beginning of vitalized existence. As the animal kingdom approximates, in its inferior tribes, to the vegetable kingdom, so the latter, in its lower genera, verges close upon inanimate bodies: that is, so far as the functions of life are concerned, for here we find the very lowest ranks of organized bodies. Yet many are very serviceable to man. Some are edible, and in truth make some of our most delicate dishes, as we will find when we proceed to examine some of the species. Those masses of medullary substance, which grow upon the trunks of trees, are a comparatively useless species of the family, Lichens. There is a plant of this family, however, that is very useful to the Laplanders, for there the reindeer subsists upon this species—the *cenomyce*—for several months in the year. Some species are used for dyeing cloths, and produce very brilliant colors. There are more than two thousand species of lichens known; they grow in the most arid places, and furnish most of the vegetation to the inhabitants of the polar regions. We will leave these, to notice a more interesting family of the thallogens, viz: the *Fungi*, or mushrooms. There are a great many varieties of mushrooms, often differing, in a very slight degree from each other; nevertheless, it is very important to be well acquainted with these differences, when we wish to make use of them, as those fond of rarities sometimes use them quite extensively for food, and as the greater portion are extremely poisonous. Thus, we may judge of some by their color, of others by their smell; for instance, those of a bright red color, or of a disagreeable odor, should invariably be rejected. The truffles are a species of mushrooms never appearing on the surface of the soil. In size they vary about as the potato, but they are not so easily obtained as those giving no signs of their existence above the

ground. All the different varieties of mushrooms are produced from sporules, which escape from the membranous sacks in which they are enclosed, after the decay of the plant, and in germinating send forth white filaments, which are often taken and cultivated by gardeners. That very rare and strange substance, called "spunk," remarkable for the slowness with which it is consumed by fire, is also classed under the head of *mushrooms*. There are a great many other species, with which we are not, in this region of country, sufficiently well acquainted, to make an investigation interesting. We must not, however, fail to notice some of the different kinds of *moulds*, and the family *Algæ*, or sea-weeds.

Of the many different kinds of moulds, we will notice only that which grows on decaying substances, and that which is produced on the heads of grain in the field, causing what is called blight. In all the plants, concerning which we have spoken above, there has been some visible means of their re-production, but here we can find none. In accordance with the general law, they must be produced by seeds; but whence these come, and how they should be deposited here, are questions that admit of much conjecture and speculation. Perhaps, they may be continually floating in the air, and being lodged here find circumstances favoring germination, and consequently they immediately spring up and flourish. But this, like many other theories, will admit of as much doubt as certainty.

Finally, we have the sea-weeds, a class, very simple as regards their organization, but by no means to be slighted. They appear to be composed of a jelly-like substance, often containing very minute shells, and variegated with the most beautiful colors, so that when pressed, and dried upon paper, they equal, if not surpass in beauty, the most perfect painting. One genus, called *fucus*, which grows upon the rocks along the sea-coast, yields that very useful substance, *iodine*, and another, under the name of Caragreen-moss of Ireland, is used in the composition of that excellent dish, *blanc mange*—both belong to this same family.

We perceive, that almost all the plants that we have had occasion to mention, flourish best in a warm, damp, and shaded soil; that some will grow submersed in the water, and some without the least particle of light. That they should prefer a warm and damp soil, is not so strange, for heat and moisture are necessary for the support of any plant; but why some will grow only in the absence of light, is a question easier asked than answered, unless the answer that they "love darkness rather than light," be taken as satisfactory; and perhaps it may be, when we consider that the deeds of many of these mushrooms, that spring up by thousands in one night, "are evil."

THE RESURRECTION FLOWER.

THE following account of a floral wonder we gather from "Harper's Magazine."

AMONG the curiosities of the floral kingdom, none is more truly extraordinary than that which is termed the Resurrection Flower, a specimen of which has been recently brought to this country from the East, by Dr. I. DECK. From Professor Torrey we learn, that although the flower is very rare indeed everywhere, and has been but seldom seen in this country, yet Bishop Wainwright procured two while he was traveling in Egypt, and Dr. Torrey himself possesses a specimen. The history of the flower possessed by Dr. Deck he states as follows: "More than eight years ago, while on a professional engagement in exploring some lost emerald and copper mines in Upper Egypt, he was of medical service to an Arab, who in return presented him a stem, on which were two seemingly dried up seed-vessels of some plant. He was assured that, many years previously, the treasure had been taken from an Egyptian mummy, a female high-priestess, and was a great rarity, as few had been obtained in the last century. The Doctor was farther informed, that if properly cared for, the flower would never decay. Of the truth of its being discovered on the breast of an Egyptian priestess there are many doubts, for the Arabs are proverbial for exaggeration; but that it will, comparatively speaking, never decay if properly cared for, seems to be confirmed by the extraordinary fact, that for more than eight years it has accompanied Dr. Deck in all his wanderings, has been displayed and *expanded* to the gaze of the curious more than a thousand times, without any diminution of its extraordinary properties, has been examined by some of the most eminent philosophers and travelers, of this country and of Europe, and yet no positive position has been assigned to it in the botanical kingdom. Baron Humboldt, to whom Dr. Deck presented the twin flower, acknowledges, that in his extensive travels in all parts of the world, he had met with nothing like it in the vegetable kingdom, and nothing so truly wonderful.

"Its origin, its location, and the plant bearing it, are entirely involved in mystery. The attractive Oriental tale of its being found embalmed is rejected, because no similar flower has been found by those who have had the most experience in unrolling the ancient dead, and also because there has never been discovered anything bearing the remotest resemblance to it upon Egyptian sculptures. Those who are conversant with the wonderful features of the Egyptian religion and priestcraft, know

how quickly everything was seized upon and deified which could be made symbolical of their tenets, and were thus transmitted to posterity, figured as hieroglyphics; and it is but natural to presume that this simple flower, with its brilliant halo, so typical of glory and resurrection, would have ranked high in their mythology.

"On examining the flower in its expanded state, it resembles, both in shape and color, a dried poppyhead with the stem attached. Upon being immersed a moment or two in a glass of water, and set upright in the neck of a small vial, in a few moments the upper petals begin to burst open gradually, yet visibly to the eye; they continued to expand until, throwing themselves back in equidistant order, there was presented a beautifully radiated starry flower, somewhat resembling both the passion flower and the sun-flower, and yet more splendid than either. The unfolding still continued until the petals *bent backward* over what might be termed the base of the flower, presenting, in bold relief in its center, its rosette of the most exquisite form and ornamentation, and assuming a new charm, entirely eclipsing what a moment before seemed its absolute perfection. The drawings were made at the moment when the flower presented the phases illustrated; but language and artistic skill can but feebly portray this extraordinary specimen of the floral kingdom. After remaining open for an hour or more, the moisture gradually dissipates itself, the fibers of the flower contract as gradually as they expanded, and it reassumes its original appearance, ready to be unfolded again by the same simple process, the number of times seeming to be limited by the will of the possessor.

"Dr. Deck suggests that the flower is a native of the Holy Land, and is a type or variety of the long-lost rose of Jericho, called also the "Rose of Sharon," and the "Star of Bethlehem," and highly venerated for its rarity and peculiar properties by the pilgrims and Crusaders, and eagerly sought after by them as a priceless emblem of their zeal and pilgrimage, and worn on their escutcheons in a similar manner as the scallop-shell and palm branch. This idea is strengthened by the fact, that resemblances of the flower, both open and closed, are sculptured upon the tombs of two of the Crusaders buried in the Temple Church of London, and also in the Cathedrals of Bayeux and Rouen, in Normandy, where some of the most illustrious Crusaders are interred.

"Its botanical position is difficult to assign, as it presents some peculiarities of the highest and lowest classes. The opinion most sanctioned is, that the flower is the pericarp or seed-vessel of the plant that grows in desert or sandy places, and falls in due course of existence from the

parent stem. Retaining its seed in an arid soil and atmosphere, it is for months and years wafted about by the winds, but from lack of moisture keeping closed. Eventually it falls upon some damp spot, near some well or oasis, when it opens, deposits seeds, and thus by a most exquisite adaptation of means to an end exhibited in this beautiful phenomenon of nature, the work of reproduction is commenced and concluded."

What One Man Can Do.

"THE *N. E. Farmer* tells the story of a Boston boy, educated for the law, who, seeking for a location in which to establish himself in his profession, went in 1810 to a farming town called Northfield, situated on the Connecticut river in a lovely valley. He was a man of public spirit and rural taste. When he went there the whole settled plain was destitute of tree or shrub—'not a flower planted by the hand of man—not even a rose could be found.'

"The road-sides were encumbered with cast-off implements of husbandry; the relics of an ancient log-house, or some dilapidated vehicle, and among these, the burdock and thistle, the mullein, milk-weed and johnswort, were flourishing in rank luxuriance.

"Such was the general appearance of the place in 1813, about three years after this gentleman entered it, with the intention of making it his future home. There was within him a love of the beautiful in rural life, which the scene before him aroused into action; and after arranging the whole matter in his own mind, he called on some of the farmers, with whom he had become acquainted, on the minister, the physician and others, and proposed to plant four rows of the American Elm, hundreds of which, young and thrifty, were then standing on the banks of the river, through the entire length of the street! By most the proposition was cordially received, and they were ready to lend a helping-hand in the work. But by others it was fiercely opposed, and denounced as a 'd——d federal trick'—it being during the war, when parties were strongly arrayed against each other, and when burning jealousies were more common than a desire to embellish and increase the comforts of home. But a survey was made, the lines were struck, and the work went on. The farmer came with his team, the lawyer, and doctor, and minister, and storekeeper came with their implements, and in a few days

the noble work was accomplished. But here and there, in front of certain premises, there was a gap! and shot was threatened to be thrown if these public benefactors broke ground there! And so they passed them by, and broke ground where no guns were charged, or threats made, and the gaps stood as living remembrances of the hostility to the work. The traveler, however, will find no vacant places now—they were afterward planted with maples by the recusants, and God's sun and rains have matured them into lofty, spreading trees, along with the rest.

"There are now four rows of trees extending the whole length of the village, with a carriage-way between the two center rows, and foot-walks between each outer row and the ornamented grounds in front of the substantial dwellings of the place. The once barren plain is now a rich gem, whose surroundings are the fertile hills, covered with verdure in summer, and dotted with cattle and sheep, and dark with the forests which spring from their sides."

How many neighborhoods in the West might be clothed with beauty, if we could make common such exhibitions of "What one man can do."



A YANKEE MAN-TRAP.

A STORY OF THE WAR OF 1812.

ETHAN BALCH was not swearing exactly; yet he was undeniably wishing uncharitable wishes, respecting the future of certain Englishmen, and using exclamatory expletives to do it with. It was August the 15th, 1813, and Mr. Balch was walking slowly homeward from the sea-shore of New London county, Connecticut; and as he went, he whittled. The precise expressions in which he indulged, were these:

"Consarn them darned Britishers to darnation! Blame their everlastin' picters! I hope to gracious the plaguy old boat'll go slam daown with 'em, sarse and all."

Then after a pause, he added:

"Jest as ef I mightn't 'a knoan they'd 'a done it! Ef I'd only kep her hum till night, and crep' raound, I could 'a gone strate into New London jest as *easy*! Near abaout two hundred dollars gone slapdab for nothin'! Oh, good thunder!" cried the mourning young Yankee,

in the bitterness of his soul, as this crowning misery rose afresh in his mind.

It is no wonder that he was seriously displeased; for the British, then maintaining a strict blockade upon Commodore Decatur, who, with the frigates United States and Macedonian, and the brig-of-war Hornet, had run up the river Thames, had that day made prize of a certain small craft, in which, together with her cargo, was invested a full moiety of his private worldly goods.

Nevertheless, with continuous whittling and many quaint execrations, home went Ethan, and told his sad tale to his parents, who sympathized with him, and were grieved.

"Who wuz there in the boat, Ethan?" asked Mr. Balch, senior.

"That's the wust on't, father," said the junior gentleman. "I've got to go'n' tell Marthy Robbins; and what on 'arth she'll say, I do' no. They wuz Peleg and Zack Robbins; and them darned everlastin' rotted pizen cusses has got 'em, and the boat besides, and sarse enough to keep the fleet a week."

"Wal, my son," said the old gentleman, "I rather guess you'd better go right over 'n tell her, and hev it done with. She'll take on some at fust, that's sartin; but the boys'll come back some time 'r another, 'n' Misses Robbins kin come 'n' stay with us, ef they're a mind to. I guess we could 'tend up to that 'ere little farm, a while."

For Mrs. Robbins, the widowed mother of "Marthy," and of Peleg and Zacharia, owned and occupied, with her children, a small farm near by, and carried on the same; and the capture of her two stout sons had, of course, left the farm quite bare of men.

Ethan walked moodily over to Mrs. Robbins' house. He was welcomed warmly by the two women, but received their greeting with so much embarrassment, that they perceived that something was wrong.

"What on 'arth's the matter with ye Ethan?" asked the old lady, cocking back her head so that she could peer at him through the spectacles which usually abode some ways down her nose; "you're shorter 'n pie-crust, seems to me."

"Perhaps," said Miss Robbins, with a small smirk, "he didn't want to come. Taint necessary to come here unless you enjoy it, Mister Balch."

"Well, well!" expostulated the disconsolate Yankee, "don't go to plaguin' a man when he's in trouble a'ready. I *didn't* want to come, and it's the fust time; and you know it, Marthy. But 'twasn't cos I wasn't glad to see *you*."

"I s'pose I might jest as well out with it. Them darned British has ketched the boat, and Peleg and Zack along with it."

An outburst of lamentation from the women interrupted the further progress of the tale, which Ethan's awkward attempts at consolation did not avail to quench. They gradually recovered themselves, however, and proceeded to inquire how it happened.

"It was," Ethan said, "by means of a well-known row galley belonging to Admiral Hardy's flag-ship, the Ramillies, seventy-four, which had already captured many small coasting-crafts, and which had secured its booty, in the present instance, by 'snakin' out,' as he described it, with joint use of sails and oars, the fair breeze with which the *Martha* (as Ethan's boat was named) had set sail, having unexpectedly died away nearly to a calm."

Miss Martha Robbins having cried a good deal, did now, as woman-kind are often apt to do, experience a sudden and not very reasonable reaction into anger; and chose to insinuate, first, that her lover had cunningly avoided any personal risk to himself, by sending her brothers off alone with the boat; and, secondly, that anybody that hadn't brains enough to keep him from such losses as that, was hardly likely to make a thrifty or prosperous helpmate.

These aspersions Ethan vigorously repelled, asserting that "the boys" had chosen to go together, both desiring to visit New London; and that as three were not necessary for managing the boat, or for selling the cargo, he had given them their own way; and as to the latter part of the accusation, he inquired—

"I want to know if you think a man ort to hev brains enough to know exactly when it's agoin' to fall calm out on the Sound, ten hours ahead?"

But Miss Robbins being, as we have insinuated, a womanly woman, vouchsafed no answer to these considerations, which were urged by way of argument—argument being a thing totally unknown and unintelligible to a majority of the female sex—and of the male, too, for that matter. And she accordingly said over again what she had said before, rather more loudly and earnestly; and having thus refuted Ethan in the discussion, she informed him that unless he could get her brothers out of the captivity into which he had been the means of their falling, he need not look upon her face again.

Ethan remonstrated, and even Mrs. Robbins ventured a few mild expostulations, but all in vain; the Yankee damsels blood was up, and the discomfited lover, not considering that it was highly complimentary to him that his lady-love should take it for granted that he was simply able to rescue prisoners from the whole British fleet, pursued his homeward way in much dejection of mind.

"I wish to gracious they'd ben fifty men in her!" he exclaimed; "'twould 'a ben fust-rate fun to jump up and gin' em a volley, clust in!"

Then, his keen Yankee intellect, pursuing the train of thought thus started, a scheme suggested itself to him which seemed to promise him both a fair revenge and the means of liberating the two brothers of his obdurate mistress.

Hastening homeward he consulted with his father, and after some difficulty succeeded in gaining his co-operation. Early next morning, the two men, harnessing on the old farm-horse, drove speedily over to New London, and procuring introductions from one or two gentlemen of standing in that city, who bore witness to the trustworthiness and abilities of the bearers, they proceeded up the river to Norwich, near which place the three American war-vessels were moored.

With the customary formalities they were admitted on board of the Macedonian, then Commodore Decatur's flag-ship, and, having introduced themselves and presented their testimonials, they proceeded to request his assistance in carrying out the scheme which they unfolded to him.

After careful investigation and inquiry, the mode, time and manner of proceeding was agreed upon, and Decatur promised that a sufficient number of marines should be at the appointed place upon the afternoon of the next day; and, having partaken of the refreshments which the hospitable sailor set before them, the well satisfied Yankee farmers set out on their return.

We skip over to the next day at a little past noon. At that time there crept slowly out of Mystic River, taking the inside passage between Ram Island and the mainland, a sail-boat, heavily laden and managed by two men. With a fine breeze from the west of north, they steered along, close-hauled and hugging the shore, until they had passed Long Point, perhaps a third of the distance between the mouth of Mystic and New London light. They could now see distinctly the lofty mills, and towering spars, and rigging of Sir Thomas Hardy's fleet, riding at single anchor inside of Fisher's Island, the two seventy-fours looming up in the warm air, and attended, as it were, by the smaller Orpheus and Eolus frigates, and by two or three gun-brigs and tenders.

After passing Long Point, the sail-boat stood rather further out to sea.

"Don't bear away too far, father," said Ethan—for he and Mr. Balch, senior, constituted the boat's crew—"they'll smell a rat."

"No, they won't, my son," said the old gentleman, luffing a little, however; "they don't give us no credit fur knowin' how to handle a boat; I reckon they'll hev to allow we kin manage a frigate, though."

The two men now intently regarded the enemy's vessels. "'Twould

be a dreadful thing if they shouldn't undertake to ketch us," said Ethan, apprehensively. "What'n thunder should we say to Commodore Decatur?"

"There they be, Ethan!" said the old man, his eyes brightening with excitement; "set still, set still; they've got good glasses; they'll see us; make believe you don't see nothin' on 'em."

And sure enough, as he spoke there shot out from behind the Ramillies, the long, low, black row-galley, which had been the means of so many petty depredations along the coast. Hoisting a lug-sail, and bracing fast up, she steered, with the double impetus of sail and oar, straight across, in a direction to cut off the heavily-laden and slow-moving boat.

"Aint it a'most time to go about, father," asked Ethan, after ten minutes of rather uneasy silence.

"Don't git worried, my son," said the old gentleman, dryly. "Your father's sailed a great many boats. We was to run ashore, with them two high trees in range, wasn't we?"

"Yes; there's a peeled pole on the beach, jest at the spot."

"Wal, I reckon we kin see them fellows aboard the galley now," said the elder Balch, with a grin. "You kin be jest as frightened as you please."

And he pretended to espy the unfriendly pursuers for the first time; and with an elaborate display of terrified haste and awkwardness, the boat was put about and steered straight for the beach, now nearly half a mile distant.

The English galley, hereupon, slightly varying her course, came in direct pursuit. Ethan and his father, as the foe approached, by way of maintaining the deception, crouched down so as to be out of sight, occasionally popping up their heads for a moment as if to watch the enemy, and quickly hiding them again.

"Peek-a-boo!" said Ethan, as he looked up for a moment. "We shall be hard aground in three minits, father. They're a comin' up, hand over hand. There's the pole on the beach."

"Come well aft, Ethan," said his father; "let's run her well on."

"Hello, there, you d—d Yankee lubbers!" hailed the English lieutenant, now within three rods. "If you beach the boat, we'll shoot you."

But, almost as he spoke, the boat ran heavily up against the sloping sandy beach, and stuck fast. The two men, hastily tumbling out, ran up the beach, and disappeared over the steep sand-hills that bordered the shore.

The English galley grounded hard upon the sand, in full pursuit.

As she stopped, fifty American marines rose from behind the crest of the sand-hills, poured in one close and fatal volley, and rushing forward overpowered the remainder of the crew. Nearly a third of their number were dead, or desperately wounded, and the lieutenant commanding, and two or three more, were all, out of about thirty men, that remained unhurt.

"You've paid ruther more'n'ts wuth," said Ethan to the English officer, "even if you'd ketched that 'ere boat-load of cobble-stones," and he pointed to the worthless cargo of the sail-boat, adding:

"I reckon we're even with you now for hooking that boat-load of garning-sarse of mine, day before yesterday, and ketching them two fellers."

The crest-fallen Englishman made no answer, and old Mr. Balch reproved his son for insulting people in trouble; whereupon Ethan discontinued his attempts at conversation, only saying that he couldn't help wanting to make the captive commander comprehend the exact features of the case.

In the exchange of prisoners, shortly negotiated, the liberation of the Messrs. Robbins was secured. The ill-fate of the row-galley and its crew secured much safer coast-wise communication; and this fulfillment, through Ethan's means, of the hard commands of his lady-love, restored and even enhanced the amicableness of the relations heretofore existing between them.

FARMERS' "HOLE AND CORNER" CLUB.

WHILE traveling in Virginia recently, one of the editors ("C. D. B.") of the *Prairie Farmer* met at a planter's several members of the "Prince George Hole-and-Corner Club"—an association of twelve farmers, who meet monthly on the farm of some one of the members, thus visiting each farm once in the course of the year. Its name is derived from the fact "that each farm is thoroughly inspected by the members—every corner and hole undergoes the strictest scrutiny—all the fault found with its management that can with good reason be found, and the planter commended, or condemned, in proportion as his grounds exhibit care, or neglect. The condition of the premises, and the mode of cultivation is thoroughly discussed, and suggestions are offered by each member of the club." A dinner is next in order, and then a discussion of subjects of agricultural interest, hearing reports from committees formerly appointed

to examine other farms, improved stock, new and useful inventions, etc. Invited guests take part in the discussions, and are criticised as closely as the farms and speeches of the members. An abstract of the proceedings is published in one of the county papers, and the influence exerted extends far beyond the plantations of the twelve members. "It is," adds the editor, "a happy combination of pleasure and profit, and promotes a good social feeling, and at the same time, a frank, uninfluenced expression of approval, or disapproval, which results in the righting of whatever is wrong, and in the rejection of theories based on the fancy of half-fledged, visionary 'gentlemen farmers.'"

These clubs are a capital idea, and the above informs us of the practical working of just such associations as we have always been in favor of, with the addition, in our part of the country, of more frequent winter meetings for discussions, etc., at some central point. And what an incentive to thorough husbandry would this annual visitation be—how much care would every one take, not only to keep his fields and buildings in good order, but to have no *holes* and *corners* that he would be ashamed to have people look into and examine. We second Brother BRAGDON's motion, that there be more such clubs among our farming friends everywhere. Who will start first in the matter.—*Rural New Yorker.*

GRAVEL WALL HOUSES.

[In consequence of the continual increase of expense in building, the public mind is manifesting a growing anxiety for information in relation to this subject. The cost of building is now nearly quadrupled on that of fifteen years ago. Economy and fitness in this particular are, therefore, matters of serious importance to all persons desirous of securing a comfortable home. We therefore clip the following "Experience with Gravel Wall Houses," from that excellent journal, "The Prairie Farmer."]

"MR. W. MAXON, of Cedar county, Iowa, says that he has occupied a gravel house for the last six years. It was the first erected in the State, and was done without the aid of Fowler's book, or of the earlier inventions of Mr. Goodrich, of Wisconsin. I have, says he, had applications for information from various sources, and have universally recommended this mode of building. Get a good foundation in the first place. Have your lime fresh from the kiln and slack as you use it. The walls must be furred and lathed, as every one wants a dry, warm house.

"No other mode of building can compare with this for cheapness. My walls are one hundred and fifty feet around and eleven feet high, and as near as we can calculate the cost was only \$55 all told, and going two and a half miles for materials. I have my fronts finished with a coat of lime and coarse sand—the same as the inside—and then colored in imitation of granite."

[And the following additional item concerning the same matter, is from Mr. D. KENNEDY, of Erie, Pa., giving his experience in regard to the "Gravel Wall" for building purposes, originally published in the "Rural New Yorker." He says :]

"The house which I built was 25 feet long, 18 feet wide, and two stories high—the first $8\frac{1}{2}$ feet high, the second $7\frac{1}{2}$. I dug the trench for my foundation two feet deep and fourteen inches wide. For the foundation, I put into my mortar-bed one bushel of quick-lime, and two of water-lime. I added water, and stirred the lime until it was as thin as milk, then added gravel until it was so thick that I could not stir it with a hoe. I then set my man to shoveling it from side to side, after which was added pounded stone, slate and small round hard-heads. The mortar was then wheeled to the spot and deposited in the moulds. The boards which I used for moulds were common pine, one inch thick, fourteen inches wide and twelve feet long. I laid a course around my building every day. When the wall was high enough to commence the first story, I leveled with a little fine mortar, laid on the top of the wall a thin board six inches wide, and placed my joists on the board, which equalized the pressure. I then used only quick-lime, about one bushel to sixteen bushels of sand and gravel, and mixed no more mortar than I used each day. It took but forty-eight bushels of quick-lime, and six bushels of water-lime, to lay up my entire house, or about five cents per square foot. I finished it about the 15th of November, and although it has stood all winter, exposed to sudden atmospheric changes, without the outside coat of hard-finish being on, yet it stands as firmly as a rock. I am in favor, however, of commencing in the early part of the summer, as it gives walls a longer time to harden before frosts come on."

Mr. Kennedy suggests the idea of laying an outside tier of good hard brick in the foundation, one foot below the surface of the ground and one foot above. It strikes me to be a good idea, lessening the liability to scale off by the frost, and also giving it the appearance of a brick foundation. Let others report their experience in this department of building. We want the cheapest modes of constructing houses, barns and out-buildings; and if it is the gravel-wall, then give us the *practical experience*.

Spring Exhibition of the Cincinnati Horticultural Society.

THE Exhibition which closed on Saturday last was held on the vacant lot belonging to the heirs of Judge Burnet, on Seventh street, between Elm and Plum.

The Society, early in the spring, resolved to hold a Spring Exhibition in Wiswell's Hall, which was supposed to be large enough to make a display of such flowers and plants as the members might contribute, the principal feature to be an exhibition of Strawberries, if the season proved favorable. This order, a few days before the 1st of June, (the time appointed for the exhibition) was reconsidered, and the members of the Council determined to erect pavilions on the Elm street lot, and there open the Exhibition, during the week of the Political Convention.

This change of time and place did not meet with the approbation of all the members of the Society, as few of them had made preparations for a display; consequently the contributions were not so extensive as those made at the last Fall Exhibition.

The members of the Society, however, who had green-houses, contributed largely, and Messrs. Heaver, Sayres, Jackson, Pentland, Howarth, and others, filled the two principal pavilions with a very choice collection of rare plants. These were arranged on tables, which extended from the front to the rear of the pavilions, and presented a beautiful display under each of the tents. Another table was appropriated to Strawberries and other fruit.

The great success which has attended the cultivation of the Strawberry in this vicinity, and the fame which Cincinnati has acquired by adopting the theory first introduced by KEEN, in England, in 1809, of planting one male to eight or ten female plants, which, at an early day, was adopted here, had this season given new interest to the subject; and a contest arising between the advocates of some new seedling varieties and the Hudson and Hovey's seedling of older date, it was agreed that each variety should be exhibited at this Spring Exhibition, liberal premiums having been offered for the best display—flavor and size of berry being considered.

Independent of the usual premiums offered by the Society, special premiums were also offered for an exhibition each day of certain varieties. The first day for the best Longworth's Prolific.—the second day, the best McAvoy's Superior,—the third day, for the best Hovey's Seedling, and the fourth day, for the best of any variety.

By reference to the report of the Fruit Committee, it will be seen that several varieties received premiums. But those who contended for the special premiums, and exhibited the largest fruit, and in the largest quantity, may be mentioned—the President, F. G. Carey, Mr. Youtsey, Mr. Wheeler, Mr. Schnecke, Mr. Meary, Mr. McAvoy, Mr. Jackson, and Mr. Lavassor. The display by Mr. Carey of Longworth's Prolific and McAvoy's Superior, and Mr. Youtsey of Hovey's Seedling, was magnificent each day of the Exhibition.

All the contributors above mentioned have adopted the sexual theory, as advocated by Mr. Longworth many years ago, and the success of that theory was most fully established by this Exhibition, not only in quantity, but in the size and perfection of the fruit.

Strangers in the city, who were visitors at the Exhibition, were astonished at the quantity of fruit produced on a small piece of ground, and the enormous size of the berries of some favorite varieties—being much larger than any they had ever seen. At this Exhibition pistillate plants cultivated without a staminate or male plant, were exhibited, which had been in full bloom, but not a berry appeared on the plant. Alongside of these blighted trusses, was the same variety which had been grown in the vicinity of a male plant, and the stock was loaded with large and perfect fruit; thus clearly proving the necessity of one male to eight or ten female plants in the same bed.

The public owe a debt of gratitude to the amateurs and gardeners in the neighborhood of Cincinnati, for their attention and perseverance in perfecting this most valuable of all fruits; and as these Exhibitions afford an opportunity of testing the best varieties, and diffusing information, not only the people of this region will be benefited, but every other portion of the country may profit by our experience, and make choice of our best and most valuable varieties.

The display of Vegetables was not so large as the Society expected; but this was chiefly owing to the short notice of the time of the Exhibition.

The premiums were awarded to Mr. Mottier, Mr. Considine, Mr. Petticolas, and Mr. Jackson.

Mr. Mottier, Mr. Petticolas, Mr. Philips, and Mr. John Schooley, each exhibited fine specimens of Apples, preserved during the winter, each one having adopted a particular mode for keeping them. Those presented by Mr. Mottier were perfect in flavor and appearance. Mr. Petticolas also succeeded well. Mr. Schooley exhibited a barrel of Bell-flowers and Pippins, which had been kept in a house prepared on the principle of his ice-chest. These appeared remarkably well, but decayed

soon after they had been removed from the cold atmosphere in which they had been kept.

The ladies of the Society, Mrs. Heaver, Mrs. Carey, Mrs. Jackson, Miss Jackson, Mrs. McAvoy, Miss McAvoy, and others, assisted at the refreshment tables, which were under the control of the Society, where the premium Strawberries, with ice-cream and other refreshments, were served to the visitors. The Society is under great obligations to the ladies for the admirable manner in which every part of this feature of the Exhibition was arranged and conducted.

The Exhibition, in all its parts, was extensive and creditable to the Society, and, taking into view the location of the lot, being out of the business parts of the city, and the want of fall fruit and vegetables, which could not be had at this season of the year, the Exhibition, independent of the great display of Strawberries, might be considered very fine; but in September next, it will be thrown far in the shade by the great Exhibition to be given at that time by the Society, if we may judge from the effort which is already making, to make that a splendid display.

A MEMBER.

DOES THE MOON ROTATE?

"IN all works on astronomy, it is assumed and taught as a fact, that the moon revolves on its axis once in twenty-eight days. J. Symonds, an inspector of schools in England, wrote a letter to the *London Times*, expressing his surprise that natural philosophers should have maintained such a dogma, and that it should be taught in all schools as a fact of science. If his conclusions were wrong, it would have been very easy for astronomers to have set him right, but not one of the eminent astronomers in England have presented a single good and conclusive argument in favor of the Moon-rotating theory, while some have rather abused the inspector for questioning the old dogma. It is a positive fact that a great deal of what is taught in schools is assumption, not fact. Assumptions, by frequent uncontradicted repetition, come to be regarded in the course of time, by students, as facts. This has been the experience of every man of an original mind, and it has thus been the means of clogging the wheels of science. As it relates to the common astronomical assumption, viz.: that of the Moon's rotation on her axis once in 28 days, how can this be so, when it continually presents the same face to the earth? If it has a rotation on its axis, it should present different phases. We perceive that Evan Hopkins, C. E., and

David Mushat, M. E., in the *London Mining Journal*, have sustained the views of Mr. Symonds in very able articles."—*Scientific American*, of June 14.

It is fortunate for the intellectual progress of mankind that we have some men of original minds without the pale of "the schools," who can correct the thousand errors that are taught in 'Academus' sacred shade:' men who will not believe that two and two make four because it is taught in the schools; men of the "Deacon Homespun" order, who are not to be taught that the earth turns over every day, for they *know* that the water is not spilt out of their mill ponds.

But to speak seriously: we could not have believed the *Scientific American* responsible for the above article, had we not seen it in its columns as original matter. The article itself contains the fact by which we prove the Moon's axial rotation. When it asks, "how can the Moon rotate when it always presents the same face to the Earth?" we reply, that in no other way could it keep the same face presented to the Earth than by rotating upon its axis in the same time that it makes a revolution about the Earth. To make this subject plain to any child who doubts it, place him, say, with his back to the south and his face toward a candle, or anything to represent the Earth, and let him walk around it sidewise while his face is always toward the candle. When he has walked half way around the candle, his back will be toward the north, and when he has completed his revolution, his back will be toward the south, as at the beginning. Thus his back in the course of his walk has been presented to all parts of the compass, just as if he had turned around once in his tracks. If he had not turned once around, then his face would have looked the same way in all parts of his walk, that is, in the case supposed, toward the north; and then all sides of his body would in turn have been presented toward the candle. As the Moon, however, always presents the same side toward the Earth, we think any bright child of ten years can understand that it makes one rotation on its axis in the same time in which it makes a revolution about the Earth. If it did not rotate at all, or if its rotation was more rapid than it now is, it would present different faces (not *phases*, for they would be the same as now), to the Earth.

A word or two in regard to the statement "that a great deal of what is taught in schools is assumption, not fact." If the writer means that theories are sometimes advanced to account for the mysterious operations of nature, we admit it; but they are offered as *theories*, and hence are not assumptions, and instead of misleading the student, they rather urge him to question and research, to see if the theory is capable of

explaining the facts. Take, for instance, the science of Geology, its long array of facts in regard to strata and fossils, and crystalline rocks, volcanoes and earthquakes, etc., etc., are presented to the student. Then comes the question, how shall we account for all these phenomena? The teacher or text-book answers, the commonly received theory is that the Earth has had a crust formed about it by slowly cooling from a melted state; but any instructor would be held unworthy of confidence did he not state further, that some eminent geologists, as Lyell and some others, strongly opposed this theory. Though a teacher may tell, as he ought, to which theory he is himself inclined, he would not be deemed worthy of a place in any good school, if he did not urge the student to original research and independent thinking. So with other scientific theories: they are taught as such, and are not elevated to the rank of fixed facts until so proven by the most rigid analysis.

Probably no class of men are more careful to obey the sacred injunction, "prove all things, hold fast that which is good," than teachers. If the editor of the "*Scientific American*" is aware of any errors taught in our schools, it is his duty to point them out, and he will find none more willing to forsake the error of their ways than are instructors. This dealing in wholesale denunciation by those who are manifestly not infallible, is neither safe nor honorable.

Grandfather's Old Farm.

SOME forty years or more ago, a neighbor of mine in C——, a Mr. Smith, occupied an immense tract of land, which he called a "farm." It was about thirty rods in width, and upward of two miles in length; an old Indian "grant," as it was termed; upon which he had been brought up a "farmer," and where his father and grandfather, and great-grandfather had lived before him.

Each generation of the Smiths that had dwelt upon this strip of land, had "contrived" to "farm it" each in the same old way, year in and year out, from father to son. The place had never known a dollar's incumbrance; scores of Smiths had been reared upon it, generation after generation came and passed away there, and the same cart-path, and the same dilapidated old wall and shanties, and decayed trees were still visible — almost the same furrow had been turned for a hundred years and

more; when, as had been the custom of the Smith families on previous occasions, it finally came to the turn of the occupant to resign grandfather's old place to his only son, Ben Smith, now come to thirty.

For five and forty years at least, Ben's father had carried on this old farm. In all that long period, and regular as the year rolled, so regular had Mr. Smith plowed up his eight acres, mowed all the grass that Providence would grow for him, pastured his ten sheep, reared his four head of cattle, fattened his three hogs, and wintered as many cows. But this was all.

True, Mr. Smith had a great farm. He toiled like a trooper from day-light to dark. He raised his own pork, corn (such as it was), his cattle and fodder; cut from his own forest the wood that he burned; never owed any man a farthing. He contrived even to pay his town and county tax. But he was literally "even with the world," for he owed no one, and no one owed him a dollar. And so he lived up to seventy.

"Ben," said the old man to his son one evening, as they sat before the winter's fire, "I'm getting old. I've worked poaty hard here for a good many years, and I have concluded to give up. It's your turn now."

"My turn for what?" asked Ben.

"To take charge of the farm, Ben. You're young, stout and healthy, I'm going to give up the homestead to you; and if you continue to labor constantly, as I have done, and as your grandfather did afore us, you can get a good livin' off on't as we have done. We can't take nothin' out of this world with us, Ben. Naked we came into it, and so must go out. But the old place is free from incumbrance; there never was a dollar mortgage on it, and I hope there never will be. I shall give you the farm, free and clear to-morrow."

Ben slept on this, and next day he was master of a "farm" thirty rods wide, and two and a half miles long. "I shall take the place, father," he said, "and carry it on; but not as you and grandfather and his father did." And though the old gentleman shook his head and looked earnestly over the bridge of his specs at his son, Ben was as good as his word; forthwith he went to work in earnest.

Spring came. Ben went into the old eight acre field and plowed up one half of it. Upon this he had deposited the whole of the season's manure, that had hitherto been sparingly spread upon double the surface. He harrowed these four acres, and harrowed them carefully. Hocing time came, and Ben had only one-half the space to go over. Though the corn and potatoes looked finely, and the beets, the cabbages, and the carrots grew marvelously, the old man grew crusty, and declared it wouldn't do, and that there wouldn't be roots enough. But Ben went

right along his own way. At his second hoeing, Ben went into his four acres, but not with a hand hoe. He got some kind of a jimerack (as the old man termed it) hitched to the old mare's heels, instead of hoeing his potatoes man-fashion; he'd begun with his improvement, but that cultivator, as Ben called it, wouldn't work no how. Ben continued the use of the cultivator, however; the old man continued to grumble, and the corn and potatoes continued to flourish. Ben Smith had gone over to a neighboring town early in the spring and run in debt (Ben was the first Smith that ever did this thing), for two hundred bushels of "nasty ashes," which he tugged the cattle to draw to the farm, and with which he top-dressed the meadow. Here was an innovation, sure. And he had subscribed for a weekly paper too; what with his jimerack of a cultivator, his ashes and book-farming, the old gentleman was nearly crazed. "It would never do to go on at this rate," said the old gentleman. But the four acres of corn and potatoes and vegetables grew finely. Never had the Smiths seen such corn, such potatoes and carrots. The grass came up thick, strong and thrifty, and the harvest time came round at last. The cattle had plenty of good feed, and they were fat and sleek; the pigs were fat, the old horse was fat, the poultry were fat, and Ben grew fat and jolly as he garnered his high corn, his big potatoes, his generous sized beets, and his great bright yellow carrots. Ben had found time during his evenings, to read agricultural articles, and to post himself in regard to the markets.

Winter came. The good old farmer entered the barn. It was filled with hay and cornstalks, and wheat and rye. The granery was loaded with corn, and Ben, who had been carefully taught to shell the cobs across the edge of the shovel, now stood beside another stupid machine, throwing in a bushel of ears at the top, while the big, golden kernels rushed out in a constant shower at the bottom. Ben Smith had "squandered" six dollars—in cash—upon a corn-sheller! "Ah! what is the silly boy coming to?" exclaimed the venerable progenitor, as he sighed and turned to the barn again. The old man examined the harvesting. There was more hay in the mows than ever before. The corn had turned out grandly. There was everything in profusion, and only half the eight acres had been tilled! Ben pointed to this gratifying result, and his father only shook his head and said, "Ben, you have been lucky; we've had a remarkable season. Things have grown finely. A very forward season, Ben, very."

Ben Smith, Jr., only smiled at this. He killed off the old razor-back grunters that had been bred upon the ancient farm from time immemorial, and bought six improved Suffolks—instead of the three alligators

that had previously been annually tolerated on the Smith place. The superannuated cows "with crumpled horns" were turned into beef and a brace of shining Durhams supplied their places. A sub-soil plow found its way into the yard one morning, early in the spring, and a "new-fangled" harrow followed this. Then came a new patent churn, then a capital straw-cutter, then more "nasty ashes," then a seed drill; and there was no end, said Ben senior, to the infernal machines that Ben junior cluttered up the place with.

Ben had been no idler meantime. He had drawn into the cow-yard two hundred loads of pond muck the previous fall. He got plaster enough and crushed bones and mixed with it, and when February came, it was heaped out generously upon the four acres again. Everything went on smilingly, and at haying time the "cap sheaf" of machinery arrived. "What on earth is that?" asked the old gentleman, as Ben put his team before a new horse-rake. Ben laughed outright, and asked his respected dad why he didn't read the papers. But his father said he had no occasion — he knew enough. Again the old barn creaked under their generous harvest of hay, and grain, and vegetables; and again the old man looked and sighed, and declared that "the season had been remarkable, very."

Ben hadn't room to stow away two-thirds of his year's produce! But his hay was excellent, his potatoes were noble ones; his carrots, beets and onions were splendid; he had surplus rutabagas by the cord and turnips and squashes and cabbages by the ton, all of which readily found a good market several miles distant. Nobody believed it at first, but all these fine products really came from the old Smith farm. When the snow and sleet rattled around that ancient mansion that winter, Ben owed no man a dollar; his barn, and bins, and cellars were well filled and he had three hundred dollars in clean cash on hand! Here was a fortune. "Verily, Ben," said his parent, "you have been lucky, and the seasons have been favorable."

The elder Smith has been gathered to his fathers. Benjamin Smith, Jr., Esq., is now a man of solid substance, a Justice of the peace. He knows the difference between partial and thorough cultivation; he can tell you the benefits of sub-soil plowing and shallow furrow; he can tell you whether and wherefore a piece of Suffolk pork or Durham beef is preferable to that of the greyhound hog or the shingle-backed ox; he knows how to use the horserake and potato-dropper; he will inform you of the advantages to be derived from irrigation, from draining, from the use of the phosphate of lime, and the like; he will show, on his farm, big hay-stacks, generous squashes, huge potatoes, twelve-rowed corn, fat

hogs, improved poultry, sleek, velvety cattle and all “jimeracks” of modern agricultural progress—and you will find, in a snug corner of Ben’s sleeping room at old Smith’s homestead, the choicest agricultural library in the State; while he is a constant reader of, and paying subscriber to, all the book-farm publications in the country.

No one that knew the old Smith farm five and twenty years ago, would recognize it now. Squire Ben is worth a pretty fortune, has a buxom wife and half-a-dozen children, and though a little corpulent—for he will live well—he is as lively and thrifty a book-farmer as you or I would wish to meet with.

[*Ohio Farmer.*



PROMOTION—A CHALLENGE.

THE wonderful career of LOUIS NAPOLEON is a marvel to mankind. From a wandering pauper, unhonored and unknown, he suddenly rises to the dignity of President of the French Republic. His towering ambition becomes inflamed; and, boldly converting his Presidency into Sovereignty, he speedily mounts the Imperial throne of his illustrious uncle, and takes rank as Emperor of France; and as such, becomes entitled, by virtue of his royal prerogative, to kiss his visitor, Queen Victoria, on *both* cheeks! His boundless ambition, still unsatisfied with the attainment of this supreme felicity, and the achievement of this Imperial position, is prompting him to make yet another effort for a still higher dignity; and he is accordingly aiming to reach, as the goal of his ambition, the most exalted rank known to earth—he is about to become a FARMER!!

For the attainment of this, he has purchased “a location,” or, perhaps, located a “land warrant” on the old domains of Fouilleuse, near Paris, where he intends to establish a Model Farm, and carry on the business extensively. And, in view of its proximity to markets, and the prices which his garden-stuff and farm-products will command, we think his “location” a good one for the business, and he will, doubtless, “make the thing pay!” We understand that he designs, when fairly settled in his new and distinguished position, to obtain all the best specimens of agricultural implements: whence we infer that he purposes to enter largely into grain-growing. We learn also, that he proposes to collect the most perfect varieties of all the races of domestic animals,

whence we infer, that in addition to grain-growing, he must intend to embark in the stock-raising business on a grand scale.

Well, we wish him joy of his accession to this crowning glory and exalted rank. And, seeing that the Emperor, by this last *coup d'etat*, has finally raised himself, so as to become our equal in rank, we no longer feel it derogatory to our dignity to send him a challenge. We therefore challenge him to meet us on the field of the Hamilton County Fair, on the 9th of September, 1856, then and there to contend, with knightly courtesy, for all the prizes in the premium list. And, as a specialty, we will "go the Catawba" with Farmer Louis, that Fouilleuse is no match for College Hill in the production of Strawberries and Shanghais!

AGRICULTURE OF ENGLAND AND FRANCE.

FIFTY millions of acres are under cultivation in England, of which only one-fifth—ten millions—is appropriated to grain-growing; while in France full fifty millions of acres are employed in the growth of cereals. In England, the average yield of wheat is thirty-two bushels to the acre, while in France the yield is but about fourteen bushels to the acre—not quite half so much as in England.

Each of those countries produce about sixty millions of pounds of wool, for which each has about thirty-five millions of sheep. France slaughters about four millions of beef cattle annually, the average weight of which is but two hundred pounds; while in England only about two millions are annually killed, but averaging five hundred pounds each; thus, while the French require four millions of cattle to produce her 8,000,000 cwt. of beef, England produces 10,000,000 cwt. from only two millions of cattle. This exemplifies the sound economy there is in securing superior breeds of stock.

THE HESSIAN FLY.—We hear of considerable injury done to the wheat crop by the Hessian Fly. Its ravages in East Tennessee will be severely felt, while in many other portions the crop is represented to be excellent.

SALT TO DESTROY WORMS.

IN that excellent paper, the Germantown *Telegraph*, we find some remarks on the value of salt to destroy worms on vegetables. We copy what follows: "A weak brine, not exceeding the strength of sea water, proves a remedy for the "squash destroyer," one of the insidious and persevering, as well as voraciously destructive enemies with which the gardener and fruit grower is called to contend. It is also a most effectual preventive of *aphides*, or plant lice, vermin which prey upon the cabbage and turnip tribes. In every instance of the application of brine to these vegetables, that has fallen under our observation, its success has been complete. No injury need be apprehended from a very liberal application, say one quart to a plant, if the solution be of the strength indicated. All the cabbage tribe are liable to be attacked and fatally injured by minute maggots, resembling, very nearly, the maggots in cheese, and which are doubtless the *larva* of some fly. There is another enemy, also, by which they are frequently infested—a small grub, similar, in many respects, to those found in corn and potato hills, and which not unfrequently prove very destructive. Salt water applied to the hills will have a tendency to arrest their depredations, and if the application be repeated frequently, say once in two or three days, it will effectually destroy or drive them off. The water, however, should not be allowed to come in contact with the foliage, in this instance, but should be applied to the soil immediately around the stalks, but without coming in actual contact with them. To destroy the first named insects, it may be applied in a state sufficiently dilute to admit of a perfect ablution of every part of the foliage; but as we said before, care must be taken not to make it too strong, or it will destroy the plant. Every cook knows, or ought to know, that the washing of cabbage, lettuce, spinach, etc., in salt water before cooking or preparing for the table, is sure to expel every species of insect which so frequently seeks a habitation or a shelter in these vegetables.—*Western Agriculturist.*

CAKED BAGS IN COWS.—Sewall Sergeant, of Massachusetts, cures this by boiling a handfull of cake or garget root in two gallons of water, and after skimming out the root, using one-third of the water in a mess of bran; and the three messes, he says, have never failed in effecting a cure. We have always found opedildoc a certain relief. Rub it upon the caked bag freely at night, and it will be well by morning.

Mr. John Thrift.

MR. JOHN THRIFT is a farmer. He has a farm of one hundred acres which he bought some years ago, of a man who could not get a living off of it, and hence wanted to sell out cheap and go West. People said, when Mr. Thrift bought this worn-out, good-for-nothing farm, that he was a fool. He was told that pennyroyal would not grow on it; a goose would starve to death with the range of a ten-acre lot. One of his new neighbors, who was accounted a wag in those parts, said that the fences had got discouraged, standing up for no purpose; and that there was not timber enough on the place to repair them; "however," he added, "it don't matter much, for what need will John Thrift have of fences around fields so poor, that cattle instinctively run away from them; a single jackass would breed a famine with the whole farm to range upon." But Mr. Thrift heeded not what his neighbors said. He moved his family on to his new, or rather, old farm, and went to work. But he went not to work on the same plan practiced by his predecessor and by most of his neighbor farmers. There was a streak of progress in his nature. He had strong arms and was willing to use them; he had a strong mind, too, and he saw no reason why he should not use that also. Indeed, he had used that when he had bought his farm; for his knowledge and the deductions of his reason told him then, in plain terms, that he was getting what would turn out to be a prize. He looked to the "lay of the land;" he took a spade, and, turning up some of the soil, satisfied himself that it was all right, save and except the surface of five or six inches, which had been exhausted of *some* of its native richness; he saw that a ditch in a certain place would relieve several acres of low land of a superabundance of water, and that this same water could be so husbanded as to irrigate several acres of other land that frequently suffered from drouth; he observed that a portion of the soil which was clayey, would be made immediately productive by means of a subsoil plow, and a few thousand draining-tiles properly laid; while several acres of sandy ridge would be greatly relieved of its barrenness by the application of a large quantity of manure, which he saw around the dilapidated barn, and of a pile of leached ashes, which a man near by had thrown out of his ashery and counted worth nothing. At a glance he saw that the whole farm could be well watered by means of a water-ram placed at the spring, which gushed out of the side hill on one corner of the premises. The bad condition of the fences and buildings did not escape his notice;

but he knew that oak, chestnut, locust and other trees would grow, if they only had a chance to get a start before the hungry cattle were turned in to browse upon and destroy them ; and he had, besides, observed, that many of his prospective neighbors, who had plenty of timber, were cutting it into lumber, and were anxious to sell it at very low prices, to raise money wherewith to pay taxes and store-bills. So he concluded, after getting the approval of his intelligent and industrious wife, to buy the farm ; and he did buy it.

Mr. John Thrift, we said, "is a farmer," and so he is. Not a mere machine of a farmer, who rolls around from year to year in the same old orbit, sticking as close to the usages and axioms of his ancestors, as a wheel does to its axle. Yet he does not disregard the experience of old and young of this and past ages. Neither is he a "book farmer," to be led away by the speculations of mere theorists ; and yet he has books about him, a library well stored with works upon the various branches of agriculture ; and he also takes several papers devoted to the same great subject, and he reads books and papers too ; and turns their instructions to profit as well as pleasure.

When Mr. Thrift's neighbors first caught him taking an agricultural paper from the Post Office, they "whew'd," and "hem'd," and laughed at the jokes (as they thought them) cracked at his expense ; but when, one day, it became noised abroad, that he had in his house a whole library of books on farming, they wanted diminutive terms wherewith to express their opinion of him. But the trouble his kind neighbors were at, on his account, made no sort of difference to Mr. Thrift. He went on using his strong arm and his strong sense with the most perfect success. He subsoiled and ditched ; he drained and irrigated ; he manured and mulched ; he bought guano and gypsum ; he fed his land with bone-dust and lime ; he improved his grasses and his grains ; he provided himself with the most approved breeds of cattle, horses, sheep and swine ; and he was ever anxious to possess the most perfect implements of husbandry, which could be any where found. And thus did the streak of progress, which we said was in Mr. Thrift's nature, make its mark. He had the gumption to see that if the business of agriculture stood still, everything else in the world would leave it out of sight. He knew of no reason why a tiller of the soil should go groping in the dark, when there was a flood of light ready to shine in upon him if he would but permit it.

Mr. Thrift has now a model farm, worth many times as much money as he paid for it. Everything is in order. His labor and intelligence are amply rewarded. Plenty crowns his board, and his home is a pat-

tern of moral elegance and generous hospitality. His neighbors who once laughed at, now envy him. They begin to see that he is right and they are wrong. Still, they think, the old conservatives, that they are too old to mend their ways. But their children may redeem what they have lost. They are beginning to buy books and take agricultural papers, and the young folks are greatly interested. Thus stimulated and aided, no doubt the next generation, in this neighborhood, will know something of the principles which govern in that process which they are daily helping to carry forward in the great laboratory of nature.

Reader, how many farmers like Mr. Thrift have you in your neighborhood? Would it not be much better were there no other kinds?

STRAWBERRIES IN NEW YORK.

THE Strawberry trade of New York, it is said in the *New York Times*, is the largest of any one point in the world, and the strawberry grows in all climates and is sold in all latitudes. It is estimated that fifty thousand bushels of this delicious fruit were sold in New York during the season of 1855, while about twelve thousand bushels were sold in Philadelphia, twelve thousand in Cincinnati, and ten thousand in Boston. During one week last season, more than 400,000 baskets were received daily in New York. From one port in New Jersey, twenty-five miles distant, was received by steamboat, on a single day, 200,000 baskets. The largest receipt of strawberries by railroad, on a single day, was a load of 892 bushels, or 142,900 baskets, brought in by an evening train on the Erie Railroad, a few years since.

New York City received, last year, from all sources, not less than 8,000,000 baskets of strawberries. The value of these, at the wholesale price of $2\frac{1}{2}$ cents the basket, was \$200,000. for which the consumers probably paid double that sum. It is stated that five baskets are required to make a quart. In the continuation of its remarks, the *Times* says:

"About fifteen hundred acres of choice land, in the vicinity of New York, are required to supply this market with strawberries. Some farmers cultivate thirty and forty acres for this purpose. The average crop from an acre runs from thirty to fifty bushels. Some cultivators have succeeded in gathering, occasionally, one hundred, and even one

hundred and thirty bushels from an acre. A celebrated nurseryman, in the Western part of the State, informs us that he has gathered from his garden beds at the rate of two hundred and fifty bushels to the acre. The cost of cultivating the berries is estimated at \$20 and \$25 per acre, with the additional expense of \$1 50 for picking. The prices obtained for the fruit, by the cultivator, range from $12\frac{1}{2}$ cents to \$1 50 the quart. The latter price has been paid in Washington City for the earliest berries raised in that vicinity.

It is probable that the nature of the strawberry and its cultivation is not yet thoroughly understood. A crop of thirty bushels an acre is about equal to a corn crop of ten bushels on the same ground, which, as every farmer knows, is a very poor product. If our farmers understood the nature of the strawberry as well as they understand the nature of corn, they could as easily raise three hundred bushels on an acre as thirty. Then these delicious berries would be cheaper and more abundant every year."—*Western Agriculturist.*

C A P T U R E O F A N O T E D W I L D H O R S E .

THE Sacramento (Cal.) *Journal* gives an interesting account of a noted wild horse which has recently been captured in that vicinity. The animal was known as the "Prairie Chief," or wild horse of Yolo, and is considered the best native trotter in the State, and the most enduring animal perhaps in any country. He had baffled for years repeated attempts to capture him, although every method that ingenuity could devise and men execute was tried years ago.

More than forty horsemen, mounted on the very flower of the ranches, pursued time and again, often running him from sun to sun, and occasionally hunting him on the second day, when he proved as fresh as upon the first; and never, until at last captured, even when hottest pursued, was he seen to break into a gallop. Trotting, he could run round most horses galloping. Once he was decoyed by means of other horses into a coral, but on perceiving the snare he at one bound cleared by several feet the bristling post of the coral. A reward of \$1,500 was once offered for him, and he was, after several attempts, driven into a narrow pass and lassoed, but he snapped the lasso in an instant and escaped.

The last organized attempt to secure him, however, succeeded, and the noble animal was robbed of the freedom he had so long and so gallantly contended for. A party of thirty persons, well mounted, assembled at the place where he was known to be grazing, which was on a range of hills on the west bank of the Sacramento. A few of them, in the morning, drove him to the mountains, when he was compelled to turn back upon the plains, where the rest of the party, scattered in squads for a distance of thirty miles along the country, dashed at him by turns, and thus run him at his full speed back and forth to the mountains, and up and down the plains, until he was completely jaded and worn, and at dark they were enabled to lasso and capture him. Thus did this wonderful horse run (or trot, rather) the entire day without a moment's breathing time.

At the close, when closely pursued, he broke into a gallop. It is estimated by those who know the ground well, that he traveled from 160 to 170 miles. He is a gray horse, with a darkish mane and tail, about fourteen hands high, and is believed to be about fourteen years of age, and is, withal, very fierce.

COLONEL BILLY VS. UNCLE JOHN.

[We take the following graphic sketch from "The Tennessee Farmer and Mechanic," an admirable Monthly, whose 'first of exchange' has just come to our table. And we can assure our Tennessee friends that Ohio has also many "Col. Billies," as well as "Uncle Johns."]

"OUR readers will find no difficulty in discovering the originals of the following sketch in every neighborhood in the State :

Among a great variety of striking circumstances, I have observed that the one who goes among his neighbors by the familiar title of "Uncle John," has uniformly every spring two stacks of excellent fodder to sell. "Col. Billy," as uniformly is harrassed every spring for the want of a stack, and his good old plow horse suffers severely from this want. Hearing this complaint from the "Colonel" so repeatedly, I was induced to ascertain the way in which it was brought about, and how the three stacks put up in the summer were disposed of, for he never failed to pull and cure a full share "to the hand"—rather more than "Uncle John." On investigating the case, in a way of delicate inquiry and observation, I discovered that the "Colonel" had been uniformly in the

practice of having a "shucking," while madam embraces the opportunity to get a "quilt taken down," a dance, a good deal of whisky, much "frolic and fun;" and, upon the whole, it becomes a periodical row, followed by two or three days of headache, sick stomach, indisposition to labor, and, indeed, incapacity. Several days elapse before the crib can be prepared, and the crop housed, for nobody is able or disposed to go to work next morning after the "shucking." The shucks lie in one pile, and the corn in another; the sick headache still continues, unless an invitation to the "Major's shucking," and dance, and quilting relieves it for a night, but not for the next day. The corn is, however, cribbed, but the shucks lie waiting for the rail-pen to be built; day after day pass, rain after rain falls on them, cow after cow and hog after hog passes over them, and at last comes, "indeed they are so much spoiled, owing to accident, that they are not now worth putting into a pen." "But thank fortune," replies the Colonel to one of his more economical neighbors, who was remonstrating with him on the carelessness of losing such a quantity of fine winter provision for his cattle—"thank fortune we have made a fine chance for fodder." But this last remark was made while the season was yet mild, and the cattle did "pretty well in the woods." The cold, chilling, rainy days and nights of November and December come on, and "nothing for the milk cows;" "the children can't do without milk;" "it won't do to let the cows suffer;" "they must have some fodder;" "it was a pity, old man, that these shucks were lost." The pleasures of the little row are long since forgotten, but the loss of the shucks, one of its consequences, begins to be remembered. "The cows must have some fodder, nothing else for them," "and the calves are perishing—it won't do, old man, to let them perish; they must get a little fodder, too, to save them." The steers were suffering: "the good pair of steers that haul wood and rails, and the crop in, I don't know how we could do without them, they must get a bundle of fodder;" "it would be inhuman to let them suffer while we have it." All wise and cogent reflections, but only sadly out of time and season. Had they been made just before the shucking and row that followed as a necessary consequence, a large pen of shucks might and no doubt would have been now on hand. "Bleak Boreas" don't choose, however, to wait upon our folly or want of consideration: the winter was long and hard. By plowing-time, two stacks were gone, and one broken into. "Well, I must buy a stack of fodder:" it is put off from day to day, other business pressing with the opening of spring, as is usual. At last "Dobbin" is mounted, to "go and look for fodder," but "it is too high:" loud complaints, vexation, and Dobbin suffers—time is lost running about—

hard work for "Dobbin" approaching fast—he gets his corn, and is nightly turned out to "pick grass" after a hard day's plowing. Dobbin frequently don't choose to come up early, and the plow starts one or two hours by sun; the Colonel walks himself "to death," hunting him all the morning, and, trying to make a good day's work by the night, is "tired to death," weary and vexed, having to turn Dobbin out again; he loses the cheerfulness of a father and a husband, and tumbles into bed like a log, fretful and fretting at his misfortune of having no "ruffage for his plow-horse." He concludes "it will never do to let the plow stand still," and again goes to "hunting fodder." After consuming two days so extremely valuable to him, he buys, at a double price, and hauls it home. Here a hole is made in his little cotton crop. So much for the shucking, the quilting, the dance, the row, and the shucks being lost. Nor does "Colonel Billy's" misfortune stop here.

The Colonel, early in life, conceived a strong military penchant, and soon determined to get, if possible, into a situation to be ready to "fight his country's battles," with renown to himself and glory to his country, should its enemies ever "invade its peaceful shores." From rank to rank he rose, until he honorably was elected "Colonel of the Third Regiment;" but notwithstanding the glitter of his epaulettes, and the imposing size of his sword, the mass of his acquaintances could never admit or apply any other title to him than the familiar one of "Colonel Billy," for they never failed to add, he was "a good soul." This military advancement, however, brings the Colonel, although in a time of profound peace, and no earthly prospect of hostilities, "a power of military business to attend to," and with it a great many military visitants, who occasionally fight some excellent battles over a glass of excellent toddy. "Scott's Military Tactics," and "Vauban's Art of War," with an old family Bible, the "Pilgrim's Progress," and "Tom Thumb," with the childrens' Spelling-book, constitute the Colonel's library; the first two being read to him in a scholar-like manner, by the schoolmaster of the neighborhood, who visits him every Friday night for that and similar purposes. The consequence, however, among others, is that the "corn goes mighty fast," and the Colonel generally becomes the purchaser late in the season; and this makes another vent in his little cotton crop. At this he frets and often makes loud complaints about his "bad luck;" and, to add to the Colonel's mortification, you sometimes see a constable's horse hitched at his gate.

"Uncle John" never has any shucking, no quilting, dancing, nor rowing. His corn is put up in the shuck, the whole shuck—no slip-shuck business with him; as he uses it, the corn is shucked, and the

shucks laid carefully in one apartment of his crib. The cold, rainy, chilling nights of November and December came to him too. The milk cow lows as she approaches his gate. She is immediately put into a dry, sheltered pen, and sufficiently protected from the piercing wind, and "pelting of the pitiless storm;" and in a large trough, a fine basketful of fresh shucks, sprinkled with salt and water, is placed, pulled to pieces, for "Brownie" and "Lady," etc., for this injunction, was given often and again, by the modest, pious matron whom it was John's good fortune to have secured, "Think of the cow, my dear children, and be good to her, for she it is that gives you sweet milk." "Pull her shucks to pieces, that she may soon fill herself, and lie down to rest." The infant drinks in benevolence, feels its humanity roused, and gratefully returns good for good. Here is the impression stamped by a mother, and no time can efface those lessons that formed a Washington! John smiles approbation, and as he inwardly congratulates himself on the possession of such a partner for his bosom—such a mother for his offspring—he feels a full glow of the most refined happiness. The calves, they have "some of the shucks, my children, and some oat straw from the barn." The "good steers," they too are well supplied with the roughest of the shuck, and some tops that were saved and laid by for them. They have their warm, sheltered apartment. Providing such little sources of comfort for his animals, occupies the time that the Colonel is found settling military affairs, or going to the "store" on Saturdays. John throws his corn from the carriage into the crib; economy makes it hold out; Dobbin has his reserve of fodder laid up in the "little stable loft" for winter use, and until plowing-time. The stacks stand untouched; a small neat stack of oats, to be cut occasionally in the sheaf, aids Dobbin with his allowance of corn, who eats his meal in a warm stable, and lies down to a refreshing rest, "after a hard day's plowing or riding." John sells his two stacks, when such as the Colonel are out on the hunt, and sold it is. The proceeds go to Nashville, and lays in his sugar and coffee at a low price. The proceeds of the little cotton-crop go to lay up a piece of good land for a child. John frequently congratulates himself on being settled in a country where it is "so easy to live and get along," and in speaking of him his neighbors say, "He is a prudent, good man."

"Absence of occupation is not rest;
A mind quite vacant is a mind distress'd."

Cincinnati Horticultural Society.—Report on Hedges.

THE following report of the Cincinnati Horticultural Society's committee on the Osage Orange as a hedge plant was submitted, at the session of June 14th, together with the interesting letter of Mr. Neff accompanying. And as this plant has suffered much from the severity of the past winter, the whole subject becomes very important and interesting.

"The undersigned committee, appointed by the Cincinnati Horticultural Society to make examination and inquiry into the extent of damage done to the Osage Orange Hedge from the intense cold of last winter, and also to make expression as to the merits of said plant, beg leave to report, that they have visited several hedges in the vicinity of Cincinnati; and, upon examination, find some of them cut down considerably by the frost. This was most especially the case where the hedge had been pruned late in the season, and the young shoots had lacked time to mature and harden before the frost had cut short their growth. The most severely cut of any other was the hedge around Spring Grove; and upon consultation with some, it was thought that this hedge would be benefited thereby, as it would enable those who have the same in charge to cut down to or below the surface of the ground, and thus encourage a strong and vigorous branching growth from the base, which was considered superior to the plashing process heretofore pursued.

In some situations the committee noticed the hedge entirely uninjured by the frost; and when it is remembered that last winter was perhaps one in fifty years, it is surprising that so little damage has been done to the Osage Orange Hedge.

The committee have also corresponded with several gentlemen distinguished for their practical intelligence upon the subject under consideration, but from only one of these has any response yet come to hand.

Accompanying this report is a letter from William Neff, Esq., which the committee hereby present without garble or mutilation to the society, as part and parcel of their own views.

As the subject of pruning and training the hedge at Spring Grove is a debatable one among hedge-growers, the committee have concluded to refrain from any expression of opinion on that subject.

The conclusion of the committee as to the *merits* of the Osage Orange for a hedge is, that it has no rival in this country, and that *they have*

the greatest confidence that it will fully serve the purpose for which it has been so eminently designed.

WILLIAM STOMS,
M. M. WILLIAMS,
M. HAZEN WHITE.

CINCINNATI, Tuesday, May 27, 1856.

WILLIAM STOMS, Esq.—*Dear Sir:* I have just received your note of yesterday, propounding some questions with regard to the utility of the Osage Orange as a hedge plant. It is now eighteen years since this subject first attracted my attention, and since that time not a year has passed without my having planted more or less. My first impressions were decidedly favorable to it, above all other plants. My experience since has more and more confirmed this opinion. Indeed, I consider the Maclura of incalculable value to our agricultural country for fencing. The great distrust in the plant for the purpose has arisen from a want of knowledge and neglect in its cultivation. This has been general, and I do not incline to relieve myself from a full share. The very greatest mistake has been from setting the plants too far apart. *They ought to be in a single row, and not more than four inches apart.* The advocates of wider setting, from their respectability and influence, are, in my opinion, doing a great injury, and I think that further experience will convince them of their error.

The last winter has done injury to all the live fences, but I think they will very generally recover from it. It was of unparalleled severity, and we may never see such another. I see no reason for discouraging its cultivation from the effects of the severe winter upon it, and I hope the society will not lend its influence in that direction.

I view this subject as of vast importance, and did I think I could contribute anything to the information of the society that could be useful, I would expatiate freely.

Yours sincerely,

WILLIAM NEFF.

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ANTS.—We have lately heard several persons complain of the injury done to young trees and plants by ants. For their benefit we would say that they may be easily destroyed by mixing a small quantity of arsenic with white sugar, placed on an orange peel, and put within their reach. They will eat it freely and perish.

Western Agriculturist.

METEOROLOGICAL TABLE.

Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 10', W. Long. 7° 24' 45", for the month of May, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.

BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.				OPEN AIR THERMOMETER.				CLOUDS—THEIR COURSE AND VELOCITY.				WIND—DIRECTION AND FORCE.				RAIN AND MELTED SNOW.	
7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Hour Began.	Hour Ended.	Amt' Inches
1 28.830	28.718	28.793	28.780	65.0	67.5	69.0	69.8	10	S. 6	10	W. 6	S. 4	S. 3	0	9 P. M.	11 P. M.	0.490
2 28.813	28.830	28.852	28.832	58.0	65.0	60.0	61.0	9	W. 5	9	W. 4	W. 5	W. 2	W. 1			
3 28.915	28.922	28.958	28.932	55.0	68.0	52.0	58.3	9	N. W. 4	4 N. E. 1	2 N. E. 1	W. 2	N. E. 2	N. E. 3			
4 29.018	28.972	29.040	29.010	45.0	60.0	50.0	51.7	10	N. W. 3	9	2 N. E. 1	N. E. 2	E. 3				
5 29.100	29.072	29.073	29.082	43.0	54.5	53.5	52.0	9	S. 2	10	S. E. 2	S. E. 3	S. 2	E. S. E. 2			
6 28.935	28.870	28.930	28.912	55.5	63.0	55.2	58.0	10	S. E. 10	10	S. Rain.	2 W. 6	S. 1	W. 2	7 A. M.	3 P. M.	0.398
7 28.897	28.800	28.863	28.853	53.0	69.5	53.5	58.7	10	N. 3	4	S. W. 4	8 N. W. 4	W. 2	N. W. 5	7 A. M.	10 A. M.	0.140
8 28.905	28.940	28.966	28.935	48.0	58.0	52.0	52.7	10	N. W.	9	N. W. 1.	0	N. W. 3	N. W. 1			
9 29.078	29.033	29.013	29.041	43.0	64.0	51.0	52.7	0	N. 2.	0	N. 2.	0	N. W. 1	N. 1			0.035
10 29.070	29.018	29.042	29.043	50.0	75.0	63.0	62.7	0	O	0	O	0	N. 1	N. 1			
11 29.078	28.997	29.015	29.026	57.0	79.0	67.0	67.7	0	O	0	O	0	N. 1	W. 4			
12 29.103	29.057	29.063	29.074	63.0	78.0	66.0	69.0	2	O	4	W. 2	0	W. 2	0			
13 29.101	29.067	29.075	29.081	61.5	78.0	67.5	69.0	4	Cirri.	5	W. 3.	9	W. 2	0			
14 29.045	29.065	29.035	29.048	64.0	63.0	61.5	62.8	10	S. 2	10	W. 5.	0	S. E. 1	W. 4			
15 29.065	28.994	29.009	29.023	62.0	81.0	67.5	70.2	0	O	5	W. 4.	10	W. 4	0			
16 29.060	28.989	28.922	28.990	62.0	78.5	62.5	67.7	10	N. 5	8	W. 4.	0	N. 1	S. E. 2			
17 28.750	28.674	28.709	28.711	64.0	69.0	63.0	65.3	10	Rain.	10	W. 6.	10	Rain.	W. 4			
18 28.755	28.775	28.832	28.787	57.0	67.0	58.5	60.8	10	N. E. 5.	10	N. 3	N. E. 3	N. E. 4				
19 28.855	28.841	28.838	28.845	57.5	75.0	67.5	66.7	10	Fog.	0	O	0	N. E. 1	0			
20 28.890	28.882	28.914	28.895	67.0	83.0	67.0	72.3	0	O	0	O	0	N. W. 1	0			
21 29.070	29.069	29.130	29.090	60.5	77.0	58.5	65.3	0	O	0	O	0	E. 2	N. E. 3	N. E. 3		
22 29.207	29.171	29.137	29.172	51.5	78.0	66.5	65.3	0	O	0	O	0	N. E. 3	N. E. 1			

REMARKS ON WEATHER

1. A dash of rain at 11 A. M. A thunder storm at 9 P. M.
 4. Min. ther. last night 42° .
 5. Do. do. $39 \frac{1}{2}$.
 6. Night hawks (*Caprimulgus*) seen this eve.
 7. Humming birds.
 9. A dash of rain at 9 A. M., and one at 3 P. M.
 12. Halo around the moon at 9 P. M.
 13. Leaves in the woods well developed.
 14. Thunder storm this morn. at 4—more rain at 10 A.M. Sky cleared at 4 P. M.
 16. Locusts and Peonies in bloom.
 17. Rain commenced again at 7 P. M.
 20. Tulip tree (*Liriodendron*) in bloom.
 23. Cinnamon roses in bloom.
 24. Lightning in north at 9 P. M.
 25. A dash of rain with heavy thunder last night.
 27. A sprinkle at 7 A. M.
 29. Strawberries ripe.
 30. Min. therm. 40° last night—some frost.
 31. Frost last night killed vegetables in low places.

MONTHLY EXTREMES.

REMARKS.—Corn had to be replanted in most fields. People thought the seed was injured by the cold of last winter.

CLERMONT COUNTY AGRICULTURAL SOCIETY.

A HANDSOME circular from this Society announces that their Eighth Annual Fair is to be held at the fair grounds, near Bantam, for four days, commencing September 16th. Clermont has both the raw material and the "back bone" to make a grand display. The oration is to be delivered on the third day of the Fair, at 10 o'clock, A. M.

FARMERS' COLLEGE COMMENCEMENT.

ORDER OF EXERCISES.

Tuesday evening, July 1.—Address by Prest. THOMPSON, of Delaware, before the Philomathean Society.

WEDNESDAY, COMMENCEMENT DAY, JULY 2D.

Forenoon.—Alumni Address, by B. F. BROWN, Esq., of Cincinnati, and Address by Rev. Dr. STORRS, of Cincinnati, before the Burritt Society.

Afternoon.—Orations of the Graduating Class, and Degrees conferred.

Our friends and the public are invited.

THE BURRITT'S PUBLIC EXHIBITION, held in the College Chapel, June 20, was attended by a crowded and appreciative audience. The speaking was good, and the music, from the Glee Class of the Ohio Female College, led by the accomplished vocalist, Miss LERNED, was excellent.

"NATURE is man's best teacher. She unfolds
Her treasures to his search, unseals his eye,
Illumes his mind, and purifies his heart;
An influence breathes from all the sights and sounds
Of her existence; she is Wisdom's self."

THE CINCINNATUS.

Vol. I.

AUGUST 1, 1856.

No. 8.

Farmers' College---Commencement.

THE Commencement Exercises of Farmers' College, held on the first and second days of July, 1856, presented an unusual degree of interest, and were attended by a crowded and highly appreciative audience.

On Tuesday, the first, the Philomathean Society was addressed by PRESIDENT THOMPSON, of the Ohio Wesleyan University. His address was excellent in matter and very interesting in manner, well adapted to the audience and the occasion, and was most warmly commended by the young gentlemen of the Society under whose auspices it was delivered. Upon the conclusion of this address the diplomas were delivered to the graduating members of the Society by R. SWAIN, Esq., of Indiana, with a "charge" replete with correct sentiment, exalted thought, and eloquent injunction.

On Wednesday, commencement day, the annual address before the Society of the Alumni was delivered by B. F. BROWN, Esq., of Cincinnati, the orator of the Society. This was a production of high merit, well written and well delivered, and manifested elaborate research in both the fact and philosophy of history. After this address, the Rev. DR. STORRS, of Cincinnati, delivered the diplomas to the graduating members of the Burritt Society, accompanied by a very appropriate and well timed extemporary address.

The exercises of the graduating class commenced at one o'clock in the afternoon of Wednesday, and were of superior merit in every particular. The class consisted of eight members, whose names, residence, and themes are as follows:

LATIN SALUTATORY—*De Antiquis.*

J. W. COCHRAN.....	Glendale, O.
	<i>Astronomic Science—Its Utility and Sublimity.</i>
E. COOK.....	Cumminsville, O.
	<i>Knowledge and Virtue—Intellectual Correlatives.</i>
D. B. CABLE.....	Albany, O.
	<i>Literary Fame.</i>
CHARLES A. WOLF.....	Cincinnati, O.
	<i>Genius of Civilization.</i>
S. R. MOORE.....	Cheviot, O.
	<i>Choice of a Profession.</i>
FOSTER BLACK.....	College Hill, O.
	<i>Spirit of the Crusades.</i>
N. B. WILSON.....	Cynthiana, Ky.
	<i>Dependence of the Present on the Past.</i>
J. W. COCHRAN.....	Glendale, O.
	<i>Faith in Science the Key to Success—with VALEDICTORY.</i>
J. A. EADES.....	Ruddel's Mills, Ky.

The orations were well written and well pronounced, and commanded the undivided attention of the immense audience present. The degree of Bachelor of Arts was conferred on the above named gentlemen by President ALLEN, with an appropriate and an affectionate Baccalaureate address. The exercises were enlivened by the finest strains of Menter's fine Cornet Band.

At the conclusion of the exercises, President ALLEN announced that the Corporation and Faculty of the Institution had conferred the Honorary Degree of MASTER OF ARTS upon ISRAEL GARRARD, Esq., of Cincinnati, and LEWIS GARRARD, M.D., of Cincinnati, O., and ABRAM BROWER, Esq., of Cincinnati. Also, that the Master's Degree, "in course," was conferred upon the following named gentlemen, Alumni of this Institution, viz:

S. W. TELFORD . . .	Lafayette, Ind.	J. HILDERBRANDT . . .	New Vienna, Ind.
A. W. GASTON . . .	Newtown, O.	G. H. LANE . . .	Dayton, O.
C. B. BROWN . . .	Cincinnati, O.	J. LAFABER . . .	Russelville, O.
G. W. COLEMAN . . .	Union, Ind.	W. P. NIXON . . .	Cincinnati, O.
W. P. FISHBACK . . .	Batavia, O.	J. H. WINTERS . . .	Dayton, O.
J. HAGEMAN . . .	Cincinnati, O.	D. W. WINTERS . . .	Dayton, O.

ISRAEL WILLIAMS, Washington City, D. C.

The affairs of the Institution have been uninterruptedly prosperous throughout the year. The number of students in attendance, as shown by our Catalogue, was *Three Hundred and Thirty*. Out of this

large number, not a death, nor even a case of serious illness, has occurred within the year.

The next session of the College will open on Wednesday, September 5, 1856.

Home Department.

It will be seen that a Bureau of Agriculture is again being talked of at Washington; and we are sorry to find some of our contemporaries approving of this attempted apology at supplying the wants of the farmer. The greatest interest of our country should demand and receive an organization somewhat adequate to its wants. A Department of Agriculture, with a secretary, who should be a cabinet officer, holding even rank with the Secretary of State, Secretary of the Treasury, Secretary of War, etc., is demanded by the farmers, and they should not accept of a sub-organization. At the early formation of our government, its founders were anxious to organize a Home Department; and, as the records will show, it was then laid aside, simply because a proper incumbent could not at that time be found as its secretary; and the meaning of this department was then distinctly understood to be a department for the improvement and protection of agriculture and other industrial arts. Gen. Washington afterward recommended such an organization, and called it a Home Department of Agriculture. Since that time our farmers, who compose the great body of voters, have sent representatives to Congress, and have generally selected them from among lawyers, or men of leisure and fortune.

The requirements of the new country for a time occupied the energies of Congress; and then the habit of selecting such a class of representatives confirmed those in office, and secured the reelection of themselves, or, by their influence, men of similar employment or occupation; and these Congressmen, forgetting that more than four-fifths of their constituents were too much engaged in agricultural pursuits to busy themselves with the affairs of government, and preferring to leave their interests in the hands of their representatives, have caused the great interests of the majority to be entirely neglected. Every other country in Christendom has such a department; and for want of such government countenance, the farmers have not advanced in knowledge proportionably with those engaged in other interests. For want of such a department the farmers have been amused rather than instructed, and the whole nation has remained divided into two classes. The poetry

of equal rights has been trumpeted to our hearts' content, while the reality has been kept beyond our reach. To silence the feeling which was evident among farmers, a Home Department was created; but in what part of that department do we find the agricultural interests represented? The Commissioner of Patents and his bureau are under the charge of the secretary of this department, and in a cellar room of the Patent Office, for a time, we find a clerk having charge of the agricultural portion of the Patent Office, whose business seemed to be to get up a volume, each year, made up of extracts from agricultural papers, and the special views of this clerk on a few prominent points in agriculture, or such at least as he conceived to be prominent. Indeed, this Home Department, so far as it related to agriculture, would remind one of a theatrical performance which occurred in England some years ago. The play of Hamlet was announced, but the principle actor being sick, it was stated that the part of Hamlet would, by particular desire, be omitted.

We have schools for the army and navy; we send commissioners abroad to examine the tactics of other countries; and every collateral branch connected with military engineering, is fostered by government patronage. The pupils at our military schools are taught many branches of simple and ornamental character, the more completely to fit them as soldiers and gentlemen; and so it should be. Nor do farmers complain of this, although they are the payers of four-fifths of the expense. But when has a commission existed under our government, for collecting information, either at home or abroad, for the use of the agriculturists? What adequate organization has ever been made, to diffuse information on this most important subject? In what bureau at Washington do we find an account of the organization of the agricultural colleges of Europe? What proportion of the public purse (four-fifths of which is furnished by farmers) has been expended for their benefit? What part of the ten millions, which has been appropriated by Congress for experiments with various scientific and mechanical devices, has been devoted to improvements in the construction of agricultural implements, or improved modes of culture? Where are our agricultural colleges, and what other civilized country is without them?

Thousands of dollars have been appropriated for improvements in the telescope, yet not one dollar for improvements in the plow. Is the surface of the moon of more consequence, to those who support the government of the United States, than the surface of the earth? Why can not part of the public domain be given to the States, for the purpose of endowing agricultural colleges? Why could not our foreign consuls

ministers etc., be made agents for the purchase of foreign seeds of superior kinds, which might be distributed through members of Congress to their constituents? And why, instead of this, is a miserable appropriation made by Congress, for the purchase of seeds from some favorite seed-dealer, and there distributed, where duplicates of home-growth are plenty? How many farmers are there in the United States, who never saw a globe artichoke or a cauliflower? There are many hundred kinds of pears raised in Europe, suited to this climate, which have never been heard of by the majority of our farmers. How long has the iron plowshare been introduced into our country? and how long since its general adoption? Has not its use increased the amount of agricultural product fifty per cent.? and has any other invention, or any other twelve inventions of modern times, equaled one per cent. in the increase of product from its use, that can fairly be attributed to the plow? Does not England, by under-draining and sub-soiling, produce of many crops double the amount per acre of the average of this country? and yet have one-third of the farmers of the United States ever seen a drain-tile or a sub-soil plow? Could England at this time sustain her present population, without the introduction of these improvements? Would not a properly organized Home Department be able to suggest to Congress methods for remedying these evils?

Suppose that one-tenth of the amount which has been paid by Congress as premiums on new inventions connected with fire-arms, or one-tenth of the amount which has been given to mechanical inventors to enable them to perfect experiments connected with steam-engines, steam-boilers, locomotives, etc., had been offered as premiums for improvements in the construction of the plow, what would have been the result? Would not the ingenuity of our mechanics have been applied to this and other agricultural implements? and would not the depth of plowing have thus been increased? Who does not know that an increase of one inch in the depth of plowing through the United States, would increase the amount of our agricultural products more in value than the total present receipts of our government? Who does not know that the general introduction of sub-soil plows would produce a similar result? And who is ignorant of the fact, that at every plowing match it is clearly proved, that even slight differences in the figure of the plow, enable the same team to drag it when inserted at an increased depth? Who knows the true figure of a plow, so that the least amount of force may produce the greatest of disturbance in the soil? Would not trials made under the surveillance of a department, in whose organization the farmers had confidence, soon settle this and every

other truth in agriculture? The very amount paid by the manufacturers of the various plows, to scribblers for puffing each, would be more than sufficient, in the hands of a Home Department of Agriculture, to settle every vexed question, and give the farmers the benefit of the results. Who doubts that a premium of ten thousand dollars for the best plow would call out the best ingenuity of the land, and that the improved results of a single season would pay this amount many times, besides leaving its use for future years as the permanent property of the nation? Would not such an increase of product lead to an increase of mercantile activity, and this to national wealth?

Apart from monetary considerations, we live under a government of written law, and we call upon our citizens to obey that law. We know that, with the exception of such States and districts as have improved the modes of agriculture, the plodding farmer can not afford to educate his children; and that until he is enabled to advantage by the improved processes of more fortunate localities, he can not do so. The few States where education is easily obtained, must not forget that a number, nearly or quite equal to one-quarter of our whole population, can not read the very law they are called upon to obey. It has been said, and with truth, that "a prosperous agricultural district is never without patriots to defend it." Let our whole country be in this position, and a small but experienced standing army, with four times the usual number of officers, would supply us with officers in cases of emergency, while an educated agricultural community would find apt recruits who would be good soldiers, if so officered, in one month. The bald excuse, therefore, continually made in Congress, that every appropriation made for experiments in the mechanical arts, and procured by the influence of rich operators, is for the defense of the country in time of need, will as rightly apply to such an organization as will assist in educating the farmers, and rendering them patriots. None other will ever make soldiers; at least such soldiers as a free government can depend upon.

We do not believe in the doctrine that farmers should be contented with a Bureau of Agriculture, and await the necessity for any other organization. The necessity is now, and has been always apparent to those who have understood the best interest of the country. The Father of his Country, WASHINGTON, was not mistaken when he recommended such a Department as part of the original plan of our government, and for the purpose of calling into action the best talent; advantaging from all the eclat that belongs to a department, as compared with a bureau, and from having an officer whose duty is to make known to our government the wants of the agricultural interests, it should be

a department that its secretary may be heard in the cabinet, and not, as with a bureau, with a commissioner at its head, whose recommendation in favor of agriculture may be stricken out by the secretary of the department to which he is attached, before it reaches the legislative halls. Why put off for a single day that which is known to be required? We hope, in the discussion before Congress, on the proposed bill for an agricultural organization, we shall not hear the hackneyed phrases, that "Agriculture is a noble art," that "Farmers are the bone and sinew of the country." These are truths trite to every schoolboy; and farmers will not be contented with a repetition of such compliments, and no further action.

Let us demand, not ask, a Department of Agriculture, and not be contented with being told that we are noble fellows, and we had better go home and vote again for our representatives at the next election. The present condition of the agricultural interest, and its neglect by government, remind us of a lieutenant in the British army, stationed in Canada. He lacked promotion, and he knew he was entitled to it, both by age and services. He wrote to the commander-in-chief, and stated that he was the oldest lieutenant in his regiment; next, that he was the oldest in the brigade; next, oldest in Canada; next, oldest in the British army; to all of which he received no reply. He then wrote that he was the oldest lieutenant in the world, and he believed his excellency meant to keep him so, as a curiosity.

Indeed, farmers' claims are like the position of the beggar to the London alderman on his way to the turtle feast. "I have not eaten in four days," said the beggar. "I wish I had your appetite," says the alderman.

The farmer, however, will not, and need not, be as silent as the beggar. They furnish the supplies, and are entitled to a portion of the disbursements. In England, where the government has no excess of public funds, millions of pounds sterling are loaned to farmers, under the surveillance of the commissioners of drainage, for under-draining the land; and these mortgages are only active after a fixed value has been placed upon the farm before its under-drainage, and still not one dollar has ever been lost by that government from such loans. The increased productions has always enabled the farmer to meet the required payments, and thus, after a short time, the country at large is benefited equal to the amount of increase in production. It has been said, and with truth, that were it not for the introduction of under-drains and sub-soil plows, England could not at this time sustain her population. This is no experiment, but a settled truth; and why should not the surplus funds in our government be so invested? It could be done

with us without the creation of a national debt; and the example would soon be followed by capitalists, as it has been in England.

Who doubts that by adopting a proper mode of tillage, the Indian corn or wheat crops of the United States would be doubled? In what country can instances not be found where individual farmers raise crops double in quantity per acre as compared with those of their neighbors? Why should these processes not be collated and made known to all?

We hope some Cincinnatus will be found among our members of Congress who will have a fellow-feeling for his craft. We hope the good sense of the present Congress will prevent their offering any compromise for the wants of the farmer, and that they will at once give us a Department of Agriculture, and not a sub-organization in the form of a bureau or agricultural clerkship. If they do not, they may rest assured that the farmers will eventually rise in their strength and represent themselves in the legislative hall with special reference to this question.

Those who use agriculture as a hobby-horse for political preferment, must prove that they are sincere, or they will receive the curses of an offended country, worse than the anathemas of the Church of Rome!—

Working Farmer.

Return of the Jews.

THE following, taken from an English paper, seems to exhibit the remarkable fact that the Jews are turning their attention to Agriculture in connection with their undying desire to return to Palestine. In no portion of the world, during all their miraculous history of eighteen centuries past, have the Jews shown any disposition to become tillers of the soil. The present movement presents a different phase, in this particular, from any heretofore observed of this wonderful people, and seems to inaugurate a most important era in the marvelous history of this marvelous race. The English paper says:

On Wednesday night, a meeting of ladies and gentlemen was held in the house of the Rev. R. H. Herschel, Gloucester-terrace, London, with the view of taking into consideration the best means of establishing an agricultural colony of believing Israelites in Palestine. Lord Shaftesbury was called to the chair. After the usual introductory devotional exercise, Mr. Herschel submitted to the meeting a clear statement of the objects which it sought to accomplish by the contemplated association. It is intended to make arrangements for the

purchase of tracts of land in the most suitable districts in Palestine, on which to found an agricultural colony of converted Jews, which should answer the double purpose of providing the means of subsistence for those poor Israelites who, after they had embraced Christianity, were reduced to great straits, hardly having an amount of food necessary to sustain existence—and of arising and maintaining the standard of the Cross in the land in which the great and momentous scenes recorded by the Evangelists were transacted, and by that means to bring the Jews in Palestine under the power of Christian influences. The Bishop of Jerusalem addressed the meeting in a very interesting speech, expressing his cordial concurrence in the scheme proposed, and pointing out the course which he deemed most adapted to insure its success. The right reverend prelate spoke in the most emphatic terms of the universal desire which at present pervades the Jewish mind to return to Palestine, and said that never, at any period since the destruction of Jerusalem, did circumstances seem so auspicious for the return of the Jews to their own land as they do at present.

The Rev. Dr. McCaul followed, and expressed himself in similar terms regarding the singular concurrence of circumstances favorable to the return of the Jews; and that, consequently, it was the duty of Christians to do everything in their power to facilitate their wishes. The Rev. Dr. Marsh also addressed the meeting on the "signs of the times,"—one of the most remarkable of which he considered to be the earnest desire pervading the Jews in all parts of the world to return to their own land.

Other gentlemen likewise spoke to the same or a similar effect, and steps were taken to form a society, having for its object the establishment of an agricultural colony in Palestine, consisting of believing Israelites, who should at once provide the means of subsistence for their poorer converted brethren, and seek to bring the unconverted Jews to the knowledge and reception of Jesus of Nazareth as the Messiah promised to their fathers.

The Cost of War.

HERE, says Charles Sumner, figures appear to lose their functions. They seem to pant as they toil vainly to represent the enormous sums consumed in this unparalleled waste. Our own experience, measured by the concerns of common life, does not allow us adequately to

conceive these sums. Like the periods of geological time, or the distances of the fixed stars, they baffle the imagination. Look, for instance, at the cost of this system to the United States. Without making any allowances for the loss sustained by the withdrawal of active men from productive industry, to find that, from the adoption of the Federal Constitution down to 1848, there has been paid directly from the National Treasury—for the army and fortifications, \$266,718,209; for the navy and its operations, \$209,994,687. This amount of itself is immense. But this is not all. Regarding the militia as part of the war system, we must add a moderate estimate for its cost during this period, which, according to a calculation of an able and accurate economist, may be placed at \$1,500,000. The whole presents an inconceivable sum total of more than two thousand millions of dollars, which have been dedicated by our government to the support of the war system—more than seven times as much as was set apart by the government during the same period, to all other purposes whatsoever!

Look now at the commonwealth of the European States. I do not intend to speak of the war debt, under whose accumulated weight these states are now pressed to the earth. These are the terrible legacies of the past. I refer directly to the existing war system, the establishment of the present; according to recent calculation, its annual cost is not less than a thousand million dollars. Endeavor for a moment, by a comparison with other interests, to grapple with this sum.

It is larger than the entire profit of all the commerce and manufactures of the world.

It is larger than all the expenditures for agricultural labor, for the production of food for man, upon the whole face of the globe.

It is larger by a hundred millions, than the amount of all the exports of all the nations of the earth.

It is larger, by more than five hundred millions, than the value of all the shipping of the civilized world.

It is larger, by nine hundred and ninety-seven millions, than the annual combined charities of Europe and America for preaching the Gospel to the heathen.

Yes! the commonwealth of Christian States, including our own country, appropriates, without hesitation, as a matter of course, upward of a thousand millions of dollars annually to the maintenance of the war system, and vaunts its two millions of dollars, laboriously collected, for diffusing the light of the Gospel in foreign lands! With untold prodigality of cost it perpetuates the worst heathenism of

war, while by charities, insignificant in comparison, doles to the heathen the message of peace. At home it breeds and fattens a cloud of eagles and vultures, trained to swoop upon the land; to all the Gentiles across the sea it dismisses a solitary dove.

Still further: every man-of war that floats costs more than a well endowed college.

Every sloop-of-war that floats costs more than the largest public library in the country. * * * *

Consider the prodigious sums, exceeding in all two thousand millions of dollars, squandered by the United States since the adoption of the Federal Constitution, in support of the war system. Surely if these means had been devoted to railroads and canals, to schools and colleges, our country would possess, at the present moment, an accumulated material power grander far than any she now boasts. But there is another power of more unfailing temper, which would also be hers. Overflowing with intelligence, with charity, with civilization, with all that constitutes a generous State, she would be able to win peaceful triumphs transcending all she has yet achieved—surrounding the land with an invincible self-defensive might, and in their unfading brightness rendering all glory from war impossible.

The Raining Tree.

THE Island of Fiera is one of the most considerable of the Canaries, and I consider that name to be given upon this account: that its soil, not affording so much as a drop of fresh water, seems to be of iron: and indeed there is in this island neither rivulet, nor well, nor spring, save that only toward the sea-side there are some wells; but they lie at such a distance from the city, that the inhabitants can make no use thereof. But the great Preserver and Sustainer of all, remedies this inconvenience by a way so extraordinary, that a man will be forced to sit down and acknowledge that he gives, in this, undeniable demonstration of his goodness and infinite providence. For in the midst there is a tree, which is the only one of the kind, insomuch that it hath no resemblance to these mentioned by us in this relation, nor to any other known to us in Europe. The leaves of it are long and narrow, and continue in constant verdure, winter and summer; and its branches are covered with a cloud, which is never dispelled, but,

resolved into moisture, causes to fall from its leaves a very clear water, and that in such abundance that the cisterns, which are placed at the foot of the tree to receive it, are never empty, but contain enough to supply both man and beast.—*Mendelsle.*

The Japan Pea.

FRIEND MINER:—Among the different varieties of seeds I have recently received from the Patent Office, was a new species of pea, called the *Japan* pea, which has created considerable interest among cultivators here, on account of its prolific qualities, and the ease with which it may be cultivated. As an instance of its great productiveness, I may mention the case of a single plant, cultivated in this neighborhood, which had upon its branches over four hundred pods, the larger portion of which contained from two to three peas, (mostly thrice,) yielding about one thousand per cent. This, from a single pea, in a single year's growth, is something worthy of notice. If each pea possessed the qualities of reproduction in the same degree, we should have in the second year's growth, nearly half a million of peas. I will leave it to others, (who are perhaps better skilled,) to estimate the number of bushels this would make, and what number of pounds it produces, at sixty pounds to a bushel, the weight of peas and wheat to the bushel being nearly identical.

This new and rare plant is found well adapted to our soil and climate, and yields bountifully, whether planted on rich or poor soil. It grows from two and a half to three and a half feet high, putting forth long branches, stiff and woody, like a shrub. The leaves are large, resembling those of an ordinary bean, growing in sets of three, with long quadrangular stems. The flowers, which are small and white, but rather inconspicuous, grow in thick clusters, nearly covering the branches. These are succeeded by downy pods, from one inch to an inch and a half in length, each containing from two to three oval peas. When boiled, the pea is very nutritious in its qualities, and makes an excellent food for man or beast. It should be planted about the usual time of planting corn, in rows from two and a half to three feet apart, one or two in a hill, and cultivate in the same manner. It requires a rather long season to ripen, but will mature its seeds where Indian corn can be grown.

The plant was obtained in 1851 from some Japanese sailors, who were wrecked on a coral island in the Pacific, and saved by some American seamen. The crew of the wrecked vessel had supported themselves for a number of days solely on these peas. One of the American sailors obtained some of them, and took them to Oregon or California, from whence they were carried to Ohio, from which State they have since been disseminated through the Patent Office over the Union. Should any of the readers of this paper wish to make a trial of the above pea, I will forward them a few (gratis), as far as they will go, and should I not be able to supply all this Spring, I will try to supply the others next Fall. A letter containing a prepaid envelope superscribed with the applicant's post-office address, will insure a return of peas.

WILSON DENNIS.

APPLEBACHSVILLE, Bucks Co., Pa.

[*Rural Farmer.*

Relaxations of Great Men.

IT is interesting to note the amusements of learned and great men of present and past times. Their predilections, their private tastes, their amusements, their domestic habits, their relaxations—in a word, all that satisfies them, amuses them—are capable of furnishing useful lessons to our race; for a man's manners and habits help us to a knowledge of him, and are the best evidence of his real character.

Many great men have delighted in passing their hours of relaxation in the company of children. This betokens a pure and loving nature. Richter says the man is to be shunned who does not love the society of children. Henry IV. was passionately fond of them, and delighted in their gambols and little caprices. One day, when crawling round his room on all fours, on his hands and knees, with the Dauphin on his back, and the other children about him, urging the king to gallop in imitation of a horse, an ambassador suddenly entered and surprised the royal family in the midst of their fun. Henry, without rising to his feet, asked,

"Have you children, Mr. Ambassador?"

"Yes, sir."

"In that case, I proceed with the sport," replied the king.

The Duke of Wellington was extremely fond of children, and was a general favorite with them. He enjoyed their gambols, took part in

them, and was constantly presenting them with little keepsakes and presents.

Leibnitz used to pass months together in his study, engaged with his laborious investigations. At such times his only relaxation consisted in collecting about him, in his study, children of both sexes, whom he watched, and sometimes he took part in their frolics. Seated in his easy chair, he delighted to observe their several dispositions; and when his soul had sufficiently enjoyed the innocent spectacle, he would dismiss the children with sweetmeats, and return to his studies with renewed energy.

Louis Racine says of his father, that he took part in all the children's sports. "I remember a procession we once had," says he in his memoirs, "in which my sisters played the part of the clergy, I was the curate, and the author of Athalie, singing in chorus with us, carried the cross."

Napoleon, like Wellington, was fond of children. He used to take the infant king of Rome in his arms, and standing in front of a mirror with him, there made the oddest grimaces in the glass. At breakfast he would take the child upon his knee, dip his finger in the sauce, and daub his face with it; the child's governess scolded, the Emperor laughed, and the child, almost always pleased, appeared to delight in the rough caresses of his father. Those who on such occasions had a favor to solicit from the Emperor, were almost sure of being favorably received.

DURATION OF A FLASH OF LIGHTNING.—In Arago's Meteorological Essays, lately published, many latitudes are given where the phenomena of thunder and lightning are unknown; those among the inhabitants of Lima or Peru, for instance, who had never traveled, can, from their own experience, have no idea of thunder; and they are equally unacquainted with lightning, for even noiseless sheet-lightnings never appear in the atmosphere of Lower Peru, often moist, but never showing true clouds. Arago sums up his inquiry by saying that the most brilliant and extensive flashes of lightning, which appear to embrace the whole extent of the visible horizon, have not duration equal to the thousandth part of a second of time.

AMERICAN OAKS.—One hundred and thirty American Oaks were planted last year in the city of Paris. Of these eighty-seven took root, and are green and flourishing. The rest, forty-six are dead.

Buried Treasures.

"EUSEBIUS" writes to the *N. Y. Observer*, from Rome, as follows:

"The Tiber is not only rich in historic associations, it is rich in treasure. An English company has actually offered to turn the current of the stream far above the city and around it, provided, the government would give them what they might discover in its present bed. This would be attended with a vast expense, but it would pay. Treasures of art, from age to age, have found their way into the stream, which would bring in the market a perfect remuneration. In the museum of St. John Lateran, a magnificent column of stone is lying, which was taken not long since from the Tiber, a portion of which has been polished to display its beauty, and no one can see it without wishing to have more of the secrets of this river revealed. Statuary more perfect and perhaps more beautiful than any of the ancient works of art now seen in Rome, lies embedded in groups beneath the stream. Agostino Chigi, the famous banker at the time of Leo X., once gave a splendid entertainment to the Pope and his Cardinals, at which the dishes were all precious metals. The price paid for three fish was two hundred and fifty crowns. It is said that these dishes were all thrown into the Tiber, by order of the rich banker, in order that no less illustrious guest might ever use them. The sacred vessels brought from Jerusalem by Titus, among them the golden candlestick, are reported to have been lost from the Milvain bridge, and if so, are still lying there."

Washing Preparation.

WE give below a recipe for a washing preparation, which we take from the *American Agriculturist*. It is one that has been extensively published, and which we consider valuable :

To each pound of common hard soap add from one-half to three-quarters of an ounce of common borax, with one quart of water. Put the water in any convenient vessel upon the stove, add the borax, somewhat pulverized, and then put in the soap cut up in thin pieces. Keep them hot—but not boiling—for two or three hours, or until the whole is well dissolved, and then set it aside to cool, when a solid mass will be formed. If the vessel is set upon the warm stove at night, the operation will be completed in the morning, though we think it is better to stir the mass just before it is cooled.

The night before washing, rub the clothes where most soiled, with the soap, and soak in water until morning. This soap which has been more than doubled in quantity, will go quite as far, bulk for bulk, as the original, thus saving at least one-half. The boiling and washing are to be performed in the usual manner; but it will be found that the labor of rubbing is diminished three-fourths while the usual caustic or eating effect of the soap is greatly lessened; and the hands will retain a peculiar soft and silky feeling, even after a large washing. The preparation is adapted to all kinds of fabrics, colored or uncolored, including flannels, and is thought to increase their whiteness.

Humboldt and Agassiz.

IT is well known that M. Agassiz, one of the most gifted men to whom Switzerland has given birth, is now settled at Cambridge College, in the United States. M. Agassiz had no fortune of his own to begin life with. He became early acquainted with poverty, and once, when he was in Paris, was reduced to so low a pitch that he had no means to take him back to Switzerland. A friend, no richer than himself, having mentioned him to Baron Humboldt, whom Agassiz had never seen, he received next morning a flattering letter from the illustrious man, begging him in the kindest and most delicate manner to allow him to advance the sum necessary to meet his wants. M. Agassiz delights in telling this story. Some years afterward, when M. Agassiz had earned to himself a name in science, he had gone to great expense in order to publish his work on fossil fishes. In consequence of this he owed his brother one hundred thousand francs. This debt he desired to pay as soon as he could. Where in Europe could he have means of clearing it off rapidly by means of lectures? He came to the United States and gave a course of lectures on geology, in the Powell Institution, at Boston, and though improvising in a language that was not his own, he produced an immense effect. His audience was so numerous that he was obliged to deliver each lecture twice, and in a few years gained enough by his various courses of lectures to repay his hundred thousand francs. This is a specimen of what may take place in mercantile America, and it shows that its people are not utterly indifferent to science, and that if they delight in making money, they know also how to spend it nobly.

Osage Orange Report Reviewed.

COL. HARRIS:—In your last number, (July 1st.,) you copy what purports to be a report of a committee of the “Cincinnati Horticultural Society,” on the condition of the Osage Orange Hedges in this vicinity, preceded by some remarks over the initials M. B. B., approving its sentiments.

Were it not for some palpable misrepresentations of facts in the report with the above endorsement, I should not deem it worthy of farther notice, as it has here, the place of its birth, been sufficiently exposed. The report is *a drive at Spring Grove hedge*, those having charge of it, and nothing else, the cause for which it is not necessary to trouble you or your readers. The public want facts, it has no interest in *personal bickering*.

From the commencement of this hedge to the present time, there has been much speculation about its success, and its finally answering the objects of its creation. Much criticism has been bestowed upon it, and this not unfrequently by those who are intelligent and entitled to the public confidence in such matters, well calculated to produce doubts and anxiety as to the issue in the mind of the party charged with the direction and care of it. Time, however, expelled these doubts, and gave place to entire confidence in its success, by two years' exposure of a large part of it to hogs, pigs, and other animals, some of it on a public highway, without a single break through it during this time. The unparalleled hard freezing of last winter created just alarm for the safety of this and other hedging in our vicinity. It was evident that in many instances the laterals were destroyed by the frost, and the appearance of the body of many of the plants was anything but encouraging. The writer was free to state this at the meetings of the Horticultural Society. The event has since proven a wonderful power in vegetable force to rid itself of the injury thus sustained. While large numbers of the laterals have dried up, the body of the plant has thrown off the injury, resumed its active and healthy growth in the reproduction of an abundance of new laterals, to take the place of the dead ones. And at the time the report of the committee was made, it was in the most vigorous and beautiful growth; so much so, that the first spring dressing had necessarily been completed.

However, the fears which I had expressed of the winter's freezing, was made the occasion of the *gratuitous* declaration, that “the most

severely cut of any other was the hedge around Spring Grove; and upon consultation with some, it was thought that this hedge would be benefited thereby, as it would enable those who have the same in charge, to cut down to or below the surface of the ground, and thus encourage a strong and vigorous branching growth from the base, which was considered superior to the *plashing* process heretofore pursued." When I first saw that report in print, I was led to look on it as a counterfeit, an imposition on the society, and so noticed it, but soon found that it was an actual reality, a *thing* presented to and sent out under the auspices of the "*Cincinnati Horticultural Society*." But the inquiry developed the fact, that Messrs. M. McWilliam and H. Hazen White had not seen the hedge, or had anything to do in writing the report. In the unsuspiciousness of their hearts they signed it, feeling it was all right. They have since visited the hedge, and on full examination think it would be unwise to cut it down, and I think the chairman of that committee would think so too, if it inclosed his grounds, or it had been grown under his direction. However, it will speak for itself to those who are near enough to examine it, and I shall say nothing more than that it is a most perfect *barrier*, without the need of *rails* or *boards*, or any other thing at the bottom to prevent the hogs or boys from creeping through it. This hedge is not however *plashed*, as it is represented to be. It is *platted*, a very different process, very beautiful and perfect, but too tedious and costly for the farmer, and unnecessary for general purposes. There is however near a mile of hedging on the same grounds, now in its third year, which is forming on the *plashing system*, and I will simply ask a suspension of condemnation of this system by M. M. B., until he has an opportunity to see it.

It is not controversy, Mr. Editor, that I am seeking, nor shall I enter into any. Each individual has a perfect right to the enjoyment of his notions on this subject, and I have no wish to disturb them in it. But no committee, under the authority of a society, has a right to misrepresent facts as they exist. Very respectfully yours,

A. H. ERNST.

Spring Garden, Cincinnati, July 4, 1856.

[*Ohio Cultivator.*

FACTS.—Old Mr. Singlestick mystified a tea-party by remarking that women were facts. When pressed to explain his meaning, he said, "Facts are stubborn things."

Sorgho Sucre—Sweet Millet.

INASMUCH as the agriculture of the country should bestow, as we think, more attention to our forage crops, we deem all the information that we can collect on this subject to be of importance to the interests of agriculture.

Under this view we now submit the following statements in relation to the SWEET MILLET, sometimes called the "Chinese sugar cane," with the suggestion that this may become an essential product among our forage staples. We therefore bespeak for this Asiatic stranger a fair trial of its merits, and trust that the experiments made with it will be accurately communicated to our agricultural papers.

J. C. ORTH'S REPORT.

The following report was read at the last meeting of the Wabash County Agricultural Society, and was ordered to be published.

I deem it my duty, as a member of your society, as well as the duty which one citizen owes to community, to report, as far as successful experiments enable me, my efforts to cultivate new seeds, some of which I obtained by means of private correspondence, and others through the Patent Office, and in behalf of your society.

The first seeds which this society obtained from the Patent Office for distribution among its members were obtained in the winter of 1855, and comprised a list of twenty-one varieties, with the cultivation of some of which most farmers were familiar, but there were also some, of the culture and care of which nothing was known, and in consequence all attempts to cultivate were necessarily experimental.

Among the latter class was the Sorgho Sucre or Sugar Millet, a gramineous plant, imported by the Patent Office from France, and imported into France from the north of China, some five years since. Mr. D. J. Brown, the agent of the Patent Office, in his report upon this plant, says, "he was led to infer that, from the peculiarities of the climate, and its resemblance in appearance and habits to Indian corn, it would flourish in any region wherever that plant would thrive." My experience fully proves Mr. Brown's judgment correct. When the seed was obtained, nothing was known of it, and no one seemed willing to plant it on trial; bearing the name of millet, it was supposed to be quite a different plant from that which it turned out to be. About the middle of May I planted all the seed received, except one paper which amounted to not exceeding one gill, on new upland, between Indian

corn and broom corn, and soon found the seed to come up in excellent order. The seed in size and shape resembled broom corn seed, but its color was black, while the plant bore a similar resemblance, except that they came up and continued to grow more thrifty, and from the first continued to retain a deeper green color than Indian corn, tinged with a whitish furze over both stalk and leaf, which could be wiped off with the finger, indicating in corn generally a more luxuriant and hardy growth. At first I concluded it was most probably a species of broom corn, and found no cause to change that opinion, until the blossom had dried off from the seeds, and they began to harden, the resemblance to broom corn still continuing to be so complete, even to the formation of head and seeds. But profiting by the remark printed upon the paper which contained the seeds, "Good for fodder, green or dry, and for making sugar," I cut off a few stalks and offered them to my horses and cattle, who ate them with apparently a good relish, and seemed to ask for more.

I then concluded that as a part of its recommendations was probably true, I should also try the other, and manufacture sugar from the juice contained in the stalk. Its stalk being very long and heavy, and exceedingly rich in juice, and to the taste, in its natural state, almost as sweet as molasses, no doubt remained upon my mind that it was what it was said to be. I cut six stalks, placed them successively upon a flat board, took a rolling pin, and as well as this simple machine enabled it to be done, expressed and saved the juice. The result was, I obtained two table tumblers full of juice (but half was not saved). This was then boiled down, and produced one of the same tumblers half full of good, pleasant tasting molasses, about as thick as the common molasses, obtained in the stores. But as my object was simply to ascertain the quantity rather than the quality of saccharine matter contained, this juice was neither strained nor clarified, and therefore, of course, its taste was not equal to what it would be under more careful treatment. From all that I could observe concerning this plant, I am fully convinced that 15 per cent. of good clarified sugar could be obtained. My experiment produced about 25 per cent. of molasses.

Mr. Brown says, "the great object sought in France in the cultivation of this plant is the juice contained in its stalk, which furnishes three important products, namely: sugar, which is identical with that of corn sugar, alcohol, and a fermented drink, analogous to cider." He also adds, "the juice, when obtained with care, by depriving the stalk of its outer coating or woody fibre and bark, is nearly colorless, and contains merely sugar and water, producing from 10 to 16 per

cent. of the former." This, it would seem, is evidence strong enough to warrant a more extended trial of its merits, and if it will in any way supply the place of corn sugar, it must of necessity become a very important and valuable acquisition to the agricultural products of the middle and northern States. I am fully satisfied that it will ripen in north latitude 42°, which is about the northern limit of Illinois.

The process of making sugar from it would not necessarily differ from others, and for family use only could be made simple. The chief difficulty appears to be the expressing of the juice from the stalk. Upon a small scale, and a scale large enough to manufacture all the sugar wanted in a family during a year, the pressing could all be done with a pair of rollers, say from one to two feet long, and from 6 to 10 inches in diameter, to one of which a crank must be attached for hand use. Such a pair of rollers placed in a frame sufficiently strong, and arranged to be set close or wide, by means of wedges, would be all that is necessary, and any one who has the least of mechanical skill, could put them up. The cost would not necessarily exceed two days' labor, while one week's work in boiling, etc. would produce from five to ten times the amount of sugar that is usually made from the maple tree in the same length of time, and the same amount of water boiled. This production then, in an economical point of view, well merits the attention of the farming community, and should they give it that attention, which in my humble opinion it demands, in a few years it will be so extensively cultivated in Illinois, that her rural population will have but little occasion to purchase their sugar and molasses at stores. Wabash county is particularly interested in the cultivation of this plant, and I hope to see her rich and intelligent farmers give it a fair, impartial trial.

All of which is respectfully submitted.

Jos. C. ORTH.

DR. RAY'S REPORT.

HUNTINGTON, Long Island, N. Y.

Early last spring, I was presented with a few seeds of the sugar cane by a gentleman who received a small package of them in a letter from England, where they had, by the aid above referred to, been matured. At the usual seed-planting season in this vicinity, the seeds were carefully planted in my garden, in a bed richly manured with a compost of guano, stable manure, and charcoal dust. They were placed in drills, at such distances apart as are observed in sowing sweet corn. It kept nearly an even pace with the corn in its germination, growth, and maturity, in all respects, except that of obtaining a hight

of from ten to twelve feet. The stalk is of a greenish, yellow color, with long, narrow blades of delicate fibre, and the seed appears at the end. In many respects the cane resembles in appearance the plant known as the broom corn. From the season when the stalk has attained one-third of its growth, up to its full size and ripening, it is exceedingly succulent; and an incision into it, followed by compression, will give exit to a clean, colorless fluid, as sweet as the syrup of sugar.

From my scant store of seed, I supplied a few friends with each a mite, in view of obviating any circumstances that might defeat my purpose of testing the qualities and merits ascribed to this new plant. Our success in its cultivation was entirely satisfactory, and we had the mutual pleasure of agreement in the views we entertained of it, as being a production entitled to the notice of farmers. As a green, palatable, wholesome, and nutritious food for cattle and hogs, at a season when pasturage grows short, it has no equal to anything that can be raised on our land with equal ease and facility. It is heavy, tender, crisp and juicy; and these qualities predominate even when the stalk is fully grown and the seed has ripened. The avidity with which it is eaten at this time is surprising. To see a stalk as long as an ordinary sized fishing pole, disappear inch by inch in the mouth of a cow, after she has once tasted its juice, is a sight both amusing and interesting. It requires no patented chopper or cutting box to prepare it for her stomach. It is no less worthy of remark, that the poles have been observed to reach and produce a very good effect upon the milk receptacle of the animal.

As the sugar cane requires but very little room literally for its growth, an acre will yield a vast amount of weight in food, and, as it grows rapidly, it may be cut at any stage when necessity requires it. If cut when it has attained a height of three or four feet, a number of shoots will spring up from the roots of each plant, and in a short time afford a second or even a third crop from the same piece of ground. At the season of cutting up corn for winter fodder, the stalks of the sugar cane may be fed whole to horses, cattle or hogs, without fear of waste; and at a later period they afford when cut into pieces, a highly nutritious food. There will be no looking for leaves among the pieces, nor tedious mastications, nor terrors of choking, but a speedy devouring of the repast.

The percentage of saccharine matter, consisting chiefly of sugar, gum, fecula and gluten, afforded by this vegetable, greatly exceeds that of any other production of the land in this neighborhood; and it is needless to say that to the presence of this principle belongs the chief value of stock-feeding crops.

JOSEPH H. RAY, M.D.

"May Be So."

A CHAPTER FOR MOTHERS.

NEXT time you go out, you'll buy me a wagon, won't you, mother?" said my little boy to me one day.

I didn't want to say "no," and destroy his happy feelings, and I was not prepared to say "yes," and so I gave the evasive reply so often used under such circumstances, "May be so," and which was meant rather as a negative than an affirmative. The child was satisfied; for he gave my words the meaning he wished them to have. In a little while after I had forgotten all about it. Not so my boy. To him the "may be so" was "yes;" and he set his heart confidently on receiving the wagon the next time I should go out. This happened to be on the afternoon of that very day. It was toward evening when I returned. The moment I rang the bell at my own door, I heard his pattering feet and gleeful voice in the entry.

"Where's my wagon?" said he, as I entered, a shade of disappointment falling suddenly upon his excited, happy face.

"What wagon, dear?" I asked.

"My wagon. The wagon you promised to buy me."

"I didn't promise to buy a wagon, my son."

"Oh, yes, you did, mother! You promised me this morning."

Tears were already in his eyes, and his face wore a look of distressing disappointment.

"I promised to buy you a wagon? I am sure I remember nothing about it," I replied confidently. "What in the world put that in your head?"

"Didn't I ask you?" said the child, the tears now overflowing his cheeks.

"Yes, I believe you did ask me something about a wagon; but I didn't promise to buy you one."

"Oh, yes you did, mother. You said 'may be so.'"

"But 'may be so' does n't mean yes."

At this the little fellow uttered a distressing cry. His heart was almost broken by disappointment. He had interpreted my words according to his own wishes, and not according to their real meaning.

Unprepared for an occurrence of this kind, I was not in the mood to sympathize with my child fully. To be met thus, at the moment of my return home, disturbed me.

"I did n't promise to buy you a wagon; and you must stop crying about it," said I, seeing that he had given way to his feelings, and was crying in a loud voice.

But he cried on. I went up stairs to lay off my things, and he followed, still crying.

"You must hush now," said I, more positively. "I can not permit this. I never promised to buy you a wagon."

"You said 'may be so,'" sobbed the child.

"'May be so,' and yes, are two different things. If I had said that I would buy you a wagon, then there would have been some reason in your disappointment; but I said no such thing."

He had paused to listen; but, as I ceased speaking, his crying was renewed.

"You must stop this now; there is no use in it, and I will not have it," said I, resolutely.

My boy choaked down for a few moments at this, and half-stifled his grief; but overmastering him, it flowed on again as wildly as ever. I felt impatient.

Stop this moment, I say!" And I took hold of his arm firmly. My will is strong, and when a little excited it often leads me beyond where I would go in moments of reflection. My boy knew this by experience. By my manner of speaking, he saw that I was in earnest, and that, if he did not obey me, punishment would follow. So, with what must have been a powerful effort for one so young, he stifled the utterance of his grief. But the storm within raged none the less violently, and I could see his little frame quiver as he strove to repress the rising sobs.

Turning away from me, he went and sat down on a low seat in the corner of the room. I saw his form in the glass as I stood before it to arrange my hair, after laying aside my bonnet; and for the first time my feelings were touched. There was an abandonment in his whole attitude; an air of grief about him that affected me with pity and tenderness.

"Poor child!" I sighed. "His heart is almost broken. I ought to have said yes or no, and then all would have been settled."

"Come," said I, after a few moments, reaching my hand toward the child; "let us go down and look out for father. He will soon be home."

I spoke kindly and cheerfully. But he neither moved, looked up, nor gave the smallest sign that he heard me.

"Oh, well," said I with some impatience in my voice, "it doesn't

matter at all. If you'd rather set there than come down into the parlor and look out for dear father, you can please yourself."

And turning away as I spoke, I left the chamber, and went down stairs. Seating myself at a window, I looked forth, and endeavored to feel unconcerned and cheerful. But this was beyond my power. I saw nothing but the form of my grieving child, and could think of nothing but his sorrow and disappointment.

"Nancy," said I to one of my domestics, who happened to come into the parlor to ask me some question, "I wish you would run down to the toy store, in the next block, and buy Neddy a wagon. His heart is almost broken about one."

The girl, always willing when kindly spoken to, ran off to obey my wishes, and in a little while came back with the article wanted.

"Now," said I, "go up into my room, and tell Neddy that I've got something for him. Don't mention the wagon; I want to take him by surprise."

Nancy went bounding up the stairs, and I placed the wagon in the center of the room, where it would meet the child's eyes on the moment of his entrance; and then sat down to await his coming and enjoy his surprise and delight.

After the lapse of about a minute, I heard Nancy coming down slowly. "Neddy's asleep," said she, looking in at the door.

"Asleep!" I felt greatly disappointed.

"Yes, ma'am. He was on the floor asleep. I took him up and laid him in your bed."

"Then he's over his troubles," said I, attempting to find a relief for my feelings in this utterance. But no such relief came.

Taking the wagon in my hand, I went up to the chamber where he lay, and bent over him. The signs of grief were still upon his innocent face, and every now and then a faint sigh or sob gave evidence that even sleep had not yet hushed, entirely, the storm which had swept over him.

"Neddy!" I spoke to him in a voice of tenderness, hoping that my words might reach his ear. "Neddy, dear, I've bought you a wagon."

But his senses were locked. Taking him up, I undressed him, and then, after kissing his lips, brow and cheeks, laid him in his little bed, and placed the wagon on the pillow beside him.

Even until the late hour at which I retired on that evening, were my feelings oppressed by the incident I have described. My "May be so," uttered in order to avoid giving the direct answer my child wanted had

occasioned him far more pain than a positive refusal of his request could have done.

"I will be more careful in future," said I, as I lay thinking about the occurrence, "how I create false hopes. My yea shall be yea, and my nay, nay. Of these, cometh not evil." }

In the morning, when I awoke, I found Neddy in possession of his wagon. He was running with it round the room, as happy as if a tear had never been upon his cheek. I looked at him for many minutes without speaking. At last, seeing that I was awake, he bounded up to the bedside, and kissing me, said:

"Thank you, dear mother, for buying me this wagon! You are a good mother!"

I must own to having felt some doubts on the subject of Neddy's compliment, at the time. Since this little experience, I have been more careful how I answer the petitions of my children; and avoid the "May be so," "I'll see about it," and other such evasive answers that come so readily to the lips. The good result I have experienced in many instances.—*The Mother's Rule, by T. S. Arthur.*

APPLE TREE BORER.—N. S. Smith, of Buffalo, N. Y., gives a remedy for the "sure and total destruction" of the apple, quince, and peach tree borer, "and at the same time a decided stimulant and fertilizer to the tree." We copy the article entire:

"Make a concave mound of mellow earth around the tree, rising about six inches above the work of the insects. Thoroughly saturate this mound with a strong common salt brine, twice, at an interval of four weeks, at any time of the year when the ground is not frozen; stale beef or pork brine in its full strength, is just the thing. The mound of earth holds the liquid in suspension, round the tree, until by capillary attraction it is carried into the holes and burrows of the insect—where the salt is a sure destruction to every grade of this ravaging and pestilent enemy. Vary the quantity of the dose with the size of the tree. Be cautious with small trees. Old, large trees, three feet round, may have a pailful at a time.

"I have revived trees by this application from apparent death. Apple trees, thirty years old, with their trunks perforated very badly, are now perfectly healthy, and their wounds are healing over. Two Golden Sweetings, eight years old, last June, withered and showed signs of

death. On examination, I found the trunks full of borers, and more than half the surface eaten off. I made the application twice. Both trees revived, and made new wood the same season. This spring I have treated every other tree with the application. These trees are in bloom, and the wounds made by the insect rapidly healing over. I would not now, without trial, recommend the application to any other than the apple, quince and peach."

COMPRESSING THE BULK OF FLOUR.—The Albany *Journal* states that Louis Napoleon, in 1853, conceived the idea that it would be practicable to compress flour so as to diminish the bulk and yet not injure its quality. In July of that year, an experiment was made by his command, to test his views. Flour, subjected to a hydraulic pressure of three hundred and sixty tons, was reduced in volume more than twenty-four per cent. On close examination, it was found to possess all the qualities it had previous to its violent treatment. It was then put into zinc boxes and sealed up. At the same time, other flour manufactured from the same wheat, but not compressed, was sealed up. In October thereafter, several boxes containing both kinds of flour, were opened and examined. The pressed was pronounced to be the best. Twelve months after this, in October, 1854, another examination took place, with the same result. The two kinds were kneaded into loaves and baked. The pressed flour made the best bread. In March, 1855, more of the zinc boxes were opened, and on examination, the loose flour showed moldiness, while the pressed was sweet, and retained all its qualities. Made into bread, the same differences were observable.

IT is related of the witty Theodore Hook, that strolling along the Strand one day, in company with a friend, he observed a dandy approaching them, dressed in the first style of fashion, and sailing down the street with the air of an emperor, passing by the ordinary mortals who surrounded him with immeasurable disdain. Just as he came near, Hook stepped up to the exquisite, and humbly inquired,— "I beg your pardon, sir, but are you anybody in particular?" The disconcerted beau looked at the grave querist in utter amazement, and walked away without a particle of dignity left.

Horticultural Society Proceedings.

THE Cincinnati Horticultural Society met on Fourth street, July 12, 1856; John P. Foote, Esq., in the chair, G. Graham, Secretary.

The following communication, from Prof. J. B. Turner, of Jacksonville, Illinois, was received, read, and ordered to be printed.

LETTER ON HEDGES, FROM J. B. TURNER.

JACKSONVILLE, ILL., June 26, 1856.

DEAR SIR:—Your note of inquiry, respecting the effect of frost on the Osage Orange, or Prairie Hedge-plant, as we choose to call it, is at hand. You inquire also of my opinion of its value as a hedge-plant for this country.

In reply, I would say that I have some eight or ten miles of this hedge on my own grounds, in all stages of its growth, from one to seven years or more. My homestead here now has no other fence around it or upon it, except a short piece of plank fence on one side of my stockyard, the other three sides being inclosed with the hedge. On my farm, near Hillsborough, I have set about six miles within the past two years, and intend to clear all other fences from that as soon as possible, although there is on the farm, which consists of nine hundred acres, about one hundred of good oak timber, which has never been cut, and never will be by me, for a fence.

These facts, I suppose, will show my own practical estimate of the value of the hedge.

As regards frost, I have not seen a single plant injured by frost, in this region, during the cold winter, nor yet heard of one, though in the spring I handled several hundred thousand, besides what are on my own grounds. Still the winter killed to the ground many of my pear, peach, and apple trees, which were six inches or more, though standing close by the hedge; so that it appears to stand the cold better than I at first feared it would.

I give myself no uneasiness about that now, for whenever we have a winter hard enough to kill this hedge, I shall move out of the country; I would as soon live in Greenland.

We find no trouble in making a fence that will stop all sorts of cattle, sheep, pigs and poultry; though I see many who attempt it fail.

Yours truly, J. B. TURNER.

To Wm. STOMS, Esq., *Chairman of the Horticultural Committee of Cincinnati Horticultural Society.*

Mr. W. E. MEARS then submitted a minority report from the Committee heretofore appointed to visit Strawberry plantations, which was, on motion, received, read, and ordered to be printed.

MR. MEARS' MINORITY REPORT.

To the President and Members of the Cincinnati Horticultural Society:

GENTLEMEN:—It is indeed a matter of surprise that the great “Strawberry question” can not be settled. But, surprising as it may seem, it is still more surprising that gentlemen engaged in collecting and disseminating information upon this much-vexed and agitating question, do not confine themselves strictly to the facts as they present themselves for investigation.

When this Society, at its meeting on the —th of June, appointed the Fruit Committee as a special committee to visit the several Strawberry plantations in the vicinity, and report upon their relative merits for general cultivation, etc., I really hoped that the question would receive that candid investigation which the intelligence and acknowledged ability of the “majority” of that committee would seem to warrant. Whether our expectations have been realized will be shown in this article.

The public have forgotten (if members of this Society would willingly blind themselves to the fact) the origin of the present Strawberry controversy. Mr. Longworth stated in a communication in the *Cincinnati Times*, that “*many years have passed since we threw aside Hovey’s Seedling, because nine-tenths of the berries were of small size, and the fruit not of superior quality.*”

To this sentiment exceptions were taken, which resulted in a majority and also a minority report; the former signed by Messrs. S. S. Jackson, E. J. Hooper, M. McWilliams, and Robert Riley, four members; the latter by myself.

The majority report was quite brief, and you, Mr. President, considered it “to the point”—the whole thing contained in a “nut-shell.” Now, sir, I propose quoting from that brief document. It says: “For size of berries and hardihood of plants, they (the committee) know of no Strawberry better than McAvoy’s Superior. In prolific qualities it is surpassed by few worthy of cultivation, but their experience, so far as the good market qualities of Strawberries are concerned, at the present time, is that there is no rival to Hovey’s Seedling, it being, in their opinion, more popular with our market gardeners who supply Cincinnati than any other kind; at the same time, they hesitate not to say that Hovey’s Seedling is not equal to McAvoy’s in flavor.”

This language, it will be recollect, was used by the "majority," before the majority of the Strawberry crop of the present summer. In their subsequent report the same gentlemen use the following language:

"With regard to Hovey's Seedling, your committee, *until other berries have been properly and completely tested*, in the same soils, and under the same circumstances, or under those circumstances at least best suited to their particular requirements, can not but arrive at the conclusion that, under all the aspects in which they have been able to examine it, it is at this time one of the very best fruit of the kind for general, or at any rate, market cultivation; *for its large size and uniform shape*, its very good and sweet flavor when fully matured, its fair yield of large berries even after the largest one of the bunch, its brilliant color when nearly ripe, and its rich deeper shade when fully ripe; its firmness for carriage and maintenance of firm texture and fine appearance for many hours after being gathered; its hardiness and vigor, its general adaptation to nearly all soils, and its easy impregnation, combine to render it, in your committee's estimation, one of the most prominent, valuable, and reliable berries in the country, in general cultivation, with which we are acquainted."

Now, sir, I claim this sentiment is a great leap from the "tame" expression of the majority in their first report, and would have received my unqualified assent if it was not smothered with a manifest determination upon the part of the majority to impress the public mind with the idea that the circumstances surrounding the cultivation of Hovey's Seedling were in an extraordinary degree favorable, and the meed of praise was only awarded until *other varieties* could be "properly tested," at least *under these circumstances best suited to their particular requirements.*"

Astonishing! Our eyes were almost picked out for intimating in the minority report thus: "If our subsequent experience and more familiar acquaintance with McAvoy's Superior, under a variety of circumstances and in different localities have convinced us that the committee was premature in making the award (of \$100) to it as a berry superior in all respects to Hovey's Seedling, we can be under no obligations to sustain that decision," etc. And now, after another year's experience with the great "Superior," the majority (one-half of whom are known to be uncompromisingly in favor of the Superior,) are constrained to place Hovey's Seedling at the head of the list of Strawberries, for universal cultivation. It is true they intermingle a few "ifs" and "ands," as they pass along, I presume, for the same reason that the sailor in a

severe storm at sea prayed first "good Lord," and then "good Devil," as he did not know whose hands he would fall into.

I can, with great confidence in the truth of my testimony, bear witness that the evidences presented to the committee in their visits, justify this eulogy of Hovey's Seedlings. The fruit at Messrs. Bates and Youtey's was truly gigantic, and I confess I was rejoiced to see our old friend A. H. Ernst, Esq., collecting mammoth specimens as we passed over the grounds of these gentlemen, and calling the attention of the members of the Fruit Committee in ejaculations of wonder, admiration and praise, and I thought the old gentleman stood at least six feet six, as the darkness of past years rolled from a mind now open to the convictions of truth, as the light shining with such intense brilliancy poured into his soul, making the very "stumps" and "grubs" which so thickly studded the fields shout aloud for joy, until the surrounding hills echoed and reechoed the sound, and our friend Riley himself faintly uttered "Astonishing! the very finest kind of Strawberries produced with less labor than we bestow upon an ordinary crop of potatoes."

But, Mr. President, as the Fruit Committee were to report upon what they saw with their "eyes," and not their imaginations, I am utterly at a loss to know where they found the original from which to draw the picture they have given us of the "Superior." It is true, sir, that we found the berries imperfectly impregnated, not, I think, from the absence of the pregnators, for other varieties, both in the grounds of A. H. Ernst and Mr. Pye, presented *perfect berries* with equal impregnation. This is a characteristic defect of this variety, and can only be remedied by excessive fertilization under other favorable circumstances, hence unworthy general cultivation. I say, sir, when the committee found the fruit in the two days we were visiting, which justified their saying, "There can be no doubt in the mind of your committee that this variety (McAvoy's Superior) is among the kinds of the very largest size at present known, is greatly productive, and the berries carrying out well their size from the finest and largest berry on each truss; that the flavor is rich and most agreeable; that it can be carried with care ordinary distances; that it is very hardy and sufficiently vigorous in growth; that the color is rich if it is not brilliant; and that, although its shape is irregular, its bulging and swelling form conveys the idea of luscious richness."

This quotation of the majority is a picture drawn from the vivid imaginations of these gentlemen, or else describes the berry in ques-

tion as witnessed by them on some other occasion than the one from which they were expected to make their report. And I will here take occasion to inquire of these gentlemen that, if it were possible to reverse the evidence presented to their consideration, and Hovey's Seedling, instead of the immense crop of mammoth and well-developed fruit, which greeted their eyes in the broad fields of our Kentucky friends, and the enormous dishes of the luscious berries which were found upon the tables of their hospitable ladies, and with such delight and apparent gratification transferred to the stomachs of the "Investigating Committee," had been such ill-formed, imperfectly developed, half-grown and miserable looking creatures that the Superior presented to our eyes at every place seen, without one single exception, and the Superior had been all that we found the Hovey to be, what would have been the character of the report? I leave, sir, the answer for such as choose to make it.

Finally, when we recollect that Hovey's Seedling secured the 1st premiums at the two spring exhibitions of 1855, and the spring exhibition of '56, carried off the grand sweepstake of \$10 offered by the society for the best four quarts of any variety, and decided, too, by this same committee, to be of *larger average size, more handsome, uniform berry, and of BETTER FLAVOR*, than the Superior placed in competition with it, we can not but congratulate the society upon the advanced ground they have taken, and flatter ourself that the experience of one or two more years in Strawberry cultivation will bring the society, and especially the "majority," up to the opinions entertained and fully expressed in the "minority" report of the Fruit Committee presented to this society on the 22d March last. I would commend to your careful reading once a quarter at least of that minority report. Lest I become tedious, I will pass over other items in the report of the majority that I designed to notice. Very respectfully, W. E. MEARS.

On motion, the Committee on the Hall was continued one week.

Adjourned.

J. P. FOOTE, Pres't. *pro. tem.*

G. GRAHAM, Sec'y.

OPPOSITION TO INVENTORS AND DISCOVERERS.—Roger Bacon was forbidden to lecture, and when sixty-four years of age was imprisoned in his cell for ten years, for the offence of making concave and convex glasses, the camera obscura, and burning glasses. Galileo was also imprisoned for his discoveries in astronomy. Guttemburg and Faust, the inventors of printing, were looked upon as having sold themselves to Satan.

For the *Cincinnatus*.

Reflections by a "Resident of the Hill Side."

A DRIVE TO SPRING GROVE.

"How peaceful and how powerful is the grave!"—BYRON.

IT was on a lovely day in November last, when our system had become depressed with an unusual lassitude that we betook ourself for a ride out of town. Our horse and buggy being ready, immediately after dinner, we started on our way, rejoicing in the glorious pleasure of leaving behind a smoky city, with "its artificial manners, its arbitrary rules, and its cheerless pleasures," to snuff the fresh air of a country drive. Passing out Vine street, and over what is familiarly called the "*Rhine*," a fine opportunity occurred for seeing unsophisticated Germany out of doors.

On each side of the street could be observed innumerable signs of "Lager Beer," for which commodity this part of the town has become so justly (or unjustly?) celebrated. Upon the side walks, was an immense throng of every age and sex, with every imaginable shape, size, and color of smoke-pipe accompaniments. To many, the use of this implement seems to have become an indispensable appendage in their daily pleasures. As we heard the merry laugh, and looked around upon this rustic, artless, and unadorned people, we could not but think they were happy; and parted from them under a high pressure of opposition to too much civilization! Their lot at least, is not one of *splendid* misery, if misery be known to them in any shape.

Arriving upon the summit of Vine street Hill, Mount Auburn, Walnut Hills, together with a vast extent of enchanting scenery, presented itself to view. To a landscape of great natural beauty, is added all the improvements of modern civilization. A few moments longer and we were upon the refined, elegant, and classic ground of *Clifton*; the only place in our beautiful State renowned for the doings of its "*Farmers' Club*." Here, too, is the residence of JOHN QUILL, Esquire, its famous Secretary. We were almost tempted to call on "John," *en passant*, but two very weighty considerations prevented our coming into the presence of this distinguished personage. First, want of time; second, the fear that "John" might insinuate that we had called more for a glass of the "*native*," than exchange of congratulations.

Suspicion and sensitiveness are our ruling foibles, and this confession must plead the apology. CLIFTON is a place presenting a great many beautiful eminences, dotted over with the magnificent palaces of the wealthy merchant princes of Cincinnati. It presents to the eye a harmonious blending of *all* the beauties. This, then, is the *Elysium* on earth, that we hear and read of in *romance!* Are these people ever burdened with care? Do they know aught of sorrow? Do they ever feel the sting of adversity? Are their bodies ever racked with pain? Do they die? Alas! Let us not moralize too long here, else echo may spoil our delusion, by a response of *yes!* to all these queries.

Arriving upon the summit, and descending the slope of the hill from Clifton, a scene presented itself to the eye worthy the pencil of a master painter. The view is panoramic; taking in at a glance the plain and valley of Mill creek, with the surrounding hills, exhibiting in every direction a natural scenery, with such improvements and embellishments, that might well challenge comparison with any other region in the United States. Across the waters of Mill creek, and skirting the edge of something in the shape of a village, is the residence of Mr. Jacob Hoffner, whose grounds annually attract the attention of thousands. No visitor ever entered his hospitable gates, and left without expressions of admiration, wonder, and surprise, that such perfection should be realized in landscape gardening. Flowers, lawns, evergreens, statuary, rock-work, and fish-ponds, all combine to make the scene one of enchantment. Still further in the distance, and to the left, on a gentle rise, or eminence, is the residence of "*Bell Smith.*" And "*Bell,*" whether at home or "*abroad,*" is just now making substantial foot-prints on the sands of time. She has already passed through the incipiency of her literary triumphs. May she weave for herself a garland of fame's unwithering laurels!

Far away to the right is "*Spring Grove,*" with its thousands of white marble tomb-stones and monuments. But let us jog along. These are but golden fringes to a dark-looking center. Time and space will not permit our further contemplation of the ravishing scene. We pass through the town of "*Cumminsville,*" almost as old in appearance as the everlasting hills which surround it.

A little further on and we are within the gates of "*Spring Grove!*" As we drove down the main avenue, the keen north air most *feelingly* persuaded us that we were mortal; but the effulgent sun gave to all nature a delightful glow, which was in most beautiful harmony with the scene under contemplation. It was autumn, melancholy autumn, which is well calculated to remind man of his own decay. It is the

precursor to that winter of age which freezes him in death! Although man is a gregarious animal, yet there are hours in the history of every one when he will prefer to be solitary and alone. These feelings generally pervade him most when the "melancholy days have come—the saddest of the year;" the falling leaf, the moaning winds, and the entire change in nature's wardrobe tends to this result. It is emblematical of the many mutations and evanescent changes along the stream of time; and is well calculated to shade our life with many hues. A tint to-day is a blight to-morrow; the bud of yesterday is a full blown rose to-day. Man has his pleasures and his pains—his joys and his sorrows—his hours of festive gaiety and his hours of sadness. Hope and prosperity buoy him up; misfortune, disease, and calamity, weigh him down. To-day he gives promise of a long life—to-morrow confined within the narrow lids of a coffin!

An hour's drive from the great metropolis of the West, the mart of trade, the din and bustle of wordly men, and we were in the deposit-house of the dead! What a contrast! The fevered brain, the anxious heart of an hour before, was now contemplating, in serene and melancholy repose, the last resting place of man! In the city all is bustle and excitement—here all is silent and at rest. How soothing! how mournful!

"There is a calm for those who weep,
A rest for weary pilgrims found,
They softly lie and sweetly sleep
Low in the ground.

"The storm that rocks the winter sky
No more disturbs their deep repose,
Than summer-evening's latest sigh,
That shuts the rose."

Our thoughts can only find vent in a rhapsody of words. Here they lie around us, the very greatest, not now equal to the beggar that starves in the market! "*And to this complexion we must come at last!*" Like the meditative "Hervey," or gloomy "Hamlet," it is well to hold in serious contemplation, "*that undiscovered country from whose bourne no traveler returns.*" For death makes no distinctions; his will is umpire; from his mandate there is no appeal. Monarch and maiden, sage, soldier, poet, hero, philosopher, the vassal and the king, the youthful and the old, the great and the small, the evil and the just; yea, all shall sooner or later be cut down with his relentless scythe. The charnel-house is filled with our moldering clay.

As our mind took in the images of those once loved, now buried

beneath the sod; and as the eye instinctively surveyed the mighty field of mementoes, that they once had life like ourselves, the reflection came upon us, and to ourself asked the question in silence, must these obelisks, these tomb-stones, these monuments, placed here at such immense cost, crumble and decay? And must these friends of ours beneath, like the soft notes of departed music, be forgotten? Alas! it is indeed, too true, they must. Examples teach us this from the birth of Christ to the present day.

Let the eye but trace down the galleries of sacred history and behold the immortal men of God that have gone down to the grave; and what do we know of them more than *they lived and that they died!* Where they lie there is no monument or stone to mark the spot. We shall go, and others will follow after.

This plain, and these surrounding hills, will re-echo with the silvery laughter of other voices, and by other footsteps will be trod; but the tendency of everything that is of earth, animate and inanimate, is to perish and decay. There is no immunity for high birth, nor desert in service, from the common lot. The proudest and most costly monument, and humblest tomb-stone, alike partake of the general doom.

As we rambled among the "storied urns" that recorded the departure of the living, we could not but muse on the thoughtlessness of man. Amidst the infinite and multifarious diversity of human pursuits, and business, in the great drama of life, how seldom do we think of death and the grave! "Death lurks in ambush along every path;" and none can be exempt from his icy embrace. Since, then, there is no loophole of retreat, it is best that it should be often thought of, so that when the time does arrive, it may lose some of its terrors.

After making our horse secure, we left the avenues to roam over the more secluded spots; to see who had taken up their abodes here with retiring modesty, and in search of names that might have gone out of recollection. Innumerable instances soon presented themselves, that a "*good man's memory did not outlive him half a year.*"

The first grave that seriously attracted our attention was that of a lady, who, several years in life, had been our immediate neighbor. She was a woman of most noble impulses, and deserving more than a passing notice. Her husband had died some years before her, and left four children in the charge, and under the maternal care of as kind a mother as the world ever saw. Her ambition was to keep her children above the suspicion of want, and to this end strained every nerve of a

most delicate constitution. Of their moral and religious culture she never lost sight nor spared an effort for its promotion. She had many years before attached herself to the *Rev. Mr. Brooke's* Church on Fourth street, and that excellent divine never failed to administer cheering consolations through every vicissitude of an anxious life, until the hour of her death. Well do we remember meeting this lady one morning upon the street, and paused a few moments in exchange of salutations. She looked a little care-worn, and depressed from over anxiety, we thought, but did not discern that her health was visibly failing. After a few moment's passing conversation, we separated, promising to make each other an early visit. But we never met again! A few weeks afterward we picked up the morning *Gazette*, and read therein the demise of our friend. How inscrutable are the ways of divine Providence! They are truly past finding out. She whom we had promised to call upon so soon with our family was now in the grave! As we stood by her tomb and read the inscription, remembering the many virtues of this noble woman, the tear drop, unbidden, had found its way down our cheek. In life our friendship had been sincere and faithful; but so it is:

“Friend after friend departs;
Who hath not lost a friend?
There is no union here of hearts
That finds not here an end.”

Should these lines meet the eye of any of the devoted children of this Christian woman, they will, we know, drop a tear to the memory of as kind a mother as the portal of the grave ever closed upon.

The next grave to which our attention became attracted was that of a victim to intemperance. By sight and reputation we had known him well. He had a large circle of acquaintances by whom he was much respected and beloved. We felt serious in contemplating the untimely fate of this young man. He had a generous heart, but his energies were wrongly directed.

But he heeds not now our pity for his foibles, nor our lamentations for his early death. He is alike insensible to our censure or our praise; and, save in the recollection of a few, is forgotten!

“No further seek his merits to disclose,
Or draw his frailties from their dread abode.”

Near by was the grave of a child. Upon a marble slab the sculptor had chiseled out a lamb, sleeping in alabaster repose; emblematical of the little innocent sleeping beneath. On this stone was the name of “Willie!”

Poor Willie! your stay was brief! your day of misery short!—We passed out of the inclosure in a sort of subdued unconsciousness, and most thoroughly imbued with a kind of soothing, softening spirituality. It was impossible for us to think, at that hour, that we had an enemy on earth, or that we did not have a universal love for every being of God's creation. The tear drop had already moistened our cheek—the heart was full—and with the lamented *Langdon* made exclaim :

“Alas! how soon shall pass away
All that is bright and glorious here!
For all on earth must soon decay—
Its radiant beauties disappear.”

Our cream-colored horse seemed to partake of the gloom of his driver, and plodded along, quite unnoticing those he met, or those that he passed. We had scarcely become conscious of being on this *mundane sphere* until having passed *Brighton* and turned into *Western Row*. Here the noisy omnibus, wagons, carts, and carriages were surging to and fro; and even the unruly boys were collected in squads, some playing marbles, and others “kicking up a dust,” by the way-side. And we thought, why should *they* not be permitted to indulge in a little innocent amusement! Soon they will be burdened with the cares of manhood—will have the making of presidents and conducting public affairs, when the present busy actors shall molder in the grave. By the time we reached Fourth street, the “weary sun had made a golden set.” The throng upon both street and side-walks, had become immense. In the street were the dashing steed and fantastic rider—the polished carriage with gorgeous equipage rolling over the pavement stones with accelerated speed. Homeward, too, the draymen were plodding their weary way; and on the side-walks, among the dense mass of pedestrians, could be observed squads of mechanics and laborers, wending their way home, in anticipation of approaching repose.

“Let not Ambition mock their useful toil,
Their homely joys, and destiny obscure;
Nor Grandeur hear, with a disdainful smile,
The short and simple annals of the poor.”

The merchant was intent upon counting his gain, in passing through the surging crowd. The pompous dandy, the conceited coxcomb, the dashing belle, and fashionable beaux, were parading in their costly habiliments, arrogating to themselves a vast consequence, little dreaming that in a few years at most they would be dead and forgotten!

Vain dreamers! ye are but bubbles on the wave, ready to be lost on the first surge of oblivion's breath.

As we neared the Post-office, the news boys were crying the "*Evening Times*," *only half a dime.*" A steamer had arrived—the news were exciting—stirring events had transpired between the Russians and the Allied powers. The town was all agog! At last we reached home, read the news, took tea, walked out with our wife to call on a friend. Here the conversation took a turn on every other subject but that of graves, grave-yards, or death. By ten o'clock we had returned home and retired to bed, having quite forgotten that such a place as "Spring Grove" was on the globe! Such, reader, is the history of one afternoon, with its joys and its sorrows, its pleasures and its pains, its smiles and its tears, its anxieties and its cares, its thoughtfulness and its thoughtlessness.

Such is man! Such is life!

SHRUBBERY AND VINES.—Let there always be a lawn in front of the house, and let the hardy climbers find all over it appropriate places on which to rest and fasten their wondrous burdens of grace and loveliness. Let honey-suckles and jessamines, clematis and bignonias, and wistaries, and roses, cluster over it and weave for it a veil of beauty, which the sun shall every moment diversify with bewitching light and shade, and in which the zephyrs shall always nestle, and rock themselves to sleep; where the bees shall come light hearted, and sing their monotonous lyrics of industry as they gather sweetest nectar; and where the little birds shall build their annual nests and rear their families not more loving than the one that dwells beneath those embowering vines. Cultivating such natural ornaments upon and about a house will refine the taste of the family, will improve the manners, will elevate the morals, and strengthen the domestic and social affections in their hearts. It will assist, also, in forming habits of industry and frugality, as well as habits of observation and intelligent piety. Let a family plan how best to adorn a yard, and decorate a house with foliage, and they will find springing up in their hearts a unity of feeling and strength of sympathy to which others are strangers. Each one labors to promote the pleasures of each other—hence domestic affection—hopeful patience: all seek to turn every spare hour to the common profit—hence orderly arrangement of time, frugality and industry.—*California Journal.*

Agricultural Entomology.

AT the late meeting of the National Agricultural Society, Hon. T. Glover, of N. Y., read a paper on the subject of Entomology as applied to Agriculture, from which we select the following wise and well-worded thoughts:

"The subject of entomology, as applied to the use of agriculture, or Agricultural Entomology, if it may be thus termed, is of the most vital importance to every planter or farmer, especially if the destruction effected by the myriads of insects annually to the staple crops of the United States is considered. The caterpillar, ball worm, and red bug too often destroy the Southern planter's hope of a cotton crop. The minute joint worm committed such ravages in the once fine and flourishing wheat fields of Virginia, that the culture of wheat in several places has been abandoned. The almost microscopic wheat midge has lately proved so destructive in the fertile fields of Ohio, that a friend from that State assured me, a few days ago, that during the last year he has seen fields so utterly destroyed as not to be worth harvesting, and cattle had to be turned in 'to prey upon the poor remains' the midge 'had left behind.' In New York, Massachusetts, etc., the curculio causes oftentimes a total failure of the plum crop. From North, South, East, and West we hear of nothing but complaints of the ravages committed by our insect foes, and it would be impossible to enumerate them on this occasion, as their name is 'legion.'

"It will, therefore, be plainly perceived that a close study of the habits and transformations of any one of these pernicious insects by the practical and intelligent farmer, would prove not only a source of great pleasure, as leading him to a keener sense of the beauteous and wonderful works of nature as exemplified in the singular transformations insects undergo, before they assume the perfect or fly state, but also a source of great profit, as, by experimenting upon them in all the stages of their existence, he might perchance discover some practical method by which their extermination could be effected. Indeed it is absolutely necessary, that a farmer should be able to recognize the insects that destroy his crops, in all their various and wonderful transformations, before any effectual remedy can be applied; as in one stage of their life they may be suffered to live and enjoy themselves, nay, even sometimes be protected, whilst in another stage we persecute and destroy them by every means in our power. Take, for example,

the beautiful and elegant butterfly of the *Papilio asterias*. Any humane and kind-hearted farmer, unversed in entomology, who should see his children chasing and killing the beautiful black and yellow-spotted butterfly that was flitting joyously over his vegetable garden, in the spring or early summer, apparently leading a life of mere harmless pleasure, would no doubt reprove them for wantonly destroying such a pretty, harmless insect; and yet, if the truth was known, this pretty and much to be pitied insect is the parent of all those nauseous-smelling green and black spotted worms that, later in the season, destroy his parsley, celery, parsnips and carrots. Yet by merely crushing the parent fly with one blow early in the season, before it has deposited its eggs, he would be spared the vexation of either seeing his plants devoured and seed destroyed, or having the disagreeable task of picking off, one by one, some hundreds of caterpillars later in the season. This fact will be more apparent when I state how incredibly fast some insects multiply, especially in the warmer climate of the South, where there is little frost to destroy insect life, and there are several generations in one season. Dr. John Gamble, of Tallahassee, Florida, assisted by myself, dissected one female ball-worm, moth, or miller, (an insect which in the caterpillar state is most destructive to cotton,) and we discovered a mass of eggs which when counted, amounted at the least calculation to five hundred eggs, duly hatched, for the first generation, say one half males, the rest females, the second generation, if undisturbed, would amount to 125,000, and the third would be almost incalculable. Now, these mother flies are not very numerous early in the season, owing to the birds devouring them, the rigor of winter, and various other accidental causes; and if practicable means were found to destroy them as early in the spring as possible, the immense ravages of the second and third generation might be prevented. In one female (*oeceticus*) case, or hangworm, so destructive to shade trees, I counted nearly eight hundred eggs, although the specimen was but small. Now were all these cases taken from every infected tree in the winter, when they can most easily be seen, owing to the fall of the leaf, and then immediately burned, the trees would be comparatively free the next season; and by following this plan for one or two years more, the work growing gradually less and less, the insect might finally be exterminated; inasmuch as the female never leaves her case, but forms her nest of eggs inside; and yet these noxious pests are suffered year by year to increase, when so little trouble would destroy them. Other insects again have other habits which, if fully known, would likewise lead to their destruction.

"Insects act a very important part in the economy of nature, serving as they do for food for millions of birds and fish. The Bible says, 'all flesh is grass,' and true it is; for take the plant-louse, or aphis, for instance, whose bloated body appears to be merely an animated green bladder of the juices of the plant upon which it exists; this is eaten by the lady-bug, which, in its turn, becomes the food of some bird or fish, whose flesh serves to nourish that great omnivorous animal, man. Were there no insects what would become of all the insectivorous birds, and still more of the fresh water fish? An old hen confined in a coop with her chickens loose around her will clear a large space of insects in a short time, yet a tender spring chicken is considered a dainty, although a week previous it may have been rioting on a fare of crickets and caterpillars. In many tobacco plantations flocks of turkeys are turned into the field to eat off the tobacco worms; yet what is better than a good roast turkey? Nay, in several places, if we are to believe travelers, men eat insects. A palm tree grub, well roasted, is considered a great delicacy in some countries; in others, grass-hoppers, or rather locusts, are preferred, but as the subject is not very pleasant to our tastes, I will pursue it no further. Insects also act as scavengers in removing decayed animal substances; in short, this theme might be pursued forever, were we to investigate all the uses which are made of insects in the economy of nature.

Here, however, let me change the subject, to put in a special plea for insectivorous birds, which appear to have been sent to keep up "the balance of power" in insect life, which insects would otherwise multiply to such a degree as to be perfectly unbearable, and render the agriculturist's toil entirely useless. A farmer keeps a watch-dog to watch his premises, and cats to kill rats and mice in his granary and barn; yet he suffers any "unfeathered biped," to tear down his fence rails in order to get a chance shot at any robin, wren, or blue bird, which may be unfortunate enough to be on his premises; and yet these very birds do him more good than either dog or cat, working diligently from morn to dark, killing and destroying insects injurious to his crops, which, if not thus thinned out, would eventually multiply to such an extent, as to leave him scarcely any crop whatsoever. Birds are accused of eating cherries and other fruits. True; but the poor birds merely take a tithe of the fruit to pay for the tree, which, but for their unceasing efforts, would otherwise probably have been killed in its infancy. To exemplify the utility of birds, I will give one or two instances that have occurred under my own observation.

"Some years ago I took a fancy to keep bees: accordingly hives were procured, and books read upon the subject. One day a king bird, or bee-martin, was observed to be very busy about the hives, apparently snapping up every straggling bee he could find. Indignant at such a breach of hospitality, as his nest was on the premises, I hastened to the house to procure a gun, to shoot the marauder. When I returned, I perceived a greyish bird on the bushy top of a tree, and, thinking it was the robber, I fired, and—down dropped a poor, innocent Phœbe bird. Hoping to find some consolation to my conscience for having committed this most foul murder, I inwardly accused the poor little Phœbe of having also killed the bees; and, having determined to ascertain the fact by dissecting the bird, it was opened, when, much to my regret and astonishment, it was found to be full of the striped cucumber bugs, and not a single bee. Here I had killed the very bird which had been working for me the whole season, and perfectly innocent of the crime for which it was sacrificed. After this circumstance I determined never to let a gun be fired on the premises, excepting on special occasions; and at present the place is perfectly crowded during spring, summer, and autumn, with the feathered songsters, which build their nests even in my very porch, and bring up their young perfectly fearless of mankind; and although cherries, strawberries, etc., do suffer, yet the insects are not a quarter as numerous and troublesome as they were formerly.

"In the Southern States I have seen a bee-martin chase and capture a ball-worm moth not ten paces from where I stood, and the mocking bird feeding its nearly grown young on the same insect. Even the ugly toad works for the gardener, as his food consists of insects more or less injurious. The beautiful and lively green and grey lizards of the Southern States, which are seen running on the fence rail, or amidst the green foliage of trees, shrubs, and bushes, and from which they can scarcely be distinguished, except when in motion, are ever on the watch for insect prey; and I know of one curious case in which even the mice in a green-house were of service, for they had rooted up the earth round several potted peach trees, in order to devour the chrysalis of the peach tree borer.

"As I fear I have already trespassed too much upon your time and good nature, I will now, in conclusion, merely observe, that if the practical farmer will note down *precisely* the transformation of insects, their first appearance and habits, and make them known to

the public through the medium of some good agricultural work, he will be doing more good to present and future agriculture than he imagines, as it is from practical men we want facts, and not theories, which may be better studied in the parlor than in the field. The regular scientific entomologist studies insects merely as insects belonging to such an order, family, or genus, and as insects alone. The *Antennœ*, *Tarsi*, *Pulpi*, etc., must all be subjected to the closest microscopic investigation. But as the farmer, or agricultural entomologist, can not devote his time to all this, except in winter, he would be much more usefully employed in studying their habits and transformations out of doors, in the field, orchard, or garden; and last, though not least, in finding out the proper remedies against their ravages. He can preserve many insects in spirits of wine, and, if he wishes the scientific name, he can send them to any regular scientific entomologist, who, no doubt, will be happy to afford him the required information. Thus it is, the one helps the other, and if all unite, the result can not fail eventually to prove highly satisfactory."

CURIOS ADULTERATION.—Of late years in the markets of New York and the other principal Atlantic cities, the grating and preparation of Horse Radish for the table, has become a large wholesale trade—most families preferring to purchase the article in a form suitable for use rather than to buy the roots and spoil a servant's eyes over a tin grater. But recent investigations have exposed extensive, though harmless, frauds committed in the wholesale preparations. It appears that turnips, which are only about one-eighth the price of Horse Radish, are grated in equal quantities with the latter root, and after being intimately mixed the whole is saturated with vinegar, which soon destroys the taste of the turnips and converts the whole into a homogeneous mass of Horse Radish, with its severely pungent taste slightly diminished.

A RAISE.—“Sonny, I don't see anything growing about here, what does your father raise on this land?”

“Wall, he raises grasshoppers, hop-toads, tumble-bugs, and other vegetables. Yesterday he raised a double-breasted pig-pen right under the window, and mother raised Cain because he put it there.”

What the Farmer Needs an Education for.

THE following, "words fitly spoken," we clip from that excellent journal, the *Prairie Farmer*.

"Some strange notions have, from time to time, crept into this world, and one of them is this: that a FARMER, because he tills the earth for a livelihood, raises grain, animals, etc., must not only confine his manual operations to this field of labor, but he must never think of anything else. " You may think and talk about plows and plowing, Mr. Farmer, and you may speculate about the weather; you may raise big crops, and big animals, and talk about them ; you may, if you choose, sport your 'fast nags,' and, in general, eat, drink, and be merry, but this is the extent of your sphere, —to these subjects you must confine yourself as long as you live."

What a preposterous notion to become so generally prevalent, even among farmers themselves. Why, here is the lawyer, he not only pleads law, but often polities, and aspires to high political stations ; he is also a literary man, and he is sometimes brought up to instruct farmers about their business. His is a wider and more varied sphere, according to the common notion of things of this sort.

Now, fellow farmers, to tell the plain truth, in plain English, it is our ignorance of general science and its applicability to the daily pursuits of life which have furnished the foundation for the estimate of our qualifications and capacities. We have only known about enough to till the earth, and some of us now might learn to do that better than we do. So that whichever way we turn ourselves, or from whatever point we view our position, this great truth beams like the sun upon us, (we mean he must have a thorough education,) not only to enable him to prosecute his business successfully, pleasantly, and with dignity ; but also that he may, if he desires, bring his sound sense, and honest and pure moral sentiments, to aid the great work of purifying the literature of the day—and do it as a FARMER. That he may be able to grapple with the scientific questions of the day, and throw some light upon it from his quiet home as a FARMER. That he may bring his knowledge to bear upon the meteorology of the country, and by a series of accurate observations, deduce some great law of weather for storms, which will prove of incalculable advantage to agriculture—and yet be a FARMER. That he may be able to explain

the origin of all soils, and give their peculiar qualities, from his geological knowledge, as a FARMER; in fine, that he may be thoroughly qualified to investigate the public questions of the day in literature or science, pursue correctly the conceptions of his own mind, which his pursuit continually starts into being, and sends crowding upon him; originate truths, and thus add more and more to the world's stock of knowledge. This is, in part, what the farmer wants an education for—that he may think on other subjects as well as those of farming—to make him an active and accomplished citizen of the world, that he may not feel out of place and out of face when fortune brings him in contact with literary or scientific men. Though in the world, he has heretofore been laid aside from the world; now, a silent, though mighty, revolution is in progress, that will call him into action, and clothe him with responsibilities which must be met and sustained. A *thorough education* then becomes his special need, a necessity of his important position.

Education Cheap Insurance.

IN the course of a lecture in New York, on the characteristics of European education, Mr. George Sumner alluded to the influence of education in diminishing crimes against property, and the security thereby attained, which is worthy of public consideration. Mr. Sumner says:

"If there be any moral to the tale I have told, it may be summed up in a few words. *Pay your school tax without grumbling*; it is the cheapest premium of insurance on your property. You are educating those who are to make laws for yourselves and your children. In this State you are educating those who are to elect your Judges. Build more school-houses; they will spare you the building more jails. Remember that the experiment of other countries shows that the development of free and extended education has been followed by public and private prosperity; that financial success and political tranquility have blessed the lands which have recognized its importance. Remember that education without freedom, is barren in its results; that freedom without the education of the moral sentiments soon runs into anarchy and despotism; and that liberty, ever vigilant herself, demanding ceaseless vigilance in her votaries—liberty will not linger long in those lands, where her twin-sister knowledge is neglected."

Magnificent Project---An Artificial Sea.

CAPT. WILLIAM ALLEN, of the British Navy, has published a book advocating the conversion of the Arabian desert into an ocean. The author believes that the great valley, extending from the southern depression of the Lebanon range to the head of the gulf of Akaba, the eastern branch of the head of the Red sea, has been once an ocean. It is, in many places, thirteen hundred feet below the level of the Dead sea and the sea of Tiberias. He believes that this ocean, being cut off from the Red sea by the rise of the land at the southern extremity, and being only fed by small streams, gradually became dried by solar evaporation. He proposes to cut a canal of adequate size from the head of the gulf of Akaba to the Dead sea, and another from the Mediterranean near Mt. Carmel, across the plain Esraelon, to the fissure in the mountain range of Lebanon. By this means the Mediterranean would rush in, with a fall of thirteen hundred feet, fill up the valley, and substitute an ocean of two thousand miles square in extent for a barren, useless desert; thus making the navigation to India as short as the overland route, spreading fertility over a now arid country, and opening up the fertile regions of Palestine to settlement and cultivation. The conception is a magnificent one; but no sufficient survey has been made to determine its practicability or its cost.—*Exchange.*

There are some evident errors in this statement. The "two thousand miles square" could not be contained in the valley mentioned, any more than lake Michigan could lie in a sap trough. The whole valley is only about half as large as lake Erie, and the article evidently should read two thousand square miles, instead of two thousand miles square. It is, therefore, slightly ludicrous to speak of it as an ocean, even were it brim-full of water. It is true, however, that the surface of the Dead sea is about thirteen hundred feet below the Mediterranean and Red seas, and if sufficiently large canals were cut, the valley might be filled. If it were done, it is likely that the eastern shore might be connected with the Persian gulf either by canal or railroad. If this were done, Palestine would be exactly in the track of the commerce of India and China, and would again become as rich and populous as it was in the days of Solomon.—*Prairie Farmer.*

MAGNIFICENT GRAPES.—Mr. Curtis, of Cambridge, Massachusetts, is furnishing for market, from his green-house, magnificent black Hamburg grapes, at three dollars a pound. It is said that the viney of the Duke of Portland, at Walbeck, once produced the largest bunch of grapes ever grown in England. A bunch of the Syrian weighed nineteen and a half pounds, and was sent by his grace as a present to the Marquis of Rockingham, and was carried to Wentworth House, a distance of twenty miles, by four laborers, two of whom carried it on a staff by turns, just in the same way as the cluster of grapes was carried from the brook of Eshcol to the camp of the Israelites.

SOAP SUDS FOR CurrANT BUSHES.—A correspondent of the *Indiana Farmer* says:—"I have found the cultivation of currents to be very profitable. By care and attention I greatly increased the size of the bushes and the quantity and quality of the fruit. My bushes are now about eight feet in height, and remarkably thrifty. The cause of this large growth, I attribute, in a great measure, to the fact that I have been in the habit of pouring soap suds and chamber lye around their roots during the summer season. I am satisfied from my own experience, and that of some of my neighbors, that this treatment will produce a most astonishing effect upon the growth and product of the bushes, and would advise others to give it a trial."

BLUE GRASS AND WOODLAND PASTURES.—CASSIUS M. CLAY gives some valuable directions in the *Ohio Farmer*, respecting blue grass pastures. He says the older the sward is the better. He has a pasture which has not been broken for more than sixty years, and it is the best on the farm. As to woodland pastures, he says they will keep young stock growing, or old stock "on foot," but will not fatten them. "Just as far as there is shade, the grass is deficient in nutritious qualities—that grass which is most exposed to the sun being best."

SPROUTS AROUND TREES.—Allow no suckers or sprouts to issue from the roots of your fruit trees; cut them all even with the surface, and arrest every new development as soon as it appears. Every particle of new wood from this point diminishes the vital force of the system, without yielding anything valuable in return. Pear trees are more seriously injured by a neglect of this duty, than other trees, as they are more delicate and less hardy.—*Germantown Telegraph.*

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The Man for the Times.

THE days of chivalry and knight-errantry are passed, and the question is not now, as formerly, "Who are your ancestors," when we would know who had eminence and station. In this busy, bustling age, but little importance is attached to the living, walking, *encyclopedia*. He is deemed but little superior to the one bound in leather, on the shelf of the student.

The characteristics that mark the man adapted to these times, and our own country, are peculiar. They deserve our attention; they should command our careful consideration. To educators it is very important to mark attentively and heed carefully those distinguishing traits, which must, in the very nature of things, exert a commanding influence over mind, and mold and fashion its destiny.

We propose, briefly, to answer the question, "What kind of men does the age require?"

We proceed, at once, without further preliminaries, to reply: *First*, It is demanded that a citizen of such a country should be eminently a practical and common-sense man. The days of theories have passed away; and the man that will dream over *hypotheses* and *abstractions*, either religious, political, or scientific, is a dead fossil at best. Even genius, ever delighting in wild fancies, has sprung from the day dreams of its youth, and gone forth to the substantial enterprises of its manhood. Imagination herself has become practical. The poet, the creator of these later times, brings forth not wild fancies, but realities.

The steam engine is a more potent and praiseworthy *Epic*, than

Paradise Lost. The magnetic telegraph is a lovelier and loftier creation of true poetry, than "Spenser's Fairy Queen," or Shakespeare's "Tempest." Genius has flung her flowery garlands off, and gone forth with a branded cheek, and hard hand, to work for a *race* in the very van of advancing civilization, and whether it be in literature, politics, or religion, the man of dreamy speculations, or subtle metaphysical theories, is but a mummy of a by-gone generation, and should be excluded from the busy world, or put into a glass case as a remarkable specimen—a wonderful curiosity.

Secondly, A man for this age, and this country, should be emphatically a decided man, not a man of sham chivalry, who talks loudly of his honor, and resents insults, and practices pistol-shooting. But a man of true moral courage, who dares to do right, and stand by the right, who fears neither to explode an old dogma, though adored for centuries, if it be a falsehood, nor to stand by an old custom against a world, if it be not honorable or truthful. If a religious man, he should not *merely* mourn over our national degeneracy, and fast over national sins, and pray for our national prosperity, but should rise up from his fasts and prayers, and work for our national reforms, and put forth vigorous and persevering efforts, for the securing, through practical righteousness, our national well-being.

It is high time that the true friends of humanity and man, use their best efforts to diffuse true practical morality into our national polities: when the selfishness of personal ambition, and the low intrigues of partizanship, should be cast out, and the spirit of *honest* patriotism and *genuine* philanthropy abide as the alone conserving presence over the entire national and political economy.

Third, A citizen of such a country, and of this age, should be *educated, intelligent*; no one will question this postulate. And when we say he should be educated, we do not mean to apply the common standard as understood among the ignorant, or adopted among the educated. We do not mean that every man should become a literary man or a classical scholar. But by education and intelligence, we mean an understanding of the operation of human governments, and the philosophy of human society, an acquaintance with the history of the past, for the sake of witnessing the recorded development of a progressive humanity, and not for an ostentatious display of classic quotations and encyclopedian statistics. Men who will study to apply knowledge to some useful purpose. We have science enough; we have a sufficiency of literary lore. What we need most is applied knowledge. The scientific laboratory should be planted along-side of the work-shop

and field, and the scientific man shake hands at least with the operator—the one to furnish statistics, the other to arrange and classify, and therefrom adduce valuable discoveries. In short, we want men so educated, as, understanding the wants of our great country, would be enabled to take warning from the beacon-lights that blaze over past political disasters. When every man invested with the elective franchise, shall be enabled not only to read his vote, and know the party for which it is given, but to know for himself who ought to govern him, and how he should be governed, and be able to detect and prevent the intrigues of demagogues, who would direct and control our national, foreign, and domestic policy.

Fourth, An American in this age should be a man of comprehensive views, and large sympathies—a man neither of half a heart, nor half an idea—one whose well-disciplined mind no particular superficial view of a subject could satisfy. A man of progress; one who could see in the mighty movements that are going on, indications that as yet the race is in the infancy of an oncoming and giant manhood, who have no sympathy with old things because they are old. Who are something more than overslept watchmen, looming out with their lanterns when the east is flashing with the light of the rising sun; whose type is not *Lot's wife*, looking back everlastinglly to *Sodom*; but rather Lot himself, with his eye lifted to the mountains, with countenance beaming with hope and expectation.

Fifth, A man for this age and this country should be a zealously earnest man. By this we do not mean excitable. Of this class we have enough. The American character, altogether discordant and chaotic in its multiplied elements, yet holds elements in combination, in the language of the chemist, only by hot fusion.

In the universal furor with which we enter into all opposite and antagonistic pursuits of politics and money making, fanatical piety and frenzied scepticism, hero-worship and hyper-religious bigotry, infidel socialism and great moral reforms; the intense excitability of our youth is a mystery quite incomprehensible by the stolid and superannuated philosophy of the Old World. But such excitability is not the earnestness for which we would plead. We seek rather a chemical union than an igneous fusion—a union of homogeneous and consistent elements—such an earnestness as would discard mere spasmodic feeling, and supplant it by a constant inspiration of a mighty master passion. Not a whirlwind raising a waterspout, but a steady sweep, rousing the whole sluggish ocean into billowy and resistless life. Our age requires men of action, and the question now is to

every man, what can you do? Not what you know, not how many pages of musty lore you have thumbed, but what application you are enabled to make of it. The past three-score and ten of our years are worth more in these tides of earnest and efficient life, than the whole nine hundred and sixty and nine years of the old patriarch.

The fact that American Nationality is yet in its infancy, is the mightiest inducement that can be brought to bear upon the educator, to be greatly in earnest in bringing this infant Republic up in the ways of a pure morality. The present generation of men will leave its character and impress on our national character, down to all generations. If the young eyes that are just opening on our national glories look out, in the dimness of age, and the gathering darkness of death, upon America, and behold us, a great people—honest and temperate, law-abiding and united, loyal to God, and obedient to his great statutes, working out efficiently the temporal and eternal interests of a world—his evident design in our existence and progress—then there will be no influence under the broad heaven that can darken our promise, or that can bode hinderance and disaster; but let the elements that are now at work continue unchecked—unpurified—let the fire in the crucible fail in refining the pure metal, and burning out the dross—let, instead of enlightened earnestness, and manly boldness, the frenzied zeal, stimulated by mad ambition, but continue rampant, and the glories which we now boast shall have departed, and the beautiful columns of our Republic, now the admiration of the world, will have crumbled into ruins.

The exhortation following from what has been said in relation to the kind of men needed, must be plain and impressive. We need more self consecration to the interests of man and of manhood, and less to ambition, less to selfishness, less to the all absorbing interests of mammon. These motives, now so all powerful, can neither awaken nor purchase the best energies of the mind, nor even of the body. They reduce every thing to a money value, so that even a man's principles—his virtue—has a price in the market. Such influences serve but to dwarf the energies of man, and check every gush of generous and holy emotion; never have they given rise to any thing that has blest our age and country. Our Washingtons, and Franklins, and Henrys, and Clays, and Websters, were not animated by such ignoble motives; and the young must be taught early to avoid their besetting influence, or the last hope of liberty to the nations will be entombed. We must raise up a generation of diligent workers—men of strong hands, and pure hearts, earnest in the cause of the right, if the world

is to be blessed in the stirring movements of this day and age. And nationally this is the day of salvation. The wrestle in this glorious strife is to be stern and sharp. It becomes every young soldier to panoply himself with such armor as will best enable him to meet and successfully withstand the conflict.

Prospect of Cheap Flour.

THE Cincinnati *Price Current* estimates the quantity of wheat gathered the present harvest as fully ten per cent. greater than has been gathered any previous year. The same authority also states that the quality of the new wheat is excellent. The grain is full and bright, and perfectly dry and sound; and from a careful examination of the advices which it has received, it feels justified in giving the following figures as the quantity of wheat gathered in each State this year:

STATES	BUSHELS.	STATES.	BUSHELS.
Maine	460,000	Alabama.....	1,200,000
New Hampshire.....	230,000	Mississippi.....	500,000
Vermont.....	640,000	Texas.....	150,000
Massachusetts.....	46,000	Arkansas.....	300,000
Connecticut	60,000	Tennessee.....	3,200,000
New York.....	16,200,000	Kentucky	5,750,000
New Jersey.....	1,800,000	Missouri	5,600,000
Pennsylvania.....	18,250,000	Illinois	14,600,000
Delaware.....	700,000	Indiana.....	11,250,000
Maryland	5,100,000	Ohio.....	16,800,000
Virginia.....	12,500,000	Michigan	5,200,000
North Carolina.....	4,200,000	Wisconsin	8,250,000
South Carolina.....	2,100,000	Iowa.....	4,100,000
Georgia.....	1,750,000	California.....	1,600,000
	64,336,000		78,500,000
			64,336,000
Total.....			142,836,000

In the British Islands, at last accounts, the weather was favorable, and the crops looked well. In France there is some fear of a short crop, but any deficiency will be largely supplied from the countries bordering on the Mediterranean, and perhaps in some measure from Russia. In Russia the crops are reported as promising well. This prospect of cheap bread is a joyous one for the toiling millions.

Cincinnati Horticultural Society---Proceedings.

JULY 26.—The President made a verbal report, giving an account of his recent visit to several of the Fruit Gardens and Nurseries in the Eastern States. Also, an interesting arrangement effected with the Patent Office for the cultivation at the farm of the Farmers' College, of the rare seeds and fruits received from time to time by the government, and reports to be made to the institution at Washington.

Mr. Matthew Hart was elected a member of the Society.

The Committee on Vegetables made the following report:—By Mr. Mears—Cabbage raised from seed received from the Patent Office, one variety, the Winnistead. The heads remarkably large and solid. Early Adams, another variety somewhat larger, but not as solid. Of both kinds the specimens were uncommonly fine.

Mr. Orange and Mr. Mears report that the Peas called the Champion of England, received from the Patent Office, were cultivated by them, and found to be, in their opinion, decidedly superior to any Peas heretofore cultivated in this region. Adjourned.

AUGUST 2.—The following circular was received from the Hon. M. P. Wilder, President of the United States Agricultural Society, which was ordered to be published with the minutes:

AGRICULTURAL ROOMS, PHILADELPHIA, July, 1856.

The next exhibition of the "United States Agricultural Society" will be held in this city, commencing on Tuesday, October 7, 1856. The exhibition is designed to represent fully the present state of American Agriculture, and in addition to the display of stock, implements and machinery, will include farm produce and substances immediately derived therefrom. Among them American wines will occupy a prominent place, and the undersigned respectfully solicit deposits of the best samples from all parts of the Union. The wine-growing interest of the country is steadily increasing, and every consideration demands that its importance should be strikingly manifested at our National Fair.

We shall, therefore, be pleased to learn from you, at your earliest convenience, to what extent you will be prepared to add to the value of this department of the exhibition, by deposits of the best descriptions of wine which you may possess, whether of your own or of other *American* production.

Annexed you will please find a copy of the List of Premiums offered for American wines. Communications and packages should be addressed to the Chairman of the Committee on Native Wines, in care of Mr. John M'Gowan, Assistant Secretary United States Agricultural Society, Philadelphia.

MORTON M'MICHAEL,
SIDNEY G. FISHER,
ALFRED L. KENNEDY,
A. J. ANTELO,
G. B. PRESBURY,
THOMAS P. REMINGTON,



Committee on Native Wines.

Class VIII—Native Wines.—Samples of wines must be arranged on the tables by nine o'clock on Tuesday morning, and can not be removed until the close of the exhibition. They must be accompanied by a statement of the kind of wine sent, the addresses of the exhibitors and producers, and the times and places of growth and production.

PREMIUMS.

For the best dry Catawba, 1855.....	\$10 ;	2d best, \$5
For the best dry Catawba, (older).....	10 ;	do. 5
For the best Wine from the Herbemont Grape.....	10 ;	do. 5
For the best Wine from the Schuylkill or Cape Grape.	10 ;	do. 5
For the best Wine from the Isabella Grape.....	10 ;	do. 5
For the best Wine from any other Grape.....	10 ;	do. 5
For the best Sparkling Catawba Wine.....	10 ;	do. 5
For the best Sparkling Wine from any other Grape..	10 .	do. 5

REPORT OF THE FRUIT COMMITTEE.

The Fruit Committee awarded to M. McWilliams a premium of \$4 for the best six varieties of the following apples:

1. Prince's Early Harvest—well known as a very good early summer apple.
2. Benoni—a subacid, juicy, high-flavored summer apple, deserving of being better known.
3. Bohanan—a pleasant, juicy and good-flavored early fruit.
4. Early Strawberry—sprightly, juicy and finely flavored.
5. Sweet Bough—very passably good.
6. Summer Queen—well known as a very good apple.

They also awarded to Mr. McWilliams a premium of \$3 for the best three varieties of the following pears:

1. Dearborn Seedling—a well-known, rich and finely-flavored first-rate summer fruit.
2. Early Charmontell.

3. Summer Bergamot—hardly worthy of cultivation.

The large red Siberian Crab, exhibited by E. J. Hooper, is the finest variety of this kind of Crab they know of. It is a beautiful little fruit, which is produced in rich clusters on the branches, and at a distance resembles large and handsome cherries. It is deservedly highly esteemed for preserving. It also forms a vigorous, neat tree of small size, and its blossoms, which are white, are produced in beautiful profusion in the spring, and a large crop of fruit regularly follows.

The Belle of Brussels Pear—Too astringent, and only presents a fine appearance for market.

Red-streak Apple—Not of much value.

Sweet June Apple—Good for a sweet apple.

English Codling—Very fine and excellent for cooking.

E. J. HOOPER, *Chairman.*

ROBERT REILEY,

JOHN SAYRES,

WILLIAM HEAVER.

Mr. Brace, for Mr. Cohoon, of Kenosha, Wisconsin, exhibited specimens of Cohoon's Seedling Rhubarb, which measured, the stem eight and three-quarters inches in circumference, and twenty-two inches in length; the leaf nine feet in circumference. The society voted, unanimously, a vote of thanks to Mr. Cahoon for the exhibition of the specimens.

AUGUST 7.—Mr. Rintz presented the leaves of a seedling grapevine, which ripens the fruit the 1st of August, and promises to be a good bearer. A committee, consisting of G. Sleath, R. Buchanan and Mr. Rintz, was appointed to present the fruit and make a report next meeting on the quality of this interesting seedling.

Mr. Buchanan read an extract from a letter received from a gentleman, a distinguished agriculturalist, of South Carolina, stating the result of an experiment in producing molasses or sirup from the sugar millet, or the grain known here as Egyptian Corn.

The writer states that he has been grinding, on a primitive mill made under his own instruction, the sugar millet for making sirup. "I had half an acre planted, and only ground enough to try it. It will do here, and it will also do in your climate at Cincinnati. It will mature sooner than corn, and in any climate suited to Indian corn. A fine sirup can be made of it at a cost of eighteen or twenty cents per gallon. On an acre of land prepared as you would work it for sugar-beets or carrots, you can, with less labor than used for corn, grow

enough millet to make five or six hundred gallons of sirup. You can grind and boil three hundred or three hundred and fifty gallons of juice per day, producing about fifty gallons of sirup. I have not tried it for sugar, and I only desire to save some \$600 or \$800 annually that I expend for molasses for my people. It can be kept for grinding. I think it likely to compete with the sugar-cane of Louisiana. I think it is particularly valuable in your region, and hereafter I will give the particulars of my experiment if you desire it."

This Millet, or Egyptian Corn, is known to many of our cultivators who have raised it for feeding chickens, and in some instances it has been ground for meal, making a delightful bread. Many of the members of our society think it worthy of cultivation for fodder, and if used for molasses it may be a profitable crop in the valley of the Ohio, as we are now dependent on Louisiana for our sugar and sirup. There is no difficulty in keeping the grain in perfection in this climate.

Professor Comstock, famous for the discovery and application of Terra-culture, was introduced to the members, and an interesting discussion was kept up for some time, on the different modes of cultivating vegetables and plants.

AUGUST 16.—The Committee appointed at the last meeting to report on the Seedling grape, raised by Mr. Rintz, presented specimens of the fruit and leaves of the vine; also, the different varieties of the Fox grape, to make a comparison between the seedling and the native Fox grape. The committee think that the new variety will be a valuable grape for wine, supposing that it will make a red wine, and ripening the fruit early in the season. Further time was granted to complete the report.

An interesting communication was received from A. Burnett, Esq., (a member of the society, now in London), inclosing some seeds of a new variety of Pansey.

On motion, the seeds were handed over for distribution, and extracts from the letter ordered to be printed with the minutes of the society.

Mr. Burnett says:

"I inclose you a few of Mr. Tuck's finest Pansey seed. He assures me that they are of the latest variety, and, if they prove equal to those I saw in his own garden, they are a rarity. The Delphinium Formosum is a beautiful flower, quite new here and highly prized. The Eckshosholtzia Tenneflia I am not acquainted with, but it is highly recommended.

I yesterday visited the Royal Cremone Gardens, and saw there the grand exhibition of American plants. It is truly wonderful to see to

what perfection the Rhododendrons are brought here. Many of them, I am told, are more than forty years old, and, instead of being merely flowering shrubs, are really trees covered with most brilliant bloom. On one tree alone there were upward of two thousand flowers just budding out, and every variety of color indigenous to the plant are here shown.

The plants are planted in the ground in raised beds, with turf borders. The tent under which they are, is three hundred and thirty yards in length and about eighty in width. The whole garden was planned by Messrs. Waterer & Godfrey, of Knop Hill. The display of Azaleas is also fine, and their specimens of beautiful firs are unequaled. I hope ere long we shall be able to contend with them for supremacy. There is not so much difference between our horticultural exhibitions as there is difference in the ages of the countries.

The Strawberry crop is very fine this year, and Gooseberries are very abundant."

The President of the Society notified the meeting that the Council had engaged the convenient and spacious lot on Vine street for the approaching fall exhibition, and asked the attention of the members to the liberal appropriations made in the shape of premiums for ornamental designs, and hoped to see a lively competition in that interesting department of the display.

Every facility will be afforded by the Committee of Arrangements for the best disposition of every article exhibited. Adjourned.

AUGUST 23.—The Committee appointed at last meeting to report upon the new Seedling grape, presented the following:

NEW SEEDLING GRAPE.

To the Cincinnati Horticultural Society:

The Committee to whom the subject was referred, present the following report:

This grape was produced by Mr. Sebastian Rintz, from the seed of the Catawba, planted six years ago in his garden. In wood, leaf and habit, it has the appearance of the Catawba, with a resemblance to the Fox grape, which is doubtless a parent of the Catawba. It has the same vigorous growth of these varieties. This is the first season of fruiting, and the Committee were surprised to find so large a product as eleven bunches on the vine. The grapes are now nearly ripe—color, dark purple—will be almost black when fully ripe, which may be in ten days. The branches are of medium size, and compact—the berries

round, a little larger than the Catawba. The skin is thick, pulp tough, juice sweet but slightly astringent, and, as in the Fox grape, not abundant.

It will ripen a month before the Catawba, and on this account may be valuable as an early market grape; but as a wine grape, or for the table, it can never compare with the Catawba. The committee consider it to be the best seedling from the Catawba yet produced in this vicinity, and hope that cultivators may be induced to grow seedling grapes until a rival shall be found for that valuable variety.

In a communication to your society some years ago, Mr. Longworth remarked, that all seedlings from the Catawba appeared to be inclined to go back to the parent of that variety—Fox grape (*Vitis Labrusea*). So far as your Committee has been able to judge, they fully concur in this opinion. It is a waste of time, therefore, to attempt to produce a better or equal grape to Catawba from its own seed, unless impregnated when in blossom, with some other variety. Union of different varieties that blossom at the same time, planted near each other, may produce seed to originate new and valuable hybrid sorts; but scarcely otherwise.

Numerous varieties of the Fox grape are found in many sections of the United States, differing in color from a greenish-white to a dark purple, and in size from a large pea to a musket ball, ripening from the middle of August to the first week in October. To illustrate this, a member of your Committee, with this report, presents six varieties from his own vineyard. The vine having been sent to him from different friends in the West as something choice and highly esteemed in their original localities.

Only one of them, Venango, or Minor Seedling, is of any value as a wine grape. Mr. Longworth thinks it may be useful to mix with and flavor other kinds in making wine, but the juice is not so abundant as in the Catawba or Isabella. It is, however, harder than either of those, and not so liable to rot. This grape was noticed by Volney in his travels through this country in 1796, and by Dufour, in 1779. It was then thought to be of foreign origin, but was subsequently identified as a variety of the Red Fox grape, then found abundantly in many parts of the Western country.

Wine was made from this grape and other native varieties, at those early periods, by French emigrants, and pronounced by both Volney and Dufour to be equal to some of the French and German wines.

In conclusion, the Committee recommend to the members, to give Mr. Rintz's new Seedling a trial, and also to endeavor to excel it by seedlings of their own raising.

GABRIEL SLEATH.

CINCINNATI, August 16, 1856.

R. BUCHANAN.

An interesting communication was received from F. G. Cary, Esq., on the subject of *Terra-culture*.

A communication was also received from A. H. Ernst, on the subject of Plums and *Curculio*. Referred to the Fruit Committee.

A. A. Mullet, M. Kelly and G. Sleath. were appointed a committee to visit the grounds of P. S. Bush, Esq., of Covington, and report on his Plum culture.

Charles Johnson and Charles Patton were elected members of the Society.

DEATH OF DAVID ROSS.

Messrs. A. Strauch, S. S. Jackson and M. Kelly, who were appointed a committee to prepare suitable resolutions on the death of DAVID Ross, presented the following :

WHEREAS, We learn that a much respected member of this Society, DAVID Ross, formerly of this city, and recently of Louisville, has departed this life—

Resolved, That we regret the loss the cause of Horticulture sustains by this event. Mr. Ross has long been one of the most eminent landscape gardeners in the West. His influence has materially contributed to produce that high degree of taste in rural matters which now distinguishes our neighborhood, and he has been one of the most prominent of those who have applied the principles of landscape gardening to the laying out of public grounds and cemeteries.

Resolved, That we, in common with his family and friends, deplore the loss of one who, by his amiable disposition and talents, has so truly fulfilled his duties as a citizen and a neighbor.

Resolved, That a copy of these resolutions be transmitted to his family, and that this Society condole with them in their irreparable loss.

It is quite a noticeable feature that, from the large attendance and deep interest manifested at the meetings, the Horticultural Society has not been in such a prosperous condition since its organization. The exhibition of fruits, flowers, and vegetables is extensive and beautiful. The public, ladies as well as gentlemen, are invited by the Society to visit the exhibition rooms, on each Saturday morning, at ten o'clock.

JOHN G. FOOTE, Chairman.

What is the use of Botany?

IN conversing with our farmers, this question is often asked with an air of contempt. As if it was a science with which they had nothing to do. And often when you attempt to explain, so mercenary are the motives by which many of them are governed, your arguments are unappreciated, if understood. And all attempts to enlighten are as effectually lost as to talk to a blind man about colors.

I say their motives are so mercenary, for what can be more so than to see a man with an immortal mind, to whom the exterior world should be all beauty to his eye and music to his ear, devoted entirely to the clink of maimon's box, to money loving, and to money getting. Well, I will, for a moment, urge this noble study, not only on grounds of taste and morality, but of utility.

Who is there after the toils of the day are over, that would not be relieved from the monotonies of his business by spending an hour in relaxation in a beautiful flower garden? There is something constantly to interest our thoughts and imaginations, yes, our affections. These pleasures will not waste, but invigorate our minds. And often will they be carried by the contemplation of these beauties of nature, up to nature's God and inspire most sincere and ardent devotion. All this *may*, yes, *will be realized* in the cultivation of a love for rural beauties. The taste which leads to it, and the affections that will be invigorated by it, are among the most pure and innocent which we can indulge, and so far from interfering with other duties, this love of rural beauties, encourages those more imperative. As ordinarily studied, I admit Botany is not made so interesting and attractive, or useful, as it is capable of being. The mere classification of plants, as taught by Botanical works seems little else than a vocabulary of difficult, arbitrary, and technical terms in a language not generally understood, and to tax the memory with them is the only object attained.

We hope by the arrangement furnished through the Botanic Garden at the Farmers' College, to give to this science, and to rural pursuits generally, an interest, a delight, and utility beyond that which they have hitherto possessed. Not only will the classification of plants, their name, etc., be attended with increased interest, but vegetable physiology, introducing the student as it does into some of the most wonderful and beautiful secrets of nature, the habits of plants,

and the cultivation necessary to their successful growth and development, will serve to inspire the student with new delight at every step.

If thus studied, Botany would be found replete with useful as well as pleasing instruction to the Agriculturist. He would learn here the peculiar adaptation of various soils and climates to the plants, and animals to be nourished and fed, the necessity of the presence of certain plants in certain localities to render such places habitable; the economical uses of different plants for food, for clothing, for building, for mechanical purposes, for fuel, for coloring and for light. The medicinal properties of certain plants, the infinite variety of fruits; not for subsistence merely, but for luxury; the uses of plants in the fine arts for imitation, for adornment, and for taste. The chemical qualities of plants in their particular uses, and in their general influences upon the atmosphere which we breathe, in the gasses which they take in, and those which they exhale. The control and influence which human sagacity and power have been able to exert over the vegetable world, in acclimating and propagating plants, in fructifying and engrafting, and changing the different species; all these matters, directly involved in the science of Botany, render it one of the most interesting and profitable of studies. But aside from all this, the simple cultivation of flowers, without knowledge, or technical skill, is not without its benefits to the humble cottager that dwells in the country. I know the cattle raiser of Kentucky may regard this as a small business, unworthy his attention. He may have the pinks and posies for the amusement of his wife and children, and be ashamed of being charged with such small matters. Nay, he may, as he often is, be equally unmindful of a vegetable garden, and be satisfied with a few rows of potatoes across his cornfield, and a barnyard devoted to a cabbage patch. Nevertheless, he can not convince any passerby that that place where there is a well arranged vegetable garden and fruitage, with here and there a beautiful and tastily cultivated parterre of flowers, looks more like home, comfort, and happiness, and I doubt not, in most cases, is really so. No farmer should be without his fruitage, his vegetable garden, and his flowers. These will contribute in many ways to his profit, health, comfort, and luxury. Will improve and refine the taste of his family, will throw around home a charm and a loveliness that will enhance greatly its present enjoyment, and invest it with a thousand sacred memories that will sweeten many an hour of reflective sadness when age comes on. It does not take the time that most persons suppose. Besides, there are many hours in which the boys in numerous households are idle, employed in lounging about

the neighboring grocery, drinking and smoking, which would not only be more rationally enjoyed and usefully spent in attending to these *minor and unimportant* matters, (as many farmers are disposed to call them,) but would save them from that vortex—intemperance, which swallows up so many fond hopes and cherished anticipations.

I am happy to say these rural embellishments are beginning to be appreciated in many places, and all that it requires is that a taste for them be cultivated among the young, soon to render them universal.

Our Farm Department.

OUR readers will be interested to know the progress of this new department.

We are now ready to enter upon the instructions and experiments which have so long been deemed desirable for the promotion of agricultural science.

Our laboratory is about completed, and provided with a large amount of new and valuable apparatus for chemical analysis and experiments. The building which has been constructed for this purpose contains something more than a mere ordinary chemical laboratory. It is a beautiful architectural structure, embracing a suit of rooms for the professors of the departments, viz: of chemistry, botany and vegetable physiology, theoretical and practical agriculture, and landscape gardening—four professors. A common lecture-room, thirty feet square; a shop of like dimensions, furnished with forge, anvil, turning-lathe, bench-planes; in short, all the means for making and repairing apparatus. These, beside a chemical laboratory, sixty by thirty, with rooms adjoining the one for a balance-room, and the finer apparatus, and another for a furnace-room. The plumbing of the laboratory is complete, a large tank furnishing the water, and every student is provided with operating-stand, wash-bowl, water, chemicals, etc., to go through with the various experiments. Every student is to be an operator.

This scientific building occupies a central position in the botanic grounds, embracing twenty acres. These grounds are being laid out under the direction of Mr. M. G. Kern, an experienced landscape gardener, in a tasteful manner, and when completed are intended to embrace every order, genus, and, as far as possible, species of trees,

plants and shrubs, foreign and domestic, that will grow in this climate.

And, at the earliest practicable period, it is the purpose of the directors to erect a large conservatory, and green-houses, that the exotics may also be represented.

These grounds will be ornamented with various other improvements; such as an apiary, vinery, rosary, grotto, lakelet, etc., to render them interesting and attractive. The fruit department, grain department, grass department, and vegetable department, are likewise receiving appropriate attention.

Arrangement has been made with the Patent Office to secure the great variety of fruit, grains, grasses, seeds, bulbs and cuttings, which this department, at great expense, is making effort to obtain from our own and other countries. For example, we shall have over twenty kinds of wheat, upon which to experiment the coming autumn.

A small nursery is attached to the department, to give instructions in grafting, budding, pruning, etc.

These grounds, embracing one hundred acres, are now surrounded with an osage orange hedge, planted last spring, protected by a good substantial fence, four feet distant from the hedge. The botanic ground, is paled with a fence eight feet high. Here, on these grounds, it is the purpose to pursue our philosophical investigations beyond the laboratory, and lecture-room, in the field and garden.

Botany will not be studied as ordinarily from the dry herbarium, or from an occasional culled flower or plant, ending with fixing its order, genus, and species. But here, in addition to all this, the habits of the plant, soil in which it will best flourish, how improved, how best cultivated. Its medicinal or other properties, etc., etc., will be investigated. The science of agriculture in all its details will here also be taught, and all that pertains to its successful prosecution, both in theory and practice, will receive attention.

And one of the leading designs of this department will be to unite science and practice, hitherto divorced, as well as to gather from the broad fields of agriculture the numerous scattered facts, of immense utility if collated, but now useless, and, often worse, tending to mislead the ignorant. We hope at length by this arrangement to awaken in the minds of our agricultural population a higher estimate of education, and, if possible, elevate the standard of attainment which they now deem sufficient, successfully to prosecute their own noble calling. By elevating the standard here, we elevate it every where, socially, intellectually, and morally. By improving the taste of the farming

population, you most successfully improve the entire taste of society. This department opens with the opening session. A number of names are already entered to pursue its course. Stimulated with the belief that such a department, though novel, will be hailed with universal favor, we are encouraged to make liberal outlays. The board having secured for this object the purchase of one hundred acres of good land, endowment of professorships, erection of buildings, and improvement of grounds, some hundred thousand dollars.

SEED CORN.—Farmers, if they would have the best seed corn, and improve their kind for another year, must not neglect to select the earliest and fairest ears this fall, and preserve them carefully for seed. They may be gathered by the hand from the fields as soon as the husks turn white, and should then be traced and hung up where the air will circulate all winter, and where the rats and mice can not reach them. In all fields some ears are earlier than others. The earliest selected for seed, will insure a field, nearly the whole of which will be ripe as early next year as the ears you gather out for seed this season. If you allow the later ears to be taken for seed, you will find a late crop next fall. The surest way, therefore, to improve a crop is to be careful in selecting the seed; for it is a universal law of nature, that “like begets its like.”

SWINE.—Swine intended for fattening should be fed more liberally. One month's feeding now is worth more than two late in the fall or winter, as all animals take on fat much faster in mild weather than in cold. Give them early pumpkins, the refuse apples, small potatoes, etc., and if cooked and mixed with meal, so much the better. At the present and prospective price of pork, it will pay to give swine extra feed and attention.

TRUTHS SIMPLY EXPRESSED.—It is not what people eat, but what they digest, that makes them strong. It is not what they gain, but what they save, that makes them rich. It is not what they read, but what they remember, that makes them learned. It is not what they possess, but what they practice, that makes them righteous. These are very plain and important truths, too little heeded by gluttons, spendthrifts, bookworms, and hypocrites.

Mr. Holloway's Report.

WE have been favored with the report of the Committee on Agriculture, to the House of Representatives, drawn by Hon. D. P. Holloway, chairman.

The report is drawn up with great ability, and the essential points are presented with remarkable clearness and force. The Bill reported by the Committee, is laid over among "unfinished business."

We submit some extracts from Mr. Holloway's report, both as being valuable in themselves, and as serving to show that correct principles are therein presented with unusual power.

We premise by stating that the Bill reported by the Committee provides for the establishment "of an economical department of the government, which shall be devoted to the great agricultural interest of the country." In support of the Bill, the report, after citing the sentiments of the most distinguished statesmen of America, says—

"We might incorporate here the strong and earnest recommendations of several of the heads of departments in favor of decided legislative action upon the subject of agriculture; but we have shown conclusively that General Washington, and almost every successor in the presidential chair, in obedience to the duty imposed upon them by the constitution, to recommend from time to time to Congress such measures as they may deem calculated to promote the public welfare, have regarded the promotion of agriculture as one of the objects which would promote the public good, and add to our national prosperity. Our executive officers have, perhaps, done their duty; Congress has utterly failed in its obligations to the people. While the constitutional advisers of Congress have advised, and recommended action, to which Congress has turned a listless ear, the people—the *sovereign people*—are now demanding that this great interest shall receive the attention and patronage of government. For the last four years, petition after petition has been received from the people; agricultural societies in the counties, State boards of agriculture, the United States Agricultural Society, and State legislatures, have passed resolutions recommending the establishment of an agricultural department. No measure has heretofore been so earnestly and so generally recommended to Congress by those whose *duty* it is, and those whose *sovereign right* it is, to call the attention of Congress to measures of public importance. Will Congress longer disobey the injunction of the one and the demands of the other? No matter how slight an ap-

preciation or low an estimate members may place upon this proposition ; it is their duty, under the letter and spirit of our democratic institutions, to take hold of the matter, and do now what they have so long neglected.

" Let us, for a few minutes, look into the extent and importance of the agricultural interests of this country. By the census of 1850 it will be seen that the cash value of farms and agricultural machinery is put down at near three thousand five hundred millions of dollars. In our opinion this falls far below their actual value, and it may now be safely estimated at five thousand millions of dollars, and their annual product at two thousand millions of dollars. The agriculturists of the United States have more than double the amount of capital invested in the single and simple item of fences, than there is invested in every department of manufacturing combined. Four-fifths of our people are engaged in rural pursuits, and by their labor are feeding and clothing over 27,000,000 of people. They produce 100,000,000 bushels of potatoes, 300,000,000 bushels of oats, 150,000,000 bushels of wheat, 800,000,000 bushels of corn, 1,600,000,000 pounds of cotton, 190,000,000 pounds of tobacco, and the less important vegetables in untold quantities. This presents a glorious picture of national prosperity. It inspires the heart of every American with pride, and too many say, " It is doing well ; let it alone." True, it has done well, but it can do much better. Every acre, speaking comparatively, can, under proper cultivation, be made to produce double the quantity it now does. The broad fields which have been opened in the west, have contributed much to the great aggregate we have presented. The lands are still fertile, but under the present system of farming in too many instances the spoiler is working his way unmolested. Nothing but bringing within the means of every tiller of the soil a knowledge of the means to preserve the fertility of his land can save them from failing, as have the lands in the older States."

After concisely discussing the constitutional power to establish such a department, Mr. Holloway's Report proceeds to examine the question of right and expediency, and the duty of Congress in that behalf. He says :

" Some, perhaps, may object to the passage of the proposed bill on account of its increasing the expenditures and multiplying the officers of government. The reply to this is, that so far as the agricultural interest is concerned, this ought to have been done long ago ; in other words, let the expense be what it may, within the ability of the government, it should not be urged against a measure from the advan-

tages of which the anticipated benefits are so great, that they can not be computed. Assuming the position declared to be true by Gen. Jackson, that 'the agricultural interest of our country is essentially connected with every other, and *superior in importance to them all*', your committee deem it by no means improper to refer to the small amount which has been expended directly for its benefit in comparison with other interests of far less importance. Since the organization of the government there had not been expended directly for the benefit of agriculture by the government \$200,000. For the benefit of the War Department a military school was established, and has been maintained at an expense of more than \$5,000,000. For the Navy Department a school has also been established and conducted at an expense of millions. An expedition was fitted out for the purpose of exploring the Dead Sea, at an expense of five times the amount which has been expended for promoting agriculture. Far more money has been expended in *ornamenting* and keeping up the twenty acres of ground around the Capitol, than has been devoted to fostering that great interest which is '*superior in importance to all others*' A larger sum has been expended in statuary to adorn the public buildings and grounds; more has been expended in the simple item of pictures; more has been expended in carpets to cover the floors of the public offices, than has been contributed to advance that great interest which President Polk said should be '*the object of every statesman*' We might refer to many other expenditures of a similar character, but let these suffice. Nor would your committee be understood as complaining of those above noticed. Their simple object is to suggest comparisons.

"It may be said that agriculture having done so long, and succeeded so well, without the aid of government, it can continue to do so. True; in view of the disregard with which Congress has treated this great interest, the people in self-defense have been compelled to exert themselves for the promotion of their's and their country's prosperity. To this end, societies have been established in almost every part of the Union, demonstrating in every instance the greater good which could be done through a systematic and liberal effort on the part of the government, and such an one as your committee respectfully recommend. The effort on the part of the people has been constrained by the want of sufficient means—it has been too partial and limited. It has been without concert and co-operation. It has lacked a head, to which results could be reported, comparisons made, and correct conclusions drawn. It can not be expected that private enterprise will ever

be able to conduct any system of investigations which shall fully and successfully develop the great science of rural economy. Investigators and experimenters must be paid for their time and labor. The mechanic is protected in the inventions of his genius; but the experiments and results of investigations made by the farmer are common property. State boards of agriculture and State agricultural societies have been established, and in most instances have received in mere pittances, aid from their respective State governments. A National Agricultural Society has been organized by the enterprise of a few individuals; but it is not, as its name would imply, the object of government patronage. To sustain its exhibitions, a tax of from ten to twenty thousand dollars has to be assessed upon the liberality of the people of the cities where it is proposed to hold its annual fairs. These associations have been vastly beneficial to the people and the country, and are indispensable to future operations. They will prove valuable auxiliaries under a department. But the opinion seems to prevail to some extent, that nothing but bone and muscle are needed by the farmer, and thus he is left to grope his way in the dark, excepting such aid as he receives through the various periodicals and societies devoted to his interests. Of the patronage extended to other industrial pursuits the agricultural interest has not complained; but it now *demands* some share in the disbursements of a revenue toward which it contributes by far the largest portion.

"To the inquiry, what good is anticipated from the creation of this department, we reply, all that good which has resulted to every other industrial pursuit toward which the energies of mankind have been directed under the stimulus of honor and reward. The establishment of a national observatory was once flouted at as a ridiculous and wasteful outlay of money; but who is there that will not admit that, under the charge of Lieutenant Maury, this institution has shed honor upon the country, as well as conferred substantial benefit to the commercial interests of the whole world? If, under the judicious administration of the proposed department, investigations should result in securing a prevention of the potato rot, or a discovery of the habits of such insects as prey upon the cotton, tobacco, or wheat crops, so as to secure these staples from destruction, the expense attending these investigations alone will be but as a drop in the bucket in comparison with the resulting benefits."

Catawissa Raspberry.

WE give below the Circular of Mr. Joshua Peirce in relation to the *Catawissa Raspberry*. Mr. Peirce is a gentleman of high reputation as a gardener as well as for integrity as a man; and, should this Raspberry be found on trial, to respond to the expectation claimed in the Circular, it will indeed be a most valuable acquisition to our Horticulture.

C I R C U L A R .

The Catawissa raspberry is a native variety, entirely new and distinct in its characteristics in respect to the manner of bearing, and the periods of maturing its fruit, which promise to render it an object of general cultivation. From its appearance and mode of growth, I have no doubt but it is a seedling produced from the common wild Black raspberry of the country, which grows in great abundance about the regions where it originated; nor can I learn that any other varieties, native or foreign, wild or cultivated, ever grew near the original plant, except, perhaps, the Thimble berry, *Rubus purpurea, or odorata*,) which, from the dissimilarity of the two, I do not suppose had any thing to do with its production.

This bountiful gift of nature originated in the grave-yard of the little Quaker Meeting-house in the village of Catawissa, Columbia county, Pennsylvania, situated near the confluence of a stream of the same name with that noble river, the Susquehanna. The history of the discovery is simply as follows: The person who had the care of the meeting-house, from whose own lips I received the account, was in the habit of mowing the grass in the grave-yard several times in the course of the year; and on one occasion, some eight or ten years since, observed that a brier, which he had often clipped with his scythe, showed symptoms of bearing fruit out of the ordinary season. For this time he spared the plant, bestowing upon it watchful care, and afterward removed it to his garden.

The fruit is medium size, inferior to many of the new popular varieties, but is sufficiently large for all economical purposes. Its color is dark reddish purple, when ripe, and is of a very high flavor. It bears most abundantly throughout the season after the young wood on which it produces its best fruit attains a height of four or five feet, usually beginning to ripen early in August, but sometimes sooner. The fruit is produced on branches continually pushing out from all

parts, successively appearing in its various stages of growth, from the blossom to perfect maturity ; and often there may be counted more than fifty fruits on a single branch. As the fruit on each branch successively ripens, the latter one diminish in size, but there is no suspension of its fruiting until checked by frost. If protected in doors, it undoubtedly would produce fruit during the winter months.

The Catawissa raspberry is offered to the fruit-growers as a grand desideratum which should be in the possession of every one who has the means of cultivating even half a dozen plants. It is not expected that it will compete with many other sorts, as a general crop at the ordinary season of raspberries ; its time of ripening and its great productiveness are the qualities for which it is particularly recommended ; producing its fruit on the young growth of each year, it is in its fall crop entirely exempt from the effects of spring frost, so often destructive to many of our fall fruits, in which case it offers a valuable substitute for such as may fail, both as a desert at hand for present use, and various economical uses as a preserve for winter.

In its cultivation, deep plowing, or trenching the ground before planting, will be found advantageous. It should be planted in rows six feet apart, and at least four feet in the rows. The plow and cultivator should be freely used to keep the ground loose and to keep down weeds or grass. The bushes may then be tied up to stakes or trellises, as with grape vines ; and as it is desirable to a *good fall crop*, the old stocks should be cut away in winter or spring, to promote the rapid growth of the young wood.

JOSHUA PEIRCE,

Near Washington, D. C.

COOL.—We have heard of cool things, but never any thing cooler than the following : The landlord of a hotel at Whitehall called a boarder to him one day, and said, "Look o' here, I want you to pay your board bill, and you must. I've asked you for it often enough ; and I tell you now that you don't leave my house till you pay it!"

"Good ! " said his lodger ; "just put that in writing ; make a regular agreement of it ; I'll stay with you as long as I live ! "

A WHISPER TO BORES.—Bores should be lenient enough to bear in mind this truth—that it is with the fire of conversation as with any other fire—little sticks kindle it, great sticks put it out.

A Sketch from Life.

AT five o'clock upon Thanksgiving morning, Deacon Wilson arose as he was wont, no holiday making any change in his hours. Yet now he no longer sprang from his bed with the alacrity which changed duty into pleasure; he rose because imperious necessity commanded it. There were the cattle to be fed and watered, and the poultry to receive the same attention, and there was, moreover, a fire to be made in the huge old kitchen fire-place, for the deacon had now no servant or helper, and in the grey winter of his life, the whole burden of managing his place had fallen on his shoulders. Fortunately they were broad and strong—fortunately, his constitution was good, his spirits elastic, and his piety sincere, for his burdens and trials were indeed weighty. He had been comparatively rich—he was now in embarrassed circumstances. He had looked forward to the time when a son should relieve him of the most laborious of his toils, while a daughter performed the same kind office for his wife. Both had been disappointed—and now the old couple were the solitary tenants of that old farm house.

The deacon went mechanically about his morning labors; he drove the cattle to the water tank; he supplied them with fresh fodder, and after seeing that they were comfortable, returned to the old kitchen. By this time the good wife had prepared a breakfast, and a genial fire was diffusing its heat through the apartment.

The old couple sat down to breakfast, after a blessing by the old farmer, but the meal passed by in silence. It was followed by a fervent prayer and the reading of a portion of the Scripture. After this they adjourned to the sitting-room, where a good fire was burning, and where the old dame assumes her knitting, one of those incomprehensible pieces of female industry, which seems to have neither beginning nor end.

"Well," said she with a sigh, "This is Thanksgiving day. It doesn't seem like old times at all. We used to have a house full of company, frolicsome young folks, and cheerful old people; and now we are alone, alone."

"Last Thanksgiving day," said the old man, "there was one with us who seemed to my old eyes like an angel of light, with her fairy golden hair floating like a halo of glory on her shoulders, and her little foot making music as she moved about the old house. But even then there

was a hectic flush upon her cheek like the red upon the maple leaf in autumn. When the January snows lay deep on the hills and in the hollows, we carried her to her last home—but God's will be done."

" You forget that we have another child alive."

" No, I do not forget it," said the old man bitterly. " There is one living somewhere, who has brought disgrace upon our name, who has forgotten his parents and his God; who has drunk deep of the cup of iniquity, and who has brought ruin and woe upon his name and family.

" Do not speak harshly of poor William," pleaded the mother.

" Why should I not? Was he not insensible to kindness—steeled against affection? Did he not scatter my hard earnings to the wind? Is it not to him that I owe the prospect of beggary and destitution? Remember the first of February. That is the last day of grace. If the money comes not then, and God knows whence it is to come, we are houseless beggars. Who will care for us then?"

" God will care for us," said the aged woman, raising her eyes reverently to heaven.

The old man made no reply, for his utterance was choked. At that moment the old clock that stood ticking in the corner, struck the hour of nine. The deacon rose.

" It is time to harness old Dobbin," said he, " for we have a long way to ride to meeting, and the roads are in a bad condition."

Their preparations were soon made, and the old couple, poorly but decently attired, sallied forth to their public devotions. The services ended, the deacon and his wife, as they issued from the porch, were kindly greeted by many old friends and neighbors, more than one of whom pressed them to come and partake of their thanksgiving cheer. But the deacon shook his head.

" Many thanks, my friends," he said, " but ever since I have been a householder, I have kept my thanksgiving at home, and I shall continue to do so as long as I have a house remaining over my head."

So they rode home together. While the deacon drove up to the barn to put up his horse, the old lady opened the back door, which was always on the latch, and entered the kitchen. As she did so, she started back. A stranger was seated by the kitchen fire, who rose on her entrance. He was a tall, stalwart man, dressed in a rough suit, with a broad-leaved hat, his countenance embrowned by exposure to the sun and wind, and his upper lip almost concealed by a heavy and luxuriant mustache.

" Good morning, ma'am," he said with some embarrassment.

"Finding no one answering my knocks, I took the liberty of walking in. I believe I owe you no apology, for I have officiated as turnspit, and saved your Thanksgiving turkey from burning."

"I am very much obliged to you, I'm sure," answered the old lady, pulling off her mittens. "But did you want to see me or the deacon?"

"Both of you," answered the stranger. "You had a son, I believe?"

"Yes," replied Mrs. Wilson, with hesitation, and casting down her eyes.

"I have seen him lately."

"Where?" inquired the mother, with increased agitation.

"In California."

"Was he doing well?"

"Admirably. Mother! mother," he added impetuously, throwing back his hat, "don't you know me—don't you know your William?"

He rushed into his mother's arms, and was clasped to her beating heart, while the tears streamed freely from the eyes of both. After the first greeting was over, the young man asked:

"Where is sister Emmy?"

"Gone," answered the mother, as her tears flowed forth anew.

William sank into a seat, and hiding his face in his hands, wept bitterly. The mother did not attempt to check him. She knew those tears were precious.

"And my father?" asked the young man, when he regained his composure.

"He is well. But you had better retire for awhile. Go to your old room, my son, it is just as you left it, and wait till I summon you."

It was with a fluttering heart that the overjoyed mother went about the preparations for dinner, and when the table was neatly set, every dish in its place, and the turkey smoking hot, waiting to be carved, she summoned the old man. He made his appearance at once, and took his seat. Glancing round the table he said:

"What is this, wife, you have set plates for three!"

"I thought perhaps somebody might drop in unexpectedly."

"There is little danger—hope, I mean—of that," answered the deacon sadly.

At this juncture, Mrs. Wilson, with a mysterious expression, rang the bell, with which, in happier days, she was wont to summon her tardy children to their meals.

It was answered by the appearance of the long lost William.

The deacon who recognized him after a moment, gazed upon him

with a stern eye, but with a quivering lip that betrayed the force of his ill suppressed emotions.

"So you have come back at last," he said.

"Yes, father, but not as I left you. Father, last Thanksgiving day I went into my lonely room, and there, kneeling down, addressed myself to Heaven, and solemnly abjured the fatal cup which had brought ruin upon me, and woe upon this once happy family. From that day to this I have not touched a drop. Is my probation enough? Can you now welcome back your son and bless him?"

"Bless him! Yes, yes, bless you, my dear, dear boy!" said the old deacon, placing his trembling hand on the dark locks of the pleader. "You are welcome, William, though you come only to witness the downfall of our house."

"Not so, father," answered the young man joyously, "I have come back to save you—to atone for my prodigality, for all my errors. It was this hope that sustained me in the lone heart of the Sierra Nevada, when I was panting with thirst and dying with hunger. Thoughts of home, of you and mother, and of God's angels, enabled me to conquer fortune. I have come back with a store of gold—you shall not be a beggar in your old age; father, we will keep the farm."

After this it is unnecessary to add that joy entered the old homestead. It was a chastened joy, for the shadows of the past yet mingled with the sunshine of the present; but the felicity which attended the prodigal's return was enough to compensate for many sorrows.

Chinese Potatoe.

DIOSCOREA BATATAS, IMPERIAL RICE-WHITE VARIETY.

WE take the following from "*Prince's Catalogue*." The subject in question is well worthy of attention. America has given to the world the Potato and Indian Corn. Might we not expect, then, in the course of "compensations" ordained in the orderings of Providence, that Asia should contain in her remote and fertile regions, esculents and fruits of great value to mankind. And since that venerable and mysterious Empire of China has already given to the civilized world its social beverage of Tea, ought she not accompany it with an esculent for food? And when our prejudices would raise obstacles and

objections to the introduction of the products of the earth from abroad; let us remember that the *American* potato was rejected by Europe for many years after its introduction by Raleigh, and his name was derided on account of his instrumentality in commanding its use in domestic economy; and that our Indian corn, the greatest of all crops now borne on the bosom of earth, is even yet received in other countries with jealousy and distrust. Let the "*Chinese Potato*," then, have a full and impartial trial before verdict is pronounced. Speaking of this, Mr. Prince says:

"I invite the public to view my plantation of two-and-a-half acres, containing 35,000 plants of this inestimable esculent. I am desirous to identify myself with the introduction of this most important plant; and after having devoted half a century to horticultural pursuits, I ask no greater boon of my countrymen than to award me this claim, which I am striving to merit more fully by its extensive culture. I shall also be thereby enabled to supply the many correspondents hereafter, whom I was unable to supply in April without then breaking into the arrangements for my present plantation.

"Having most fully investigated the merits of this esculent, I have a few positions to state in regard to it, which, being somewhat bold in their character, *I wish my countrymen to record for future verification.*

"*First.* I assert that the *Dioscorea Batatas* of *Decaisne*, is perfectly hardy during our severest winters.

"*Second.* That it is more nutritious than any other esculent we cultivate.

"*Third.* That its culture is so easy and simple, and its product so great, that it can be afforded incomparably cheaper than any other nutritious vegetable, it having produced in France at the rate of above 800 bushels per acre.

"*Fourth.* That the combination of every useful property, renders it the greatest vegetable boon ever granted by God to man, and that its introduction to our country is even more important than that of cotton, and that in twenty years our national statistics will report the value of the annual crop *as greater than the Cotton crop.*

"Next I assert, that this plant alone has served to solve the enigma as to the alimentary basis of the Chinese empire, and that a statistical investigation will prove, that if the country were deprived of this one vertical root, and received in lieu every other known vegetable, more than one-half of its enormous population would perish from famine. Further, I assert, that such are its superior properties—the three most important of which I have above detailed—that it is destined not only

to supersede every other potato and every similar esculent in all countries of the temperate zone, but that it will attain in all these countries the position it occupies in China, and will consequently usurp a portion of the position which is now occupied here by Indian corn and by wheat; it being perfectly competent to make good bread similar to that of wheat, and capable of being afforded at an incomparably cheaper rate. As the roots propagate so easily and rapidly, it will, after a few years, become generally disseminated; but, for the first four or five years, millions of dollars will be made by its early cultivators, until all countries are supplied. The stupidity and ignorance of those who have maliciously assailed this plant, will be understood by the perusal of an address delivered by me before the American Institute, which institution awarded its silver medal for this vegetable, and has also in its transactions recommended its culture as a substitute for the common potato. The Secretary, the Hon. Henry Meigs, has made a most triumphant report in regard to its successful culture in France. The statements pretending to emanate from the Farmers' Club of the American Institute, the last spring, unfavorable to this plant, were *barefaced forgeries*, made from malicious motives,—as was fully exposed. At the present time there are nearly one thousand persons in the Union who have the Chinese potato under culture (mostly supplied by myself), and the public can not fail to obtain from them satisfactory and conclusive information the ensuing autumn, for their future guidance. Persons who are desirous of ample information as to the last year's successful culture in Europe, can consult the "*Mark-Lane Express*" and "*Gardener's Chronicle*," of Great Britain, and the "*Revue Horticole*," published under the direction of the French Institute; which latter, in its last quarto for 1855, devotes twenty entire pages to the experiments and culture of this plant, and concludes with the following astounding announcement: 'This esculent has now been tested in every department of France, even to its most northern limits, the shore of the Rhine, and it is to be deemed, henceforth, incorporated into the agriculture of France.' I have taken especial pains to inform myself fully, by examining several very extensive Chinese agricultural works which have been translated by order of the French Government, and it is the perusal of these works and their elaborate details as to the extensive culture of this root in China, which have most fully confirmed in my mind the vast importance of this inestimable esculent.

WM. R. PRINCE."

For the *Cincinnatus*.*Reflections by a "Resident of the Hill Side."*

DWARF PEARS.

READER! did you ever talk to a nurseryman who had a fine lot of Dwarf Pears to dispose of; especially, at such time when there was a fair prospect of making a sale to you? If not, you have missed a rare treat in the way of "piling on," what may be termed, a topological *agony*. As we have been one of those *fortunate* individuals, it will not, perhaps, seem out of the way that we give "our *experience*." It was at a time, some years ago, when *Dwarf Pears* were ahead of every thing else, in the fruit tree line, that we were approached most *delicately* on the subject, and induced to make a purchase of some three hundred trees. Our nursery friend told us of a Dwarf Pear tree, either growing in Germany or France, that was one hundred years old; and the pears it had borne were outside of all bounds in recollection, or calculation either! But our ideas were up, and no mistake; and it was at the termination of one of these grand flourishes of our exuberent friend, that we concluded to give him an order at once.

The next thing was to engage the proper person to set them out, and infuse into the young trees that *luxuriant vitality* at the beginning, so thoroughly important, in order the *enchantment* should not flag; at least, for the first year on their pilgrimage of a new life. We had heard many years ago of the *Morus Multicaulis*, and more recently of the *Dioscorea Batatis*, but these were visions that seemed to fade into utter insignificance along side of the *Dwarf Pear mania*! But we must be brief, or else our story will neither be read nor believed.

The first year, then, *only* about one-sixth of our trees died outright! Others looked "sort o' sick" and troubled with the yellows, or some disease quite similar; whilst the balance showed any thing else but uniformity. It was hard to tell, upon examination, whether they or the owner looked the most "*green*." Some shot up their branches with a desire to reach the vicinity of the Moon, whilst others run out horizontally and longitudinally in every direction, making, altogether, about as shaggy an appearance as could well be conceived.

The second year no better. Third, ditto. What was to be done? At last, however, we made bold to suggest our troubles, not to a "Philadelphia lawyer," but to a very eminent Philadelphia Horticulturist; and after making a most amiable reply to the various other

points in our letter, he soothes our unstable nerves with the following very refreshing piece of intelligence:

"Ah! those Pear Trees; do you know that a room will not keep warm unless you live in it? Just so with Dwarf Pears; they are *social* and you must live with them, talk to them, coax them, and feed them with a spoon; pinch them whenever they run out of bounds, give them a drink from a feeding mug, and persuade them, by gentleness, to keep in a good humor. Is there not something in this?"

Yes, sir-ee! "There is something in this!" A little *more* of the same sort, and we should have fainted sure. "Feed them with a spoon!" and a silver one at that, we presume; as it can hardly be possible that any other should answer the purpose so well! "Coax them, give them a drink from a feeding mug!" This was enough! And the only remedy or consolation that we could then devise, was to abide our time until encouragement might come from some other quarter less straining on the nervous system!

That the reader may have the benefit of *all the lights*, we here give Dr. J. M. Ward's experience, taken from the August number of the *Horticulturist*. The Doctor says:

"A Pear tree, once established in any soil of moderate tilth, will take care of itself, will ordinarily find nutriment enough to secure vigorous growth, will at least make progress in the world, and bear fruit. Not so with the Dwarf. The range its rootlets travel for food is circumscribed. Numerous as those rootlets are, they will soon exhaust the soil of the food nature has supplied, and if attention is not given it—and good attention, too—it very soon shows its neglect. And good feeding is not all that is required. If well fed, it will give you towering shoots; these you must repress. *But*, with this, your work is not done. Your spring pruning, laboriously completed, is soon followed by a call for June pinching. And, again, your autumn shortening must not be neglected, or your reward for high culture will consist in great luxuriance of growth, which, though pleasing to the eye, will not satisfy the palate. And furthermore, in orchard culture, in our country of abounding high winds, with occasional thunderstorms, the culturist who neglects to *shorten-in* will sometimes find the reward of his labor unexpectedly given in a prostration of heavy-laden trees, and his hopes together. The separation is so readily made at the usual swelling over—just at the junction of the graft with the stock—that it is not unusual, under these circumstances, for this accident to occur."

There! Gentle reader, you have the whole story in a nut shell.

Those among you who like the sport of growing Dwarf Pears, so well as to "live with them," "talk to them," "e coax them," "feed them with a spoon," "pinch them," "give them drink from a mug," "persuade them," "shorten in," etc., just "pitch in," whilst we will just pitch out.

That Dwarf Pears are a humbug, is an opinion, as Benedict says, "fire can not melt out of me; I will die in it at the stake." W. S.

CINCINNATI, August, 1856.

The Ravens—A Stratagem.

A HERD of grampuses (*Delphinus orca*) having made their appearance off the island of Pappay, in the Sound of Harris, in the summer of 1818, the natives surrounded it in boats and drove it ashore. Some of the animals were about thirty feet in length, others not more than twelve. Forthwith all hands were out, busily employed in stripping off the blubber, an operation which lasted but a few days.

In the meantime two ravens were seen on the neighboring rocks, croaking dolefully. The people then brought out all the pots they could muster, for the purpose of boiling the blubber. The island sent forth an odor which extended for miles around. Ravens came daily, in pairs, and at length in small flocks. The grampuses, now abandoned by their murderers, were attacked by the ravens, which, after gorging themselves most gloriously from dawn till daylight, retired in the evening to a rock in the vicinity, where they dozed away the short hours of a summer's night, seeing in the visions of sleep the noble carcasses of whales moored upon the island beaches of the stormy Hebrides.

There were about seventy grampuses in all, and for each grampus there might be for the first week five ravens, the next week ten, then twenty, and at length fifty; so that the ominous army at length amounted to upward of three thousand beaked warriors, headed by an enormous white field-marshall, under whom were various speckled generals. Spotted ravens, in fact, are sometimes seen in the Hebrides on ordinary occasions, but one totally white had never before presented itself to the astonished natives. The carcasses were wasting but slowly; and so long as the ravens had plenty of food, no person thought much about them. At length the flesh and entrails disap-

peared, and nothing remained but the bare bones. The skeletons lay on the shores like the hulls of the Spanish Armada, keel and timbers, the planks torn off by the natives. Everybody thought the ravens would withdraw, but no diminution appeared in their number. Week after week, the old marshal and his subalterns led the sorties to the breach. A council of war was held, but no person could suggest a remedy. Some shots were fired, and a few ravens hung in irons on the heights; but the rest merely croaked as they saw their companions swinging in the gale.

At length a man named Finlay Morrison hatched a plot which produced a goodly gosling. Finlay had been often in St. Kilda, where he saw the gannets slain in the following manner:

The bird-catcher slips down a long rope, fastened above by a peg, until he gets upon a shelf where the gannets have roosted. He approaches cautiously, seizes the first one between his knees, to prevent it from flapping its wings, thereby frightening the rest; dislocates its neck by a sudden jerk, and then leaves it there stark dead. In this way he kills scores each night.

Finlay crawled cautiously up the rock to which the ravens retired at night, laid hold of an old rascal and killed him; then another and another, until at length he had slaughtered more than a score.

This was repeated several nights in succession. Still no diminution was perceptible in the army, and the islanders were apprehensive of a famine, for the ravens had attacked their barley. Finlay scratched his head one night as he sat by the fire, right over the organ of invention, which being electrified, out came a spark, which, passing through the other organs, produced a scheme, and a funny one, too, as will presently be seen. He rose up, dark as it was, and took two of his companions. They walked to the rocks, clambered up as usual to the raven roosts, laid hold of half a dozen birds, plucked them completely, leaving only the wing and tail feathers, and let them loose. By this time it was dawn. The plucked ravens screamed violently; the whole flock screamed and fled. Nothing was to be heard on the island but one desperate and incessant scream. The natives, terrified, got out of bed and came abroad. The denuded ravens naturally sought their companions, but the latter had no compassion upon them. They fled from them in all directions, terrified at the unnatural and never-seen spectacle. One night only did the ravens remain on the island. Some herdsmen saw them at sunrise wing their flight in a body northward, over the Atlantic, leaving behind them their luckless companions, which, naked and persecuted, soon perished.

By this means was the island of Pappy rid of a pest, which might have reduced to severe distress, by destroying their scanty crop, an already wretched population, the greater part of which has taken refuge in the wilds of Canada.

Personalities of Literati.

JERROLD.

DOUGLAS JERROLD, a well-known contributor to *Punch*, and editor of various publications, is a man about 50 years of age, and in person is remarkably spare and diminutive. His face is sharp, angular, and his eyes are of a grayish hue. He is probably one of the most caustic writers of the age, and with keen sensibility he often writes under the impulse of the moment, articles which his cooler judgment condemns. Although a believer in hydropathy, his habits do not conform to the internal application of Adam's ale. His Caudle Lectures have been read by every one. In conversation, he is quick at retort—not always refined. He is a husband and grandfather.

MACAULAY.

The Hon. T. B. Macaulay is short in stature, round, and with a growing tendency to aldermanic disproportions. His head has the same rotundity as his body, and seems stuck on it as firmly as a pin-head. This is nearly the sum of his personal defects; all else, except the voice (which is monotonous and disagreeable), is certainly in his favor. His face seems literally instinct with expression; the eye, above all, full of deep thought and meaning. As he walks, or rather straggles along the streets, he seems as if in a state of total abstraction, unmindful of all that is going on around him, and solely occupied with his own working mind. You can not help thinking that literature with him is not a mere profession or pursuit, but that it has almost grown a part of himself, as though historical problems or analytical criticism were a part of his daily and regular intellectual food.

BAILEY.

He is a thick-set sort of a man; a stature below the middle size; complexion dark, and in years about eight-and-thirty. His physiognomy would be clownish in expression, if his eyes did not redeem his

other features. He spoke of "Festus," and of its fame in America, of which he seemed very proud. In England it has only reached its third edition, while eight or nine have been published in the States.

DE QUINCEY.

He is one of the smallest legged, smallest bodied, and most attenuated effigies of the human form divine, that one could meet in a crowded city during a day's walk. And if one adds to this figure clothes that are neither fashionably cut nor fastidiously adjusted, he will have a tolerably rough idea of De Quincey's outer man. But then his brow, that pushes his obtrusive hat to the back of his head, and his light gray eyes that do not seem to look out, but to be turned inward, sounding the depths of his imagination, and searching out the mysteries of the most abstruse logic, are something that you would search a week to find the mates to, and then you would be disappointed. De Quincey now resides at Lasswade, a romantic rural village, once the residence of Sir Walter Scott, about seven miles from Edinburgh, Scotland, where an affectionate daughter watches over him, and where he is the wonder of the country people for miles around.

LAMARTINE.

Lamartine is,—yes, young ladies, positively—a *prim*-looking man, with a long face, short gray hair, a slender figure, and a suit of black! Put a pen behind his ear, and he would look like a "confidential clerk." Give his face more character, and he would remind you of Henry Clay. He has a fine head, phrenologically speaking—large and round at the top, with a spacious forehead, and a scant allotment of cheek. *Prim* is the word, though. There is nothing in his appearance which is ever so remotely suggestive of the romantic. He is not even pale, and as for a rolling shirt collar, or a Byronic tie, he is evidently not the man to think of such things. Romance, in fact, is the article he lives by, and like other men, chooses to "sink the ship," at least when he sits for his portrait.

DUMAS,

On the contrary, is a burly fellow. His large, red, round cheeks stand out, till they seem to stretch the very skin that covers them, and it looks as smooth as a polished apple. His black, crimped hair is piled high above his forehead, and stands divided into two unequal masses, one inclining to the right, and the other to the left. His eyes are dark, and his mouth sensuous, but not to the degree of vulgarity.

His person is large, and his flowing mantle red. He is the gentleman to lay bare the throat and look romantic; not Byronically so, but *piratically*. Yet he looks good humored, and like a man whose capacity for physical enjoyment of all kinds is boundless. His negro blood is evident enough to one who knows he has it; but it would not be detected by one who knew it not. It appears in the peculiar rotundity of the man in all his parts. It crisped and heaped his hair; it gave the fullness to his mouth; it made him dress up in flowing red to have his picture taken. But his complexion is only a shade darker than the average. The portrait reminds one for a moment of the late Thomas Hamblin, the actor.

EUGENE SUE

Is neither prim nor burly. He is a man of large frame, over which a loose black coat is carelessly buttoned. Complexion light—eyes blue, hair once black, now pepper-and-salt—whiskers voluminous—eye-brows black and thick—good forehead, and lower face ample. This conveys no better idea of the man's appearance than the description in a French passport. But the truth is, Sue's countenance and figure have none of those peculiarities which make description possible. He looks, in this portrait, like a comfortable, careless, elderly gentleman, taking his ease in an easy coat. He does not look like an author—authors seldom do. His air is rather that of a prosperous citizen. Sue is only forty-five years old, but he has lived fast, and looks fifty-five. Lamartine is sixty-three, and would pass easily for fifty-three. Dumas is fifty, and could get credit for thirty-eight.

AN amateur gardener and joker sent to a seedman in town the other day for some seeds of the "pie-plant," which he had advertised,—requesting six parcels of the custard pie seed, and two of mince pie. The seedman promptly sent him half a dozen of goose eggs, and two blind puppies. The humorous gentleman admitted that the joke was rather against him.

A GIRL was talking of the loss her sister had recently sustained in the death of a devoted husband.

"Poor Mary!" said she, "though George has been dead near six months, yet she grits her teeth even now whenever she thinks of him."

The Emperor and the Yankee.

THE following occurrence is quoted by Frederika Bremer, in her late work on America, as from the letters of Mrs. Child, and gives a graphic illustration of a prominent feature in American character. The adventurous youth alluded to, was the brother of the Hon. Charles Sumner, one of the present Senators in Congress from Massachusetts. Instead, however, of coming immediately to this country; as the story intimates, he pursued his travels in the East, and was returning home in the ill-fated brig Elizabeth, with Margaret Fuller Ossoli, and, with her, perished in the wreck of that vessel off the southern shore of Long Island. The date of the following scenes was about 1837, when the Hon. George M. Dallas, since Vice President, was our Minister to the Court of Russia :

One day a lad, apparently about nineteen, presented himself, before our Ambassador at St. Petersburgh. He was a pure specimen of the genus Yankee—with sleeves too short for his bony arms, trowsers half way up to his knees, and hands playing with coppers and ten-penny nails in his pockets. He introduced himself by saying—“I’ve just come out here to trade, with a few Yankee notions, and I want to get a sight of the Emperor.”

“Why do you wish to see him ?”

“I’ve brought him a present all the way from Ameriky. I respect him considerable, and I want to get at him and give it to him with my own hands.”

Mr. Dallas smiled as he answered—“It is such a common thing, my lad, to make crowned heads a present, expecting something in return, that I am afraid the emperor will consider this only a Yankee trick. What have you brought?”

“An acorn.”

“An acorn ! What under the sun induced you to bring the Emperor of Russia an acorn ?”

“Why, just before I sailed, mother and I went out to Washington to see about a pension ; and when we was there, we thought we’d just step over to Mount Vernon. I picked up the acorn there ; and I thought to myself I’d bring it to the emperor. Thinks says I, he must have heard a considerable deal about our General Washington, and I expect he must admire our institutions. So now you see I’ve brought it, and I want to get at him.”

"My lad, it's not any easy matter for a stranger to approach the emperor; and I am afraid he will take no notice of your present. You had better keep it."

"I tell you I want to have a talk with him. I expect I can tell him a thing or two about Ameriky. I guess he'd like mighty well to hear about our railroads, and about our free schools, and what a big swell our steamers cut. And when he hears how our people are getting on, may be it will put him up to doing something. The long and short on't is, I shan't be easy till I get a talk with the emperor; and I should like to see his wife and children. I want to see how such folks bring up a family!"

"Well, sir, since you are determined upon it I will do what I can for you; but you must expect to be disappointed. Though it will be rather an unusual proceeding, I would advise you to call on the vice-chancellor, and state your wishes. He may possibly help you!"

"Well, that's all I want of you. I will call again, and let you know how I get on."

In two or three days he again appeared, and said: "Well, I've seen the emperor, and had a talk with him. He's a real gentleman, I can tell you. When I gave him the acorn he said he would set a great store by it; that there is no character in ancient or modern history he admired so much as he did our Washington. He said he'd plant it in his palace garden with his own hand, and he did do it—for I saw him with my own eyes. He wanted to ask me so much about our schools and railroads and one thing or another, that he invited me to come again and see his daughters; for he said his wife could speak better English than he could. So I went again yesterday; and she's a fine, knowing woman, I tell you, and her daughters are nice gals."

"What did the empress say to you?"

"Oh, she asked me a sight o' questions. Don't you think, she thought we had no servants in Ameriky! I told her poor folks did their own work, but rich folks had plenty of servants. 'But then you don't call 'em servants,' said she, 'you call 'em help.' 'I guess, ma'am, you've been reading Mrs. Trollope?' says I. 'We had that ere book aboard our ship.' The emperor clapped his hands, and laughed as if he'd kill himself. 'You're right, sir, said he, 'you're right. We sent for an English copy, and she has been reading it this very morning!' Then I told all I knew about our country, and he was mightily pleased. He wanted to know how long I intended to stay in these parts. I told him I'd sold all the notions I'd brought over,

and guessed I should go back in the same ship. I bid 'em good bye all round, and went about my business. Ain't I had a glorious time? I expect you didn't calculate to see me run such a rig."

"No, indeed, I did not, my lad. You may very well consider yourself lucky; for its very uncommon thing for crowned heads to treat a stranger with such distinction."

A few days after he called again, and said, "I guess I shall stay here a spell longer, I'm treated so well. T'other day a grand officer came to my room, and told me that the empress had sent him to show me all the curiosities; and I dressed myself, and he took me into a mighty fine carriage, with four horses; and I've been to the theater and museum; and I expect I've seen about all there is to be seen in St. Petersburg. What do you think of that, Mr. Dallas?"

It seemed so incredible that a poor, ungainly Yankee lad should be thus loaded with attentions, that the ambassador scarcely knew what to think or say.

In a short time his visitor reappeared. "Well," said he, "I made up my mind to go home; so I went to thank the emperor, and bid him good-bye. I thought that I couldn't do less, he'd been so civil. Says he: 'Is there any thing you'd like to see before you go back to Ameriky?' I told him I should like to have a peep at Moscow, but it would cost a sight of money to go there, and I wanted to carry my earnings to mother. So I bid him good-bye, and come off. Now what do you guess he did next morning? I vow he sent the man in regiments to carry me to Moscow! and bring me back again, when I've seen all I want to see; and we're going to-morrow morning, Mr. Dallas."

And sure enough the next morning the Yankee boy passed the ambassador's house, in a splendid coach and four, waving his pocket handkerchief and shouting, "Good-bye! Mr. Dallas, good-bye!"

Mrs. Smikes says the reason children are so bad this generation is owing to the wearing of gaiter shoes instead of the old fashioned slippers. Mothers find it too much trouble to undo gaiters to whip children, so they go unpunished; but when *she* was a child, the way the old slipper used to do its duty was a caution.

Where and How Guano is Obtained.

The New York Evening Post furnishes the following interesting account:—

An intelligent gentleman, who has been employed in loading a ship with guano at the Chincha islands, on the coast of Peru, has communicated to us some interesting information with respect to the trade. He has been at the islands at three different times; and nearly six months in all. The last time he was there was in the fall and summer of 1855. He says he found at times five hundred sail vessels together, loading with guano, generally large ships. One ship was 4,500 tons burden. Not less than three hundred sail of vessels are now at the islands loading for the United States, Spain, Portugal, France, and English and German ports. Some cargoes are sent to Constantinople, and some to Russian ports in the Black Sea. This was before the war in the Crimea. The Russian trade will now open again, both from the Black Sea and the Baltic. Freights are high; £6 10s. are often paid per ton for Liverpool and Hampton Roads. Generally ten shillings more a ton freight is paid to Europe. At the rate at which guano is now shipped from the Chincha islands, it will be exhausted in six or eight years—not a ton will be left. Twenty thousand tons are sometimes removed in a single day.

These islands are about one hundred miles north from Callao. The longest of the group is two miles in length and a quarter of a mile wide, but contains only a small quantity of guano. The most northerly island is the smallest, being about a mile in length by half a mile in breadth. Guano on this island is two hundred and fifty feet deep. The island contains a Chinese settlement of Coolies, about a thousand in number, who are employed in digging guano and loading the vessels. A task is given them each day, and if the gang fail to get out the given number of wagon loads, of two tons each, a day, their bondage is continued a longer period to make it up; so many months or days being added as wagon-loads are wanting.

The Coolies are cheated into the belief that they are to be shipped from China to California and the gold diggings, and are further deceived by the offer of a free passage. The knowing Chinese, or the Mandarins, ship them. The ship-master carries them to the Peruvian coast and sells the cargo of living Chinese to the Peruvian Government for his freight money. All this time the Chinamen are

kept in irons and confined below in the ship. The Peruvian Government purchase the cargo of living Coolies, paying the Yankee or English captain a round sum for his care, diligence, and labor in stealing Chinamen from their homes, to be sent into the *guano* mines of Peru for life, or for from five to seven years, and to be held in bondage or peonage to pay their passage to the glorious land of the *Meas*.

The guano is hard, and can only be broken up with the pick-axe. It is then broken and shoveled into the wagons, and rolled from the shutters into the vessels.

No person can go upon or come away from the islands without a pass, as they are guarded by more than one hundred armed soldiers belonging to Peru.

The Peruvians send all their prisoners of State into the guano mines—say from about two to three hundred—where they are let out to work by day, and at night are shut up in their cells, with only two meals per day. These prisoners are generally provided with wives, or female companions, who have been permitted to go to the islands, and hire themselves out for work and prostitution. They are mostly Indians—natives of the country. There is no fresh water on the islands, and each vessel is compelled by law to carry a ton of fresh water there for every hundred tons burden of the ship. The oldest captain in the fleet from each nation is appointed commodore, and hoists his flag as such on his ship, where all disputes are settled. Indeed, the municipal laws of the islands and the fleet are decidedly of Yankee origin.

The islands are about ten miles from the main land, and are composed of new red sandstone. The guano is not all bird-dung, but is largely composed of the mud of the ocean; that brought from Peru is so, at least. When anchors are hoisted into the ship from the holding-grounds of vessels along the Peruvian coast, large quantities of mud, of a greenish-white color, are brought up, and this mud, when dried, makes guano equally good with the guano taken from the islands.

The birds and seals come upon the island when the people are not at work; but it does not appear that their dung or decayed bodies is more than a foot deep on any of the islands. Fish are taken in great abundance about these islands, as are also seals, which come there in large schools. Sea-lions also abound. The composition taken from the islands, called guano, is stratified, and lies in the same form it did before it was lifted up from the bottom of the ocean.

Our informant says that a geographical examination of the islands will satisfy any man that the guano ships are bringing away from these

islands a very different thing than the dung of birds or decomposed animals.

Gibbs & Bright, of Liverpool, have a lease of the guano islands from the Peruvian Government for five years, which expires in 1857, but hope to get their lease renewed. This house pays the Peruvian Government about \$4 50 a ton for the privilege of taking all the guano from the islands, the government furnishing the men to dig the guano.

The ships that load at the island are mostly ships chartered to carry a cargo, or sent there by the owners to take away a cargo, bought of Gibbs & Bright, who have the entire monopoly of the trade.

The Mighty Cedars of California.

REV. DR. BUSHNELL, of Hartford, writes from California, to the *New York Independent*, a graphic account of the immense cedars of California, the greatest trees in the world. One of them which had been felled, he ascertained, by counting the grains of the stump, to be twelve hundred and eighty years old. When Mahomet was at nurse, this tree was sprouting. Says the Reverend gentleman:

It is a forest, yet nothing that we mean by forest. There is no undergrowth, scarcely any where a rock; the surfaces are as beautifully turned as if shaped by a landscape gardener, and dotted over by myriads of flowers, more delicate, if not more various than any garden ever grew. Moving along these surfaces, rounding over a hill, or galloping through some silent valley, winding here among the native oaks casting their round shadows, and there among tall pines and cedars drawing their huge conical shapes on the ground, we seem, in fact, to be riding through some vast park. Indeed, after we had seen the trees and taken their impression, we could think of nothing but to call it the park of the Lord Almighty. The other trees, we observed, were increasing in size as we neared the place, till finally, descending gently along a western slope among the files of little giants, we came to the gate of the real giants, emerging into the clear ground of the Big Tree Hotel, between the two sentinels, which are five hundred feet high, and stand only far enough apart for the narrow road to pass between. These were the first of the Washington cedars we had seen; it really seemed that we had never seen a tree before. And yet they were only medium specimens.

Close by the house lay the first cut of the Big Tree, *par eminence*; the remaining part, or top, had been split up and removed. Near this first cut stood the stump, about six feet high, with an arbor mounted on the top, which had been squared down for this purpose, the posts of the arbor standing out in the line of the largest circuit at the ground, and the space between them and the circuit of the top filled in by a floor of short boards. The diameter of the top is by measurement twenty-five feet one way, and twenty-three and one-half feet the other. The diameter, at the ground, was thirty-one feet. They are all included in a space of fifty acres, and are only about ninety in number. The ground occupied is a rich wet bottom, and the foot of the moist northern slope adjacent, covered also with an undergrowth. *And why are they here, just here, and no where else?* This, I confess is to me, the greatest, strangest wonder of all, that no where in the whole earth, is there another known example of these Anakims of the forest; ninety seeds alone have been started, ninety and no more. Is there, was there no other piece of ground but just this, in the whole world, that could fitly take the seeds of such a growth? Why have they never spread, why has no one seed of the myriads they sprinkle every year on the earth, ever started in any other locality?

And what a starting it is, when such a seed of life begins to grow. Little did that tiny form of matter about the size of a parsnip seed, and looking more like it than any other, imagine what it was going to do, what feelings to excite, when it started the first sproutings of the Big Tree! We measured an enormous sugar recently felled. Sixty feet from the ground it was six feet in diameter, and was two hundred and four feet high. We measured one of the prostrate giants, and two hundred and forty feet from the ground it was six feet in diameter! The top was gone, but it could not have been less than three hundred and fifty feet high. And yet this tree was only eighteen feet in diameter where the Big Tree was twenty-five. If the Big Tree were hollowed, one might drive the largest load of hay through it without even a brush of contact.

Many of the trees, and all the largest of them that remain, are greatly injured by fire. Their time is therefore shortened, and a long time will be required to bring the smaller ones to their maximum of growth. That a man, instigated by the infernal love of money, should have cut down the biggest of them, and skinned the next, one hundred and twenty feet upward from the ground, (*viz*: the Mother,) that he might show or sell the bark of her body, both sound as a rock at the heart, and good for a thousand years to come! Oh, it surpasses all contempt. And yet to see this Giant Mother still growing on as

before, bearing her fresh foliage, ripening her seeds, and refusing to die ; hiding still her juices and working her pumps in the deep masses of her barkless body, which the sun of two whole years has not been able to season through, dead as it is and weather-cracked without—it is a sight so grand as almost to compensate for the loss we suffer by the baseness of the human scamp.

Tact and Talent.

TALENT is some thing, but tact every thing. Talent is serious, sober, grave, and respectable. Tact is all that, and more too. It is no seventh sense, but it is the life of all five. It is the open eye, the quick ear, the judging taste, the keen smell, and the lively touch. It is the interpreter of all riddles, the surmounter of difficulties, the remover of all obstacles. It is useful at all times, and in all places. It is useful in solitude, for it shows a man his way into the world. It is useful in society, for it shows a man his way through the world. Talent is power—tact is skill. Talent is weight—tact is momentum. Talent knows what to do—tact how to do it. Talent makes a man respectable—tact will make a man respected. Talent is wealth—tact is ready money. For all the practical purposes of life, tact carries itself against talent, ten to one. Take them to the theater, and talent will produce you a tragedy that will live scarcely long enough to be condemned, while tact keeps the house in a roar, night after night, with its successful farces. Take them to the bar : talent speaks learnedly and logically, tact triumphantly. Talent makes the world wonder that it gets on no faster—tact excites astonishment that it gets on so fast ; and the secret is that it has no weight to carry, it makes no false step, it hits the right nail on the head, it loses no time, it takes all hints, and by keeping its eye on the weathercock, is ready to take advantage of every wind that blows. Take them into the church ; talent may obtain a living—tact will make one. Talent gets a good name—tact a great one. Talent convinces—tact convicts. Talent is an honor to the profession—tact makes it brilliant. Take them to court : talent feels its weight—tact finds its way. Talent commands—tact is obeyed. Talent is honored with approbation—tact is blessed with preferment. Place them in the Senate : talent has the ear of the house—tact wins its heart and its votes. Talent is fit for employment—

tact is fitted for it. It has a knack of slipping into places with a sweet, silent and glibness of movement, as a billiard ball insinuates itself in the pockets. It seems to know every thing without learning any thing. Talent is certainly a fine thing to talk about, a very good thing to be proud of, a very glorious eminence to look down from; but tact is useful, portable, applicable, always alert, always marketable; it is the talent of talents, the availability of resources, the applicability of power, the eye of discrimination, the right hand of intellect.

LORD ROSSE'S TELESCOPE.—This magnificent instrument is made of speculum metal, which, while it is as hard as steel, is yet so brittle that a slight blow would shiver it to atoms, and so sensitive to the changes of temperature that the effusion of a little warm water over its surface—not too warm to be disagreeable to the touch—would crack it in every direction. The plan proposed by Mr. Potter, and now claimed as originating the entire improvements, was tried and found utterly unfit for producing the proper surface. A deviation of the speculum from the parabolic form at its outside circumference, which should then amount to the $1-100,000$ part of an inch, would render it optically imperfect, and a deviation from the proper focal length of any part to the amount of the $1-1,000,000$ th part of an inch can be detected. Sirius, when seen in it through the light, is utterly insupportable to the unprotected eye; yet, when properly viewed, it is a beautiful sharp head of intense light.

UP at Manchester the other day, a party from Boston were examining the factory facilities and buildings, and among the rest the force pumps that threw water all over the premises. This was just as the girls were leaving work, and some of them got pretty wet. "You are washing your girls, colonel?" said one of the party to the master of ceremonies. "Yes," said he quickly, as the bell sounded for closing the work for the day; "yes, and we are now ringing them out."

A lady said to a gentleman, who had accompanied her and her sister to church, "Why, it rains; send and get an umbrella."

"Why," said the beau, you are neither sugar nor salt, rain will not hurt you.

"No," said the lady, "but we are lasses."

He sent for one immediately.

METEOROLOGICAL TABLE.

Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 10', W. Long. 7° 24' 45", for the month of June, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.

BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.				OPEN AIR THERMOMETER.			CLOUDS—THEIR COURSE AND VELOCITY.			WIND—DIRECTION AND FORCE.			RAIN AND MELTED SNOW.		
7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Hour Begun	Hour Ended.	Amt in'th's
1 29.237 29.154	29.167	29.186	29.170	71.0	71.0	71.0	2 S.W. 1.	0	0	0	S. W. 3	0			
2 29.202 29.144	29.104	29.150	29.050	78.0	77.7	78.0	0	0	0	0	S. W. 2	0			
3 29.114 29.056	29.044	29.071	29.071	78.0	80.0	78.0	0	0	0	0	S. W. 1	S. W. 3			
4 29.057 28.971	29.027	29.018	29.018	73.0	73.0	73.0	3 W. 2.	0	0	0	S. W. 1	S. W. 2			
5 29.047 29.032	29.049	29.043	29.043	68.0	71.2	68.0	0	5 W.	3	0	S. W. 3	S. W. 2			
6 29.082 29.054	29.024	29.053	29.053	86.0	86.0	72.0	4 W.	8 W.	4	0	W. 1	W. 1	11 A. M.	12 M.	0.590
7 29.000 28.816	28.839	28.885	28.885	80.0	61.0	70.5	75.3 Fog.	0	0	0	W. 1	W. 2	0		
8 28.890 28.852	28.852	28.865	28.865	78.0	66.0	66.0	9 W.	10 W.	0	0	W. 2	N. W. 2	8 P. M.	9 P. M.	0.160
9 28.870 28.861	28.912	28.881	28.899	79.0	64.0	69.0	0	3 W. 6.	3	0	N. W. 2	W. 4			
10 28.945 28.919	28.929	28.931	28.931	70.0	70.0	72.5	0	Cirri.	1	0	N. E. 1	E. 1	0		
11 28.985 28.924	28.880	28.930	28.930	88.0	71.5	76.5	0	2	0	0	S. W. 1	0			
12 28.944 28.974	28.969	28.962	28.962	70.5	76.5	67.0	71.3	5 W. 4.	0	0	W. 3	N. W. 3	0		
13 28.925 28.888	28.927	28.913	28.913	67.5	76.0	59.0	67.5	4 W. 6.	0	0	N. W. 3	W. 5	N. W. 2		
14 28.968 28.920	28.965	28.951	28.951	57.5	71.0	58.5	62.3	0	2	W. 6.	2	W. 2.	N. W. 2	N. W. 1	
15 28.990 28.972	29.000	28.987	28.987	58.0	73.5	65.0	65.5	0	0	8 N.W. 2.	4	W. 2.	0	W. 1	0
16 29.075 28.939	29.007	29.007	29.007	61.0	84.0	69.5	71.5	0	0	5 S.W. 2.	8	0	0	S. W. 3	0
17 28.980 28.977	28.940	28.966	28.966	66.5	65.0	64.0	65.2	4 W. 2.	10 S.W. 9.	10	Fog.	0	S. W. 2	0	
18 28.970 28.962	28.938	28.975	28.975	66.0	72.0	58.5	65.5	7 W. 5.	8	W. 4.	0	W. 2.	W. 3	N. W. 1	
19 29.078 29.014	29.032	29.041	62.0	81.0	67.5	70.2	0	0	0	0	0	0	0	S. E. 1	0
20 29.094 29.044	29.104	29.081	73.0	90.5	76.5	89.0	0	0	0	0	0	0	0	S. E. 1	0
21 29.183 29.133	29.173	29.163	74.0	96.0	83.0	84.3	0	0	0	0	0	0	0	S. 1	0
22 29.244 29.175	29.148	29.189	81.0	97.0	82.0	86.7	0	2 W. 1.	0	0	W. 1.	0	0	W. 2.	0

REMARKS ON WEATHER.

1. Roses in bloom.
 3. A thunder storm passed south at 11 A. M.
 4. First fire-fly.
 5. A much needed shower at 11.
 7. A thunder storm at 8 P. M.
 12. An effort to rain this morning at 8, failed.
 13. Blew a gale from N. W. this P. M.
 15. Vegetation suffering for want of rain.
 17. A drizzling fog all day.
 20. Raspberries ripe.
 22. Lightning at eve in N. W.
 24. A thunder shower at $3\frac{1}{2}$ A. M. One at 12 M.
 26. A few drops at 7 A. M. Showers passing around us.
 27. Hard thunder this morn at 3 A. M., but no rain.
 28. Very dry, grass dying.
 29. A thunder storm from W. at 6 P. M.

MINIMA.

MONTHLY EXTREMES.

	7 A. M.	2 P. M.	9 P. M.	MONTH.	7 A. M.	2 P. M.	9 P. M.	MONTH.
Barometer, . . .	29.244	29.175	29.173			28.870	28.828	28.839
Thermometer, . .	83.0	96.0	83.0			57.0	65.0	58.5

E X P L A N A T I O N.—The state of the sky is indicated in the above table by numbers from 0 to 10; 0 signifies perfectly clear sky, 10, that it is entirely covered with clouds, and intermediate numbers show the number of tenths clouded. The direction from which the wind blows is shown in the initials of the points of the compass. Its force is indicated by numbers; 0 meaning a perfect calm, and 10 the most violent hurricane.

The Mountain Wind.

BY REV. JAMES GILBORNE LYONS, LL.D.

THE local allusions in this song make it necessary to state that it was written in Scotland, after visiting the sublime mountain scenery round Castletown of Braemar.

BLAST of the mountain, the strongest, the fleetest,
 Sounding at eve in the pines of "Bræmar,"—
 Breeze of the desert, the purest, the sweetest,
 Warbling alone on the moorlands afar,—
 Hasten, unseen! from the fields of thy freedom,
 Play round my bosom, and steal o'er my brow;—
 Harpstrings of Morven, and perfume as of Edom,
 Bring not to my spirit such gladness as thou.

Come from the brake where the wild bird is singing
 Come from the fresh bank that gladdens the bee,
 Come from the cliff where the blue bell is springing
 Hidden from all but the sunbeam and thee;
 Rise in thy strength from the vale of thy slumbers,
 Waken! my spirit has pin'd for thee long:—
 Oh for the music that swells in thy numbers!
 Oh for the wildness that breathes in thy song!

Welcome, thou playmate and friend of my childhood
 Thou art the same that I loved in my youth;—
 Others were false as those leaves in the wild wood,
 Thou still dost retain thy freshness and truth;—
 Thou still dest rejoice in melody roaming
 Thro' the long fern where the dew spangles gleam,
 Thou, when the swift brooks are turbidly foaming,
 Dashest the spray from the vex'd mountain stream

Bard of the hill! when thy harping is loudest,
 Bid me not think with the tyrant or slave;—
 Teach me to strive with the worst and the proudest,
 Fearless as thou with steep Garvel's dark wave;
 Teach me to rise with a lofty devotion,
 Pure as thou rovest the blossoming sod,
 Sweeping the chords with a sacred emotion,
 Singing of Truth, and Redemption, and God.

THE CINCINNATUS.

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NO. 10.

Chapter on Wheats and Wheat Culture.

WHEAT is by far the most important of the cereals. The flour made from this valuable grain, from the quantity of its gluten, makes the best bread in the world. It is probable there is more of the human family nourished by rice than by wheat, but there is no grain of any thing like the value for bread-making as that of wheat. Indian Corn, Oats, Barley, and Rye, supply its place but imperfectly.

Of what country wheat is a native, is totally unknown, but is supposed to be indigenous to Asia and Africa, and unquestionably it is more likely to belong to those parts of the world than any other, but all that can be advanced on this subject is conjecture.

Wheat, with the exception, it is said, of some parts of the southern coast of Africa, is cultivated in every part of the temperate and torrid zones, and in some places as high as 2000 feet above the level of the sea. It has been grown from time immemorial in Britain, but in few places at a greater elevation than 600 feet, the elevation to which any plant can be cultivated depending of course on the latitude of the situation.

Botanists reckon seven species of *Triticum*, besides many varieties and sub-varieties in common culture.

1.	<i>Triticum</i> ,	<i>Aestivum</i> ,	or	Spring wheat,
2.	"	<i>Hybernum</i> ,	or	Winter wheat,
3.	"	<i>Egyptian</i> ,	or	Many spiked wheat,
4.	"	<i>Turgidum</i> ,	or	Turgid wheat,
5.	"	<i>Polonicum</i> ,	or	Polish wheat,
6.	"	<i>Spelta</i> ,	or	Spelt wheat,
7.	"	<i>Monocoeum</i> ,	or	One grained wheat.

The peculiarities of these several species would be interesting to the Botanist, but will be passed over for the present. In making choice from all the species and varieties, the thin skinned white wheats are preferred by all the best farmers of Europe, and America, where soil and climate are best adapted to them. In late situations, and less favorable soils and climates, the red varieties are generally preferred, also for spring sowing. Red wheats are however esteemed generally ten or fifteen per cent less valuable than the better white varieties. Writers on agriculture enumerate something over one hundred varieties of wheat; but the nice distinctions which are necessarily made in multiplying the sorts to such an extent, are but of slight importance to the majority of farmers. The mode of classification in practice is by natural marks exhibited in the ear and the grain. By a proper description of these, confusion is avoided. The farmer who grows the wheat plant, and sells it in the grain, should be acquainted with both; but the baker, who is only acquainted with the grain, need know nothing of the ear. By examination of the heads or ears of wheat you will find them properly divided into three classes. First class is a close compactly headed wheat, which is occasioned by the spikelets being set near each other on the rachis, making by their position the chaff short and broad. The second class, the spikelets being of medium length and breadth, and placed so close upon the rachis as to screen it from view; the head is not so broad as the former but longer, the chaff is of medium length and breadth. In the third class, the spikelets are set more open and so far apart as to permit the rachis to be easily seen between them; the ear or head is about the same length of the second, but is much narrower; the chaff is long and narrow. When a variety is clothed with beards, it presents quite a different appearance in the head. The term bearded is applied the same as spring wheat; beardless wheat, however, is as fit for sowing in spring as bearded, and the bearded may be sown in winter.

In regard to the classification by the grain, three heads may comprise all the varieties. The first class is where all the grains are short, round and plump. The second class, the grains are long and of medium size. The third class, where the grain is large and long to a greater degree than the last class. The following are the names of the kinds of wheat most esteemed and cultivated in this country.

White Flint, sometimes called white Genesee. This is one of the most valuable in all the northern States, the heads are not very

long, but well filled, with from thirty to forty grains. The kernel is white, and flinty, large, and with thin bran; the flour is very superior; specimens of this wheat have been known to reach 67 lbs. to the bushel.

We have now in cultivation a wheat called the white Turkey, the origin of which is not given; it answers to the description of Harmon's white Flint, (which is another esteemed variety,) but the exterior coating does not seem so hard, and transparent, but has a yellow cream-like tinge, and the grain is very soft and the bran uncommonly thin. This wheat has taken the premium in the neighborhood of Cincinnati, as likewise the flour at our Fairs for several years past. It succeeds well upon all wheat growing soils, especially upon a thin clay, yielding a more remunerative crop than any other. This wheat has been known to weigh 72 lbs. to the bushel as attested at the Fair of 1852 by Mr. Dair, a well known seedsman of Cincinnati. This wheat was raised by a Mr. Wardel, of Green township, near Cheviot. A grist of the same wheat yielded 44 lbs. of flour to the bushel of standard weight (60 lbs.) It very much resembles the specimen just received with near forty others from the United States Patent Office, called the Prince Albert white wheat. Flour from this wheat will everywhere command at least ten per cent. premium.

Old Genesee red chaff: an old favorite, but liable to rust and the fly; red chaff, bald, long straw, berry white and large, bran thin, superior flour; Kentucky white-bearded, white chaff, heads short but heavy and well filled, shells readily, berries round, short and white, flour good, straw liable to injury from insects.

Indiana wheat: white chaff, bald, berry white and large, bran thin, berry not so flinty as the white flint, but the straw is larger and longer, shells easily, is attacked by the insects and it is more liable to be winter killed. Red Bearded, red chaff, beards standing out from the head, berry white, good flour, succeeds well after corn, bran thick, inferior flour; the Egyptian many spik'd, or wild goose wheat, is a hardy variety, with a thick straw, which prevents its lodging; not grown in this part of the country.

The Mediterranean is a well known and tested variety in this region; light red chaff, bearded, berry red and long, flinty, bran thick, and the flour rather inferior. This wheat yields well, and seems to be a hardy variety which in some measure compensates for its inferior quality. It may be laid down as pretty general that the red wheats succeed best upon the strongest clay land, and they degenerate

when sown upon a soil of a lighter description. But on all the better class soils, the white or smooth-chaffed wheats are preferable, the thinness of the bran rendering them more valuable. We are now prepared to enter upon a course of experiments with this invaluable cereal, testing various kinds of culture, and various and approved kinds of grain. The following is a list of the wheats received from the Patent Office and other places which will engage our attention under numerous tests and experiments the coming year. Mostly winter varities, we have also received eleven kinds of turnip seed which are now growing, and some forty-five kinds of grasses—ten kinds of oats, likewise numerous other kinds of seeds. Among the varieties of wheat there are many most beautiful specimens.

WHEATS—

White Purkey (of Mr. Christopher Wardel, of Cheviot, Green Township, O.)

White Genesee Flint

Polish Wheat	-	-	-	From Poland
Swedish Wheat	-	-	-	" Sweden
Turkish Flint	-	-	-	" Turkey
Turkish Flint	-	-	.	" Mount Olympus, Asia
Triticum Hunter's	-	-	-	" England
Triticum sativum arbeis prolific				" England
Triticum Album	-		-	" "
Brawick's	-	-	-	" "
Wooly Eared Wheat	-	-	-	" "
Chiddam Prince Albert or Windsor			"	"
Kessingland, A. S.	-	-		" "
Triticum Sativum			"	"
Triticum	"	Spaldings	"	"
Triticum	"	Nuneus	"	"
Hardcastle	A.S.	-	-	" "
Golden	Drop	-	-	" "
Triticum	Sativum	Orkeis	prolific	"
Triticum	"	Lamos Red	"	"
Taunton	"	-	-	" "
Nursery	"	-	-	" "
Red Chaffed	Wheat	-	-	" "
Triticum	Talavera	-	-	" "
Froment	Blanc,	-	-	" Ireland
Froment	Blanc B. M.	-	"	England

Triticum Sativum (Fenton)	-	from England
Froment Rouge	- - -	" Ireland
Ecosse Ble Fenton	- - -	" Great Britain
Triticum Sativum (Spring)	-	" England
Froment Rouge	- - -	" "
Froment Bury Medal	- - -	" "
Geja	- - - - -	" Trigo de Geja
Soule	- - - - -	" "
Algerian Wheat	- - - -	" the province of Orem
Pithusian	" - - - -	" Yuica
Gale	" - - - -	" "
Early Noe	- - - - -	" the Island of Noe
Flamath Wheat	- - - -	" Homs, Syria in Asia

Study of Nature.

THE age in which we live has a decided tendency to the artificial. The very desires and affections of man's heart have been turned from their proper channel. Scarcely can anything in these days be regarded as *elegant*, that is *natural*. ART must throw around all things an enchantment, before they can be appreciated or appropriated to our use. Such is the force of public sentiment that the very innate faculties, and qualities of man's whole nature—moral, intellectual and physical—seem seriously perverted, influenced in many instances as they are by the whims and caprices of a fluctuating, morbid and artificial state of society. Diligence in the perusal of the latest novel, aptitude in the appreciation and peculiar habits and manners of heroes and heroines, and a consequent apeing of what is denominated high life, are deemed prerequisites to gentility, and to be regarded as worthy of any attention by the *ton* of society.

While looking at these features, limned as they are by this artificial age, we have been led to think, that, could we be induced to study the visible works around us, we should reach a point of moral and social elevation, and a degree of happiness far higher than is now attained and enjoyed. Could we but view nature unspoiled by the hand of art as our forefathers did, when they looked upon the majestic forest, the pomp and pride of the wilderness, adorned with the exuberant beauties of a wonderful vegetation and crowned with the

honors of a venerable age, it would be a mighty corrective to the manners and habits of the artificial present. Nature opens to us ten thousand sources of pleasure and profit. Every shrub and plant and flower, has a voice and a language for the contemplative and inquiring mind. The impressions they leave upon the soul are pure, the feelings they produce are those of pleasure. All nature is but one vast temple of undeveloped science, inviting the beholder to study and improve, to reverence and adore its grand and glorious Architect. And when earth with her myriads of trees, and shrubs, and plants; her rocks, and fossils, and metals; her reptiles, and beasts, and birds; yes, when animate and inanimate nature have been exhausted and cease to afford pleasure and profit, let the eye be turned above to the starry vault, and the mind be led forth into the field of astronomical science, or in contemplation of the sublimities there presented, and you have wherewith ever to instruct and delight. In yonder distant empire the imagination has opportunity to expand, full pinioned, and to catch the spirit of beauty and perfection with which the heavenly hosts are radiant, and the heart will almost surely be won by the harmony which they make to Him who gave them their orbits and appointed their goings. Surely, in such studies and pursuits as call directly the mind's energies away from the numerous excitants furnished by artificial society, in its innumerable artificial rounds of pleasure, in its gilded equipage and lieing vanities, we shall be led to embrace the ennobling sentiment, that

“Earth on whose lap a thousand nations tread,
An ocean brooding with prolific bed,
Night’s changeful orbs—blue poles and silver zones,
Where other worlds encircle other suns,
One mind inhabits—one diffusive soul
Wields the large limbs and mingles with the whole.”

Who will say that such studies and such pursuits as lead men often from “Nature up to nature’s God” will not refine the soul and purify the heart’s best affections? Through this medium we are led to lay hold on eternity, and prepare for our eternal destiny.

The mind thus chastened and exalted by the study and contemplation of nature, mounts higher into the regions of thought, where the sacredness of heaven will clothe the spirit, and awaken the heart to universal affections. If this be so—and of its truth none can reasonably doubt—we feel assured that the study of the sciences, in connection with their applications, will operate as a powerful corrective to

the love of the artificial which is now so prevalent. It will tame the restlessness of that ambition which is ever seeking the chief good in external blandishments—in wealth, in political distinction, in the gratification of the still lower and more groveling passions of a corrupt heart.

Transplanting Trees, Effects of Frost, &c.

MANURING at the time of transplanting, ploughing, manuring stimulating, and forcing the growth of trees afterwards, may all be well enough on the hill sides of New England, and on the sandy plains further south; but in the West, the man that pursues such a course does it at the imminent danger of losing his orchard by winter killing. I know this to be true, for I have tried it on one orchard and lost thirty out of one hundred as fine apple trees as I ever looked at, in one winter, by being winter killed; and thousands besides have tried like experiments with the same disastrous results.

With us the question is not, how shall we make our trees grow faster, but how shall we keep them in a healthy condition without letting them grow too fast. After an orchard is set out, crops that require cultivation may be grown on it with safety for four or five years; after that, it should be kept in clover, and if the clover dies out, it should be ploughed and harrowed in the fall after the trees are done growing, and clover again sown in February or March following.

If it becomes indispensable to cultivate an orchard to extirpate foul weeds, it should always be done when the trees are well loaded with fruit; then all the energy of the tree is directed to the maturing of fruit, and there is no danger of an inordinate fall growth or winter killing. When an orchard is ploughed and the ground put in good order in the fall, it induces an early vigorous growth of the trees the next season; and if the trees make a large early growth, they make a small late one; and *vice versa*.

If an orchard is ploughed in the spring and cultivated in some crop till harvest, the mutilation of the fibrous roots, and spongiolites retards the early growth of the trees, and induces a late growth, placing the trees in the best possible condition to be killed; provided the fall and winter favor such a result.

I often use the phrase "winter-killed," yet I do not like it, because we never experience a degree of cold here that would affect trees injuriously, if the growth of wood was completely matured before cold weather. Judging the future from the past, on the 27th of October, 1854, I wrote down a prediction that there would be a great destruction of fruit trees the ensuing winter, and never was evil prophecy more literally fulfilled. The same has been true several winters since, and last winter was a most signal illustration of the same fact. In 1851, the early part of the season had been rather unpropitious to a rapid early growth; August was very dry, and retarded the commencement of the late growth; and September, and October, being warm and showery, stimulated the trees to a vigorous late growth. On the 20th of October a very rapid fall in the thermometer occurred, and with the leaves on the trees as green as midsummer, a very heavy frost came on, and completely destroyed their vitality; and the moment that happened, that wonderful chemical laboratory that had been converting sap into woody fiber, ceased its operations as suddenly as a steam engine when the boiler bursts.

Every pore of the wood was filled to repletion with a watery fluid, that the tree was powerless either to throw off or assimilate. The sap became vitiated, and, on making an incision in the bark late in the fall, a colored, watery fluid, sometimes highly acid, exuded.

It is a well known law of nature that all fluids expand by freezing; and in obedience to this law the trees, surcharged with watery fluid, expand until the bark bursts, and on the return of mild weather the water escapes at the cleft made in the bark; the tree again contracts to its natural size, the bark sometimes standing off to the fourth of an inch from the wood, the winds of spring dry the bark in that position and the trees perish.

When trees are in such a condition I doubt whether any of our winters are so mild as not to kill them. Our mildest winters freeze to their centers trees larger than any of our fruit trees. The coldest can do no more.

Now I will not say that the causes alluded to bring on the real blight; but diseased sap, induces an unhealthy condition of the tree, and brings on diseases that often pass under that name.

I have now an orchard of one hundred and forty apple trees set out fifteen years ago, and although I have occasionally had a tree slightly injured, I know of no orchard that has come off better, and

thousands have fared far worse. And the loss sustained bears a very striking proportion to the stimulating treatment the trees have received.

JESSE MORGAN.

Beech Grove, Rush County, Ia.

"Terra Culture."—Prof. Comstock.

FREEDOM of thought, freedom of speech and freedom of the press are the glory of our times, and the pride of our republic. Yet amidst our vaunted rights and privileges we are often arrested in the contemplation of our joyous condition with the reflection and indeed with the apprehension of being under the surveillance of a more crueltyrant than the C'zar, and exposed to a worse serfdom than his subjects by the oppressive domination of fashion—of public opinion.

How did you like the *preacher*, the *lecturer* the *stump Orator* of yesterday. The honest reply, if made, often would be, "I have not heard any body say." All are more or less influenced by others, and this is right to a certain extent; but never admissible where "ignorance is the mother of devotion," or where the wise vauntingly assume that "wisdom will die with them." We have in our prosecution of the science of Agriculture both of these classes to contend with. We have those who have planted, and sowed, and done everything 'in the moon' according to the tradition of their great grandfather Abraham. And others who have come to the conclusion that there can be "nothing new under the sun," since they have been permitted to sit at the feet of wisdom, "and have all learning and all science gained." Although it is a generally admitted fact that in these last days the world has made great progress, let us not hastily come to the conclusion that it has reached the *Ultima-thule*, and that the present generation has nothing to do but follow the lights of the past, or that generations to come will bask in the perfect sunlight of the present, and must needs fold their hands when *we* are gone. Let us then neither assume the character of *dogmatists*, nor man-worshippers, but try, examine, prove whatever presents plausible claims for our investigation. Although Agriculture is the oldest pursuit of our race, we have reason to believe there remains much to be learned in relation to it. Indeed, as a science, it is yet a *terra-incognita*,

having thus far been followed principally as an art, and not studied as a science, simply because our good mother earth from her bountiful bosom has fed her children without stint, imposing upon them no need of invention, while an iron necessity has impelled to numerous and great discoveries in other pursuits, and placed the mind, in relation to them under the severest requisitions. In vegetable physiology, we have learned but few things profitable, in a practical point of view. We know when a seed is put into the ground the moisture and heat cause it to swell; the pellicle that surrounds it is weakened and the embryo bursts through. We know further that vegetation proceeds in two opposite directions, forming the radicle below, and the plumicle above; we say then that germination is the act by which a seed, placed in the soil under favorable circumstances, develops itself, in order to give birth to a plant of the same kind as that whence it sprang: that a seed to develop itself and form a vegetable, it is not only necessary that it should be placed in the soil, and that the soil should contain the *humus*, and mineral substances required for the nutrition of the plant, but there must also be a concurrence of certain atmospheric influences, that perform an important part in the phenomena of vegetation; that these atmospheric influences or agents are heat, moisture, air and light.

And after a few facts of this kind which have been learned by observation, and which were doubtless known and understood by Adam in the garden, the whole story ends.

At this point hundreds of false theories, and unfounded practices have sprung up, and others again are constantly taking root upon these like the mistletoe, and are propagated from father to son, from generation to generation. As in other sciences so in Agriculture there must be one uniform course, from which there can be no deviation. The first step must bring together and verify numerous facts; and when these have been satisfactorily established, to compare them with each other, and from their agreement or disagreement, to deduce principles.

Isolated facts are not sufficient to establish general principles. It is necessary too that the facts collected should have been observed, and verified, under the modifications and influences of different soils and their fertilizers, the state of the atmosphere, the influence of climate, and varieties of exposure before we can derive from them such general principles as can be practically applied. If the agents in vegetation were constantly the same and their action were uniform,

a single well observed fact would constitute a principle of universal application. But the difference in their action under different circumstances, must necessarily modify results. Thus, that which causes a particular kind of culture to succeed in one country, will not often have the same effect in another; and the Agriculturist in adopting new methods, which are attended with favorable results elsewhere, is often disappointed in his experiments, from the fact that he is unable to combine the same causes of success.

True science then proceeds on no uncertain data, but is the result of patient, long continued investigation under a great variety of circumstances.

We have recently been much interested by the disclosure of a newly discovered law of vegetable physiology said to be of immense value in its application to the farmer and horticulturist, by Prof. Russell Comstock, of Mabetsville, N. Y., under the name of “*Terra Culture*.” By a strict observance, in earth culture, of this law, we are directed uniformly and unerringly to the most successful and profitable results. While we are unprepared fully to substantiate its claims, and in the absence of well authenticated facts to indorse its doctrines; from what we have observed, and the simplicity, and character of the *rationale* adopted, we are inclined to investigate with care and candor its merits, and defend its author from the aspersions and ridicule which without just cause have been heaped upon him. As to the appropriation of the term “*Terra Culture*,” out of its literal and generally received signification, (which some have criticised, giving it a technical sense) we can see no valid objection.

As well might we object to the term *phrenology* applied to a well known science, because *phren* means mind, and *logos* a discourse, or treatise, putting them together, a treatise about the mind; or any other scientific term, as the one in question.

The term “*Terra Culture*,” is, we think, quite appropriate, comprehending a principle, or law and the application of that law to the development and growth of the whole vegetable kingdom. Who will captiously say this is a misnomer and unscientific?

What is “*Terra-Culture*”? We feel not at liberty to disclose it. You have heard it pronounced a veritable humbug by some who have listened to its disclosure—its claims are a sham, “a cheat; and its discoverer an Imposter.” We will never knowingly defend a humbug, much less advocate the claims of an imposter; but in the absence of facts against the man, and in the discussion of great philosophical

principles, and especially where practice is so diverse, we are not prepared to condemn wholesale, and treat him who lays claim to a great discovery as a culprit rather than a gentleman, though alike fallible with ourselves.

Mr. Comstock has been before the country for over twenty years, and a host testify to the merits of his discovery as we shall in a future number show. And not a man, so far as I can learn, has ever pretended to maintain that he is a dishonest man, or an impostor. If so, the knowledge of the facts has not reached us, and since the lecture, we are in receipt of numerous letters all of which fully establish his claims. If such facts exist, let them be made public.—Mr. Comstock may be self deceived; many zealous inquirers after truth have lived, and died, under a delusion, and many in a more barbarous age have paid the penalty of their rashness, in daring to think for themselves, with their lives, and that too for adherence to a mere opinion. But what are the claims of this new discovery, which, from the unfolding of the germ in the seed, to its expansion in the tree or vegetable, must be kept constantly in view, if you would secure the most successful result? By "Terra Culture," Mr. Comstock claims not only to be able to increase greatly our staple products in amount and quality, but to relieve from the depredations of diseases and of insects, and secure such vigor as will greatly lessen the effects of drought and frost; and all this at a less expenditure of labor and money than by ordinary culture. He further claims that on his system of culture, we may proceed with as much accuracy and exactness as the mathematician in his calculations in accordance with his rules of algebra and geometry; and that, too, by fixed laws, so perfectly simple, that they require no scholastic education, no expensive outlay of books or implements to understand or reduce to practice.

Certainly these are high claims, and such as are worthy our regard, and such as demand our careful consideration and research. One thing is certain, whether his claims are well founded or not, they will set all who will put his theory to the test upon a most interesting field of experiment which can not possibly result otherwise than beneficially. A fine opportunity will be presented, from the multiplied phenomena around us, to learn more perfectly the modus operandi of nature's laws, and the tendency will be to make every student, every investigator, a philosopher. Being called upon at every step to reason and compare, to discriminate between the natural and adventitious, extensive scope is given to all the powers of the mind, not excepting even the imagination.

"Terra culture" directs to a uniform practice, and places nature under the severest requisition to always make the most profitable returns.

It directs how the ground shall be prepared, how planted or sowed without the least uncertainty.

It directs the mode of every operation, it predicts beforehand with accuracy and uniformity what will be the effects of a different culture, and how defects are best remedied. For example, in planting a tree, the question is asked, what is your rule. Practice replies with uniformity so far as putting the roots into the ground and not the top, and that is about as far as uniformity goes. Some cultivators recommend shallow-planting, others, deep, according to nature of soils, location, &c. If the soil be good, plunge deep; if poor, plant more shallow, being careful to manure well.

If there is a tap-root, cut it off, and be sure you put a flat stone under it to encourage the roots to spread, for if permitted to penetrate into the deep unhealthy clay, surcharged with pernicious salts your tree will inevitably become diseased, and give rise to bitter rot in the fruit and many other maladies to the end of the chapter!—Again, some recommend root-pruning, as well as top-pruning to the healthy growth of the trees; others, you must prune neither root or top. We once knew a Judge, of some eminence, who contended with pertinacity, that nature did all things in perfection, and therefore that neither sprouts or succors should be removed. For, said he, if the branch we lop off had been unnecessary, nature would never have sent it forth. A convenient and easy practice, certainly, and one to which said judge rigidly conformed.

Thus we see diverse practices prevail and are defended often by reference to numerous facts, collected, of course, to suit the case, yet all alike, perhaps, unsupported by reason and common sense. "Terra culture," starting from a discovered principle, a fixed law, refers all these operations to it. Telling you what you should or should not do to a healthy or diseased plant, and in all your operations insisting upon keeping in view this important law. The caviler is often disposed to say, "I have long known such to be correct or incorrect practice, and I find all these matters fully discussed by various writers; I have long since adopted that course." "Well, that's nothing now." "I wonder if that's all the man has to say." "It's a grand humbug." "Loudon upon such a page includes the same doctrine." The page is cited, when, lo and behold, it amounts to the same old

story were it explained. Grandfather told his son John, that his great grandfather succeeded best by planting in this or that way, but the entire philosophy of the thing is wanting. We venture the assertion that if you would inquire of ten men, how they would prepare the same field for wheat, that no two of them would agree; the same would be true of sowing, covering, and indeed every important particular. This is not science; this is the result of an uncertain practice. And that if the Professor were asked, he would differ from every one of the ten on more than twenty particulars, and give you his rationale, plausible, at least, for every departure, showing in what particular you violate established botanical laws.

But, says our objector, "I will not leave an old established practice for mere theory; wisdom, and prudence require that we should not depart from usages consecrated by time, until other methods, to be substituted in their place, have been fairly subjected to trial, and have received the sanction of experience."

Plausible enough, but not progressive. If all were to come to such a conclusion, the world would wag on in the old beaten track, and if this policy had been pursued in the Arts where would we now have been; In the darkness of a midæval age. Is it not the better course to give a theory of such importance and such plausibility a few tests?

It is at once admitted that nature proceeds in all her processes according to fixed and established laws. That the different parts of plants all have their peculiar functions, and perform certain offices, the roots, stem, and leaves, the spongioles, albumen, and various tissues. It is the province of sound philosophy to learn their relations, and how to treat them in practice according to "*Terra culture*." The treatment necessary to the most successful maturation of the plant—its perfecting its grain and its fruit—is pointed out and insisted upon by the practice of many years, and a reference to more than five hundred names concurring in such treatment and bearing testimony to its important results. If these testimonials are not a fabrication, and a farce, "*Terra culture*" has *solid ground* to rest upon. You say that here is nothing new. Prove that position, says its author, and you shall have placed in your hands one thousand dollars. No inconsiderable sum in this money loving age; try it; according to your statement it will be easily won. "But this thing of secrecy, I do not believe in it." "If the man has anything valuable, society will reward him." He with many others have come to the conclusion that the *tender mercies of public opinion are often unjust if not cruel.*"

But look at the reasonableness of the discoverer's plea. The man who has a copy-right can avail himself of the advantages of his pen; The man who invents a machine that costs but five dollars, by securing to himself a patent, avails himself of its advantages and becomes a millionaire. But for him who discovers a valuable principle, or law, as in the case in hand, our government makes no provision.

And this is the burden of his complaint, and the great object to be gained. He desires the laws to be so modified as to secure him a reasonable consideration for his discovery, and the disclosures be made public. He had never applied to Congress but once, when the best minds in the nation gave him audience and approved of his views, and labored for the corrective. He only proved by this effort that Congress was but a representative of the people from whom its members are chosen, and is slow of heart to believe, and slower still to favor, the most commendable objects.

If the claims of "Terra culture" can be sustained only to a limited extent, the author of its discovery is not only entitled to a bounty, but to the lasting gratitude of his countrymen. He is evidently acting in the full belief of the truth of his theory, and hence he proceeds with extreme caution in its disclosure, enjoining the profoundest secrecy, not even suffering a note to be made while he lectures.

Upon one gentleman present, at the opening of a recent lecture, stating that he could not remain if that injunction was insisted upon, he tersely replied he could not help it—that however wealthy the audience might be, they unitedly had not money enough to influence him to vary from his established conditions. Showing further that he designed to take no advantage, he appointed an individual present to receive the money which would not be taken by him until it was adjudged his by the majority present. And his introductory lecture was given to six or seven upon the condition of their paying him one dollar, if they thought it worthy; if not, they need not pay him anything, and in the second lecture, the same. One and all agreed to give him a bonus over the other subscribers in order to a full disclosure. This much is due to Prof. Comstock, and to those who have been more or less impugned with what they have been pleased to caricature as a ridiculous humbug.

We so far yield assent to the plausibility of "Terra culture," and its bold claims, that we purpose to put it to the test of experiment; and in order to obtain light, we have written to persons who have for several years practiced it.

Scientific Agriculture.

Time was when the knight of the three Rs, "Reading, 'Riting and 'Rithmetie," was the literal hero of the farmer's home. The yeomen of the country were popularly excluded from the more intricate walks of letters and science. Their avocation demanded no literary gratification beyond the every day business of piling log-heaps, pacing off the corn ground, measuring the peas, or counting up how much must be taken out for the new plow, mother's dress, and Susan's bonnet. The effect has been to degrade the business of Agriculture even in the eyes of those engaged in its toils. The warm blood of youth has often been chilled by the reflection that his calling was menial, that his soul was fettered in its aspirations by the clay of his father's farm. Taught to look to the professional man as his superior in learning and ability, and to the tradesman as a too successful rival in money making, he falls into the error of incorrigible discontentment.

How often, in moon-stuck reveries, has the plow-boy, whistling to the tune of *Vacuity*, dreamed of the glistening gold of the counting-room—of the polished boots and pearly linen of the taper fingered clerk. Or, with a "big idea in his head," has he, in imagination, roused the sleeping energies of the moral world, or suspended the interests of the nation on the next ominous sentence from his lips. And just then, "the Hon. Judge Smith, from town," drives along, his daughter at his side, smiling to see that awkward fellow plodding in the mud. Walking, shame faced from his day-dreams, he secretly resolves upon some *nobler* calling. And why? Because the *popularly learned*, and otherwise favored have looked upon the plow-boy's furrow as the path of the ignorant; no glowing embers from the workshops of science to light that path, nor expand the struggling genius. Little has that son of Cincinnatus dreamed that in every clod turned by the plow, in every stone removed to the wall, and in every esculent or blade rooting in the soil, there may be matter for more ennobling study than may be culled from the whole list of counting-room technicalities, of court pleas, or *Aesculapian* arts, and not in the least uncongenial with the highest achievements of oratory.

No Business occupation affords better facilities for making practical application of scientific knowledge and experience than agriculture. No more honorable way of making money by an application of that knowledge, and no *surer way*, comes within the range of laudable enterprise. Could the immense losses sustained every year by misapplied farming labor in any one of our fine agricultural districts be fully disclosed to those interested, that disclosure would effect a revolution. But we have no available statistics from which to make such disclosures. But give to our farmers' sons the means of acquiring a knowledge of those branches of science intimately connected with the comforts of home and the productiveness of the soil; give to the youthful mind the elements on which to feed its powers and interest its energies in the field of the homestead; give to our youth in the country a real agricultural literature, then compare the present with the tenth year from this, and the statistics will be in your possession—*W. R. Chronicle.*

Agricultural Discovery.

A Paris letter-writer states that a scientific gentleman discovered two years ago, embedded with some embalmed bodies, a species of wheat not then in existence. In the time of the early Gallic Kings, a certain quantity of wheat was placed in the coffins of embalmed bodies. Some of it was sown, and it yielded from sixteen to twenty stalks to a grain, while there was, on an average, twenty more grains in the head, than in the ordinary wheat. A considerable quantity of this ancient wheat was sown on the government farm last fall.—Great reports are received of its productiveness. The ordinary wheat of France is believed to be only a degeneration of this ancient grain, deteriorated by centuries of reproduction. This discovery takes France back fourteen centuries for seed wheat, and it is expected will put her in possession of one eighth more agricultural wealth than she possessed before the discovery.

Cincinnati Horticultural Society.

ANNUAL EXHIBITION.

PURSUANT to the society's arrangements its annual exhibition was opened on Vine street on the 16th. of September, and continued till the 27th. By the politeness of its efficient and gentlemanly Secretary, G. Graham, Esq., we were favored with a "family ticket." And right well did we use the privilege thus kindly accorded, by stealing away from the bustle of the busy street at every hour in our control to regale the senses among the fruits and flowers within the society's magnificent pavilion. Nor did we refrain from exercising the ticket's "family" privilege; but took pains to escort thither our "wee toddlin' things," in order that something of the fragrance and freshness of the place and the beauty of its adornings might be infused into their budding sensibilities and thereby lend to the flower of human life a richer luster and perfume. And we would that every child and family of children in this Queen City could visit and revisit this temple of taste and beauty where all is suggestive of pure emotions and happy thoughts. And, in view of this, we were pleased to observe that the society's arrangements for the reception of the juveniles were on the most liberal scale. Invitations were extended to the Public Schools of the city, the Orphan Asylums, &c., which were gladly accepted and responded to by the presence of column after column of joyous juvenile faces, each radiant with the emotions of a heart full of glee, and all chattering exclamations of delight as their eager eyes caught sight of canary or cantelope, of fruit, flower, or gold-fish. While watching their child-like antics and gleeful emotions we feel thankful that they had been invited up to this mount of nature's transfiguration and we know that it was "good" for them to be there.

We think the *tout ensemble* of arrangements showed to even better advantage than did that of last year; though we then thought the whole faultless. Upon entering, a wide avenue, neatly "tanned," opens before the visitor, leading up to a fountain set in a most appropriate frame of magnificent rock-work, crowned by a gigantic tower, built of specimens of all, as it would seem, that earth can yield.—This fountain and rock-work, constructed by Mr. G. M. Kern, land-

scape gardener at Farmers' College, like a miniature mountain, closes the vista of the main avenue. Lesser meandering avenues, like Milton's "Lydian airs,"

"——— with many a winding bout
Of linked sweetness long drawn out,"

lead the visitor around among fruits and flowers and grains and vegetables interspersed with beauties of Art, and adorned with statuary, while the air is kept fresh and genial by numerous smaller fountains and jets d'eau that send up their sparkling contributions to enliven the gladsome scene. Passing along, the names of Heaver, Sayres, Kelly, Cook, Jackson are seen on premium cards that modestly nestle among the foliage of green-house plants, which are crowned with gorgeous flowers that

"———in dewy splendor
Weep without wo, and blush without a crime!"

Farther on, to the left, pyramids of apples greet our gaze, with the blending hues of the lily and the rose striving for mastery on their blushing cheeks; while the names of Petticolas, Buchanan, McWilliams, Mottier, Cary, Lingo, Mears, Sleath, White, and Sedam, stand conspicuous as sponsors for those "spotless" offspring of their orchards now presented at the font, for horticultural baptism. And grapes—*such* grapes!—ranged along in purple battalions, under the banners of Resor, Dalhegan, Heaver, Murphy, and Buchanan, that verily "cheer the heart of man," even before being subjected to the wine press:—And, see there—Oh! Bacchus, *what* a bunch!—"Black Hamburgs, grown by G. Lazendy, gardener to D. S. Brown, Radnor, Pa., weight of the single cluster *nine pounds and two ounces!*" We speak by "the card": we gaze till both eyes and mouth "water"—can't help it!

Passing on around this miniature mountain of rock-work we there behold a piece of the Gobelin Tapestry more than *two hundred* years old, an heir-loom in the family of Wm. Orange, Esq., its design representing the meeting of Joseph and his brethren. Its colors remain lively, though its texture bears the impress of Time. As a *vis-a-vis* to this is an elegant Chinese quilt, exhibited by Mrs. Robb. It is made of silk needle-work of the most brilliant dyes and elaborate designs wrought on dark blue satin by *celestial* fingers—more properly, by fingers of the "Celestials."

Turning our "barbarian" eyes from the dazzling colors of this

chef d'œuvre of some long-eyed and short-footed Asiatic beauty, we see a common plain looking chip, and wonder why the workmen neglected to clear away their rubbish. But we find the "chip" fastened there by a wire; and we ask, wherefore here? why fastened? Directly we see Secretary Graham's name attached, by which token we feel assured that "thereby hangs a tale" concerning some interesting event or important scientific fact: and, sure enough, this "chip" betokens both; for it is a chip taken from the corner-tree, at the forks of Licking, Kentucky. This tree was marked by Daniel Boone with his "tom hawk" in 1782; and to establish title under him, it became necessary some years since, to fix the corner-tree of his claim. An old pioneer was found who had been with Boone when the tree was marked, and who recollects it; but, no mark appearing upon it externally, it was suggested to cut it down, and scale it off, which being carefully done, the "mark" was found imbedded with *sixty-one years of growth over it*, this number subtracted from 1843 fixed the period of the mark in 1782. This "chip," thus authenticated, was received by the court in evidence; and was the means of settling the land claims of Kentucky under Boone's survey.

Hard by, and also with Secretary Graham's name attached, is somebody's old account-book. We look into it; it seems as though presented as a good specimen of book-keeping of olden time—handwriting clear and bold, figures large and unequivocal, footings unblotted and accurate. But the entries seem curious! We read—"Aug. 24, 1780, "To expenses to meet Count de Rochambeau." Again, "To expenses of visit to Count de Grasse, in command of the French fleet, to arrange plan of operations!" Our eyes begin to open, and behold we are reading the Account-Book kept by GEORGE WASHINGTON during the Revolutionary War!

Turning over to page 34 our eye fell upon this item—"Credit by cash, 133 pounds 6 shillings;" with this note, "This sum stands in my account as a credit to the public. But I can find no charge of it against me in any of the public offices; where the mistake lies I know not, but wish it could be ascertained, as I have no desire to injure or be injured!" As we read this simple exhibit of the great truthfulness of that Great Man's character, our heart grew big with the thought that Washington was wholly our own; and anon came the contrast presented in many instances of criminal unfaithfulness, on the part of public officers in more modern days! This Book, a *fac simile*, published under an order of Congress, is a rare and valuable curiosity; and Mr.

Graham deserves well of the Society for his thoughtfulness in presenting it for exhibition on this appropriate occasion.

Again Graham's name caught our eye; and now, sure of finding something exquisite in taste, excellent in Art, or curious in Science, we gave heed at once. In a glass case was the African Thrush, unknown on this continent, bought of a sailor in N. Y., and "put up," by Mr. Graham himself. Its plumage is quite unlike any known in America, a rich and most beautiful bronze with a bright tint of copper. Its luster is admirably preserved by Mr. Graham's skill in putting up. In the same case is a complete specimen (conchological) of the Nautilus, whose shell was the model for the Venetian gondola; and whose occupant hoists a little filmy sail and skims the surface of the placid ocean, and on the approach of storm, furls his tiny sail and sinks to the bottom till the storm is past.

There are many other exquisite specimens of conchology in Mr. Graham's case: and among the other "shells" is an Ostrich's—egg-shell; a curious looking thing, certainly, for a sand-bank to hatch feathers from! But such it is: and possibly those jaunty plumes, now pendant from that beauty's bonnet, may have issued from the fellow-nestling of this uncouth and speckled globe by its sandy incubation.

Mr. Graham's active zeal in behalf of horticulture, united with his high attainments in natural science, renders him a most useful auxiliary to the Society's prosperity. Indeed, it is not too much to say that all the most useful institutions of the city, whether scientific or philanthropic, bear the impress of his most efficient but unassuming activity and interest in their behalf. His reward as we know, consists in the well-doing, but it is not therefore amiss for the public to say, "well done!"

We are yet lingering in the rear of this miniature mountain; we have got half way round but not half way through, and drawing a long fainting sigh, wish we had our dinner. And then, behold, close at hand, we perceive certain fine looking ladies, who, like ministering angels, are dispensing ambrosia congealed into the "actual presence" of ice-cream, and pouring out libations of nectar bearing the aroma of Java and Mocha. A smile of benevolent recognition from one brought us to her side with a grateful and reverential bow, and ere long, bread and butter, cheese and coffee, were devoutly and devourously sacrificed at the domestic shrine of those benevolent divinities who superintended this horticultural cuisine! God bless them!

Nous revernons: And what in the name of Erebus, is this ebon-hued cereal? It looks like some "Black Republican" grain!—"Papio Corn"—says the card, obtained, it seems, in Nebraska Territory, from Logan Fontanel, an Omaha Chief, in 1854: this specimen grown by R. Robertson, Iowa, and presented for exhibition by Col. Kennett, of Cin: it certainly is a very peculiar "institution;" so much so that we believe Ceres herself, the "goddess of roasting-ears," would fail to recognize it as a product germain to her jurisdiction! The ears are eight-rowed, some are full fifteen inches long, the grains are large, the outer cuticle *entirely black*, but within, the meal is of pearly white; it is a variety of the sweet-corn, is much prized by the Indians among whom it was found, and would seem to be a valuable acquisition to our gardens for table-corn, provided "prejudice" did not revolt at its color, in which case we would advise a hungry man to "go it blind!" It is said to have yielded *one hundred and fifty six bushels to the acre*: we *hope* 'tis true.

And here again is a double-pumpkin joined a-la-Siamese, and, like the "Siamese," looking very green, and with nothing remarkable but the joining. Then there are two beets and a carrot naturally intertwined in a most unnatural manner. Here is Cotton-seed-oil-cake sent in by Dr. Mosher, of Latona Springs, Kentucky; recommended highly as food for stock, especially milk-cows, as it imparts more cream to the milk while it increases the quantity of milk given. Should experience confirm this it will become, as D. Mosher suggests, a valuable addition to our forage supplies. What an enormous pumpkin is that, weight 119 pounds, premium \$3; and here is a tomato weighing one pound and twelve ounces.

Yonder is a lot of potatoes exhibited by J. Wilson, and raised by planting in the usual way and then covering with straw some three inches thick, and with no other cultivation; they are fine and large, especially for this season of "Small Potatoes." Here is a specimen of the "Syrian Melon," raised on the grounds of Farmers' College, the seeds of which came from Asia last winter—it is said to keep till January, like a pumpkin. We shall try it, and report progress hereafter. Mr. C. H. Ernst's design for a suburban Cottage is a real *bijou*, and all the *young* ladies call it "a love of a place!"

There are several specimens of the "Sugar Millett"—the "Sorgho Sucre" (spoken of in our August number) on exhibition, accompanied with very encouraging statements as to its value and adaptations, going to confirm in all particulars, the suggestions we have

heretofore given. Both stock and seed seemed to indicate a maturity so perfect as to warrant belief in its ready domestication with us. And all this is not a tithe of the useful, the beautiful, and the curious that everywhere around met our sight.

There were three specimens of Art done in crayon, by Miss A. E. Barnes, 5th. Street, Cin: which received the mostly hearty encomiums of all visitors. They were certainly executed with wonderful truthfulness of outline and justness of expression.

FRIDAY EVENING.

Menter's fine cornet Band is discoursing most eloquent music within the pavilion, crowds are thronging the entrance, gas-light, by softening outlines, harmonizing colors, and blending all beauties, has transformed the interior into a fairy palace: Aladdin's magic lamp ne'er wrought a change so rare as this by gas-light. PROF. WARDER, the distinguished *savant* and horticulturist of the West, is to deliver an address. At 8 o'clock a call to order was made by Secretary Graham, and Prof. Warder was introduced to a large and brilliant audience. His subject had been indicated to him by a wish of the Society—"A Review of the Progress of Horticulture among us." And although we made note of the learned speaker's address, we nevertheless know that no notes could do justice to the agreeable style and tenor of thought which characterized the effort. The speaker paid well-turned and well-deserved compliments to several who had been pioneers of our Horticulture, among whom were named, "Mother Arbegest," N. Longworth, Silas Wharton, and Gabriel Sleath. The address was well conceived, well written, well delivered, and well received.

Altogether, this Annual Exhibition is to be regarded as a triumph most creditable to the Society, and especially an honor to those most active in behalf of its arrangement and management.

Below we give the correct List of Premiums, from which may be gathered that the whole amount of premiums and gratuities awarded is \$566. That from this

Wm. Heaver,	Rec'd in premiums and gratuities,	\$110.
John Sayres,	"	"
Kelley & Co,	"	"
Joseph Cook,	"	"
T. Knott,	"	"

43.

41.

36.

20.

Wm. E. Mears, Rec'd in premiums and gratuities, 15.			
T. V. Petticola, "	"	"	13.
Morton & Long, "	"	"	12.
F. G. Cary, "	"	"	11.
R. Buchanan, "	"	"	10.
M. S. Wade, "	"	"	10.
J. E. Mottier, "	"	"	10.
J. H. & I. H. Jackson, "	"	"	10.

All others received less than \$10, not enumerated.

ON STOVE AND GREEN-HOUSE PLANTS.—For best 20 vari. in bloom, Wm. Heaver, \$25; 20 vari. in bloom, J. Sayres, \$15; best 12 do., J. Dunlap, at M. Kelley & Co.'s, \$10; best 6 do., J. Dunlap, \$5; sec. best 6 do., J. Cook, \$2; best 3 do., W. Heaver, \$3; sec. 3 do., Jos. Dunlap, \$2.

PLANTS WITH VARIEGATED FOLIAGE.—For best col. W. Heaver, \$7; sec. best do., J. Sayres, \$5; third best do., T. Lambert, \$2; best spec., W. Heaver, \$2.

PLANTS IN TUBS AND BOXES.—Best 12, W. Heaver, \$20; best 6 J. Cook, \$10.

CACTI AND ALOES IN POTS.—Best 12, J. Cook, \$5; best spec. plant, J. Cook, \$2.

NEW OR RARE PLANTS.—For a new Fuchsia, with a white corolla and a new white Bouvardia, T. Lambert, gratuity \$1.

VERBENAS IN POTS—For 12 best vari., T. Hutchinson, \$4; for 12 sec. best do., W. Heaver, \$3; for 6 best do., T. Knott, \$3; for 6 sec. best do., W. Heaver, \$2.

FUCHSIAS IN POTS.—Best 7 vari., T. Hutchinson, \$2.

PETUMIAS IN POTS.—Best 6 vari., J. Sayres, \$3; 6 sec. best do. J. Dunlap, \$2; best spec. plant, T. Hutchinson, \$1.

PHLOXES IN BLOOM.—Best 4 plants, W. Heaver, \$2.

SCARLET GERANIUMS IN BLOOM.—Best 6 var., W. Heaver, \$3; sec. best 6 var., J. Dunlap, \$2; best spec. plant, J. Sayres, \$1.

COCKSCOMBS IN BLOOM.—Best 12 vari., J. Cook, \$1.

CHINA ASTERS IN BLOOM.—Best 12 in pots, W. Heaver, \$3; sec. best 12 in pots, J. Dunlap, \$2.

DAHLIAS.—Best 24 var., J. Dunlap, \$5; best 15 vari., \$3; best 6 vari., J. Sayres, \$2; best display. Francis Pentland, \$5; sec. best display, R. B. Price, \$3. For a display, W. Heaver, \$2. Best single spec., "self color," T. Hutchinson, \$1; best single spec. of "fancy," T. Hutchinson, \$1.

FOR COLLECTION OF PLANTS.—The following gratuities are awarded for collections of plants, viz: H. Herling, \$8; T. Knott, \$7; J. Dunlap, \$10: and T. Lambert, \$3.

MISCELLANEOUS CUT FLOWERS, INCLUDING ROSES.—F. Pentland, (cut flowers) \$5; W. Heaver, for best display of cut roses, \$3; J. Sayres, for sec. best display of cut roses, \$2.

DESIGNS.—For a design of a rustic summer house, J. H. and I. H. Jackson, \$10; for a design of a rustic seat, J. Sayres \$10; for a design of a rustic temple, H. Ratt, \$5; for a design of rural cottage, C. C. Ernst, \$6; for plants arranged around one of the small fountains, a gratuity to W. Heaver, \$5; for a basket of dried flowers handsomely arranged, H. Ratt, \$1.

BOUQUETS.—Best pair of pyramid hand Bouquet, to W. Heaver, \$2; sec. best pair of pyramid hand Bouquets, T. Knott, \$1; best pair of convex or French Bouquets, T. Knott, \$2; sec. best pair W. Heaver, \$1; best pair of vase Bouquets, J. Cook, \$3; sec. best, W. Heaver, \$1; best display of Bouquets, J. Cook \$5; sec. best display, W. Heaver, \$3; one flat and one pyramid Bouquet, J. Cook.

FOR APPLES.—T. V. Petticolas for best and greatest number of vari. of assorted Apples, \$10; R. Buchanan, \$7; for the sec. best, M. McWilliams, of Delhi, for the best five baskets of a half-peck each, \$5. No sec. best in competition. J. E. Mottier, of Delhi, for the best display in quality and vari., \$10; F. G. Cary, of College Hill, for sec. best, do., \$7; H. Paul, for 3d. best do., do., \$5. W. E. Mears, for the 10 best vari., \$6; H. Lingo, for sec. best 10 vari., \$4. W. H. Pye, for the best 6 vari., \$4; D. Z. Sedam, of Storrs, for sec. best do., \$3. S. S. Jackson, the best 3 vari., \$3; M. H. White, for the sec. best 3 vari., \$2. M. McWilliams, for the best arranged basket, \$3; M. H. White, for sec. arranged basket, \$2.

Gratuities in the following sums were awarded for choice contributions, viz: Mrs. E. A. Bickham, of Storrs, \$1; W. C. Groves, Gabriel Sleath, E. Mayhew, M. C. Dew, S. S. L'Hommedieu, S. J. Jones and Mr. Green, \$1 each; and F. Diserns, of Delhi, \$2.

PEARS.—M. S. Wade, for the best display in quantity and vari., \$10; W. Heaver, for the sec. best do., \$7; M. McWilliams, for 3d. do., do., \$5. W. S. Hatch, of Delhi, for the best 5 vari., \$4; no sec. best. F. Koloff, for the best 3 vari., \$3; T. Lambert, sec. do., do., \$2; F. G. Cary, for best display of 1 vari., \$2; H. Paull, for sec. do., do., \$1. Gratuities of \$1 each are awarded to G. Dulhagen, H. Duhme, W. H. Leverick and C. Saunders.

FOREIGN GRAPES, GROWN UNDER GLASS.—W. Heaver, for the best display, \$6; W. Resor, for sec. best do., do., \$4. W. Resor, best 3 vari., \$4; W. Heaver, sec. best do., do., \$3. N. B.—Mr. Heaver's bunches of grapes are the largest, but Mr. Resor's of the best color and size. W. Resor, for the best single bunch, \$2; W. Heaver, for sec. best, \$1.

M. W. E. Mears received a premium of \$2 for the best plate of foreign grapes, grown in the open air, of the vari. *Chasselas de Fontainebleau*.

NATIVE GRAPES.—H. Duhme, for the best half bushel of Catawbas, \$3; G. Dulhagen, sec. do., \$2; W. Murphy, for the best peck of Catawbas, \$2; F. Diserns, for the sec. do., \$1; R. Buchanan, for the best 3 vari. receives \$1.

QUINCES.—W. E. Mears, for the best 12, \$3; H. Lingo, for the sec. do., \$2; M. McWilliams, for the best display, \$3; R. Buchanan, for the sec. do., \$2.

PEACHES.—J. L. Roberts, for the best plate, \$2; G. Graham, for the sec. do., \$1.

PLUMS.—P. S. Bush, for the best display, receives a gratuity of \$2.

WATERMELONS, CANTELOPES AND MUSKMELONS.—Morton & Long, for the best 3, \$2; W. E. Mears, for the sec. best 3 Watermelons, \$1; W. Ball, for the best Citron, \$2; Morton & Long, E. Morris, J. Eccles, W. Morris & W. Saunders, receive a gratuity of \$1 each, for Muskmelons and Cantelopes.

VEGETABLES.—For Irish Potatoes—Best display, W. Heaver, \$4; sec. best, J. K. Green, \$3; third best, W. F. Irwin, \$2; third best, half bus. one var., Morton & Long, \$1

Sweet Potatoes—Best display, W. Babb, \$3.

Parsnips—Best display, J. Eccles, \$2.

Egg Plants—Best dis., Morton & Long, \$2; sec. best, E. Morris, \$1.

Carrots—Best dis., J. Eccles, \$2.

Tomatoes—Best dis., in var., T. M. Weltz, \$3; sec. best, M. Coffin, \$2.

Beets—Best Long Blood, C. Saunders, \$2; best Turnip, do., J. Eccles, \$2.

Salsity—Best dis., C. Saunders, \$2.

Capsicum—Best dis., D. Forester, \$2; sec. best, E. Morris, \$1.

Beans—Best Snap, Morton & Long, \$2; best Lima, W. Heaver, \$2; sec. best, do., Morton & Long, \$1.

Corn—Best dis., in var., T. V. Petticoles, \$3; sec. do., do., W. C. Grover, \$2; best 24 ears field Corn, M. Coffin, \$2.

Squashes—Best dis., E. Hooper, \$3; sec. do., Mr. Turrill, \$2; third do., A. H. Ernst, \$1.

Pumpkins—Largest and best, W. Ogborn, \$2; sec. do., Mr. Payson, \$1; best dis., Mr. Turrill, \$2; sec. do., A. H. Ernst, \$1.

Vegetables in Variety—Best dis., Mr. Forrester, \$6; sec. do., C. Saunders, \$4.

The Committee also recommend the following gratuities to be awarded:

To Morton & Long, for a var. of specimens of Corn, including mammoth sweet Corn of superior quality, \$3; W. R. Saunders, for 44 var. of vegetables, \$3; E. Morris, for an excellent dis., \$2; J. Sayres, for late Peas, \$1; Mr. Coffin, for very fine Squashes, \$1; H. Lingo, for fine Potatoes, too late for competition, \$1; W. E. Mears, for fine specimens of Winnenstadt and Early Adams Cabbages and excellent Tomatoes, \$3; F. Cary, for specimens of Syrian Gourds, Pumpkins and

Watermelons, \$2; W. Evans, for fine var. of Corn and Pumpkins, \$1.

For collection of stove and green-house plants,

To Herman Hirling - - - - -	\$8 00
To Thomas Knott - - - - -	7 00
To J. Dunlop, at M. Kelly & Co.'s - - - - -	3 00
Best specimen plant in box or tub, to S. S. Jackson - - - - -	5 00
To Charles Cooper, for bouquets - - - - -	2 00
Second-best stove and green-house plants, to John Sayers - - - - -	—
Second-best three varieties of Apples, to C. J. Jackson - - - - -	—
Gratuity for Apples to William Orange.	

Indian Corn.

THE raising of Indian Corn is certainly becoming one of the most important branches of agriculture in the United States, and we think with justice. It grows to the greatest perfection, and is alike applicable to the frozen North and the sunny South, and away to the far West on our interminable prairies, or on the mountains and hills of the East. It is the least exhausting of all crops, produces the most food, and can be more generally used than any other grain. It can be grown at the least expense, and keeps the land in better tilth than any other grain. We can think of nothing that so adds to the glory of our country, that throughout our whole area we can claim the corn as indigenous; and that it is essentially our national grain. The corn must be the stand-by of nations, and the United States must be the great granary from which other nations will draw their supplies of food.

The Western States understand this matter, and are enriching themselves by the culture of corn. If the Middle States would strive for the prize of advancement, their farmers must turn their attention to corn. With a very productive soil, and intelligent tillage, and conveniences to the sea-board, it requires but little effort to put themselves in favorable competition. It is a trite saying, that "Cotton is King," in this country; but his scepter is departing, and but a few years will intervene until the shout of the nation shall reverberate to the poles and be borne on the winds to the limits of earth that "*Corn is King*," and his scepter shall ever remain, "praised be Allah."

HARD STUDY.

HARD STUDY hurts nobody, but hard eating does. It is a very common thing to attribute the premature disability or death of students and eminent men to close application to their studies. It has now become to be a generally admitted truth, that "hard study," as it is called, endangers life. It is a mischievous error that severe mental application undermines health. Unthinking people will dismiss this with the exclamation of "that's all stuff," or something equally conclusive. To those who search after truth in the love of it, we wish to offer some suggestions.

Many German scholars have studied for a life-time for sixteen hours out of the twenty-four, and a very large number from twelve to fifteen hours, lived in comparative health, and died beyond the sixties.

One of the most sterling of living minds, Prof. Silliman, the elder, the past winter, traveled through the country, at the age of nearly eighty years, and in good health, delivering geological lectures, living mentally on the hard food of rocks, iron, iridium, and the like.

Another strong example of the truth that health and hard study are not incompatible, is found in the great Missourian, Thomas H. Benton, now past the three-score and ten, and in the enjoyment of vigorous health; a more severe student than he has been, and is now, the American public does not know. Dr. Charles Caldwell, our honored preceptor, lived beyond the eighties, and with high bodily health, remarkable physical vigor, and mental force scarcely abated; yet for a great part of his life he studied fifteen out of the twenty-four, and at one time gave but five hours to sleep. John Quincy Adams, the old man eloquent, is another equally strong example of our position. All these men, with the venerable Dr. Nott, now more than eighty years old, made the preservation of health a scientific study, and by systematic temperance, neither blind nor spasmodic, secured the prize for which they labored, and with it, years, usefulness and honor. For the present, we content ourselves with the enumeration of the gist of this article: students and professional men are not so much injured by hard study, as by hard eating; nor is severe study for a life-time, of itself, incompatible with mental and bodily vigor to the full age of three-score years and ten.—*Hall's Journal of Health.*

Beautiful Thought.

As in the light of cultivated reason, you look abroad and see a wealth of beauty, a profusion of goodness in the work of Him who has strewn flowers in the wilderness, and painted the bird, and enamored the insect, in the simplicity and universality of his laws you can read this lesson. An uneducated man dreams not of the common sun-light which now in its splendor floods the firmament and the landscape; he can not comprehend how much of the loveliness of the world results from the composite character of light, and from the reflecting propensities of most physical bodies. If, instead of red, yellow and blue, which the analysis of the prism and experiments of absorption have shown to be its constituents, it had been homogeneous, simple white, how changed would all have been! The growing corn and the ripe harvest, the blossom and the fruit, the fresh greenness of spring and the autumn's robe of many colors, the hues of the violet, the lily and the rose, the silvery foam of the rivulet, the emerald of the river, and the purple of the ocean, would have been alike unknown. The rainbow would have been but a pale streak in the grey sky, and dull vapors would have canopied the sun instead of the clouds, which, in the dyes of flaming brilliancy, curtain his rising up and going down. Nay, there would have been no distinction between the blood of the children, the flush of health, the paleness of decay, the hectic of disease and the lividness of death. There would have been an unvaried, unmeaning, leaden hue, where we now see the changing and expressive countenance, the tinted earth and gorgeous firmament.—*Selected.*

IMPORTS AND EXPORTS OF THE U. S.—The following facts and figures possess unusual interest to the commercial world. It will be seen that the total imports into the United States for the fiscal year which has just ended, amounted in the aggregate to the enormous sum of \$300,617,232. The exports for the same period amounted to \$305,630,932. It thus appears that the exports exceeded the imports a trifle more than \$5,000,000

For the Cincinnatus.

"Royal Families"—Whence Came They?

BY PHILO BURRITT.

THE "divine right of kings" is a phrase that has become historic in the annals of Europe. It is a phrase long used to conjure with both in cabinet cabals and popular harangues. So frequently and so solemnly was this watchword employed, and so euphonious were the changes rung thereon that for centuries the public mind received it, on mere enunciation, as orthodox; and with unquestioning faith adopted the doctrine which the phrase involves. But, as men began to be enlightened in the principles of civil institutions and social organizations, they very naturally began to demand the charter by which, in divine legislation, this "divine right" was granted to those who claimed the perogatives of the grant. And it becomes a curious theme to look into the history of Royal Families and learn whence they come.

And of these—First as to England:

William, the Norman, commonly called "The Conqueror" is the source whence the crowned heads and most illustrious families of England have long been proud to derive their pedigree. This William was the illegitimate son of the Duke of Normandy, and the mother of this "sinless child of sin" was the fair but frail daughter of a very worthy tanner in a country town in the French province of Normandy. William, the Norman Bastard, is therefore the paternal stock whence come the Royal Houses of England.

On the maternal side, various infusions of honest plebeian blood have from time to time served to prevent a total stagnation of the blood royal in the veins of royal indolence and impotence.

None more remarkable in this particular could have been drawn from the fables of romance than one which English history, well avouched, records. Indeed, the most startling events and thrilling scenes which the potent "Wizard of the North" has presented for our wonder and delight have been but little more than illustrated transcripts taken from the historic records of England's and Scotland's heroic age. It is everywhere manifest that Scott's genius fully comprehended the poetic axiom that "truth is *stranger* than fiction."—He therefore aimed, most wisely, but to embody the truths of history

in the drapery and habiliments of actual and every-day life. It is this fidelity to historic facts that gives to Sir Walter's fictions their universal interest.

But, to our story—rather to our history : “Once upon a time,”—we need not be definite as to dates,—suffice it that it was when a Stuart was wearing the English crown—a young woman stepped from a rude country wagon of that period which had just driven up to the gate of the then famous Chelsea Inn, London, called the “Goat and Compasses,” a name formed out of the corruptions that time and ignorance had produced from the pious original, “God encompasseth us!” The young woman was but decently dressed in the plainest rustic fashions of the times. She was of a good form and benevolent countenance, both face and form giving indications of the ruddy health derived from free exposure to sun and country air. As soon as she alighted from the wagon it was driven into the yard of the “Goat and Compasses,” and the young woman stood for a moment as if bewildered and uncertain whither to go. The mistress of the inn having come to the door discovered her hesitation and apparent bewilderment, and invited her to enter and take rest from her journey. The young woman, encouraged by the lady’s kindness of speech and manner, readily accepted the timely invitation, and was directly seated by the fireside of a nicely sanded parlor.

A single interrogatory from the kind hearted landlady had completely won the confidence of the unsophisticated country girl, and in reply she had revealed her purpose of coming up to London to seek employment, for her support. “And so, my poor girl,” said the landlady, “so thou hast come all this way to seek service; and hast thou no friend to aid thee but John Hodge, the wagoner?—Truly, he is like to give thee but small help towards getting thee a proper place?”

“Is service then so difficult to find?” asked the girl despondingly.

“Aye, marry, good situations are hard to find. But you have good health, dear child, so keep a good heart, and may be thou wilt thrive as I have done.” And looking round her with an air of honest pride and homely dignity she continued, “Thou seest what I have come to be; I too left the country a young thing like thyself with as little to look to for aid, and now I am mistress here. But for a certain ‘tisn’t every one that must look for such a fortune, and in any case, it must be toiled for. I showed myself a good servant before my poor old Jacob—heaven rest his soul—made me mistress of

the "Goat and Compasses?" So mind thy ways, girl, that——"

The good dame loved the sound of her own voice, so her tongue might have carried her on a long way, but for the interruption caused by the entrance of a gentleman whom the worthy hostess welcomed most warmly.

"Ah, dame," said the new-comer, a stout respectably dressed person of middle age, "how sells thy good ale? scarcely a drop left in thy cellar, I hope?" "enough left to give your worship a draught after your long walk" she said as she rose to fulfill the purpose implied by her words.

"I walked not," was the gentleman's reply, "but took a pair of oars, dame, down the river. Thou knowest that I always come to the Goat and Compasses myself to see if thou lackest anything in my line."—"Ah, Sir," replied the landlady, "it is by that way of doing business that you have made yourself, as all the city knows, the richest man in the Brewer's Guild, if not in all London itself."

"Well, dame, the better for me if thy words be true," said the brewer with a complaisant smile; "but let us have the mug, and this very pretty friend of thine here shall pleasure us, mayhap, by tasting with us?"

The lively landlady was not long in procuring a stoup of foaming ale, knowing that her visitor never set an example hurtful to his own interests by countenancing the consumption of foreign liquors:

"Right, my goodhostess," said the brewer, when he had tasted from the brimming tankard, "all right, well made and well kept, and that is but giving both me and thee our dues. "Now, pretty one," said he, filling a tankard beside him and addressing the silent country-girl, "wilt thou not drink this to thy sweet heart's health?"

The poor girl thus suddenly addressed, with a blush of modest confusion, declined, the proffered civility; seeing this, the lively landlady exclaimed "come, come, silly thing, drink his worship's health, for he is more likely to get thee a place for service, if it is to please him, than John Hodge the wagoner. This poor girl has come many a mile," continued the hostess, "to seek a place in town, that she may burden her family no more at home." "To seek service, dame!" exclaimed the brewer. "Why then perhaps it is well met with us. Has she brought a character with her, or can you speak for her, dame?"

"She has never before been from home, sir, but her face is her character," said the kind hearted hostess; "I'll warrant she will make thee a diligent and trusty servant, sir?"

"Upon thy prophecy and assurance then, hostess, I will take her into my service ; for my housekeeper, but yesterday was complaining of the want of help in the house since this new Deputyship brought me more in the way of entertaining the people of my ward."

Before leaving the "Goat and Compasses," the wealthy Brewer and Deputy made arrangements for sending the poor country girl to his house in the city on the following day. Proud of having done a good action and indeed pleased with the pretty rustic before her, the garrulous hostess took advantage of the occasion to deliver a lengthened harangue to the young woman on her new duties and responsibilities, and on the dangers to which youth were exposed in the great city. The girl heard her worthy benefactress with modest and silent thankfulness, but a more acute observer of character than was our good landlady might have observed in the steady eye, and calm countenance of the girl a quiet firmness of expression and rectitude of purpose that might have induced an abbreviation of the good woman's homily. The day, however, had an end, and so had the lecture ; and strangely enough, the terminations of each were simultaneous ! And on the day following her arrival, barefooted and alone, at the "Goat and Compasses," the youthful rustic found herself installed as house-maid in the family of the rich London Brewer.

The fortunes of this obscure country girl we propose to follow in illustration of the theme commenced in our caption. The first change of condition that awaited her was her elevation in due time to the vacated post of housekeeper in the brewer's household. In this situation her duties brought her more frequently and familiarly in company with her master, who found ample reason for admiring her sound sense, her propriety of conduct, as well as her faithful management and skillful economy. She was moreover healthful and handsome. By degrees he found her presence necessary to his home comforts and happiness ; he was a bachelor, a man of honorable sentiments and independent mind, and at length offered his hand in marriage. It was accepted ; and she who five years before had entered London barefoot, and alone, became the wife of one of the richest citizens of that great metropolis. For many years Mr. Aylesbury,—such was the brewer's name,—and his wife lived in quiet happiness together. He was a man of good family connections, of a fair education for the times, had mingled somewhat in genteel society, and consequently had advantages as to manners and breeding, greater than his wife could boast, but on no occasion had he to blush before

his friends for the partner he had chosen. Her calm self-possession, and native strength of character, gave her a dignity of manner, that no mere breeding could confer, while her sound sense and extreme quickness of perception enabled her to fill her place at her husband's table with an easy grace that did him credit and herself honor.

As time passed on, the dignity of Mr. Aylesbury's position received a gradual increase. He became a city Alderman, and subsequently Sheriff of the city of London, a position of no trifling distinction; and by virtue of this latter elevation received the honor of knighthood. The holding of this important station called upon him the attention of king Charles, I.—There, we have revealed the period of which we write!—who was then, on account of political turbulence, anxious to conciliate the good will of the citizens of his capital. To this end the brewer-knight received the further honor of a baronetcy by grant of king Charles.

We must now return a little in order to make statement of an important item running into the web of history, and connected with the matter of Royal Families, and whence they come. During the second year of her married life, our poor country girl, now Lady Aylesbury, gave birth to a daughter, who proved to be the only child of this marriage; and around her the affections and hopes of her parents were entwined. His daughter had only reached her seventeenth year when her father died, leaving behind him one of the greatest fortunes of England. It was presumed, at first, that his widow and daughter must inherit this without the shadow of controversy: but it proved otherwise. The immensity of the estate prompted certain relatives of the deceased brewer to assert a claim by virtue of a will made in their favor before Mr. Aylesbury's marriage, and while yet childless. With her usual firmness of character, Lady Aylesbury now refused to yield, or compromise, to their claim, and took immediate steps for the vindication of her own and her daughter's rights. As her legal adviser, she fixed upon a young lawyer named Hyde, who had been a frequent guest at her husband's table, and of whose abilities she entertained a high opinion. Edward Hyde was indeed a young man of distinguished ability. Though then only twenty-four years old, and though he had spent much time in gay and fashionable society, yet he had not neglected the professional pursuits to which his family's wishes and his own feelings inclined him. But it was with much diffidence and anxious trepidation that he consented to receive Lady Aylesbury's retainer in a case of such moment and magnitude.

It must be admitted, too, that certain unexpressed emotions were at work in his bosom to render him fearful of assuming the responsibility and solicitous about the result: he had learned to love the brewer's daughter.

The young lawyer, however, became the counsel for the widow and daughter, and by his brilliant eloquence and legal ability gained his suit. Two days afterwards, the successful barrister was seated beside his clients. Lady Aylesbury's usual manner was quiet and composed, but now she spoke warmly her thanks to the young lawyer, for his successful efforts in saving herself, and daughter from penury, and tendered a most munificent fee for his services. The young advocate seemed, however, but ill at ease; he shifted his position, his color went and came, he played with the bloated purse before him, essayed to speak, stammered, and stopped short. Thinking only of the most effectual way of expressing her gratitude to Mr. Hyde, Lady Aylesbury rose, saying, "in token that I hold your services above all pecuniary compensation, I desire to present to you a memorial of our gratitude in another form." Young Hyde's heart beat tumultuously; he thought she would offer him her daughter's hand, and thus the second "suit" would be gained. But, drawing from her pocket a bunch of keys, which, in those days, every lady carried, she left the room. What passed during her absence is probably conjectured, and is certainly known by the result; for when Lady Aylesbury returned she found her daughter standing with downcast eyes and cheeks suffused, but her hand within Edward Hyde's, who knelt, upon the mother's entrance, and besought her consent to their union. Explanations of the feelings which the parties entertained for each other ensued, and Lady Aylesbury cheerfully gave the desired consent. "Give me leave, however," said she to the lover, "to place around your neck, the memorial I intended for you. This chain,"—it was of massive gold,—"was presented to my dear departed husband as a token of respect from the ward in which he lived." Lady Aylesbury's calm serious eyes filled with tears as she gently placed the chain around Edward's neck, saying, "These links were borne on the bosom of that worthy and honored man: may thou, my son, attain to still higher honors."

Edward Hyde, the son-in-law of Lady Aylesbury, already distinguished as a lawyer, soon came into parliament, and there, by his abilities, became eminent as a statesman, and received from king Charles I. the order of knighthood. Not long after, when Oliver Cromwell,

brought the king to the scaffold and established the commonwealth under his "Protectorate," Sir Edward Hyde was too prominent a member of the royalist party to escape the vindictive enmity of the "round-head" rulers, and was obliged to fly with his wife and family, and resided on the continent some thirteen years, till the restoration of the Royal House of Stuart, in the person of Charles II., with whom Hyde had escaped to the continent. While abroad, he was so much esteemed by the exiled Prince, afterwards Charles II., that he was there appointed Lord High Chancellor of England, the highest post an English subject can hold, and this appointment, thus made, while abroad, was confirmed when the king was restored to his throne. Some years afterwards, Hyde was elevated to the peerage, first as a Baron, and subsequently as the Earl of Clarendon, a title which he made familiar and famous in English history.

Those events all passed while Lady Aylesbury still lived; and she had now the gratification of seeing her only child Countess of Clarendon, and her grandchildren, born to her of that daughter, mingling as equals with England's highest nobility.

But a position still more exalted awaited the descendants of the poor friendless girl who had come barefooted to London in search of service in a wagoner's van. Her granddaughter, Anna Hyde, a young lady of rare accomplishments and beauty, had been appointed, while her family remained abroad, during Cromwell's protectorate, one of the maids of honor to the Princess of Orange. While in this position, she had so strongly attracted the affections of James, Duke of York, and brother of Charles II., that he contracted a private marriage with her. The birth of a child forced on a public announcement of this contract; and ere long, Lady Aylesbury saw her granddaughter, Anna Hyde, openly received as the Duchess of York, and sister-in-law of the king of England!

Lady Aylesbury did not long survive this event; but before descending to the grave she saw her lineal descendants heirs presumptive to the throne of the British Empire! for king Charles, though married, had no issue by that marriage; and accordingly, his brother James, Duke of York, and husband of Anna Hyde, and her children, had the right and prospect of the succession. Charles died without issue: his brother James succeeded him to the throne, but not in the life time of Anna Hyde; she died Duchess of York. She left two daughters, Mary and Anne—great-granddaughters of Lady Aylesbury. Of these, Mary married William, Prince of Orange, and

Anne married George, Prince of Denmark. Upon the deposition of James, Mary was called jointly with her husband William to the British throne, and they reigned under the title of William and Mary. Upon their demise, without issue, Anne succeeded her sister. Thus both of the great-granddaughters of the barefooted country girl came to wear the crown as Queens of England. Verily, truth is stranger than fiction !

So much for *England's* "Royal Families and whence they came."

The Inauguration of Washington.

THIS ceremony (1789) took place in Federal Hall, Wall street, New York, which building was afterwards used as the New York Custom House. It stood on the present site of our Custom House, though it did not occupy but about half the ground. Washington made his appearance in a plain suit of brown cloth, coat, waistcoat, and breeches—the dress was home spun—home manufactured—even to the buttons ; which displayed the arms of the United States, chased by Rollinson, the engraver. White silk stockings showed the contour of a manly leg ; and his shoes, according to the fashion of the day, were ornamented with buckles. His head was uncovered, and his hair dressed and powdered; for such was the universal custom of the time. Thus was his tall, fine figure presented to view at the moment which forms an epoch in the history of nations. John Adams, a shorter figure, in a similarly plain dress, but with (even then) old-fashioned Massachusetts wig, stood at Washington's right hand: and opposite to the President elect, stood Chancellor Livingston, in a full suit of black, ready to administer the prescribed oath of office. Between them was placed Mr. Otis, the clerk of the Senate, a small man, bearing the Bible on a cushion. In the background of this picture, and at the right and left, stood the warriors and sages of the Revolution—the men who forgot self for the sake of their country. The man on whom all hearts rested, stretched forth his right hand with that simplicity and dignity which characterized all his actions, and placed it on the open book. The oath of office was read. The Bible was raised, and he bowed his head upon it. The chancellor announced that *it was done*—"that George Washington was President of the United States of America."

A Public Rebuke---Anecdote of Judge White.

The late lamented Judge Hugh L. White, of Tennessee, became conspicuous at a very early period of life, as a jurist and a statesman. He fixed his permanent home near Knoxville, amidst the scenes of his youthful sports and the companion of his boyish days. Rarely has a young man, continuing in his own country and among his own kindred, so soon attained such literary and political pre-eminence. From his youth, the Judge was characterized by profound reverence for the ordinance, of the gospel. He was a regular attendant at the house of worship. And while he was a Presbyterian,—that being the church of his fathers, and the church of his choice,—he was benevolent and generous towards other branches of the great Christian family. He gave to the Methodist church at Knoxville the ground on which their house of worship was built; and occasionally he would appear in the congregation, and join with them in their worship.

Now, in those days, there was a notable presiding elder in that region, called Father Axley, a pious, laborious, uncompromising preacher of the gospel, who considered it his duty to rebuke sin wherever it should presume to lift up its deformed head within the limits of his district. And while Father Axley was a man of respectable talents, undoubted piety, and great ministerial fidelity, he had, moreover, a spice of humor, oddity, and drollery about him, that rarely failed to impart a characteristic tinge to his performances. The consequence was, that amusing anecdotes of the sayings and doings of Father Axley abounded throughout the country.

On a certain day, a number of lawyers and literary men were together in the town of Knoxville, and the conversation turned on the subject of preaching and preachers. One and another had expressed his opinion of the performances of this and that pulpit orator.—At length, Judge White spoke up—“Well, gentlemen, on this subject each man is of course entitled to his own opinion; but I must confess that Father Axley brought me to a sense of my evil deeds,—at least a portion of them,—more effectually than any preacher I have ever heard.” At this, every eye and ear was turned; for Judge White was known never to speak lightly on religious subjects, and, moreover, he was habitually cautious and respectful in his remarks

concerning religious men. The company now expressed the most urgent desire that the Judge would give the particulars, and expectation stood on tiptoe.

"I went up," said the Judge, "one evening to the Methodist church. A sermon was preached by a clergyman with whom I was not acquainted: but Father Axley was in the pulpit. At the close of the sermon, he arose and said to the congregation, "I am not going to detain you by delivering an exhortation. I have risen simply to administer a rebuke for improper conduct, which I have observed here to-night." This, of course, waked up the entire assembly; and the stillness was most profound, while Axley stood and looked for two or three seconds over the congregation. Then, stretching out his large, long arm and pointing with his finger steadily in one direction, "Now," said he, "I calculate that those two young men, who were talking and laughing in that corner of the house, while the brother was preaching, think that I'm going to talk about them. Well, it is true that it looks very bad, when well-dressed young men who you would suppose, from their appearance, belonged to some genteel, respectable family, come to the house of God, and instead of reverencing the majesty of Him that dwelleth therein, of attending to the message of everlasting love, get together in one corner of the house, (his finger all this time pointing straight and steady as the aim of a rifleman,) and there, through the whole solemn service keep talking, tittering, laughing, giggling—thus annoying the minister, disturbing the congregation, and sinning against God. I'm sorry for the young men. I'm sorry for their parents. I'm sorry they have done so to night. I hope they will never do so again. But, however, that's not the thing that I was going to talk about. It is another matter, and so important, that I thought it would be wrong to suffer the congregation to depart without administering a suitable rebuke. Now, said he, stretching out his huge arm, and pointing in another direction, "perhaps that man, who was asleep on the bench out there while the brother was preaching, thinks that I am going to talk about him. Well, I must confess, it looks very bad for a man to come into a worshiping assembly, and, instead of taking his seat like others, and listening to the blessed gospel, carelessly stretch himself out on a bench, and go to sleep! It is not only a proof of great insensibility with regard to the obligations which we owe to our Creator and Redeemer, but it shows a want of genteel breeding. It shows that the poor man has been so unfortunate in his bringing up,

as not to have been taught good manners. He don't know what is polite and respectful in a worshiping assembly, among whom he comes to mingle. I'm sorry for the poor man. I'm sorry for the family to which he belongs. I'm sorry he did not know better. I hope he will not do so again. But, however, that is not what I was going to talk about." Thus Father Axley went on, for some time, "boxing the compass," and hitting a number of persons and things that he was "not going to talk about," and hitting them *hard*, till the attention and curiosity of the audience were raised to the highest pitch, when, finally, he remarked—"The thing of which I am going to talk, is *chewing tobacco*. Now, I do hope, when any gentleman comes here to church, who can't keep from chewing tobacco during the hours of public worship, that he will just take his hat, and put it before him, and spit in his hat. You know we are Methodists. You all know that it is our custom to kneel when we pray. Now, any gentleman may see, in a moment, how exceedingly inconvenient it must be for a well dressed Methodist lady to be compelled to kneel down in a great puddle of tobacco spit!"

"Now," said Judge White, "at this very time, I had in my mouth an uncommonly large quid of tobacco. Axley's singular manner and train of remark had strongly arrested my attention.—While he was striking right and left, hitting those "things" he was not going to talk about, my curiosity was roused, and conjecture was busy to find out what he could be aiming at. I was chewing my huge quid with uncommon rapidity, and spitting, and looking up at the preacher to catch every word and every gesture; and when, at last, he pounced on the "tobaceo," behold, there I had *a great puddle* of tobacco spit! I quietly slipped the quid out of my mouth, and dashed it as far as I could under the seats, resolving never again to be found chewing tobacco in a Methodist church."—*W. Sketch Book.*

VENUES IN VERSES.

THE latest remedy for this troublesome disease is *feeding on corn-stalks* through the winter. The *Prairie Farmer* says: "We have a horse which *had* the heaves a year ago and coughed badly. Last fall we commenced feeding on corn-stalks, and continued nearly all the past winter. To our great satisfaction he has exhibited none of

the usual symptoms of heaves—has not had a cough that would be noticed, drives well, and breathes without the least difficulty.” Well cured corn-stalks, cut before frost-bitten, are good fodder, and horses, colts, cows, or sheep, will do about as well on them as on hay. Horses at all affected with the heaves will do better when fed upon them than upon *clover* hay. A great many horse owners have communicated facts to different agricultural papers, going to show that chopped straw, wet, or good timothy hay, cut, and wet, would improve the health of a heavey horse. Dusty hay, musty oats, exposure to changes of weather, always increase the cough and difficult breathing which constitutes the heaves. In the way of medicines, a great many have been proposed, but we have little faith in any of them, unless accompanied with care in feeding and diet, as well as overwork and exposure.

Management of Canaries.

WITH the humane purpose of checking the “bird-murders” so frequently committed by those ignorant of the physiology and hygiene of our common and beautiful domestic songster, the Canary, we take occasion to insert the following instructions in regard to the food and management of Canaries.

The plumage, pretty form and docility; the charming familiarity which disposes it to nestle without fear or reserve beside us; and above all, its melodious song, have long introduced the canary to all classes of society.

Buffon, speaking of this beautiful universal favorite says: “If the nightingale is the chantress of the woods, the canary is the musician of the chamber; the first, owes all to nature, the second, something to art. With less strength of organ, less compass of voice, and less variety of note, the canary has a better ear, greater facility of imitation, and a more retentive memory; and as the difference of genius, especially among the lower animals, depends in a great measure on the perfection of their senses, the canary, whose organ of hearing is more susceptible of receiving and retaining foreign impressions, becomes more social, tame and familiar, is capable of gratitude and even attachment; its caresses are endearing, its little humors innocent and its anger neither hurts nor offends. Its education is easy

we rear it with pleasure, because we are able to instruct it. It leaves the melody of its own natural tone to listen to the melody of our voices and instruments. It applauds, it accompanies us, and repays the pleasure it receives with interest, while the nightingale, more proud of its talent, seems desirous of preserving it in all its purity, at least it appears to attach very little to ours, and it is with great difficulty it can be taught any of our airs. The canary can speak and whistle; the nightingale despises our words, as well as our airs, and never fails to return to its own wild wood notes. Its pipe is a masterpiece of nature, which human art can never alter nor improve; while that of the canary is of a model of more pliant materials, which we can mould at pleasure; and therefore it contributes in a much greater degree to the comforts of society. It sings at all seasons, cheers us in the dullest weather, and adds to our happiness by amusing the young, and delighting the recluse, charming the tediousness of the cloister, and gladdening the soul of the innocent captive."

Except in the breeding season, the male canaries should be kept alone in separate cages, which, whatever the shape, ought not to be less than eight inches in diameter and a foot in height, with two sticks placed across for the bird to perch on. The females may be allowed to range the room with one wing clipped, or, what is better, kept in large cages; where, from having plenty of exercise. Their health and strength are better preserved. In the small cages, glass vases should be placed on the outside, at the extremities of the lower stick, to hold the food and water. These may be surmounted with a cap of tin, or something of the kind, to prevent the seed from being so easily scattered. Cleanliness being a great preservative against most of their disorders, the bottom of the cage should be made to draw out, that it may more easily be cleaned and covered with sand. This should be done every day or at least several times a week.—These tender birds, being natives of a warm climate, and becoming more delicate instead of hardier from being kept in the house, require a temperature analogous to that of their native climate. They must be protected from the cold. But in the summer it is proper to place them in the open air, and they enjoy it very much. Never do they sing so gaily as on fine days, and their cages should therefore be placed at the open window, that they may have the advantage of the light and warmth of the sun, which is particularly serviceable to them while bathing.

Their food is an important point; for, in proportion as it is simple and natural, it will be wholesome; and on the contrary, the more it is mixed and rare, the more injurious and productive of disease it will be. We have found the best is summer rape-seed; we mean that which is sown at the end of spring, which is small and brown, in distinction from the winter rape-seed, which is sown in the autumn, and which is large and black. This seed alone agrees with canaries as well as linnets; but, to give them the pleasure of variety, hemp, canary, or poppy is added to it, especially in the spring when they are intended to breed. Indeed a mixture of rape-seed, oatmeal, and millet, or canary-seed, may be given them as a great treat. But whatever seed they may have, they equally require *green food*, as chickweed in spring, lettuce and radish leaves in summer, endive, watercress, and slices of sweet apple in winter. As to that whimsical and complicated mixture, prescribed and used by many people, of rape, millet, hemp, canary seed, whole oats, and oatmeal, poppy, lettuce, plantain, potenilla, and pink seeds, maize, sugar, cake, hard biscuit, cracknels, buns, and the like, so far from being wholesome, it injures the birds in every respect. It spoils their taste, weakens their stomach, renders them feeble, sickly, and incapable of bearing moulting, under which they most frequently die. It is true, that they may be accustomed to eat every thing which comes to table; but to teach this habit is also to prepare a poison for them, which, though slow, is not the less sure, and brings them to a premature death; while every day we see the bird fanciers, who are poor, who hardly know the names of these delicacies, rear, on simple food, a considerable number of the healthiest, cleverest and strongest canaries. We must, however, be guided in a great measure by the constitution of the birds. They should be daily supplied with fresh water, as well for drinking as bathing, in which they delight. In the moulting season, a nail or bit of iron should be put into the water, in order to strengthen the stomach. Saffron and licorice are in this case more hurtful than useful. Grains of sand with which the bottom of the cage is strewed, afford the birds a help to digestion.

SIR HUMPHREY DAVY states that the germination of seeds in general is hastened by watering them with a solution of chlorine:—Have any of our readers ever soaked seed in a solution of chlorid of lime to accelerate germination?

METEOROLOGICAL TABLE.

Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 10', W. Long. 7° 24' 45",
for the month of July, 1856, by Prof. G. S. Ormsby. Height of Station above the Sea, 800 feet.

7 A. M.	2 P. M.	9 P. M.	OPEN AIR THERMOMETER.			CLOUDS—THEIR COURSE AND VELOCITY.			WIND—DIRECTION AND FORCE.			RAIN AND MELTED SNOW.		
			7 A. M.		Mean.	7 A. M.		2 P. M.	7 A. M.		9 P. M.	Hour Ended.		
			7	2 P. M.		9	P. M.	Mean.	7	A. M.	9 P. M.	W. 2	N. E. 1	
1	29.114	29.019	29.084	29.072	72.0	90.0	76.0	79.3	0	0	0	W. 2	N. E. 1	
2	29.099	29.028	29.000	29.042	76.0	90.0	76.0	80.7	10	S.W. 5.	0	S. W. 2	0	
3	29.027	28.869	28.918	28.938	76.0	86.0	80.0	80.7	1	S.E.	5	S. W. 2	S. W. 2	
4	28.950	28.891	28.948	28.930	84.0	89.0	74.0	82.3	8	S. W.	0	S. W. 1	0	
5	28.995	28.952	28.950	28.969	78.0	86.0	75.0	79.7	0	0	0	W. 0	W. 1	
6	28.939	28.863	28.916	28.906	79.0	93.0	74.0	82.0	0	0	8	W. 2	3 P. M.	
7	28.939	28.904	28.939	28.961	76.0	72.0	68.0	72.0	5	N.E.	10	W. 0	Night.	
8	28.942	28.924	28.969	28.945	68.0	86.0	72.0	75.3	9	W. 1.	5	S.W. 2	0	
9	29.007	28.980	29.004	28.997	74.0	86.0	76.0	78.7	0	0	0	W. 1	0	
10	29.030	28.983	28.934	28.982	76.0	89.0	77.0	80.7	0	0	0	S. W. 1	0	
11	28.864	28.741	28.749	28.785	72.0	90.0	76.0	79.3	2	0	5	W. 2	0	
12	28.752	28.766	28.859	28.792	74.0	85.0	76.0	78.3	4	W. 3.	0	W. 2	0	
13	28.982	28.971	28.991	28.981	76.0	88.0	78.0	80.7	1	W.	0	W. 1	0	
14	29.039	29.000	29.018	29.017	74.0	91.0	82.0	82.3	3	0	0	S. W. 1	W. 1	
15	29.081	29.056	29.048	29.062	82.0	97.0	86.0	88.3	0	2	0	N. W. 2	E. 1	
16	29.110	29.043	29.050	29.068	83.0	98.5	86.0	89.2	0	2	0	S. E. 2	S. 1	
17	29.100	29.063	29.033	29.065	87.0	98.0	86.0	90.3	1	0	3	W. 1	W. 1	
18	29.089	29.060	29.110	29.086	82.0	88.0	73.0	81.0	0	0	5	N. W. 1	0	
19	29.160	29.110	29.114	29.128	76.0	86.0	72.0	78.0	0	0	2	N. W. 2	W. 1	
20	29.200	29.184	29.216	29.200	76.0	85.0	70.0	77.0	0	0	2	N. E. 1	N. E. 2	
21	29.294	29.284	29.254	29.261	70.0	87.0	70.0	75.9	0	0	0	N. E. 1	N. E. 2	
22	29.267	29.186	29.200	29.218	76.0	86.0	76.0	79.3	0	0	0	E. 2	0	

23	29.265	29.178	29.224	29.232	75.5	91.0	77.0	81.1	1	0	0	0	E. 2	0	
24	29.264	29.168	29.136	29.189	79.0	92.5	73.0	81.5	0	0	0	0	E. 2	0	
25	29.259	29.085	29.065	29.136	80.0	95.0	82.5	85.8	2	0	9	8	E. 1	0	
26	29.154	29.111	29.126	29.130	73.0	83.0	75.0	77.0	10	Nimb's	3	Cum'l's	S. W.	1	2 A. M.
27	29.194	29.138	29.088	29.140	76.0	90.0	81.0	82.3	0	"	0	0	S. W.	1	7 A. M.
28	29.139	29.046	29.084	29.090	84.0	95.0	73.0	84.0	8	W.	2	5	S. W.	1	0.017
29	29.064	28.943	28.973	28.993	76.0	97.0	87.0	86.7	7	W.	5	W. 2	S. W.	2	0.031
30	29.006	29.059	29.000	29.022	82.0	77.0	75.0	78.0	4	S. W.	0	0	S. W.	3	4 P. M.
31	29.097	29.074	28.986	29.052	75.0	89.0	75.0	79.7	10	N.E. 2	10	10	S. W.	1	2½ P. M.
													S. W.	0	0.148
Sums.								900.389					2507.1		0.325
Means.								29.045					80.9		

REMARKS ON WEATHER

2. A storm passed south at 8 P. M.
 3. Shower from N. W. at 3 P. M. Strong wind.
 6. Shower E. and S. W. at 4 P. M.
 7. Heavy shower from W. at 3 P. M.
 8. A little rain at 8 A. M.
 11. Shower from S. W. at 4 P. M. Another at 7 P. M. with fresh breeze.
 12. Entirely cloudy at sunrise; broke away immediately.
 16. Thunder in the west at 5 P. M.
 21. At 11 A. M. Merc. in Barom. stood 29.390.
 25. A few drops of rain at $4\frac{1}{2}$ P. M., and appearance of a shower in the E.
 28. Thunder shower from W. at 10 A. M.; slight shower here, but passed very heavy at N. Shower from N. W. at 3 P. M. Strong wind.
 30. Shower from N. W. at $10\frac{1}{2}$ A. M., continued till $2\frac{1}{2}$ P. M., with violent wind.

MINIMA:

MONTHLY EXTREMES.

E X P L A N A T I O N.—The state of the sky is indicated in the above table by numbers from 0 to 10; 0 signifies perfectly clear sky, 10 that it is entirely covered with clouds, and intermediate numbers show the number of tenths clouded. The direction from which the wind blows is shown in the initials of the points of the compass. Its force is indicated by numbers; 0 meaning a perfect calm, and 10 the most violent hurricane.

	7 A. M.	2 P. M.	9 P. M.	MONTH.	7 A. M.	2 P. M.	9 P. M.	MONTH.
Barometer, . . .	21st. [*] 29.294	21st. 29.234	21st. [*] 29.261		12th. 29.294	11th. 28.752	11th. 28.749	11th. 28.741
Thermometer, . . .	16th. 87.0	16th. 98.5	29th. 87.0		16th. 98.5	8th. 68.0	7th. 72.0	7th & 8th. 68.0

METEOROLOGICAL TABLE.

Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 10', W. Long. 7° 24' 45", for the month of August, 1856, by Prof. G. S. Ormsby. Height of Station above the Sea, 800 feet.

BAROMETER, CORRECTED FOR TEMPERATURE AND CAPILLARITY.				OPEN AIR THERMOMETER.			CLOUDS—THEIR COURSE AND VELOCITY.			WIND—DIRECTION AND FORCE.			RAIN AND MELTED SNOW.		
7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Hour Begun.	Hour Ended.	Amt' Inch's
1 29.054 28.988 29.051	29.031 27.5.0	91.0 76.0	80.7	3 Cirrus.	2	W.	0	0	0	S. W. 2	S. W. 1	S. E. 1			
2 29.022 28.921 28.961	28.968 75.0	90.0 68.0	77.7	8 Str'tus	5	S.	9	0	0	N. W. 1	S. 3	S. W. 1			
3 28.984 28.949 28.934	28.956 74.5	81.0 73.5	76.3	9 Nimb's	3	Cum'l's	5			N. W. 2	N. E. 1	N. W. 1			
4 28.984 28.994 29.023	29.000 74.0	81.0 69.0	74.7	0	1	Surtus	0	0	0	N. E. 2	N. W. 1	N. W. 1			
5 29.089 29.071 29.100	29.087 71.0	83.0 73.0	75.7	0	0	0	0	0	0	N. W. 1	N. E. 2	0			
6 29.119 29.074 29.059	29.084 78.0	88.0 77.0	81.0	2 Haze.	5	0	5	0	0	N. W. 0	N. W. 1	0			
7 29.004 28.906 28.903	28.938 73.0	92.0 81.0	82.0	1 Str'tus	2	N.W.2.	1	N. W.	0	S. E. 1	N. W. 2	N. W. 3			
8 29.030 29.017 29.049	29.032 69.0	82.0 63.0	71.3	0	4	C.Stra.	0	0	0	N. W. 3	N. W. 3	N. W. 1			
9 29.092 29.052 29.014	29.053 69.0	81.0 71.0	73.7	1 Str'tus	1	"	4	"	4	N. E. 1	N. W. 2	N. W. 1			
10 28.983 28.926 28.941	28.950 74.0	88.0 78.0	80.0	2	0	9	W.	9	N. W.	S. E. 2	W. 2	N. W. 2			
11 28.984 28.997 28.932	28.971 75.0	71.0 66.0	70.7	9 W. 1.	10	Nimb's	9	W. 2.	0	W. 1	W. 1	W. 1			
12 28.877 28.877 28.847	28.867 64.5	70.0 68.0	67.5	10 Nimb's	10	W. 3.	10	W. 2.	0	S. W. 1	W. 2	S. W. 1	6½ A. M.	0.073	
13 28.854 28.854 28.907	28.872 71.5	77.0 72.0	73.3	10 S.W.1.	5	S. W.	2	0	0	S. W. 1	W. 2	0			
14 28.949 28.969 28.992	28.970 69.0	82.0 70.0	73.7	0	5	N. W.	2	0	0	S. E. 1	N. W. 2	0			
15 29.059 29.070 29.084	29.071 74.0	84.0 72.0	76.7	0	0	0	0	0	0	N. W. 1	N. W. 1	0			
16 29.150 29.124 29.144	29.138 73.0	81.0 67.0	73.7	1 Cirrus.	3	N.W.1.	0	0	0	N. W. 1	N. W. 2	N. W. 1			
17 29.147 29.007 29.028	29.061 69.0	83.0 78.0	76.7	0	0	9	0	9	0	S. E. 1	S. 3	S. E. 1			
18 28.917 28.815 28.670	29.800 62.0	64.0 64.0	63.3	10 Nimb's	10	Rain.	10	"	9	N. W. 2	N. W. 2	N. W. 1			
19 28.650 28.739 28.774	29.700 68.0	74.5 70.0	70.8	10 "	2	"	2	"	2	N. W. 2	N. W. 2	N. W. 1			
20 28.892 28.882 28.909	28.898 68.0	80.0 65.0	71.0	2 N.W.1.	3	N.W.1.	0	0	0	N. W. 1	N. W. 2	0			
21 28.952 28.924 28.924	28.934 68.0	83.0 70.0	73.7	0	3	Str'tus	10	2	2	N. W. 1	N. W. 1	0			
22 28.972 28.952 28.959	28.361 70.0	81.0 71.0	74.0	3 Str'tus	10	"	10	"	10	S. W. 1	0	S. W. 1			

Night.

0.215

Discoveries of the Present Century.

SOME of the most wonderful results of human intellect have been witnessed in the last fifty years. It is remarkable how the mind of the world has run into scientific investigation, and what achievement, it has effected in that short period. Fulton launched the first steam-boat in 1807, now there are 3,000 steamboats traversing the waters of America only. In 1825 the first railroad was put in operation in Massachusetts. In 1800 there was not a single railroad in the world. In the United States alone there are now 18,797 miles of railroad, costing \$285,000,000 to build, and about 22,000 miles of railroad in America. The electric telegraph had its beginning in 1845. The electric magnet was discovered in 1812, and electrotyping is a still later invention. Hoe's printing press, capable of printing 20,000 copies an hour, is a very recent discovery. Gas light was unknown in 1800; now every city and town of any pretense is lighted with gas, and we have the announcement of a still greater discovery, by which light, heat, and motive power, may be produced from water, with scarcely any cost. Daguerre communicated to the world his beautiful invention in 1839. Gun cotton and chloroform are discoveries but a few years old. Astronomy has added a number of new planets to the solar system. What will the next half century accomplish? We may look for still greater discoveries; for the intellect of man is awake, exploring every mine of knowledge and searching for useful information in every department of art and industry.

NEW KIND OF GAS.—An English paper states that the Queen's Palace has for some time been lighted by means of the "Torbanehill mineral," the gas from this substance being destitute of sulphur.—The same journal says: Last year ten thousand tons of this mineral were sent to London, alone. Not long ago the French Government published a report concerning this substance, which had previously lighted up the whole of the Hotel des Invalides. It is sent to the most distant parts of the globe. A ship loaded with blocks of this mineral conveys an enormous quantity of a peculiar oil, the source of the illuminating power in the smallest possible bulk—seventy-five per cent., or three-fourths of the substance being latent oil, and the rest pure clay.

THE CINCINNATUS.

VOL. I.

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NO. 11.

Our Forage Crops.

'OATS, *forty-five cents* per bushel—CORN *sixty-five cents* per bushel—HAY, from *twenty-six to twenty-eight dollars* per ton!' Such are the quotations at present given by the Cincinnati 'price current' of the staples of our forage supplies. This is an approximation to starvation prices—and this too in the middle of October, long before the hay-consuming winter months have come to enhance the price of those supplies. Why is this? Does the country afford no such supplies? and is famine then impending over our domestic animals? Or, is Cincinnati and its suburbs inaccessible as a market place for those supplies? It would seem, indeed, that the Queen City was beleaguered by lines of hostile circumvallation, and that to secure a speedy surrender of her doughty burghers, no supplies, fitted for forage, were permitted to enter her precincts. The country is in no wise deficient in such products; for, to our certain knowledge, at a distance of not more than two hours' ride (by rail) from the perfume of her pork houses, oats are plentiful at twenty-five cents per bushel, corn a drug at thirty-five cents, and hay abundant at eight dollars per ton!

These curious facts have led us into some reflections upon the subject of our Forage Crops: and we have been led to propound to ourselves the question—how can we best economize the supplies now usually provided and employed for our forage? What substitutes can be found and produced that will tend to cheapen forage? And, how will such substitutes affect the health, and development of our field stock and domestic animals? Now we feel perfectly assured that all good citizens having a barn-full of animals without a barn-full of feed will agree with us as to the practical importance of those questions, especially in view of the 'price current' above quoted!

We therefore do not feel bound to submit any apology for submitting our 'reflections' to your perusal.

Firstly, then—of the economics of forage. The slightest reflection must make it manifest to any intelligent mind that the *economy* of Agriculture is in this country but slightly considered; and that as an agricultural people, we, of all people, have given the least heed to agricultural economy. This has proceeded doubtless from the fact that, as a people, there has been among us at no time a lack of general plenty. The rewards of industry have ever been abundant—the soil of our wide and widening domain has ever been fertile, the seasons fruitful, and the aggregate products of our husbandry prolific. The stern monitions of necessity have consequently been almost unknown among us—the pinching demands of a great scarcity have never been urged upon our attention—destitution has never stretched forth her scourging rod to inculcate those rigid lessons of economy which are among the first that husbandry learns, and among the last that even wealth abandons, in countries less favored than our own. And in nothing is this lack of economy so manifest as in the lavish manner in which we supply our farm stock with feed. This lavishness is perhaps not so much in the quantity we give, as in the market value of the crops we employ. Our ordinary domestic animals consume of *cereal* crops as much as would supply a large proportion of our population with bread, greatly superior to that on which the peasantry of Europe rely as their staple and most savory food. Our stock literally live on the fat of the land. Instead of receiving their subsistence from the wholesome and nutritious, but coarser, esculents, they riot on the richest grains and grow discontented and dainty over the finest and most fragrant forage.

Moreover, owing to the usual abundance of our forage supplies, as before alluded to, American farmers, and more especially western farmers, are the most lavish and extravagant in the use of forage of any farmers in the world. In many instances that have fallen under our observation, this extravagance has become absolutely wasteful, and therefore sinful. In the West, it is a sight not uncommon to see hay, that had been timely cut and finely cured, smelling as fragrant as 'the balm of a thousand flowers,' thrown loosely from the fork and scattered widely upon the oozy soil of the farm yard, with nothing to secure it from 'the trampling hoofs' that 'brook no delay' in pursuit of the precious morsel thus slovenly presented; and in this way, certainly full fifty per cent. of the forage is wastefully

lost, to the necessary damage of both owner and animal. Ears of corn, too, are often broken across a sharp-cornered rail into halves or thirds, and then thrown into the dirt from which the cattle are expected and required to rescue it by ‘word of mouth.’ Also, oats in sheaf are frequently unbound and strewn over the field with the expectation that the sheep are to thrash, gather, and winnow, and save the straw as over it they run in thronging crowds, trampling it under foot and sowing it to the winds, while for the want thereof, the flock, before spring, not unfrequently reap the whirlwind! Yet means and appliances for the more careful and tidy feeding of stock are known to all intelligent farmers, are easily constructed, and in no wise expensive, even if serving no other purpose than mere tidiness.

Again, it is a fact so well known as to render argument useless that animals, when protected from storms and extreme cold by warm and *dry* shelters, do not require for their support so much forage, by a large percentage, as when exposed to all the severity of our changeable and inclement winters. The providing of suitable shelter, then, to say nothing of the ‘animal comfort’ thereby promoted, is one method of economy in forage:—and one of no trifling importance. The reason for this is, that warmth becomes, to a certain extent, an equivalent for food;—or, more properly speaking, an animal when kept warm by a suitable shelter does not demand so great an amount of food, by so much as is needed to supply that additional necessary warmth. For, by a wise provision of nature, whatever may be the temperature of the external air, the living animal has its own invariable standard of vital heat. By the consumption of food for the formation of blood this necessary degree of animal heat is maintained; hence, the colder the external air becomes, the more rapid the waste of animal heat, and of course the demand for food is increased to supply this increased diminution of warmth. Consequently more forage must be consumed under circumstances of exposure in order to keep this animal heat up to the vital standard; and precisely in so much, as all experience teaches, shelter for animals is equivalent to food.

Another and a most efficient method of economizing ‘feed,’ for horses and milk-cows especially, is by the aid and instrumentality of the cutting-box. By various ingenious improvements and modern inventions, the cutting-box has reached such a degree of ‘perfection in its performance as to render it an indispensable ‘implement’ in agriculture. By the aid of this machine both hay and straw, and

even corn-fodder can be so rapidly cut that it becomes but a trifling "chore" to prepare the provender for the manger and the feed-box. When thus cut and made wet the addition of wheat-bran, shorts, chopped rye, or oil-cake, makes a most "savory dish" for either steed or cow. Thus prepared, the animal consumes with great relish what is set before him without rejecting the coarser parts and without the least waste of any portion. By this process much of what would otherwise be heedlessly flung into the manure yard as refuse and worthless is converted into most healthful and acceptable forage, to the manifest saving of much other feed of greater market value.

Some may conclude that this is all moonshine, because in the coarse provender, thus put through the cutting-box, there is found but an inconsiderable proportion of nutritive matter. As to this, it is proper to remark, first, that whatever elements of nutrition may be contained therein is at all events a clear gain: and, second, that to all persons of any intelligence on these points it is well known that, with their food, all domestic animals desire, and indeed their proper health and digestion demand, something in addition to the mere elements of nutrition. To confine animals, or even man, to the simple concentrated elements of nutrition alone, would be tantamount to condemning them to ultimate starvation; for, animal physiology informs us that herbivorous animals require much that serves only the purpose of supplying the *stimulus of distention*; and the material supplying this need have—indeed *should have*—but a small proportion of nutrient matter. Its benefit results from the capacity of producing merely a mechanical distention of the organs of digestion, in order that the gastric fluids may proceed, unimpeded by pressure of digestive matter, in the work of digestion; and by having the digestive matter thus divided through a larger mass, it is made more accessible to the action of the gastric fluids, than if permitted to remain compact and undivided. Hence, even if it contains no nutrition, this coarser forage thus palatably prepared by the cutting-box, nevertheless serves a most important function in the animal economy, by producing this mechanical distention, so important to an easy and healthful digestion of food. Cows fed thus, will yield milk more abundantly than when confined to dry and concentrated food, for the reason that the healthful digestion keeps their system free from all feverish tendency, and the slightest fever, as all know, is inimical to the secretion of milk. Horses thus managed will keep in better 'condition,' i. e., in better general health;

the skin will be healthy and the coat glossy; their lungs will be less liable to injury from obstructions of the bronchial tubes, and their 'wind' will consequently be less affected by any unusual exertion in travel; their feet and limbs, too, will be less liable to stiffen, from the reason that this kind of food, from its ease of digestion, excites no fever in the stomach and alimentary canal. By this expedient, therefore, now made easy by the improved cutting-box, the purpose of economy in forage is subserved and the health of our animals at the same time promoted.

Germain to this is the subject of corn-feeding. We in the Valley region of the West are accustomed to resort to corn in the rearing and feeding of stock, to an extent that elsewhere is not even dreamed of. Corn is certainly among the most nutritious of grains; and on account of the large percentage of oil in its constituents it is especially suitable for fattening purposes, though in its muscle-making qualities it is not equal to oats. It is therefore, most appropriate for stock-cattle and swine, and less valuable for horses. But, as we desire a good coat of fat on our horses for looks, as well as strength of muscle for action, the better plan would seem to be to mix oats and corn, or alternate them daily. This view, founded upon those facts in science, is confirmed by the experience of the proprietors of the New York stage and omnibus lines employing about twelve hundred horses, as appears by their report to the 'Farmers' Club' of that city; wherein they say that "horses do not keep fat so well on oats alone, if at hard labor, as on corn meal, or a *mixture of the two.*"

This doctrine seems to be further corroborated by the practical experience of Dr. Bigelow, of Attica, Indiana, given by himself in a letter bearing on this subject. Dr. Bigelow says:

* * * "I am a great lover of horses—generally keep good ones, and do some fast driving in my business, and notice its effect upon horses; and having used them five years in Vermont, and ten here, I will give you the result of my observation. Vermont horses, like its inhabitants, are almost invariably raised on plain diet, but if the former arrive at maturity without having the 'heaves,' and the latter, consumption, they can beat the world for power of endurance. The horses seldom see oats or any other grain, till they are old enough to work, and then 'mighty little,' as everything there must be done up on the 'cheap.' The Indiana colts are generally allowed to eat, all, or nearly all the corn they like, summer and winter, commencing

as soon as they have teeth to masticate it. The result is, for fast driving, they are comparatively useless forever, though at slow work they do very well. When I first came here, I was struck with the multitude of diseases that horses are afflicted with here, that are seldom or never known in Vermont; and although some of them may be attributed to the climate, I am convinced that most of them are caused by giving them too much corn. These diseases are, in part, the following: Stiff complaint, (something like a horse foundered all over,) fistula, sweeney, (perishing of the scapular muscles,) poll evil, general lameness without any apparent cause, and blindness, which is very common. Now, are not all these diseases nearly allied to the gouty inflammations that follow high living in the genus homo?

A fine colt, that perhaps never had a halter on him, will be attacked with inflammation of the eyes—one or both—generally scleritis or conjunctivitis, and in spite of knocking out the ‘blind teeth,’ ‘cutting for the hock,’ if the corn diet is continued the eyes are lost.

I find that if I keep a horse on corn instead of oats, he will surely ‘fail up’ sooner or later. He will endure through the winter, but it will tell the following summer, though corn be discontinued in the spring. I happened, accidentally, to find a mare five years old, who was so vicious that her master could not use her, and he said he did not care a fig if she starved to death, and treated her accordingly. I bought her, tamed her down, and she is the first sound and hardy horse I have ever had since. I would like to give some of your Long Island boys a chase with her. Therefore, my directions for feeding a Western horse, would be, to give him five ears of corn twice a-day, and all the good oats and hay he will eat; for a horse raised on corn, will grow poor on oats and hay alone; but if he has been properly raised, do not poison him with corn.’

Now we will not assume to determine the question started by Dr. Bigelow, whether corn will ‘poison’ horses,—at least, not until the scientific world has settled that other grave question—‘will salt-peter explode?’

It seems to be conceded that the cutting, steaming, and in any way softening the woody portion of our forage plants, serve to prepare them more effectually for the functional process of digestion and assimilation. By this means, we, to some extent, assist nature, and economize the labor of the animal machine, in so far as that labor is merely mechanical, and thus enable it to retain a greater vigor to be expended in the vital function of digestion; by so doing we render a

less amount of forage adequate to the proper nourishment of the animal.

At this point comes up the further application of this principle to the question as to the expediency of bruising, cracking or grinding our forage grains. It seems to be manifest as the result of the most ample experience, that the feeding of grain in gross is much more wasteful, than by feeding it cracked or coarsely ground. All analogy with the character of food found best for human consumption seems to sustain this conclusion. To be sure, we occasionally hear it stated, that, for our animals, the ‘natural food’ is the best:—meaning thereby, food in its crude and unprepared state. This view might be held as sound and philosophical, provided the animal itself were in *its* natural state. But the animals of which we speak are domesticated; then sound sense as well as philosophy would indicate that the preparation of their food should be changed, to correspond to their change of condition,—that the modification of their habits should be accommodated by a corresponding modification in their food. The food of man in his savage state, is comparatively coarse, crude, and innutritious; yet the savage energy of the animal economy, in such a state, renders such food both wholesome and palatable, while it can not be therefore recommended for the uses of *civilized* man. The functions of the animal economy in the brute race, partake of the same characteristic change, by reason of their domesticated condition; it is, therefore, plainly the part of wisdom to adapt their forage to their new condition. To this end the crushing of their cereal food is most obviously proper for them, and important to their owners:—proper, because by rendering it easy of mastication, it is made more easy of digestion and assimilation; and important, by reason of the economy thereby attainable. In the West, this procedure was formerly inconvenient, and, in many instances, quite impracticable on account of the great distance ‘to mill;’ but since Leavett’s Patent of ‘The Young America Corn and Cob Mill,’ the difficulty is almost altogether removed; for every farmer, instead of taking his grain to the mill, can now bring the mill to his grain.

Against this doctrine of ground-grain-feed we have heard some objections alleged, the most proceeding, however, so manifestly from prejudice, that they need not be mentioned. There is one of those objections, nevertheless, of too much importance to pass without notice, which is, that the crushed or ground feed, corn for instance, is not so wholesome to digestion as the crude grain, and is liable to pro-

duce in the animal a kind of diarrhea usually denominated ‘the scours.’ If this objection be well founded as to the facts, it is certainly well grounded as against the doctrine; it is therefore to the facts that we must direct our attention. Now, that the use of ground-feed, especially of corn, has in many instances led to this result, it would be wrong to deny, for it is unquestionably true. But then arises this most important query—wherefore has it produced this result?—it is the same grain as that fed daily on the cob; why then, when ground, should it thus affect the animal? And this consideration leads us to ask whether the unhealthy action complained of, was the result of the *kind* of food used, or of the *quantity* given? Was the food itself unwholesome, or was the quantity taken a surfeit? From all that we can learn, we incline to the opinion, that in every case of the kind, excess in the quantity given, and not the unhealthful condition of the food, caused this derangement of the animal’s digestion. Every farmer of experience knows how great is the danger of surfeit, when the animal is fed for the first time upon rich and concentrated food: hence, it is easy to understand that in the ground and concentrated form of the food, the animal too greedily, takes an immoderate quantity, that by overburdening digestion produces a sub-acute irritation of the stomach and alimentary canal, and necessarily passes off by diarrhea. This is the *rationale* of this result. And now it is not difficult to see that this objection, even when we concede the fact on which it is founded, when pushed to its ultimate conclusion, rather commends the doctrine of ground-corn feeding, than otherwise:—because the fact on which it rests signifies the development of a greater richness and capacity for nutrition in the same grain, when thus ground, than when crude; if so, then the less of it suffices for the nourishment of the animal, and thereby economy of our forage is attained.

But we must pursue this point further, in order to fairly and fully meet the objection founded upon this admitted fact:—As we stated above, the health of the animal demands that it shall be supplied with something more than the mere elements of nutrition,—in other words, it must have a proper vehicle for carrying those elements into the system. For its healthful digestion, therefore, it must be supplied with some crude and coarser material, as food, to furnish that ‘stimulus of distention,’ before mentioned, (so called by physiologists, for want of a better phrase, I believe—certainly not because it expresses any very definite idea concerning anything!) When

those crude materials are properly supplied in the form of cut straw, wet, and served with the ground meal, in judicious proportions, ‘the scours’ will never occur, and we are able thus to keep our stock on less grain, united with coarser and cheaper forage, and in a superior condition of health. In view of the fact that this coarse and cheap forage contains but little nutriment in itself, many persons are unable to see its value in the keeping of stock. But, though this coarse forage may of itself possess but little nutrition, (as before remarked,) still it performs an important function in the vital process of yielding nourishment: for, by mingling with the rich and nutritive elements in the ground-feed, and separating it, while in the stomach, into divided portions, it detains it there, thus separate and divided for the action of the gastric fluids, whose secretion the stimulus of its presence continually promotes, until digestion of all those nutritive elements is perfectly performed. In this way it is that all tendency of ground-feed to produce ‘scours,’ is obviated, and all its concentrated elements of nutrition are economically secured and healthfully supplied.

In view of these and similar considerations, it would seem that one eminent advantage afforded by the ‘Corn and Cob Mill,’ must consist in furnishing this requisite coarser material, so important in animal digestion, in the matter of the cob crushed up to be eaten with the corn. This idea, as to the importance of the corn-cob in our forage, we know has been ridiculed and scoffed at, by some who predicated their ridicule upon the basis of chemical science. Nor are we ignorant of the fact, that a chemical analysis has shown that the corn-cob contains but about five per cent. of nutritive matter, and that the remaining ninety-five per cent. is composed chiefly of *woody fiber*. Under the supposed sanction of this analysis, the scoffer has probably urged that we might as well feed cord-wood as corn-cobs to our stock. But before being convinced by a sneer—which, by the way, has never yet either proved or disproved anything—I would remind the sneerer that so too the best of hay contains a large percentage of mere *woody fiber* in its composition; and would ask him why, on *his assumption*, it would not answer to substitute pine-shavings for clover, or feed saw-dust instead of timothy? To those who reason thus it is perhaps not known that still further back and behind this analysis upon which they found their faith, is another test of the character of those qualities in forage—a test that tells us what this *woody fiber* is composed of!—a test that reveals its *inorganic el-*

ements; and which makes known the very important fact that the elements which enter so largely into the composition of the dried grasses,—hay, and the corn-cob are the self same elements and proximate principles that go to constitute the animal muscle, nerve, and bone. When this comes to be revealed we can readily understand why there is nutritive virtue found even in the woody fiber of the corn-cob. Consequently, whatever virtue or nutrition there is in the corn-cob, is, by this ‘crushing’ process, entirely saved, while the addition of the matter of the cob to the grain itself serves the purpose, in a great measure, of supplying the rough food so essential to healthful digestion. But in many instances even the cob will not be sufficient of this kind of food to correct the tendency of the ground grain to produce diarrhea; in such case let the cutting-box be called in to supply more of the coarse forage,—more of the “woody fiber” in the shape of straw, or hay: and in this way the full virtue of the corn is obtained without the least harm to the digestive functions of the domestic animal. By the judicious mixture, therefore, of the crude and coarse forage, cut with the solid food crushed or ground, we both promote the health of our stock and secure economy in our forage.

But, what substitutes can be produced to cheapen our present forage crops? This is tantamount to the inquiry as to what productions can be *added* to our forage supplies that may render us more independent of hay, oats, and corn. When we come to consider that the stock growers of other countries do not use a tithe of the hay and solid grain consumed by our cattle and horses, we see at once the comparatively trifling attention that has here been given to the *root crops* for forage. It is evident, from the present tendency of prices and limited supplies of our common forage, that the root crops will not be much longer neglected. Turnips, carrots, and parsnips can all be reared abundantly and at much less cost than the forage crops now usually relied upon. The carrot is a more certain crop than the turnip, and more prolific than the parsnip. In New York and Connecticut, where it is in great favor with the cattle raisers and dairy-men, the carrot has yielded from one thousand to fifteen hundred bushels to the acre, accounting sixty pounds to the bushel. It is there regarded as an indispensable crop for the feeding of stock.—The parsnip is also found to be of great value in forage, and furnishes an excellent food for horses, cattle, and swine: it is more nutritious than the carrot. The winter butter, (with us so *blanc* and

bleached,) from the cows of Jersey and Guernsey, England, fed on the parsnip, is almost as rich in flavor and color, as when they are fed in summer pasture.

We do not intend to say that the root crops will supplant our other forage crops; but that by their cultivation, they will form most important aids and adjuvants in affording us more adequate supplies of forage of a marketable character. The advantages of root-raising are various; but they may be briefly summed up thus—they are certain and prolific, they make mellow the soil, they afford variety of feed during winter; this food being of a succulent nature, tends to promote the animal's health, and for the same reason increases the flow of milk in cows, and greatly improves its butter making quality. So convinced are we of the aggregate of advantages derivable from an increased measure of attention to our root-crops, that we hesitate not to declare, that if every farmer of this region would plant but one acre of parsnips and carrots the coming year, it would constitute an era in agriculture which would be remembered and quoted as the inauguration of an era of unwonted abundance and prosperity.

Mental Precocity.

FROM the days of Dr. Goldsmith's "Thinks-I-To-Myself" down to Anno Domini 1856, parents are found prone to the belief that in the person of their own particular *only* child, an intellectual prodigy was born. Under this impression, parental solicitude is aroused and its activity quickened, by parental pride, to seek out means and appliances for stimulating the mental action of a child, who may indeed present a precocious intellectual development. In such case nothing could be more unwise, nothing more hurtful to both the mental and bodily development of such child, than thus to stimulate this precocity into greater exuberance of growth. Parental care would be acting the part of both wisdom and kindness, to judiciously repress rather than to foster this premature development, and aim to guide this overflowing rivulet into the natural channel of the intellectual current. To any one who has taken note of such matters, such precocious development of the mental faculties will present nought but an unpleasant aspect, inasmuch as it is but a manifestation of disease. It is the disease of a very fine, but a very weak, nervous organization;

and the exhibitions of intellectual power or activity are but hot-house productions, exhausting the feeble stock that gives these blossoms of preeocious genius birth. Indeed almost all experience shows that all the infantile wonders of the world have never been wonderful beyond the years of their infaney; while many, whose early childhood was marked by slow and toilsome progress in the attainment of ordinary learning, have honored their names and blessed the world with the munificent gifts of hallowed genius. We do not presume to aver that such is the rule without its exceptions; but we would rather look upon a child of ours without this prematurity of mental development than with it; we would rather see childhood child-like than man-like, trusting to the maturity of years to bring about the maturity of mind. True, the tumultuous ardor of youth has given birth to some of the noblest productions in music, poetry, and painting; but productions no less wonderful have sprung up from the ripeness of years. Chatterton wrote all his beautiful things, exhausted all hopes of life, and saw nothing better than death before him at the youthful age of eighteen. Both Burns and Byron died at the early age of thirty-seven years, and every thing indicated that the strength and grandeur of their genius was even then upon the wane. Raphelle, after filling the world with his fame as the delineator of Divine Beauty, perished also at thirty-seven: Mozart died younger, though not too young, for his achievement of lasting renown. On the other hand, Handel was forty-eight before he gave the world assurance of *such* a man. Dryden first went up to London, dressed in his provincial suit of Norwich drugget, at the age of thirty, and did not know that he could write a line of poetry. Milton had indeed written his "Comus" at twenty-six; but blind, and "fallen on evil days and evil tongues," he had passed his fiftieth year when he began his great epic work. Cowper knew nought of his own capaeity till he was beyond the years of Byron's life, and when his last great work was written, he could score his full half century. Sir Walter Scott was upwards of thirty before he wrote his *Minstrelsy*; and even then, all his greatness was yet to come.

A WITTY lawyer once jocosely asked a boarding house keeper the following question:

Mr. —, if a man gives you \$500 to keep for him, and dies, what do you do?—do you pray for him?"

"No, sir," replied Mr. —, "I pray for another like him."

THE GUANO TRADE.

AN intelligent gentleman, who has been employed in loading a ship with guano at the Chincha Islands, on the coast of Peru, has communicated to us some interesting information with respect to the trade. He has been at the islands at three different times, and nearly six months in all. The last time he was there was in the fall and summer of 1855. He says that he found at times five hundred sail of vessels together, loading with guano, generally large ships. One ship was 1,500 tons burden. Not less than three hundred sail of vessels are now at the islands, loading for the United States, Portugal, France, and English and German ports. Some cargoes are sent to Constantinople and some to Russian ports in the Black Sea. This was before the war in the Crimea. The Russian trade will now open again, both from the Black Sea and the Baltic. Freights are high; £6 10s. are often paid per tun for Liverpool and Hampton Roads.—Generally ten shillings more a tun for freight is paid to Europe.—At the rate at which guano is now shipped from the Chincha Islands, it will be exhausted in six to eight years—not a tun will be left.—Twenty thousand tuns are sometimes removed from the islands in a single day. These islands are about one hundred miles north from Callao. The longest of the group is two miles in length and a quarter of a mile wide, but contains only a small quantity of guano. The most northerly island is the smallest, being about a mile in breadth. Guano on this island is two hundred and fifty feet deep. The island contains a Chinese settlement of Coolies, about a thousand in number, who are employed in digging guano and loading the vessels.—*N. Y. Post.*

SMALL FARMS.—We desire to impress on the common sense reasoning of every man, the paramount importance of having no more land in cultivation than can be cultivated. By no means attempt to manage more than you can manage well. Be a FARMER, not a mere earth scraper, lazily scratching up sufficient earth to destroy the face of the soil, and throw seed away, or you will always have to scratch hard for a living. But make your farm a source of pride, and it will surely become a source of profit. Make the object to be not to have MANY, but RICH acres.—*Selected.*

Pomeroy, Ohio.

THE recent conflagration at Pomeroy, Meigs County, in which nearly the whole of the business part of the city was consumed, has called the attention of the trading community in that direction, and renders information, concerning that place, appropriate at the present time. In a recent visit there we devoted several days to the examination of the extensive mining operations for coal and salt, for which Pomeroy has become justly celebrated. In company with Dr. Charles Thomas and other citizens of the town, we entered and thoroughly surveyed several of the coal excavations in that region and examined the Salt-Works.

LOCATION.

The city of Pomeroy (for it rejoices in a corporation) occupies a narrow strip of interval on the banks of the Ohio, some two miles in length, but no where more than forty or fifty rods in width. The craggy bluffs of the outercopping carboniferous strata occupy the rear, and seem threatening everywhere to crowd the narrow town into the river. In many places these rocks present their naked and precipitous front some one hundred to two hundred feet in hight, composed of a soft, coarse-grained sand-stone of a reddish white color, of shales abounding in fossil plants, of the coal measure's and of the underlieing fire-clay. These rocks are crowned with verdure, and the dwellings are built at their very base, almost in contact with the coal-vein itself. The country beyond these bluffs continues exceedingly broken and hilly.

THE COAL-HILL TUNNEL.

The coal stratum which everywhere in this region underlies the sand-rock, is found generally above high-water mark and about $4\frac{1}{2}$ feet in thickness. Our first entrance into a mine was facilitated by a train of cars drawn by a French pony. We entered the shaft above the level of the streets, and stooping as we rode, were wheeled rapidly forward into more than midnight darkness, guided by the feeble glare of the miner's lamp through the bowels of the hill. After traveling thus about half a mile, we again saw far ahead the light of day, and ere long emerged upon the opposite side of the hill, into a narrow ravine which here cleft the hills to a depth beneath the coal-stratum.

Here, after a short interval of open road, we again enter the earth upon the same level where the operation of mining is now carried on, the first hill through which we had passed being considered as exhausted. The speed with which we traveled in this mine forbade our observations of the character of the rocks.

A N E X H A U S T E D M I N E .

Our next excursion was made in company with Mr. Starr, Superintendent, as our intelligent guide into an old shaft in the eastern part of the town. We entered on foot, each carrying a lamp. Here, as generally, the passage was too low to admit even the shortest of us to stand erect, being scarcely five feet high. Occasionally we met a depression in the rock above, reducing the passage to three feet! Then, immediately beyond, the ceiling would arise to seven feet for a short distance, affording us an opportunity for straightening our weary backs—a privilege highly appreciated. These depressions are called *horse-backs*, whether from their resemblance to the inverted back of that animal in a fossil state, or because the backs of the *recent* animals get a hard rubbing in these places, we did not learn. In every instance we observed, at the sides of these horse-backs, fractures in the rock whose sides were glazed, polished, and scarified with parallel striæ as if subjected to friction under immense pressure; indicating that these depressions in the rock overlaying the coal are the result of a *movement* subsequent to the deposition of the strata. The coal-bed, being less solid in these places than elsewhere, yielded to the enormous pressure of the superincumbent rock, which thus subsided, causing the friction of mass against mass, as mentioned above.

T H E F O S S I L F L O R A .

In these passages and deserted chambers, which we traversed for nearly a mile, we often found our way obstructed by heaps of rocks fallen and falling from the ceiling. The shales above were everywhere cleaving and crumbling, and occasionally a slab was heard to fall, remote or near, so near in one instance as to give us a broad hint of the propriety of making good our retreat from the jaws of the mountain, while yet we might. But our guide, Mr. Starr, was too well acquainted with these scenes to regard the danger of crumbling shales; and laughing at our apprehensions he led us forward, and

soon called our attention to the fossils of which we were in search. Indications of vegetation in the shales we had already observed, but now we had arrived at a field replete with the remains of the Flora of the Ancient World. The rocks over us were indeed a mass of fossils, seeming festooned or stuccoed with plant impressions and pterofalections in indescribable profusion.

Here were seen the trunks of trees many yards in length, with roots, branches, and leaves, but all either completely petrified or reduced by the vast pressure of the rock to a thin film of coal, with the superficial form and texture still complete. Of these remains we readily recognized some as the stereotyped illustrations of school geologies,—the Sigillarias, Stigmarias, Ulodendrons and Calamites, while among these were some which appeared to us strange and new. Having secured many specimens of these fossils, and seen the extremity of this labyrinth, we turned our steps in retreat, and at length were again ushered into the open day.

THE SYRACUSE MINE.

We next visited the coal-mine with the above title, lying about seven miles Eastward of Pomeroy. This mine, owned by a company in Hartford, Ct., has been wrought about two years, and their works are an example of mining operations, conducted upon the most approved European method, improved by Yankee ingenuity. At this place there are no out-crops of coal, as at Pomeroy, but the measure is depressed to the level of low water in the river, and has to be reached first by a perpendicular shaft, sunk through the sandstone to the depth of 80 feet. Over this shaft, which is quadrangular, with beautifully even sides, a building is erected containing a steam engine,—the motive force for the various works in wood and iron required by the company,—for pumping water from depths, and for lowering and elevation to and from them.

In company with the gentlemanly overseer, Mr.——and his 'Boss' miner, Billy, a stout wide-awake Welshman, we stepped upon the platform, and were gently but speedily lowered to the level of the horizontal shaft, 86 feet below the surface of the earth. Here the coal bed was found, and from this point the main tunnel extends both east and west, already a mile long, perfectly straight, and almost level, full 7 feet high, evenly and regularly excavated, and furnished with an iron track for cars. From this main track, branches

diverge at intervals of 36 feet and soon expand into chambers, whose height is only 5 feet,—little more than the thickness of the coal stratum. The character of these chambers is the same everywhere, viz.—the floor is of fire-clay, which underlies the coal; the walls of the black shining mineral carbon itself, and the roof of argillaceous shale, filled with fossils and impressions. But to these remains of a buried world, we soon turned our attention. In better preservation than any heretofore seen by us, and more abundant, these remains everywhere frescoed and enlivened the rock over us, crossing and recrossing, trunks and branches intermingled. It was a glorious sight for the geologist! Together with the common coal plants, we here obtained some of the rarer sort and some altogether strange, about which, after their arrival we hope to speak more particularly.

It was delightful to see with what zeal the sturdy Welshmen, who accompanied us, pointed out the curiosities of their domain, and with what force they applied the pick to bring down from the vaulted roof the specimens which we selected. Billy also illustrated the *modus operandi* of coal digging, which is thus:—bending low, the miner picks away a thin layer of coal at the bottom of the strata as far *under* as he can reach, at last lying flat upon his side. When thus undermined, he drills in the uppermost layer of the mass, and a charge of powder brings down usually one, sometimes three or four car-loads at a single blast. For each car-load, (which is 100 bushels,) the miner receives \$2.00,—his average earning per day. The greater number of these miners are Welsh, an honest, hardy race, but poorly educated. The whole amount of coal annually raised in Pomeroy and vicinity, can not be less, we think, than 15,000,000 or 20,000,000 bushels. We left the Syracuse Mine, rich in collections of fossils, and well pleased with our visit.

BORING FOR SALT.

At a depth of about 1200 feet below the coal at Pomeroy lies a rich bed of salt. This being about 60 miles only from the salt mines of Kanawha, makes it probable that it is a continuance of the same vast bed. The history of the discovery of this bed, in Ohio, is interesting.

In the year 1851, there appeared at Pomeroy an old man from Virginia, by name, James C. Blunden. Without consulting any of his neighbors, he set to work erecting a rude shed near a little run, just where the waters fell into the Ohio. Under the cover of this he

raised a framework of timbers, of singular structure, and a wheel horizontally inclined, with other machinery attached. Single-handed he began to dig in the soil and then to drill in the rock. In due time a pair of sober horses were mounted upon the wheel and began an endless journey, and day after day the drill was moved, and gradually dropped deeper and deeper in the sand rock. Meanwhile the curiosity of the citizens, especially of the boys, became greatly excited.—They wondered and wondered at these operations of the old man, and finally pronounced him crazy. ‘Old Blunden,’ and his two horses lean and spavined as they were, became a by-word among the wicked boys, and a subject of ridicule and persecution. Yet he toiled patiently on, amid their taunts and jeers, and at last against what is worse, the rude pinchings of poverty. After all his own means had been thus exhausted, he applied to a neighbor for help, declaring his confident hope of soon reaching a fountain of salt water! The neighbor assented, and the fresh-fed horses continued their circuit, until a depth of 600 feet had been reached by the drill.

It was late in Autumn and late in the evening. A grease lamp was burning close by the drill which the jaded horses were yet slowly moving, under the eye of the old man. Suddenly an explosive tempest of gas is heard in the well. Then a blast of wind, so violent as to raise the drills and poles more than half way out; and scatter widely the boards of the roof of the shed. Simultaneously the gas caught fire from the lamps, and a brilliant flame roared and towered aloft to the hight of a dozen yards. The old man, confounded with superstitious fear, rushed forth into the street wailing aloud ‘O Lord have mercy, have mercy!’ thinking of the fires of the nether world. All night it continued to burn, and part of the following day. But this strange phenomenon effectually discouraged Mr. Blunden, and he never again dared to resume his thankless toil. A year passed on, and the good old man (for he was sincerely pious,) closed his eyes on all earthly things. After his death, some citizens re-opened ‘Blunden’s well,’ and descending with the drill 475 feet further, they struck a vein of foaming brine, which, for a long time continued to overflow in a copious stream, until other wells had been sunk in the vicinity. At present the water rises within 15 to 30 feet of the surface, in all these wells, and steam-power accomplishes the remainder of the hight. Nineteen of these Artesian wells are already completed and two more were in progress during our visit; and it is remarked as a most singular fact, that of all these wells, the original one,

commenced by Mr. Blunden, still pours forth the *greatest* quantity of the *richest* brine! Poor man! He died in poverty, leaving inexhaustible wealth to his despisers!

THE SALT WORKS.

The average product of these wells is 25 gallons of brine per minute, each, and the average strength is $9\frac{1}{2}$ per cent of salt. The concentration of the brine and crystallization of the salt, is effected with great economy as follows:—A row of close covered iron pans, 90 feet in length, is placed over a furnace of equal length. The coal taken from the adjacent bank, supplies the fire. Here the brine is concentrated to the proportion of 18 per cent. salt, and then flows off into a series of vats, 100 feet in length each, and 1 foot in depth.—Here the brine is retained near to the boiling point, by the steam generated in the pans over the furnace, acting through long submersed copper tubes in these vats. From the first vat, where it deposes most of its impurities, and is concentrated to 28 per cent. salt, it flows into the second, and thence to the third, where the last of its sediment is deposited. In the fourth and fifth, are deposited the crystals of pure white salt, and the spirit liquid flows off into the river. As the result of one day's labor, each furnace thus produces (as we were informed) 575 bushels of salt. In 1855 the whole amount manufactured, was 948,000 bushels:—In 1856 it is calculated that the product will be 1,223,000 bushels!

And who buys all this salt? Why, the Kanawha Salt Mining Company *takes it all* delivered here at the salt manufactory. And what do they want of it? Do they not make salt enough of their own? Certainly; but that company can thus maintain their monopoly of the salt trade in the West, and compel the people to pay *twice* as much for this needful article, as they would otherwise be charged. Down with such monopolies!

OREGON WHEAT.—The *Oregonian*, published at Portland, thus mentions a bunch of wheat left at its sanctum:—"It consists of fifty-one stalks—all grown from seed—each having a large head, containing, on an average, over seventy large kernels of fine, plump wheat. The bunch stands nearly six feet high, and in its way, is a perfect curiosity. The wheat is of the common white variety, and the field from which this was taken was sowed during the middle of last winter."

History of the Authorized Version of the Bible.

A "Brief History of our Present Version" is given in a little pamphlet just published by the Rev. Francis Trench, Perpetual Curate of St. John's, Reading.

At the accession of James the First to the throne, in 1603, there were two versions of the Scriptures commonly employed in this country, namely, that of "Geneva," and "The Bishops." Much difficulty and inconvenience arose from the fact, that while the latter was the *authorized*, the former was the *popular* version. The king wrote to Bancroft, Archbishop of Canterbury, mentioning that he himself had selected fifty-four able men to be employed on a fresh translation of the Bible into the English tongue. Through him he also called upon the Bishops to encourage the learned men in their respective dioceses to send in their notes on any difficulties which they found in the Scripture to the two Hebrew readers in Oxford and Cambridge respectively, or to the Dean of Westminster, that they might be considered by the translators. Nothing is known with any accuracy as to the appointment of translators by the two Universities of Oxford and Cambridge; but that such an appointment was made, there is no doubt, as the king issued his command for this purpose. The king also arranged for their maintenance. Fifty-four persons were originally mentioned as the number appointed by the king for the translation. However, the names of forty-seven only are known as actually employed in it. The translators finally met at Oxford, Cambridge and Westminster, and were divided into two companies at each place, so that there were six in all. The following were the chief of the instructions given to direct their proceedings:

I. The Bible ordinarily read in Church, and generally called the Bishops' Bible, was to be the basis of the new version.

II. Proper names in the text and the old ecclesiastical words were to be kept as much as possible.

III. No marginal notes were to be allowed, further than to explain those Greek and Hebrew words which could not be conveniently expressed with their full meaning in the text.

Thus much for the contents of the new version. As to the mode towards effecting it, the following plan was adopted:

I. Each translator of each company was first to take the same por-

tion. Then all were to meet and compare notes, and through this mutual conference the best attainable version was to be made.

II. When each company had thus finished a book, a transcript of it was to be sent to each of the other five companies, so that every printed passage would thus be considered: 1st. By an individual translator; 2ndly. By a company numbering from seven to ten; 3dly. By the other five companies separately; and lastly, By a Committee of Revision, in case of any doubt or difficulty. This committee was formed of the chief persons of each company, who were to meet together for the purpose at the end of the work. The work was not absolutely commenced until the year 1607. It is considered that a very likely cause of this delay was the difficulty of obtaining funds for the requisite cost of the undertaking. The only means of obtaining them consisted in a contribution, asked by Bancroft, in his Majesty's name, from the bishops, deans and chapters.

The first company of translators met at Westminster, under the presidency of the well-known Dr. Andrews, at the same time Dean of Westminster, and afterwards Bishop of Chichester and Winchester, in which See he died. To this body was assigned the Pentateuch, and the historical books of Scripture to the Kings inclusive. The second company met at Cambridge, Dr. Livelie, the Regius Professor, having been appointed to preside. He, however, died before the commencement of the work; and, in consequence of the prominent part which, from the beginning of the proposal, was placed in his hands, it is supposed that the delay in its commencement may have partly arisen from his death at the most critical time. The portion assigned to this company consisted of the Chronicles, and succeeding books, to the end of the Song of Solomon. The third and fourth company met at Oxford; the first of these two divisions under the presidency of Dr. Harding, Regius Professor of Hebrew. From Isaiah to Malachi inclusive, was entrusted to them; and the four Gospels, the Acts, and the Book of Revelation, to the latter of these two bodies, which met under Dr. Ravis, then Dean of Christ Church. The fifth company met at Westminster, under Dr. Barlow, who had been just made Bishop of Rochester. The Epistles of the New Testament were their allotted work. And, finally, the sixth company met at Cambridge, with the Apocrypha for their portion.

The translations were finished in the year 1610. Two delegates were then appointed from Cambridge, Oxford, and Westminster, who met daily at Stationers' Hall for about three quarters of a year; and

from a statement made at the Synod of Dort, in 1618, it is known that six other persons met these six representatives, and thus formed a Committee of twelve for the general review of the work. It is not known who these six were; but it is supposed that they were six bishops appointed to the office by King James, and that Dr. Bilson, Bishop of Winchester, with Dr. Miles Smith, afterwards Bishop of Gloucester, finally revised the whole, previous to publication, prefixing the heads to the several chapters, and adding the preface.

Farm-Records Important.

EVERY farmer should keep a register or Journal made up daily, or at least weekly. It should contain the process adopted in the culture of his crops, such as the character of the soil selected for any particular crop, mode of manuring or fertilizing, the state of plowing, planting, sowing, the kind and quantity of seed per acre, the time of harvesting, and the quantity raised on any given area, together with the daily state of the weather, rainy, cloudy, fair, warm or cold, with the direction of the wind, with the first appearance and duration, and effect of destructive insects to crops, with any mode that might be adopted to prevent their ravages.

Such a journal, to refer to, would be to the farmer, what the compass is to the mariner. He would then know without relying on treacherous memory, all favorable results, and the causes that produced them. He could also see all the failures and mistakes, and would be likely to ascertain wherein success did not attend his efforts. If much of the success of the farmer is derived from experience, let me ask what is experience? It is knowing precisely the past management, in connection with *every thing* that had an influence upon results, and profiting thereby. Can he retain all this in his memory? certainly not. The very cause mainly productive of the results might not be retained; while other matters, having little or nothing to do with it, might be, and operate as a guide for the future, leading in a wrong direction. Ask many farmers at the close of the year, how much they have made. They can tell nothing about it. They do not know whether they are advancing or retrograding.—But ask him who keeps a journal, and notes down all his operations, and he can tell you whether he can afford to purchase his wife a new carpet, or send one of his daughters to a seminary.

C. B. RISING.

Ladies and Agriculture.

IN his Address at the Maryland State Fair, C. P. Holecomb gives us the following:

As showing the interest English ladies take in agriculture, I cannot but relate a casual interview I chanced to have with an English lady, in going up in the express train from London to York. Her husband had bought a book at the stand as we were about starting, and remarked to her that "it was one of her favorite American authors—HAWTHORNE." I casually observed, "I was pleased to see young American authors found admirers with English ladies," when the conversation turned on books and authors. But I said to myself pretty soon, "this is a literary lady—probably her husband is an editor or reviewer, and she uses the 'scissors' for him—at all events, I must retreat from this discussion about authors, modern poets, and poetry. What should a farmer know critically of such things? If I were only in those fields—if the conversation could be made to turn upon crops or cattle—then I should feel quite at home." I finally pointed out a field of wheat, and remarked that it was very fine. The lady carefully observing it, said, "Sir, I think it is too thin—common fault this season, as the seeding was late." "Those drills," she added, turning to her husband for confirmation, "can not be more than ten inches apart, and you see, sir, the ground is not completely covered—twelve and even fifteen inches is now preferred for the width of drills, and two bushels of seed to the acre will then entirely cover the ground, on good land, so you can hardly distinguish the drills."

If the goddess Ceres had appeared with her sheaf, or her cornucopia, I could not have been taken more by surprise. A lady descended on the *width of wheat drills, and the quantity of seed!*

"I will try her again," thought I, "this may be a chance shot;" and remarked in reference to a field of plowed ground we were passing, that it broke up in great lumps, and could hardly be put in good tilth. "We have much clay like this," she replied, "and formerly it was difficult to cultivate it in a tillage crop; but since the introduction of Croskill's Clod Crusher, they make the most beautiful tilth on these lands, and which are now regarded as among the best wheat lands."

The conversation turned on cattle. She spoke of the best breeds

of cows for the pail—Ayrshires and Devons; told me where the best cheese was made—Cheshire; the best butter—Ireland; where the best milk-maids were to be found—Wales.

“Oh!” thought I, “I was mistaken; this charming, intelligent woman, acting so natural and unaffected, dressed so neat and so very plain, must be a farmer’s wife; and what a helpmate he has in her! yes, a single bracelet clasps a fair rounded arm—that’s all.”

The train stopped at York. No sooner had my traveling companions stepped upon the platform, than I noticed they were surrounded by half a dozen servants—men and women—the men in full livery. It turned out to be Sir John and Lady H. This gentleman I learned was one of the largest land-proprietors in Berkshire, and his lady the daughter of a nobleman, a peeress in her own right; but her title added nothing to her—she was a noble woman without it.

It is a part of our task to excel in horticulture, in which female taste and skill must aid us. We must embellish our homes; we must make them sweet and pleasant homes. The brave old oaks must be there, the spacious lawn with its green sward, and the fruit orchard, and the shrubbery, and the roses, and the vines festooned and trained about the balconies. Even the birds will think *that a sweet home, and will come and sing and make melody, as though they would “teach the art to imitative man.”*

Such a home will be *entailed* to our children, and to their children—not by statute laws of entail, but by a higher law, the law of nature—through the force of sympathy—the associations of childhood.

“The orchard, the meadow, the deep tangled wildwood,
And every loved spot which our infancy knew.”

These will hold them to it—these early memories—which we should take care to deepen with a binding and indissoluble tie.

Talk not, then, O you fathers and mothers! to your sons, of forensic fame—of senatorial halls—of the distinction of professional life—or the gains and emoluments of commerce. It is not for our class, surely, to furnish more recruits to this hazardous service in which so many of our country have already been lost—lost to any useful purpose of living—themselves miserable from hope deferred that makes the heart sick—or disappointed of the objects of life, have become overwhelmed with bankruptcy and ruin. *Give to your sons the pursuit of WASHINGTON, who gloried in being a FARMER.*

The field and the council chamber he sought from duty ; but his farm at Mount Vernon, where he wisely directed the plow, from choice and pleasure.

“ Wide, wide may the world feel the power of the plow,
And yield to the sickle a fullness delighting ;
May this be our conquest, the earth to subdue,
Till all join the song of the harvest inviting,
The sword and the spear
Are only known here
As we plow, or we prune, or we toil void of fear ;
And the fruit and the flower all smile in their birth,
All greeting the FARMER, THE PRINCE OF THE EARTH.

GLASS MILK PANS.—L. V. Bierce, of Akron, Ohio, has been experimenting a little with milk in glass pans, and furnishes the result to the *Ohio Farmer*:

General Bierce says:—“I took the milk of the same cow, milked at the same time, and divided it equally, putting half in a glass pan, and half in a tin pan, and placed them side by side. At the expiration of twenty-four hours, the milk in the tin pan was sour; that in the glass pan sweet and good. At the end of twelve hours more, that in the tin was thick *clabber* or *lobbered*, as the Yankees call it, and that in the glass *began* to turn.

From this, I believe glass pans will preserve milk one third longer than tin pans. Will our dairymen try it?”

- **COULDN'T TELL THE DIFFERENCE.**—A loafer got hold of a green persimmon, which (before they are ripened by the frost) are said to be the most bitter and *puckery* fruit known.

He took the persimmon outside the garden wall, and commenced upon it by seizing a generous mouthful of the fruit, which proved to be in a state to frizzle his lips and tongue most provokingly.

“ How do you like it? ” inquired the owner of the garden, who had been watching him.

The saliva was oozing from the corners of the fellow's mouth, and he was only able to reply:

“ How do I look, nabber ? *Am I wisslin' or singin'?* ”

The Calliope.

Several years ago, Mr. Stoddard, a mechanic of Worcester, conceived the idea that the bells, by the vibration of whose thin edges the 'steam whistle' is produced, could be so arranged as to render accurately the 'diatonic scale,' in music; and after experimenting for some time he succeeded in constructing a series of bells on which the seven notes of the octave could be played by steam.

The desideratum was now to produce a valve sufficiently delicate to correspond with the touch of the performer on the keyboard of an organ.

This has finally been effected, and the inventor has taken out a patent, not only for the application of steam to a series of musical bells, but also for a new delicate 'valve' for the admission of the steam into the bells.

The Calliope, then, as now exhibited, consists of a long series of bells, varying in size and length according to the tone to be produced and running through four or five octaves.

The steam is admitted to these bells, by means of a long series of corresponding tubes, inserted in a small cylinder connected with the boiler. A small wire connects the valve in each tube with a key in a 'finger-board,' like that of a piano-forte or organ; and this in a steamboat may be placed in the ladies' cabin, while the bells themselves are in a distant part of the boat.

A full chord of eight notes may be struck at once, as upon the organ; and it is needless to say that the effect of such a combination of musical tones is remarkably grand and sublime. Think of a steamer with one of these 'mighty musicians' on board, plowing its way up the Mississippi, and wakening those vast solitudes with its trumpet breathings!

Upon the ocean, the Calliope can be heard for ten miles, discoursing the 'Star Spangled Banner' and 'Hail Columbia,' with accuracy. The action of the valves is so nice and perfect that the quickest tunes, as 'Fisher's Hornpipe,' 'Money Musk,' and 'Mary's Wedding,' can be performed with ease, and all the accompanying parts distinctly given.

The 'Glencoe,' between New York and Albany, has one of these instruments on board, and it is said the boat has doubled her number of passengers by means of it.

The Calliope is capable of being played with a crank, as a common hand organ; and in this form will doubtless take the place of the shrill steam whistle on the railroad; but its greater utility will be, it seems to us, as a ‘signal’ between our steamships on the ocean; and as a ‘diversion’ to the passengers on their voyages. The consumption of steam by it is said to be quite inconsiderable.

Bottom of the Atlantic

The steamer Arctic sounded the Atlantic all the way across, finding the greatest depth 2,070 fathoms, (more than two miles.) The bed of the ocean, in the section traversed by the Arctic, is a plateau, as already announced by Captain Berryman, who had twice before sounded across the Atlantic. The bottom in the deeper part is a very fine mud, of a mouse-gray color, so soft that the sounding instruments frequently sunk several feet into the mud. They brought up specimens of the bottom at every sounding, in quills which were attached to the end of the sounding instrument. Toward the shores on each side, this mud changes into a fine green ooze. No other substances were met, no rock, nor any thing that might prove fatal to a telegraph wire. There seems to be now nothing to hinder the great work, to unite Europe and America by means of a telegraph wire; an undertaking so grand that few thought it possible. The whole distance across was found to be 1,640 sea miles, from St. John, N. F., to Valentia Harbor, Ireland. The greatest depth was found nearly in the center between these two places. The profile of the Atlantic bed on this route, is of easier grade than many of our railroad profiles.—*N. Y. Journal of Commerce.*

ATHEISM.—What can be more foolish, says Jeremy Taylor, than to think that all this rare fabric of heaven and earth could come by chance, when all the skill of art is not able to make an oyster? To see rare effects, and no cause; a motion, without a mover; a circle, without a center; a time, without an eternity; a second, without a first; are things so against philosophy and natural reason, that he must be a beast who does not assent to them. The thing formed says that nothing formed it; that that which is made *is*, and that which made it *is not*. This folly is infinite.

WHEAT.—We extract the following from the official report of the products of the Universal Exposition of France:

Since 1849, France has been able to supply England with more wheat than Russia or the United States, seeing that the latter have only furnished her with 1,789,697 hectoliters, and France with 2,151,866 hectoliters.

In 1850, the exportation of wheat from France surpassed the sum of 60,000,000f., and attained to 70,000,000f in 1851; whilst our exports of agricultural food products of all kinds amounted in 1851 to the value of 258,205,352f, and in 1852 to that of 285,960,083f. If this movement has slackened in these three latter years, the reason of it is the rise in the price of all kinds of provisions, caused by the failure of crops; but the experience of preceding years is sufficient to show that the agricultural products of France are sought for, and take their place proudly in the greatest markets in the world. The great encouragement which French agriculture has gained this day will tend to favor and develop this movement. It is also the most powerful resource for us to fall back on, in those years when the crops are damaged by the intemperature of the seasons. France has raised in good years 97,000,000 hectoliters of wheat, which represents the sustenance of 32,000,000 of individuals; and there are, unfortunately, more than 4,000,000 of our compatriots who are not in the habit of eating bread.

POINTS OF A GOOD MILCH COW.—The London *Farmers' Magazine* gives the following characteristics of a good milch cow:

"The head should be small, but rather long and narrow at the muzzle; the eye small, but quick and lively; the horns small, clear, bended, and their roots at considerable distance from each other; neck long and slender, and tapering towards the head, with little loose skin hanging below; shoulders thin; hind quarters large and capacious; back straight, broad behind, and joints of the chine rather loose and open; carcass deep, and the pelvis capacious, and well over the hips, with fleshy buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad, square, stretching forward, and neither fleshy, low hung nor loose; the milk veins large and prominent; teats short, pointing outwards, and at considerable distance from each other; skin thin and loose; hair soft and wooly; the head, bones, horns, and all parts of least value small, and the general figure compact and well proportioned."

Exhausting the Soil.

We read in America much of the "exhausted soil of Europe." I have seen none of it. So far from being exhausted, I think the soil of Europe is now better than ever, and that it is made to yield larger crops than ever. How can soil be exhausted, which has for centuries, received plentifully of manures, and manures made upon the best possible systems. I think a little reflection, coupled with a proper observance of European agriculture, must lead to the conviction that the soil of Europe is constantly receiving more back in manure, etc., than is taken away in products. Of all farm products, the atmosphere and rains furnish the larger quantity of its component parts, and whenever a proper system of manuring exists, the ground must become constantly enriched.

In Europe, manure is the ever-present idea of the farmer, and by gathering all offals, and making manure in any conceivable way, he does not only by green manuring, such as plowing clover under, but by stable, factory, street and dwelling manure, take good care to return to mother Earth the rental she requires, and to do it without grudging, and with compound interest. The soil is only there exhausted where crops are raised which are entirely removed, and of which nothing is returned to the soil—for instance, tobacco. This is very little the case in Europe. The fine wheat crops which smile upon the traveler, as he is rushed past them by railroad speed, would be an impossibility, if the idea of exhaustion were true. The meadows, too, which are mown thrice every year, and each time give a good crop, and have been so mown for ages, contradict this exhaustion theory. No! the European farmer and his land are always on good terms with each other. The man yields good husbandry, and the land yields good crops.—CHA'S REEMELIN.—*Ohio Farmer, September 20.*

MIRTH is like a flash of lightning, that breaks through a gleam of clouds, and glitters for a moment; cheerfulness is like sunshine, that keeps a kind of daylight in the mind, and fills it with a steady and perpetual serenity.

To make stars visible at noon—take a pair of skates, and while cutting a spread eagle, come "ker swallopp" on your head.

The Sensitive Plant. [ACACIA MIMOSA.]

In its native country, Brazil, this singular plant grows to the height of seven or eight feet, and is armed with short recurved thorns; the leaves grow upon long foot-stalks, which are prickly, each sustaining two pairs of wings—from the place where these are inserted come out small branches, having three or four globular heads of pale purplish flowers, coming out from the side on short peduncles. Naturalists, says Dr. Darwin, have not explained the immediate causes of the collapsing of the sensitive plant; the leaves meet and close in the night, during the sleep of the plant, or when exposed to too much heat in the day time, in the same manner as when they are affected by external violence, folding their upper surfaces together, and in part over each other, like scales or tiles, so as to expose as little of the upper surface as may be to the air; (many of the acacia do this which are not otherwise sensitive;) but do not, indeed, collapse quite so far, for when touched in the night, during their sleep, they fall still farther, especially when touched on the footstalks, between the stem and the leaflets, which seem to be their most sensitive or irritable part. Now as their situation, after being exposed to external violence, resembles their sleep, but with a greater degree of collapse, may it not be owing to a numbness or paralysis consequent on too violent irritation, like the faintings of animals from pain or fatigue? A sensitive plant being kept in a dark room till some hours after day-break, its leaves and leaf-stalks were collapsed as in its most profound sleep, and on exposing it to the light, above twenty minutes had passed before the plant was thoroughly awake and had expanded itself. During the night the upper surface of the leaves are oppressed: this would seem to show that the office of this surface of the leaf was to expose the fluids of the plant to the light as well as to the air. If kept in the dark it fails to expand during the entire day.—Although easily grown by any one, simply requiring to be treated as a tender animal, there is no plant we grow requiring so little trouble, that excites such a lively interest, and been seen by so few people, as this sensitive plant. Dr. Darwin thus characterizes this plant in verse:

“ Weak with nice sense, the chaste Mimosa stands,
From each rude touch withdraws her timid hands ;

Oft as light clouds o'erpass the summer glade,
Alarmed, she trembles at the moving shade ;
And feels alive through all her tender form,
The whispered murmurs of the gathering storm,
Shuts her sweet eye-lids to approaching night,
And hails with freshened charms the rising light."

[Country Gentleman.

EGYPTIAN, OR MUMMY CORN.—Perhaps the most wonderful and interesting specimen of the earth in the Horticultural Exhibition recently closed, was some *Egyptian Corn*, raised in the garden of Gen. Wm. H. Sumner, of Jamaica Plains, and kindly sent by him for exhibition, thus giving thousands an opportunity of seeing one of the greatest curiosities within our knowledge. The seed from which this corn was raised, was taken from the *folds of cloth wrapped around a mummy three or four thousand years ago*, and wonderful as it may seem, after being entombed for so many centuries, like a resurrection from the dead, it springs up in new life and vigor. It is undoubtedly the kind of grain for which Joseph's brethren went into the land of Egypt—the same ‘corn’ of which the Bible speaks. It is luxuriant in its growth, and the heads resemble wheat, but are very much larger, forming in inverted conical clusters as large as the closed hand; the kernels are large and very sweet to the taste, and the stock and leaves are similar to our Indian Corn. There seems to be no reason why it may not become a valuable addition to our cereal productions, and thanks are due to the gentlemen who are multiplying it and bringing it into notice.—*N. Y. Evening Post.*

VEGETABLE EGGS.—We are indebted to E. Sanborn of Andover, for specimens of some queer productions of nature. They are called vegetable eggs, and look for all the world, in shape, size and general appearance, like Shanghai, or goose eggs. Dr. Sanborn informs us that the seed came from the Patent Office at Washington. The plant is a new production, and a bright ornament in the garden. If planted by a shrub or tree which is not more than fifteen feet high, the vine will run so as to nearly cover it with these apparent productions of the Shanghai, or goose. Dr. Sanborne has raised a large number of these eggs, and will gladly distribute them wherever they will be appreciated.—*Boston Journal.*

RYE.—Rye is cultivated in almost all the climates on the globe, its northern limit being about 26 deg. It is used for distilling as much perhaps as for bread.

Of the common rye so long and so widely cultivated, we need not speak, but it may not be known to all our readers that a new kind of rye, called the *multicole*, was introduced to our agriculturists by the Commissioner of Patents in 1845. It has proved itself a good variety, bearing a heavy crop in our most northern latitudes.

The Siberian is also remarkable for the quantity both of its stalk and grain, and coming from a cold country will do well in any part of the United States. With all kinds of plants it is always better to remove them toward the south than toward the north.

The proper soil for rye is a light sandy loam—but it will grow in any soil that is properly loosened, and is not too wet.

Rye makes a very good fodder for cattle, and for selling has one great advantage: that it comes into use earlier in the season than any other grain crop. It may also be used as a green manure.

Rye should have but a very shallow covering, not exceeding an inch, and less than this is better.—*Plough, Loom and Anvil.*

THE INFLUENCE OF THE BIBLE ON COMMUNITIES.—The Bible, for more than a thousand years, has gone hand in hand with civilization, science and law. It has never been behind the age; nay, it has always gone before it, like the pillar of fire before Israel in the wilderness. Its great principles of order, submission, and freedom, have been the stability of states. Its presence among them has been a saving ark, a refuge, and a rest. How far, even beyond the present time, gleams the light of that wondrous book, which describes and promises true freedom and fraternity, that divine and universal brotherhood of which the nations only dream. In a word, the Christian revelation is the true salt of the earth, the vital force of communities and states. It alone regenerates. There never was found, in any age of the world, says Lord Bacon, either religion or law that did so highly exalt the public good as the Bible.

Dedication of Polytechnic Hall.

At the earnest solicitation of many of the patrons and friends present, it was thought proper to publish in this number of the CINCINNATUS the address entire of F. G. CARY, Principal of this Department, and to prevent its crowding out important current matter, this number is enlarged.

Address Delivered at the Dedication of the New Hall of Science, connected with the Agricultural Department of "FARMERS' COLLEGE."

SUBJECT.—INDUSTRIAL UNIVERSITY EDUCATION—ITS MISSION.

WE read from the prophetic page that a time shall come when the “sword shall be beaten into the plowshare, and the spear into the pruning hook, and when the nations shall learn war no more”—when the pomp and pageantry of the battle-field shall be exchanged for the less ostentatious display attendant upon the quiet pursuit of husbandry. We may not live to see the dawn of that happy day, but the cheering anticipation—the animating hope and the *sacred assurance* that such a time shall come, is calculated to inspire courage even in the darkest hour. That it may speedily be ushered in, is the ardent prayer of your speaker. To hasten its approach—to prepare the way for its coming—may we all bear some humble part. We have assembled at this hour not to celebrate a nation’s jubilee, not to commemorate any martial achievement; we have no triumphant banners to display, nothing to lend brilliancy to a *pageant*, yet we trust that you feel that you have come on no mean errand, and that the occasion of the hour will not be without a meaning and a moral. Many of you have been recently in attendance upon the Jubilees of a nation’s husbandmen—our agricultural Fairs. The results of another year’s toils have been exhibited, and the products of our innumerable beautiful hills, fertile valleys and broad prairies, have passed under review. These yearly reunions are fraught with interest and profit to the agricultural community. And if there is anything that should call for a nation’s paeans—a nation’s rejoicings, it is the fact that the earth has yielded up her increase without stint, and that famine and pestilence are not in our prospective.

By these reunions, the feeble have been strengthened and encouraged, the ignorant have been enlightened; and those who would look upon our husbandmen as their drudges and serfs, and regard their pursuit as menial, have gone from these scenes appreciating more highly their calling, and have seen in it the elements of our nation's wealth, our nation's prosperity, our nation's glory.

It requires no great grasp of the intellect to perceive when harvests are abundant, health, contentment and happiness follow in consequence. If these be scant, or from any cause are cut off, famine and pestilence, misery and death throw around us their sable pall; the hand of the artifeer is paralyzed, the din of the workshop is still, the sails of commerce are furled, the business of a nation is deranged, and its citizens are bankrupt. Warehouses, ports of entry, canals, railroads, the entire machinery of a nation's commerce avail us nothing, unless it be to transport the pale survivors—reckless of the ties which bind man to his birthplace, regardless of storms, and of shipwreck—to a land of plenty and of bread.

The earth itself is not more the foundation on which we stand, than the cultivation of the soil is the foundation of all national existence, of all political stability, all social and mental progress. The agriculturist feeds, clothes and shelters the world; and it is a work of supererogation in this day, to accumulate evidence to show the magnitude and value of this pursuit; argument can not enhance its claims, or eloquence, in its most select phrase, add to its adornment. Let it be ours then, on the present occasion, to honor this noble pursuit, and as far as possible place its higher attainments on an equality with those of the professions, and learn the only way by which it can be permanently and truly elevated, as it must and will be when the prophecy quoted shall have its fulfillment, and men seek through it that position—station, which they now do on the hard fought field, where the glory of the vanquished enemy is the prize sought by the general, and the number slain the measure of his prowess.

We assert, then, that no prestige of antiquity can throw around this calling its own proper dignity, and give to it distinction or eminence. It has this in classic story. We read of a Cicero prosecuting his agricultural labors at his own Tuseulan Villa—of a Cato, at his farm, and of a Cincinnatus at his plow; while the great naturalist, Pliny, in his beautiful letters, prides himself on his vineyards. It has been the theme of the poet, the philosopher and the sage.

As a pursuit, it dates back to a patriarchal age; indeed, to the time when Adam in the garden dressed the first budding plants, and watched the first blooming rose. There is no reason, if antiquity can impart dignity, why this should not be the most honored, the most honorable. Further then, we assert, that it is not in that iron necessity which compels all trades, arts and professions, to look to this calling for food, for raiment, and shelter, that will place the farmer in his true position, and give him his own proper dignity; for we have seen a nation's famishing millions empty their treasures at his feet, and we are assured that his products are necessary to our very existence; and that he possesses the very elements of a nation's prosperity, a nation's progress; yet it fails to do him honor; his calling is associated with sweat and toil, with hard hands and small compensation. Show, and luxury, and leisure are far from him, and these the multitude admire and covet in preference. The farmer is often the humble servant of the youthful aspirant after fame; and he is often deemed most worthy of his vote to office and to honor. No, 'tis not in any or all of these combined, to give to the agriculturist the elevation, the dignity, to which he should aspire. But it is in the proper development, the proper cultivation of his mind. 'Tis the talent brought into his business, 'tis educated labor that must impart dignity. There never was a truer saying than that knowledge is power. The knowledge of our physical being is power; the knowledge of our mental capacity is power; the knowledge of natural laws, of the trades we practice, the tools we handle, the earth upon which we tread; its formations and productions is power; in short, it is mind, developed mind, that governs the world. It is to developed, educated mind, that the world is indebted for all that is called progress. The soul is the urn that scatters beauty over all creation. The forest and the lake are lovely because the thinking soul hath breathed upon them.

"'Tis not in the light of yonder setting sun that beauty dwells; sublimity tabernacles not in mountain peaks, nor dark and gloomy depths; nor yet soars on tempest's wings or lightning's fiery brow, but in the reasoning, thinking spirit—*the Mind.*" This mind which is no royal prerogative, but the common endowment of the peasant and the prince, when developed by education, when stored with knowledge, exceeds in grandeur the whole material universe. For no part of it can reason, think or feel; not a star that twinkles in the blue vault of night, nor the sun with all its attendant planets; yet these are

the proper prerogatives of mind. They can not write the name of their maker, yet the child of seven can. The sun and moon and stars shall cease to number seasons, days and months and years, and wax old as a garment—shall finally perish; but the thinking, reasoning soul, never. 'Tis this same mind expanded by knowledge, elevated by thought, its energies directed aright, that must substantially dignify any calling or pursuit—*nothing else can.*

'Tis the directing then of the mind in the channel of this great, this necessary, this all important pursuit, that we appear here at this time to perform the interesting services of this hour—of this occasion; and present to your minds something of the manner in which this so desirable an end appears to us attainable.

Education then in general gives one a knowledge of his powers; and the very excitation of thought is the revelation of the soul to itself. The power of thought, inactive, dormant in the mind, is as the germ in the acorn, unsubjected to its own appropriate excitants wrapped in tripple folds. For the want of such excitants, thousands of really talented men, with true native energy, have frittered away their lives in obscurity.

Education again gives its possessor the fullest use of his faculties, and fits the mind successfully to grapple with difficulties, and surmount obstacles, whether it be on sea or land; prepares him to scale the mountain's summit, or dive deep in ocean depths; it enlarges and ennobles the faculties; it is the divining rod that points unerringly to subterranean mines—the all powerful key that unlocks the treasures of darkness, and renders the peasant, with this diadem, more noble oft than crowned kings; for it gives eyes to plan and hands to execute.

Many, indeed most, are ready to admit all this in the abstract, and concede that to some, education—a liberal education—is proper, is indeed necessary, but to me, and mine, it would be a waste of time and what is to me more valuable, money. "We have gotten along very well without it, especially so much as you would urge as necessary, much better than many that have enjoyed superior advantages." "It is well enough for the *Lawyer*, the *Doctor* and the *Preacher*, and perhaps the *Teacher*; but as to the *Farmer*, while it may be well enough, it is a work of supererogation, and may very well be dispensed with." It is all important that he should read, write and cipher; this prepares him for the current literature of his studio, the *Almanac* and *Newspaper*, and this is quite sufficient; while, comparing himself with

others around him, he deems himself quite learned, for he finds many that can neither read nor write.

We oppose his creed, *in toto*. This is but the inculcation of the dogmas of the dark ages—that the priest can think, and vote, and believe for the people. For what were your minds given you if not to improve to the highest extent of which they are capable? If they are of inferior order, even that gives you no license to indolence or neglect. Abandon such ground at once as untenable, and unsound, and fit only to be uttered by the Pope of Rōme, and not to be countenanced in a free republic. True, this has been the teaching of many; but if you trace its origin, you will find it to have come from the oppressor, be he prince or pedagogue, the emperor Nicholas or one of his prototypes.

Again, we often find in pressing the importance and advantage of a more thorough and liberal system upon the great farming class of our community, they will point to those who have enjoyed the advantages of high school instruction, it may be in some of our best colleges, even to the bearing away the honors of their Alma Mater, and their class who are incapable of securing a respectable livelihood, mere moths and drones of society. All this proves nothing, or it rather proves too much, for it would be an argument against all education. The facts stated are too often true; for we have seen many who have been thrust forth upon society as helpless as unweaned children, unable to stand alone, barely able to creep along in hopeless dejection, who, looking around with a vacant stare upon the movements of society, wonder what to do with themselves. But all this shows an inherent defect in the system of education, and not in education itself, a system which we deprecate, a system which we are endeavoring to correct. The system pursued goes upon the principle that all who are educated should follow one of the learned professions, consequently must not work, consequently must be fed with a silver spoon, often at the cost of some body else, either a rich father, or a wealthy community where every thing is furnished ready to their hand. The deductions of the farmer from the facts before him are logical, and the whole train of reasoning proceeds altogether upon the false premise, as to the object and design of an education. It never ought to have been the object to educate the few to rule the many, either by the greater ability thus acquired to cheat, lie, or steal, or in any more honorable way obtain more for service rendered, or duties performed, than was justly due, and thereby, as many

have done fare sumptuously every day, and he clothed in purple and fine linen because, forsooth, it has been their privilege to gain better the command of the powers of their own minds, and control over others. Thus it has happened that many decry liberal learning because of the great power which it affords to do mischief, and argue from its abuse that it would not only be injurious, but calamitous, to extend to all, its benefits.

There, says the farmer,—pointing perhaps to some of these young sciolists who have just emerged from academic shades *thoroughly educated*, in common parlance, but if distinguished at all, distinguished for nothing else than that they have become flippant talkers, declaimers of other men's thoughts,—is a fair specimen of your collegians; “they must be held up by the chin;” they are entirely unable to make a living. And it is true they find the world in which they are to live and act a very unclassical sort of place, and that they need a more substantial sort of food than Greek roots and Latin verses. The better part of them now turn their attention to something useful, something to fit them for the busy bustling world they are about to enter. And how often does the faithful student commence this preparation with emaciated frame and shattered constitution, with habits anything but favorable for present duties. And it should be a source of deep regret that the errors of this system are extensive and wide spread, while but a feeble response is had to any change among those who have been nurtured, and trained according to its principles and no change from any other quarter can reasonably be expected, such power and influence has the prestige of antiquity and established reputable usage; and hence, any reform must be slow, and must necessarily encounter from prejudice and pride, strong opposition; and while we would not be ranked among the number of those who would demolish the noble temple of science and literature which our fathers have reared, or remove one stone from the building, we are prepared to say, that much that is performed within its halls needs essential modifications—and here, too, we would be conservative—we are neither contemners nor depreciationists of classical learning, or any kind of valuable learning. We reject the dogma that a man can lay no claim to scholarship unless he has gone *through* or *over*, what is commonly denominated a classical course, that is, that he must be a classical scholar, or no scholar at all, and entirely unworthy collegiate honors. Further, we are prepared to say with confidence that such a being as lays claim to so

much, is entirely too narrow for these times, and for this age. The platform, to use a word common in our political vocabulary, savors of the one plank kind, and that a very narrow one. We object not that our course is too extensive, by no manner of means, but that it is not extensive enough. There are men to whom classical studies and pursuits are as the breath of life, and such greatly improve literary and classical taste, and add refinement to our morals and literature; and I trust the day is far distant when these long revered and cherished authors of antiquity—now made *absolutely necessary* to obtaining a diploma from any college in the United States—shall be discarded, or left out of a liberal course of mental training and mental discipline. To a large class, such attainments are necessary—to professional men and teachers, especially so—beneficial would they be to all classes, yet absolutely necessary to eminence, to but few; and no proposition can be more conclusively evident than that our colleges as now organized and conducted, are so far from being thorough, that the tendency of the course pursued is to the extreme of superficiality, and serves but to degrade, rather than exalt, classical or any other kind of liberal learning. The system now uniformly adhered to, was devised and adopted in a less enlightened age. It was well devised, and has been productive of incalculably beneficial results. It was planned for the benefit of the few—it is still prosecuted for their highest good; for those who especially aspire to professional eminence, and the opportunities now offered in our better institutions have been, and are still, almost exclusively preoccupied by those who would qualify themselves for professional life. To those who would qualify themselves in an eminent degree for any of the industrial pursuits, there are no opportunities for so doing, except through the same routine. It need not be said that these institutions have their scientific departments, for any young man would be wanting in self respect, who would toil for six or eight long years, and be told at last he was unworthy a diploma; or what is equivalent, that he must take a certificate of less value than the Diploma, which the youth of no ordinary ability of sixteen bears away merely because he has preferred to take Latin and Greek.

It does not answer the objection to say that he can prepare himself afterwards for such industrial pursuits, as the professional man does, and that he is unprepared to prosecute science successfully without it. We freely admit that the more preparation the better: but a man must stultify his intellect, and especially his reason-

ing powers, if he would, by this course, or by the course which has been pursued, think of waking up the great agricultural community, or any other department of society, while even the present course is deemed more than sufficient in its requirements, even for professional life, and that too, while our colleges, theoretically and practically, undervalue the attainments for any of the industrial pursuits, and especially that of Agriculture, which is the one pre-occupied by far the largest number. We rarely see the collegian resort to the plow or the workshop; and the prevalent feeling among the learned and unlearned alike, is, that if his talents are so employed, they are effectually lost to the world, buried in a napkin, while at the same time there could be no greater mistake. Yes, the young man, often ambitious of distinction, entering college with the full intent of becoming a scientific farmer, by the time he has reached his junior year, and often before he has entered college, has acquired quite a disrelish of his father's pursuit, and the one of his own choice, and often has he become so disgusted with its menial character, as almost to be ashamed of the mother who rocked his cradle, and the rough exterior, the bronzed vizage, and hard hands of the father—the earnings of whose toil and sweat he is enjoying without gratitude, and almost without feeling—his eye directed, as he supposes, to some lofty station—made so by the perverted notions he has imbibed—by the false views inculcated.

Public sentiment is doing much at the present time to modify and mold anew the organization of our colleges, in regard to their course of study, and it is to be feared, often greatly to their injury; in many cases, by frittering away to a mere smattering the studies to be pursued, and by introducing others esteemed more practical; for example, numerous modern sciences, thus multiplying greatly the number of subjects to be studied, or to use a more appropriate term, *gone over*, without prolonging the time for their prosecution, thus rendering superficiality of attainment inevitable. It now is a little of everything, and not much of anything, and the consequence is nothing.

How idle it must appear to every reflecting mind, that any considerable number of the subjects laid down in almost every collegiate catalogue can be mastered, or great proficiency be attained, in the brief period allotted. And still it will be found true, as a general rule, that the students in our colleges, notwithstanding this great multiplication of subjects, graduate at an earlier period in life than

they did twenty years ago. Formerly, what was studied, was canvassed thoroughly. In classical literature the student must be an adept not only in translation, but in composition, both in prose and verse. Hence, if discipline was the chief object, it was effectually secured; if information, they stopped not at half-formed ideas, and partial sketches of the history and philosophy of other days, as they now do. As these studies are now pursued, not only does the mind acquire nothing valuable, but is positively disqualified for subsequently making any valuable acquisition, by reason of the habits formed altogether averse to successful, profound mental effort.

Neither would we subscribe to the notions generally entertained of a practical education, by the advocates of radical reform. That is to make the chief end of education consist in its availability of making dollars and cents more speedily and surely. This sentiment, while it is gaining ground, is much to be deprecated, and is productive of like evils to the cause of profound erudition. While it is admitted on all hands that education should be practical—and we would strongly defend the position—it is well perhaps to define what we mean—what forms of knowledge are practical, and what are not.

Some seem to think nothing but mathematics, and the sciences based upon them, are practical; others, that Greek and Latin and metaphysics are in the highest degree so; and others still, and by far the largest number, admit into the catalogue of the practical, only those meager forms of knowledge that prepare one for the counting room, and enable him to reckon discount and interest accurately, and facilitate those processes by which the pocket may be filled with money. We will state here what we conceive to be the truth on this point, clearly and unequivocally. It is as follows:

All forms of knowledge, whatever, are truly practical, when imparted to the right persons, at right times, and in right proportions; and when not so imparted, no knowledge whatever, is truly practical, or eminently useful. Under this simple and obvious rule, then, there can be no kind of knowledge that is not truly useful and practical to man—no starry heights of immeasurable space above, no profound geological depths beneath, no sublime circuits and harmonies of astronomical worlds and spheres, no minute dancings of microscopic insects and chemical atoms, no voice of eloquence or of song, no utterance of cultured or barbarous human tongues, from Adam's day to ours, no action, attribute or accident of man, beast, bird or fish, plant, tree, or flower, that will not yield true practical wisdom and

knowledge, to him who needs and knows its use. But to undertake to give one and the same man all this, is to attempt to educate a God and not a man; while the attempt to give him a smattering of the vast whole, without any clear, definite and practical knowledge of any part, will end only in the production of a pedantic fool—mere talkers of commonplace, and slaves of extant custom and authority, who owe the silly influence they exert on human society to their Braminical caste, and the deplorable ignorance around them, far more than to any real and truly practical wisdom, or superior mental or moral power of their own.

Human life is so short, the powers of the human mind are so limited, that it is only a mere point in this vast field of infinite knowledge that the brightest genius can fully explore, much less reduce to its ultimate uses and ends. Among civilized and enlightened men, there must ever be a division of labor and of pursuit. This division will be based on that diversity and aptitude which God has enstamped on every human soul, and which no artifices of teachers or schools can ever efface. To attempt to force the same modes of culture and development upon all human minds, is as impracticable and absurd as to attempt to drive them all into the same occupations and pursuits, or to compel all animals to eat straw with the ox, or spout water with the whale. The Esquimaux can not live on oranges, nor the West Indian on whale oil; yet the laws and habits of the mind are, if anything, more various and inflexibly diverse than those of the body, and require more varied adjustments for its appropriate nurture and development. This leads us to another remark, which is: *That a knowledge of things directly connected with one's own individual interests*, is not only practical for each individual, but it also furnishes the only sure and proper basis of his own highest mental and moral discipline and development of mind. The allotment of these various pursuits of life is not a Divine blunder—intended to consign nine-tenths of the human race to brutal ignorance, with scarce mental capacity enough to feed themselves—and produce another—mis-called educated class—all nerves and brains, with no bodies or souls—particularly skilled only to tyranize over, and defraud and rob their supposed inferiors by the varied stratagems of law, of custom, and of faith; but it is the highest manifestation of the infinite God and Father of all, adapted, when rightly understood and improved, to serve not only the broadest freedom, and the highest, and purest faith, but also the most perfect moral and mental development of all

classes and conditions alike. An educated class is a barbarism and a heathenism, but an educated race, is the only true christian idea; and the lowest end worthy a christian man, or consistent with the law and will of God; and this brings us to the application of the principle embraced in our plan, in the establishment of our new department. A department which looks to the education—the liberal education—of the leaders, at least—of those engaged in the most important, the most indispensable, and the most ancient pursuit in existence—and which, from its very nature, and the wants of society, must embrace the largest number, and that too, of the most moral and respectable, and why not the most enlightened, citizens?

In securing the liberal development of the largest possible number of this class, we most effectually secure the highest elevation—intellectual and social—of the entire race.

That there are certain indispensable elements of knowledge, alike common and needful to all, and which all should acquire in the same classes and schools, is freely admitted; and the only question of difficult solution here, is, where this common culture should end, and the routine of a specific and individual culture commence. That all men should learn to use their hands, feet and eyes, all will admit; but it by no means follows from this, that all should learn alike to paint, to fiddle and to dance. In like manner, all should learn to read and write—for reading and writing are the indispensable instruments—the very eyes and hands—of all subsequent processes in mental culture. But it no more follows that all should become expert linguists—especially in foreign tongues, or adroit debates and harangues—than as before, that all should become expert dancers and fiddlers; and how strange it is, that to such attainments, almost the only premium is now offered. There are also certain general scientific principles and departments of knowledge, which are found equally needful and useful to all; all of which should be taught, and will be taught, when our institutions of learning are what they ought to be. But after passing the threshold of the great temple of science, the inclinations, capacities, and consequently the pursuits of men, diverge through all the endless labyrinths of human occupation, and human endeavor; and here the hand that affects successfully to guide, should equally diverge. This is indicated by a common necessity overhanging and overmastering all alike, oppose it as we will. Our system of education should fully meet this exigency, and should be sufficiently comprehensive to afford to

all, facilities for the fullest mental development of which mind is capable.

By appointment, we have come here to day to dedicate this Hall of Science to the great objects for which it has been constructed, which in a single sentence, is: for the promotion of agricultural science, and the elevation and enlightenment of that most numerous and important class, who, either from necessity or choice, make this their pursuit. That we have long needed an institution—or class of institutions—adapted to the wants of the farmer, no reflecting mind will deny. This has been the felt sentiment, as well as expressed, of all our leading statesmen. At the head of the list, Washington's name stands pre-eminent; and this want will not be met by institutions teaching mere abstract science; these, we have, at the present; but they must be so organized as to apply the principles and doctrines taught under the direction of skillful scientific operators and observers. Theory, in other words, must be united to, and illustrated by, practice; as now the theorist is no operator, and the operator is entirely incapable of applying the principles taught to practice. The common farmer has neither time, inclination, means, or capacity for such a work; and if he had all these, he ought not to be subjected to the expense incident to faithful and successful experiment, for the development and elucidation of principles which belong to the common weal.

We have erected here a building, and propose to open here a school of science—thus far, purely through private munificence and liberality—which shall hold the same relation to the farmer, that West Point does to the soldier; to qualify him by regular scientific drill—not for the blood-stained battle-field—but for the successful culture of a far broader, more useful, and, what should be regarded as more honorable, field of labor and conquest—a field where the science of feeding men, not of destroying them, is to be the prize of the victors. Government takes under her peculiar guardianship the former, and lavishes upon it money, and confers upon it dignity and position, and instructs her young and promising sons how to draw with fatal skill, the glittering blade, and to aim, with precision and effect, the deadly death shot, while it has entirely neglected to provide the means—or even given encouragement to others to provide them—to impart such knowledge as will teach man better to feed, clothe and shelter earth's teeming millions, and to do it without impoverishment, or improvident waste of the elements of our

fertile soil. And it is a fact, we have not as yet an institution worthy the name in our nation, amid all its multiplied facilities for education,—and liberal education too—where a young man can learn as a farmer, the principles of the extensive science which he is to pursue, and at the same time know or learn the applications of those principles. I know efforts have been made, and much said and written about them. I know political declaimers and popularity seekers have not failed to laud this pursuit, and make some fitful efforts to secure the end we propose; but has it been done? Echo answers where?

You farmers and patrons of this enterprise have said this state of things shall no longer exist; that this noble pursuit shall no longer continue without protection, and with such encouragement as is furnished by our regularly endowed institutions. You have said this by the establishment of Agricultural and Horticultural societies all over our land; bringing together the results of your experience, science and skill, and forming a kind of holy alliance in your own great cause. And by the substantial evidence here presented in this beautiful structure, and these grounds which are to be made classic under your fostering hand, we are encouraged to hope and expect a better day in prospect. Your noble response to our calls, in behalf of this department of our college, is substantial evidence of the interest felt by you on this great subject, and is not only an index of your determination, but an earnest of your success. What you have done, others will be stimulated to do; and what men in their associated capacity can do for a community, you will at length be able more fully to accomplish, by the aid of governmental patronage. You farmers have the power to direct your government in this matter—rather if you knew it, you, yourselves are the government, for in your hands resides the power. You can extend the same liberal policy in behalf of your own pursuit—viz: Agriculture—that is now extended to that of arms. And while you may afford to West Point the fostering care and liberal aid of government, (and at the policy pursued toward this institution we would not complain) I trust you will demand the same liberal contribution towards your own; and as the prestige and glory attendant on arms shall diminish in importance, that of agriculture will rise in like proportion, and will one day be in the ascendant; and that as a nation of educated and enlightened farmers, you may be among the first to beat our swords into plowshares, and spears into pruning hooks, and not require that

your President shall have the name of General, but when it will be esteemed as high a mark of distinction to have been conspicuous as a farmer—as a civilian. The liberal course you have adopted, and the means you have furnished to carry out our great enterprise, is conclusive that the mission you propose is not for a caste or clique, but for the multitude, for all who would covet or devise liberal things. What you ask and must demand, is, an education for the farmer, and for the industrial pursuits generally, such as is demanded and required for the professions—an education for the farmer as a farmer, the linguist as a linguist, the engineer as an engineer; in short, that will qualify the leaders at least, to be scholars in their respective departments. The object which we would present most conspicuously as worthy your highest efforts, is the establishment of an *Industrial University*, where those who would become eminent in the industrial pursuits, may have an equal opportunity to improve their minds, and thereby rise to distinction—as those who may have chosen one of the so-called learned professions.

We would aim to so educate each and every one that he can apply the knowledge which he acquires to some valuable purpose; and thus be able to pursue with pleasure and delight the avocation he may choose. We would give on these grounds so much of the application of science to husbandry, as to impart an interest and delight, which no eloquence in the lecturer could give; and serve to make the farmer love his mountain or prairie home, 'mid his lowing herds, and downy flocks, and prancing steeds, and waving harvests, and golden fruits; and regard his position quite as honorable, as those professions which are built upon the depravity of our race, and owe their very distinction to the errors and miseries of mankind.

We freely admit that there is, and must continue to be, a great difference in the extent and amount of culture given to those to be engaged in this pursuit, according to varied opportunities and capacities. Agriculture is both a science and an art, and most of those engaged in it will probably for a long time to come, pursue it, as hitherto, as a simple art. And while we freely admit that it may be so pursued with profit, with a small, very small amount of education, or intellectual capital, we deny most emphatically, that there is a single profession on earth that God has destined any man to follow through life, that admits the opportunity, or affords the materials of a richer or more varied culture, or a more profound and thorough development of all that constitutes the true man—and the truly

great man too—than does Agriculture. Not one separately, nor all three combined, of the so-called learned professions, can surpass it in richness, extent or variety; for in its amplitude, it is the embodiment of all science. Indeed, there is something in this pursuit to which the largest portion of society seem destined to follow—pre-eminently favorable, instead of unfavorable, to the growth of mind and of manhood. The pride of caste and worldly ambition, of pedantry and of power, of bigotry and of tyranny in all ages, have turned away from, and against this and all other industrial pursuits, and those engaged in these pursuits have been uncultured, neglected and enslaved—and now too often complacently fold their hands and hug their chains—while rebels who would not obey God and eat their bread by the sweat of their brow, have by one pretext or another, continued to rule the world—so far as its outward forms and superstitions are concerned—with an iron scepter. Yet God in all ages has abundantly vindicated the wisdom of his own providence, and evinced the certainty of its future triumph over the ambition and folly of man, by humbling the pride of the oppressor, and bringing almost all the true light which now irradiates the world, out of the very bosom of these despised and neglected industrial pursuits, insomuch that it would be hard to find a score of men who have been of the highest real worth to manhood, in the entire past of the world's history, who were not either through life—or at least through all the earlier part of it—trained and innured to these very pursuits and toils. And this brings to our view the true principles of a sound mental and healthy physical development. As well might we attempt to rear one of those majestic oaks of yonder forest in a hot bed, as to develop a truly great man from his infancy in schools, and professional and literary pursuits exclusively. How it has happened, that institutions have been almost exclusively pre-occupied for the training of youths for some two or three of the most narrow and limited professions of human life, and these deriving their very existence from the depravity and death—and not from the virtue and the life of the race—and how it has happened that such institutions have dubbed themselves Universities, can be accounted for, only on the same principle which has compelled a score of men to declare "*We are the State,*" "*We are the Church,*" "*I am France.*" But we trust that it is the mission of American Institutions, as developed in these United States, to enlarge the idea of a University, until it shall embrace the education of men for every honorable calling and pursuit.

How long it may continue fashionable to use the ordinary educational cant, and adhere to old systems belonging to a dead and buried age, and that almost exclusively, or how long the ghosts of those old systems may still stalk abroad in this country, to inspire the credulous and alarm the timid, we can not say; but we are fast receding from all but their names and forms, and shadows, and approximating, as we humbly hope and trust, a brighter and more glorious era, for men and angels to look upon. We have marked out for us in our catalogue a course of study as extensive for the scientific agriculturist as for the man of letters. And on the completion of the course, we have appended equal honors; and when young men reach a point in their literary course, that they can investigate science with profit, they are transferred at their option to such department of science, as will especially fit them for their chosen pursuit, and not to stop with a mere smattering. And this is the principle adhered to, in every department, even to the accomplishment of a highly classical and literary course.

But some are ready to ask, what can you employ profitably so much of the precious time of those who are to become scientific Farmers, for whose benefit all this outlay in buildings, grounds, etc., is especially made.

Our chief difficulty is, there are so many branches to be studied, such an extensive round of science peculiar to the pursuit of the Farmer, and so profound are its investigations, we can not determine with precision the beginning or the terminus of such a course. Then the low estimate in which the pursuit is held by the educated and uneducated alike *will, must* at first modify and serve to abridge our course. It is a department that must literally be built up from foundation to topmost stone; even the rubbish is yet to be cleared away, and the excavation made for the corner-stone of the mighty edifice. First, then, it will be admitted, that those sciences which have an intimate connection with agriculture should be studied, viz., Geology, Mineralogy, Chemistry, Botany, Vegetable Physiology, Entomology, and Zoology.

And how studied? Assuredly differently from the ordinary way. I will endeavor briefly to tell you; the young Farmer must study geology to know the structure and composition of the rocks which constitute a large part of the soil which he cultivates. We should know the nature of the rocks in all the region around him; he should know how to select those soils, whose mineral composition is best

suited to particular crops, and to determine when they contain elements that unfit them for his purpose. First, then, we have here the nature, elements, properties and origin of soil, and in addition to all this, its proper preparation by plowing, trenching, subsoiling, draining and the testing of different modes of culture, etc.

Next, as to botany, which may be called the natural science of the agriculturist. Instead of ending, as now with a few, classifications and hard names, that might be regarded as the mere scaffolding to the erection of an edifice of beautiful architectural proportions, he should carry this science into his forests, and fields, and make it the medium of his investigations of the characteristics and properties of plants, and study every tree, shrub and flower, so lavishly spread around him, painting his fields and woods with their thousand hues, and making this outward world a scene of grandeur and beauty. He should know how the seed germinates, the tender leaf unfolds itself, and in what order the several parts of the flower are developed—how the blossom is rendered fruitful—what will injure, and what will improve each plant—how plants may be improved by ingrafting, by inoculation, by crossing—how new varieties may be obtained and old ones made better; and this knowledge, as pertaining not only to his fruits, but his grains, grasses and vegetables. And immediately connected with this wide field of scientific research, and indeed forming a part of it, is vegetable physiology. He should know all about the anatomy of plants—the cell, tissues, organs of nutrition, of respiration, reproduction—the offices of the roots, stem, leaves, bark, etc., etc.

The geography of plants, distribution of species, peculiar products, Milk, Juices, Wood, Bass, Cotton, Starch, Sugar, Oils, Wax, Resins, etc. Circulation of sap,—old theories, Darwin; New theories, Schleider—Plant Geography, distribution of species, geological formations, meteorology, climate, acclimation, range of species, zones of flora, etc.

Propagation of plants,—seeds, buds, germs, leaves, layers, cuttings, etc.

Culture,—its objects, drill-husbandry, surface-stirring, deep tillage, corn crop, root crop, *Terra Culture*, mulching, surface roots, their uses, etc., etc.

Also pot culture, drainage of pots—the vine border, houses for forcing, propagating, hotbeds, etc., etc.

The orchard, pruning, its objects, when to be performed, root pruning, shortening in, pinching, etc.

But geology, botany, vegetable physiology, and fruit and garden culture in all their practical details, form but a small part of the course to be pursued, the sciences to be mastered.

The Farmer should not only understand the leading principles of chemistry in general, but all about those particular principles that are applicable to agriculture. He should be able to analyze his soils, plants, etc.—know the properties they contain in abundance to secure a crop, and in what they were deficient. He should not, as now, look upon the earth as a dead mass of matter; but regard himself as surrounded by a vast chemical laboratory, filled with various and strange materials, full of activity and motion, in which composition and decomposition and new combinations are constantly going on, to-day it receives accessions and influences from the heavens, to-morrow it throws off new formed elements, that are carried into the oceans and again deposited on distant shores. The earth is almost a living, moving creature, and when quickened by atmospheric influences, she brings forth innumerable living things; infinitely diversified in form, in hue and fragrance, and each derives from her bosom the nutriment that is suited to its character and wants. Truly is she the mother of all living things. The skillful cultivator should know something of its nature, its elements, its affinities and its uses. But shall we stop here? we have scarcely yet entered the vestibule of the temple in which he is constantly to live and act. The farmer has in his charge, and appropriated to his use, some of the noblest animals upon the earth; they are his companions and helpmates through life, and by their labor, or the products of their bodies, he is fed, and clothed, and ministered unto. He should know their structure, and be able to minister skillfully to their wants, whether in health or sickness. Hence, the farmer should have a knowledge of the diseases of his animals, and of the proper remedies.

Again, the farmer should not only carefully examine and understand the habits of animals, but should be a naturalist; especially should he be acquainted with the nature and habits of insects that are injurious to vegetation, that he may the better defend his crops from their ravages.

Our government could well afford to give a million of dollars for an easy and practicable method of arresting the ravages of that single little destroyer—the curculio. I have no doubt that it destroys over that amount annually, in three States of this Union.

The farmer should understand thoroughly the principles of mechanics, upon which all his tools are formed, his various implements constructed. We need not pursue the catalogue further to convince the most skeptical in this audience that there is a wide field open directly before him, and connected with his pursuit, which it would be profitable for him to know and understand. The study of these subjects will be to him an unfailing source of pleasure, and can not fail to improve and refine all his sensibilities. Indeed, there is no branch of knowledge that will not be serviceable to him. There are none from which he can not divine some hint or some law, that may be applicable to some one of his varied pursuits; and they will tend to refine his feelings, to enlarge his intellect, to elevate and dignify him in the only way in which true dignity can be imparted, either to him or to his pursuit.

We have presented here in brief, some of the subjects which will occupy the special attention of the students in this department, and one of the prominent features of our plan, is, that theory shall be joined with practice. It is hoped, by experiments, to settle many important inquiries, and in these experiments make many valuable discoveries. We propose here to have science join hands with art, science must blow the bellows and art must strike; and often they will be under the necessity of changing work. This course, it is believed, will give a living, tangible reality to what are now looked upon as mere abstractions; and this course would have a most happyfying effect upon every department of study. This thorough systematic application of science in one department, would be carried into every other branch of study, and give to every student a zeal and interest which could be effected in no way so well. We would then have no walking encyclopedias—who had much knowledge, but who could apply it to little or no account—but active, efficient, thinking men.

To carry out these plans, and to complete this course of industrial university training for the Agriculturist, we have purchased one hundred acres of ground, surrounding this spot, to be subdivided into departments for fruits, for grains, for grass, for vegetables, and a botanic garden of twenty acres. These divisions, enclosing a woodland of fifteen acres, will as soon as possible be set in grass, upon which we shall graze a few superior animals. In the grain department, we shall gather together, and test, varieties of grain, under varied approved forms of culture, that we may ascertain the

best. Test also the productive capacity of our soil—learn the philosophy of manures. In the fruit department, gather together all the best fruits; test their merits, and if possible, settle the nomenclature of many fruits now in cultivation. The same will be the object in regard to vegetables and grasses. In the Botanic garden, we propose to gather together the forest growth—as far as possible—of this climate, around the world. Also shrubs and plants, domestic and wild, and arrange in families, genera and species. And as soon as practicable, it is our purpose to erect a conservatory, and have at least the exotics, numerously represented.

Now as to the Union. Here in this Hall, in its various departments, under the respective professors—which at present will be; The Prof. of Chemistry, The Prof. of Botany and vegetable Physiology, The Prof. of Theoretical and Practical Agriculture—the instructions will be given, the doctrines taught; and on these grounds we propose to carry out into practice, and fully illustrate them. Thus you see, we propose harmoniously to unite theory and practice. The Botanist, for instance, gives his lecture—classifies his plant—and, instead of resorting to his dry herbarium, or his culled flower—takes his class to the living plant—gives instructions in relation to its history, habits, qualities, soil best adapted to its culture, etc. Thus giving increased and ever increasing interest and zest to his lectures.

You have by this time obtained a glimpse of the scope and design of our objects and aims, and no doubt many are ready to say, “You are in advance of the age, we are not yet prepared for such a work; it will take too much money.” To such reformers, we have simply to say, we mean to keep ahead of the times, if possible; and as to not being prepared to accomplish such a work, we think it is at least time to begin it. We were told two years ago we could not raise the sum proposed—it was entirely chimerical—it simply could not be done. It has been done, and you now appear here to day to witness the novel ceremony of dedicating this Hall of Science. The same endeavor faithfully applied, will carry forward this well begun effort successfully, triumphantly. Farmers, you have the money if you are disposed so to apply it; and there will be a willing hand if you are assured at every step that there is a faithful, and proper, and profitable appropriation of it. And these assurances—in these days of humbugs and swindlers—you have a right to demand. And it seems motives will not be wanting to stimulate you onward—motives of a pecuniary nature—motives involving your highest dignity and

honor—motives touching the destiny and glory of our great nation. The cause of humanity and man demand your zeal and activity in this great work ; and it gathers importance when we contemplate the tremendous influence of our great country, embracing a dominion of fifty-seven degrees in one direction, and twenty-four degrees in another, including an area of two million three hundred thousand square miles ; or one million four hundred and seventy-two million acres. We have as yet under cultivation, but a fragment of this dominion, including thirty sovereign States, some of which are larger and more powerful than whole Kingdoms in Europe, and yet but about one-third of these immense tracts have as yet been reclaimed from the wilderness, while the portion already settled, could sustain a population ten times as dense. Our mountains are as productive as they are grand ; for beneath their rugged sides lie inexhaustible mines of mineral wealth, furnishing—with the variety of our soil, and diversity of our climate—the raw material for every kind of manufacture.

Our facilities for inland commerce since the introduction of railroads, are beyond compare; bringing the East and the West, the North and the South—of our goodly heritage—into close companionship. These, with the addition of our telegraphic wires, render instinct with life and motion our whole confederacy ; making it, from center to circumference, feel the pulsations of its mighty heart. Our inland cities will soon rival those of the seaboard, and Cincinnati—which twenty years since, according to our learned savans, had attained a precocious growth—is but yet in its infancy—young, healthy and vigorous, we know but little what will be the giant proportions of its manhood.

Look on the map ; we are near the center of a vast basin, eight thousand miles in circumference—an area the most productive on the globe. Nature has thrown around this spot unwonted facilities to men of education, of enterprise and of wealth. Every production—cotton, wool, hemp, leather, clay, wood, lead, iron, the precious metals, grains, fruits, vegetables—can be produced on and around this spot, with a profusion and excellence, which shall command the capital and influence of the great West. Is there not found then in our position a mighty motive to carry forward, in this behalf, our educational enterprise ? An enterprise that looks to the liberal education of the largest body, and associates *the most influential, powerful, independent and wealthy combinations on the face of the*

earth—a combination that a small undertaking would belittle—a combination among whom God has seen fit to deposit the best minds—where he has placed his richest treasures. These now—like unpolished jewels in the mine—we would bring out and place in our country's diadem, and thereby impart luster to our country's glory.

And now, farmers, fellow citizens and friends, we have laid these foundations—I trust in prayer, and by the direction of a divine hand; and with the hope that this superstructure will be but the earnest of still greater achievements, and that the *Magna Charta* of your educational principles may continue to extend, till their magnificence and glory may be seen from afar, and the radiance of their light streams over every land and every sea. Let pilgrims from every class direct thitherward their steps, and here find the culture needful for the true inspiration of their art, and the true manhood of their life. And when the aged Yew tree throws its shade over the green grass that covers these beautiful grounds, millions of enlightened and joyous freemen will bless the hour when in doubt, in weakness—yet still in *faith* and in *hope*—you reared and consecrated these walls to God and to them.

AND NOW, BY THE AUTHORITY, AND IN BEHALF OF THE DIRECTORS OF FARMERS' COLLEGE, I DEDICATE THIS HALL OF SCIENCE, HENCEFORWARD TO BE KNOWN BY THE NAME OF THE POLYTECHNIC HALL, TO THE PURPOSES FOR WHICH IT HAS BEEN CONSTRUCTED; AND MAY GOD ADD HIS BLESSING. AMEN.

FARMERS should raise and save their own seeds, to a great extent, in the Vegetable Garden, and thus know what they get, and keep only pure seeds from the best stocks. Many farmers do this; and are noted for the ‘nice kind’ of beans, sweet corn, cabbages, etc., which they raise. Anybody can have a ‘nice kind’ of such things, if they will be careful in selecting their seed, and in cultivating; which is better than to run to foreign countries for dubious old sorts, with more dubious new names, invented only to *sell*.—*Ohio Cultivator*.

The only fame worth possessing is the good opinion of the good.

Correspondence.

MABBETTSVILLE, Dutchess Co., N. Y., Sept. 29th, 1856.

PROF. F. G. CARY, of *Farmers' College*, O.:—

You ask my opinion, and the result of my experience, in regard to "Terra Culture." I think I may safely affirm that the net profits of my farm have been fully doubled during the last five years, or since adopting Russell Comstock's system of culture, which is known as Terra Culture. Its practical application is advantageous to all crops with which I am acquainted. The Terra Culturists of Mabbettsville, *all* agree as to its great practical value.

I have produced one hundred bushels of shelled corn on an acre, with less expense than I formerly produced half that quantity; and the latter not so well ripened as the former. May your efforts be successful in causing his discovered laws in vegetation to become public property. It is time the public were moved on this subject.

Yours respectfully,

JOSEPH BATES.

HART'S VILLAGE, Dutchess Co., N. Y., Sept 26th, 1856.

PROF. CARY:—

In answer to your inquiries, I would say: I have practiced "Terra Culture" successfully for the last five years, and I regard the saving of labor and expense, material, on crops where labor is generally most bestowed, with an increased quantity, and improved quality of the product.

I am pleased to hear that you are collecting facts on this subject.

Yours respectfully,

DAVID WOOD.

We would add other responses, did not a want of room forbid.

We add below a letter from a well known correspondent:

CINCINNATI, October 23d, 1856.

F. G. CARY, Esq:—

DEAR SIR:—The samples of wheat which you were pleased to forward me yesterday were duly received; and upon examination, I find the weight of those plants raised upon the principle of "Terra Culture" nearly eight times heavier than those cultivated according to the recommendation of the United States Patent Office Report, and also of Loudon's Encyclopedia of Agriculture.

These experiments, I understand, were made by you immediately, after hearing the lecture of Prof. Comstock, on "Terra Culture," at Farmers' College, Sept. 1st, 1856, and most clearly demonstrate the practical value of that gentleman's theory. Although there seems to be a strong and determined opposition to the doctrines advanced by Prof. Comstock, in certain quarters, yet I have never met with one who has been willing to test his theory by actual practice. It is a very easy matter to cry out "humbug," but not always so easy to demonstrate its clearness by negative proof. The course which you have pursued in this case will be very gratifying to the friends of scientific agriculture every where, and most especially to those who have silently brooked the "storm" of fanatic indignation which met them at every step since the memorable first of September.

Your motto, which is, to "*try all things*," meets my most candid approbation, and whenever it may be necessary, shall receive a hearty co-operation, let whoever may, stand in the opposition.

Believe me most sincerely and truly Yours,

WILLIAM STOMS.

C h r ̄ D e a d S e a .

Though in breadth not exceeding ten miles, the Dead Sea seems boundless to the eye when looking from north to south; and the murmur of waves, as they break on its flint-strewn shore, together with the lines of driftwood and fragments of bitumen on the beach, give to its waters a resemblance to the ocean. Curious to experience the sensation of swimming in so strange a sea, I put to the test the accounts of the extreme buoyancy felt in it, and I was quickly convinced that there was no exaggeration in what I heard. I found the water almost tepid, and so strong, that the chief difficulty was to keep sufficiently submerged, the feet starting up in the air at every vigorous stroke. When floating, half the body rose above the surface, and with a pillow, one might have slept upon the water. After some time the strangeness of the sensation in some measure disappeared, and on approaching the shore I carelessly dropped my feet to wade out, when lo! as if a bladder had been attached to each heel, they flew upwards; the struggle to recover myself sent my head

down: the vile, bitter, and briny water, from which I had hitherto guarded my head, now rushed into my mouth, eyes, ears and nose, and for one horrible moment the only doubt I had, was, whether I was to be drowned or poisoned. Coming to the surface, however, I swam to land, making no further attempt to walk in deep water, which I am inclined to believe is almost impossible.—*Eastern Traveller.*

Milk as a Manufacturing Ingredient.

Milk now performs other offices besides the production of butter and cheese, and the flavoring of tea. It has made its way into the textile factories, and has become a valuable adjunct in the hands of the calico printer and the woolen manufacturer. In the class of pigment printing work, which is indeed a species of printing, the colors are laid on the face of the goods in an insoluble condition, so as to give a full, brilliant appearance. As a vehicle for effecting this process of decoration, the insoluble albumen obtained from eggs was always used, until Mr. Pattison, of Glasgow, Scotland, found a more economical substitute in milk. For this purpose buttermilk is now bought up in large quantities from the farmers, and the desired indissoluble matter is obtained from it at a price far below that of egg albumen. This matter the patentee has called "lactarin." A second application of the same—milk—has just been developed by causes arising out of the recent high price of olive oil, which having risen from \$200 to \$350 a ton, the woolen manufactures are now using the high-priced article mixed with milk. This compound is said to answer much better than oil alone, the animal fat contained in the globules of the milk apparently furnishing an element of more powerful effect upon the fibers than the pure vegetable oil *per se*.

PRACTICAL and scientific farming should go hand in hand; science without practice, is unavailable; practice without science, is the quality of the brute. While science without practice will not produce a blade of grass, every acre will produce more under the culture of a practical hand guided by a scientific head.

Vegetable Vitality.

It is alleged by some that there is a deterioration of vegetable vitality in plants propagated by buds and bulbs. To such we commend the following article, taken from the *London Gardeners' Chronicle*, edited by the learned naturalist, Prof. Lindley:

"The species of plants, like those of animals, appear to be eternal, so far as anything mundane can deserve that name. There is not the smallest reason to suppose that the Olive of our days is different from that of Noah; the *Asa dulcis*, stamped upon the coins of Cyrene, still flourishes around the site of that ancient city; and acorns figured among the sculptures of Nimrod seem to show that the same Oak now grows on the mountains of Kurdistan as was known there in the days of Sardanapalus. There is not the slightest evidence to show that any species of plant has become extinct during the present order of things. All species have continued to propagate themselves by seeds, without losing their specific peculiarities; some appointed law has rendered them and their several natures eternal.

It would seem, moreover, that, with the exception of annuals and others of limited existence, the lives of the individual plants born from such seed would be eternal also, if it were not for the many accidents to which they are exposed, and which eventually destroy them. Trees and other plants of a perennial nature are renovated annually; annually receding from the point which was originally formed, and which in the nature of things must perish in time. The condition of their existence is a perpetual renewal of youth. In the proper sense of the word, decrepitude can not overtake them. The Iris creeps along the mud, ever receding from the starting point, renews itself as it advances, and leaves its original stem to die as its new shoots gain vigor; in the course of centuries a single Iris might creep around the world itself, if it could only find mud in which to root. The Oak annually forms new living matter over that which was previously formed, the seat of life incessantly retreating from the seat of death. When such a tree decays, no injury is felt, because the center, which perishes, is made good at the circumference, over which new life is perennially distributed. In the absence of accidents, such a tree might have lived from the creation to this hour;

travelers have even believed that they had found in the forests of Brazil living trees that must have been born in the days of Homer. But here again inevitable accidents interfere, and the trees are prevented from being immortal.

Species, then, are eternal; and so would be the individuals sprung from their seeds, if it were not for accidental circumstances.

But plants are multiplied otherwise than by seeds. The Hyacinth and the Garlic propagate naturally, not only by seeds, but also by the perpetual separation of their own limbs, known under the name of bulbs, their bulbs undergoing a similar natural process of dismemberment; and so on for ever. The Potato plant belongs to the same class. Another plant bends its branches to the ground; the branches put forth roots, and as soon as these roots are established, the connection between parent and offspring is broken, and a new plant springs into independent existence. Of this we find familiar examples in the Strawberry and the Willow. Man turns his property to account by artificial processes of multiplication; one tree he propagates by layers, another by cuttings planted in the ground. Going a step further he inserts a cutting of one individual upon the stem of some other individual of the same species, under the name of a bud or a scion, and thus obtains a vegetable twin.

It is not contended, for there is nothing to show, that these artificial productions are more short-lived than either parent, provided the constitution of the two individuals is in perfect accordance. There is not the smallest evidence—it has not even been conjectured—that if a seedling Apple tree is cut into two parts, and these parts are reunited by grafting, the duration of the tree will be shorter than it would have been in the absence of the operation.

It is nevertheless believed by many, that the races of some cultivated plants have but a brief duration, provided they are multiplied otherwise than by seeds. No one indeed pretends that the Garlic of Ascalon has only a short life, although it has been thus propagated from the time when it bore the name of Shummin, and fed the laborers at the Pyramids; nor do we know that the bulb-bearing Lily has been supposed to have less inherent vigor than if it were multiplied by seeds instead of bulbs. It is only among certain kinds of plants that exceptions to the great natural law of vegetation are supposed to exist. It is thought that although the wild Potato possesses indefinite vitality, yet that the varieties of it which are brought into cultivation pass their lives circumscribed within very narrow limits;

and the same doctrine has been held concerning fruit trees. The great advocate of this view, the late Mr. Andrew Knight, rested his case upon the disappearance of certain kinds of Apples and Pears, once to be found in the orchards of Herefordshire, but now no longer to be met with. This he ascribed to cultivated varieties being naturally short-lived, and to an impossibility of arresting their gradual decay by any process of dismemberment; and following out this theory he strongly urged the necessity of renewing vitality by continually raising fresh varieties from seed. It is difficult to comprehend what train of reasoning led to this speculation. We know that wild plants may be propagated by dismemberment for an indefinite period; we know that when such wild plants spring up from seed, the dismembering process still goes on, and still without exhibiting symptoms of exhausted vitality; and yet if a plant grows in a garden, and is brought under the direct control of man, the power is thought to be lost, or so much impaired that indefinite multiplication no longer becomes possible. Can this be true? Most assuredly the cases adduced in support of the doctrine are susceptible of another explanation, perfectly consistent with the general laws of vegetation.

That renewal by seed will not restore what is called exhausted vitality, was sufficiently proved by the experiments with Potatos after the blight made its appearance. We were assured by an ingenious writer in one of the daily papers that the constitutional power of the Potato was on the decline; in other words, that the lives of individuals were approaching their end; that the blight arose in consequence, and that a certain remedy would be the renewal of the existing races by sowing seeds. Hundreds joined eagerly in what proved to be the vain pursuit. A worthy armorer at Solingen even published an elaborate pamphlet in support of the idea. 'No more Famine' was his audacious motto—a prediction wofully falsified by the result, for the seeding Potatos, were, if possible, more diseased than their parents."

"CABBAGE," says the *Edinburgh Review*, "contains more muscle-sustaining nutriment than any other vegetable, whatever. Boiled cabbage and corned beef, make fifty-two as good dinners in twelve months as a man can eat."

Taste in Female Dress.

"SOMEBOBY has said that a Parisian grisette, with a little tulle and ribbon, will conquer the world, while an English woman with all her shawls, damasks and diamonds, looks only like an animated clothes-horse. There is some exaggeration in this statement, but more wit, and still more truth. The women of France unquestionably have a better taste in dress than those of Great Britain or America. In both our mother country and this, there is too much of what may be called 'snobism' in female attire. The ladies of Anglo-Saxondom seem to fancy that the more they spend on dress the prettier they look. Accordingly one sees little women covered all over with lace, or buried in the middle of stiff brocade, or almost lost to sight under a puffing velvet cloak, with capes that extend on either side, like gigantic wings. Or one beholds tall women, if such is the fashion, tricked out in tight sleeves, and striped silks, the costliness of the material being regarded by the wearer as sufficient compensation for the incongruity of the styles. A French servant girl has better taste. She knows it is not so much in the richness of the material, as the way it is made up and the manner in which it is worn, that gives the desired elegance. A neat fit, a graceful bearing, and a proper harmony between the complexion and the colors, have more to do with brightening female attractions than even American ladies seem particularly to comprehend. Many a wife looks prettier, if she would but know it, in her neat morning frock of calico, than in the incongruous pile of finery, which she dignifies with the title of full dress. Many an unmarried female first wins the heart of her future husband in some simple, unpretending attire, which, if consulted about, she would pronounce too cheap except for ordinary wear, but which, by its accidental suitability to her figure, face and carriage, idealize her youth wonderfully. If the sex would study taste in dress more, and care less for expense, they would have no reason to regret it. At present the extravagance of American females is proverbial. We wish we could say as much of their elegance in the same line."—*Selected.*

METEOROLOGICAL TABLE.

*Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 19', W. Lon. 7° 24' 45"
for the month of September, 1856, by Prof. G. S. Ormsby. Height of Station above the Sea, 800 feet.*

BAROMETER, CORRECTED FOR TEMPERATURE & CAPILLARITY.				OPEN AIR THERMOMETER.				CLOUDS—COURSE & VELOCITY.				WIND—DIRECTION & FORCE.				RAIN & MELTED SNOW.			
7 A. M.	2 P. M.	9 P. M.	Mean.	9 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	Hour Began.	Hour Ended.	Amt' Inch.	
1.29.210	29.170	29.200	29.193	66.0	79.0	68.0	71.0	0	0	0	0	N. E.	3	N. E.	3	N. E.	2		
2.29.297	29.151	29.176	29.208	60.0	86.0	69.0	71.7	0	0	1	0	E.	2	S. E.	1	S. E.	1		
3.29.207	29.138	29.146	29.164	66.0	90.0	73.5	76.5	0	0	4	0	S.	0	S. S.	2	S. W.	1		
4.29.241	29.224	29.204	29.223	68.0	77.0	66.5	70.5	7	0	10	0	S. W.	4	S. W.	1	S. W.	3		
5.29.204	29.192	29.185	29.197	65.0	70.0	68.5	67.8	10	S. W.	8	10	S. W.	10	S. W.	5	S. W.	2		
6.29.217	29.164	29.148	29.176	69.0	85.0	73.3	75.8	10	0	6	0	S. S.	4	C. S.	0	S. W.	1		
7.29.142	29.089	29.154	29.128	71.0	86.0	74.5	77.3	10	Rain.	5	0	S. W.	5	C. S.	0	S. W.	3		
8.29.229	29.179	29.154	29.187	66.7	84.0	75.0	75.2	0	0	0	0	S. W.	1	S. W.	1	S. W.	1		
9.29.169	29.120	29.098	29.130	71.0	80.0	75.0	75.3	6	0	9	0	S. W.	4	S. W.	4	S. W.	3		
10.29.107	29.066	28.979	29.047	78.0	91.0	79.0	82.7	0	0	5	0	S. W.	4	S. W.	1	N. W.	3		
11.29.100	29.082	29.077	29.086	67.0	77.0	66.0	70.0	3	N. W.	4	0	O	0	O	0	N. W.	3		
12.29.062	28.963	28.954	28.926	59.5	82.5	68.0	70.0	2	Cirrus	0	0	O	0	O	0	O	W.		
13.29.015	28.970	29.027	29.000	62.0	84.0	72.0	72.7	0	0	0	0	N. W.	1	W.	3	W.	3		
14.29.115	29.064	29.074	29.084	63.0	84.0	70.0	72.3	0	0	0	0	O	0	O	0	O	0		
15.29.095	29.043	29.056	29.065	63.5	89.0	77.5	76.7	0	0	0	0	O	0	O	0	S. W.	3		
16.29.122	29.093	29.084	29.100	69.0	91.2	77.0	79.1	0	0	0	0	O	0	O	0	S. W.	3		
17.29.119	29.043	28.980	29.047	63.0	90.5	76.0	78.5	0	0	0	0	O	0	O	0	S. W.	4		
18.28.947	29.020	29.095	29.021	72.0	66.0	58.0	65.3	2	0	9	N. W.	4	O	0	O	S. W.	3		
19.29.175	29.087	29.122	29.128	49.0	74.0	61.0	61.3	0	0	0	0	O	0	O	0	N. W.	1		
20.29.143	29.116	29.195	29.151	56.0	74.0	55.0	61.7	0	0	2	0	3	0	N. W.	1	N. N.	1		
21.29.208	29.175	29.158	29.180	48.0	62.0	51.0	53.7	10	0	0	0	N. N.	1	0	0	N. W.	2		
22.29.110	29.068	29.073	29.084	41.0	59.0	49.5	49.8	0	0	7	N. W.	10	N. 4	0	O	N. W.	2		

REMARKS ON WEATHER.

1. Very dry.
 2. " "
 4. A slight shower between
2 and 4 P. M.
 5. Rained all day.
 9. A very hard thunder
shower.
 10. Lightning in N. W. this
eve.
 18. A little dash of rain when
the wind ch'd at 10 A.M.
 19. Minimum ther. 46.
 21. Sky cleared at 1 P. M.
 22. Minimum ther. 39.
 24. Minimum ther. 38.
 26. A few drops of rain at
 $6\frac{1}{2}$ A. M.
 28. S. wind commenced at
8. ch'd to W. at $1\frac{1}{2}$ P.M.
 29. A slight shower at 12 M.

REMARKS. — The Barometer very steady during the whole month. The rains in the early part of the month revived the dead pastures.

MINIMA.

MONTHLY EXTREMES.

MAXIMA.

7 A. M.	2 P. M.	9 P. M.	Month.	7 A. M.	2 P. M.	9 P. M.	Month.
2 ad. 29.297	4th. 29.294	4th. 29.204		30th. 28.841	24th. 28.835	29th. 28.860	
10th. 78.0	16th. 91.2	10th. 79.0		24th. 39.0	23rd. 58.0	30th. 56.5	

EXPLANATION.—The state of the sky is indicated in this table by numbers from 0 to 10; 0 signifies perfectly clear sky, 10 that it is entirely covered with clouds, and intermediate numbers show the number of tenths clouded. The direction from which the wind blows is shown in the initials of the points of the compass. Its force is indicated by numbers; 0 meaning a perfect calm, and 10 the most violent hurricane.

Facts for Mechanics.

ST. PAUL was a mechanic, a tent-maker. Our Savior was a mechanic, a carpenter. The great Architect of the universe has set his creatures an example in constructiveness in the mechanism of the heavens and the earth, with their productions, animate and inanimate, but which they can never equal or approach.

Next to Farmers, mechanics are the most numerous and the most important class of the community. Whatever promotes their interest, of course promotes the interest of the public. They, like farmers, have great facilities and great inducements to become men of science and sound knowledge. Every mechanic, in every operation, brings into use some principle of science; which principle, it is, of course, his interest and convenience to understand.

Every apprentice boy, no matter how assiduous or rigorous his employment, if he spends a few minutes daily in useful reading and other modes of improvement, is certain to be a man of future influence and respectability. That apprentice who seeks most assiduously the interests of his employer, promotes most effectually his own interest; as character is the best capital a young man can have for the commencement of business.

Mechanics, like farmers, make safe and enlightened statesmen. They are well educated for legislators, and for other offices, because educated in schools of experience. Who can be better qualified to make laws for aiding the operations of business than those engaged in these operations?

BUSHEL AND ACRE.—What difference is there in the United States bushel and the English—also in the acre of the two countries? *Ans.* —The standard bushel of the United States is the same as the “Winchester bushel,” which was the standard in England from the time of Henry VII. to 1826, and contains 2,150.4 cubic inches. The present standard in England is the “Imperial bushel,” which contains 2,218.192 cubic inches, being within a fraction of 68 cubic inches larger than that of the United States. The acre is the same in both countries.

THE CINCINNATUS.

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NO. 12.

Stall-Manure and Straw.

ORDINARY stall-manure is a varying mixture of animal excrements, urine, and straw-litter. It is strong, in proportion to the urinous liquid it has absorbed; weak in proportion to the small amount of urine and the large quantities of straw it contains. With these circumstances, also, its greater or less facility of decomposition entirely coincides. Amongst these ingredients, the urine has the greatest tendency to putrefaction and decay, and straw the least; manure rich in urine will, therefore, pass more rapidly into fermentation, and arrive more quickly at what is called "ripeness," than when poor in this constituent.

Fresh manure is, however, no means of nourishment to plants; it becomes so only by what is termed fermentation, that is, by a previous *putrefaction and decay*. The changes which manure undergoes by these processes of disintegration, extend chiefly to its organic or combustible constituents; inasmuch as these are transformed into a brownish-black, pulverulent mass, (the well known humus,) whilst a part becomes at the same time aeriform, and escapes into the atmosphere. Coincidently with this, a quantity of water is also evaporated; and from these two volatilizations it is easily understood why fermented manure is of less weight than fresh. If the matter so escaping was exclusively water, this diminution in bulk and in weight would be advantageous and desirable; for the farmer would thereby save expense in transportation, as he would employ a dryer manure, and would possess in a load which had lost half its weight by desiccation, the same fertilizing power that is contained in two equal loads of fresh manure. The true state of matters is, however, wholly different.

Of the proximate constituents of plants, two leading classes are distinguished, the combustible (organic,) and incombustible, (inorganic;) of these, the first alone are capable of fermentation and putrefaction, the latter not.

Amongst organic substances a distinction is made between such as contain, and such as do not contain, azote or nitrogen, and the former must be regarded as more scarce and valuable, as well for foddering animals, as for manuring plants. Now it is precisely these azotized constituents that are always first changed; for they introduce and transfer to the other ingredients the putrefactive fermentation, by the intervention of visible and invisible animals of all kinds (*infusoria*, maggots, worms, etc.) If by this means their nitrogen finally enters into a volatile combination, in other words, into ammonia, then it is evident that the farmer who carelessly abandons his stall-manure, to the process of putrefaction, will in the generality of cases, lose considerable quantities of the manuring elements it contains, and of these elements, precisely those which have the highest value. With the ammonia other volatile combinations of sulphur and phosphorus (sulphureted hydrogen, etc.) are simultaneously generated, and these likewise escape in an aerial form. They possess an extremely offensive odor, the same as that of rotten eggs, which is strong in proportion to the putrefactive fermentation. Hence, from the strength of the stench emitted during the putrefaction of animal manure, a tolerably accurate conclusion may be drawn with respect to the loss of strength which may be feared. The old maxim of the peasantry, "Whatever stinks is good for manuring," is perfectly true; the more, therefore, stinking gasses (containing nitrogen and sulphur) and vapors escape from a dung heap into the air, the less of course can it continue to retain.

Those parts of plants which contain little or no nitrogen (for instance, straw, wood, sugar, starch,) emit no disagreeable odor, during putrefaction; this kind of change is called, by way of distinction, *fermentation*. Animal substances are richest in nitrogen, and amongst vegetable matter, the seed; hence the great difference in the odor, where potatoes, sawdust, sugar, etc., which have been sprinkled with water, are left standing until they pass into fermentation or putrefaction.

Heat is generated by most chemical processes, and in most considerable degree by those which resemble combustion. Digestion and respiration have been shown to be such processes; so also are putre-

faction and decay. For this reason, we perceive a visible and spontaneous evolution of heat, wherever considerable quantities of animal or vegetable matters putrefy, decay, or rot. Hence soil rich in humus (for humus must be considered vegetable fiber, undergoing decay or slow combustion) will always preserve a greater amount of warmth than soil which is poor in this ingredient, and this the more, because on account of its dark color it absorbs a larger proportion of the rays of the sun than a soil of lighter color. The heating of stall-manure is thus explained at once; it will be stronger in proportion to the larger masses heaped on each other, and to the abundance of azotized substances they contain, inasmuch as these latter produce a brisker putrefaction; in the first case, however, the heat is better kept together, and is constantly generated anew, because, with increasing temperature, the putrefactive process is more energetically carried on.

Next to heat, *air and water* have an essential influence upon the progress of putrid disintegration in organic matter. Substances from which all water has been removed by drying do not suffer this decomposition, as is exemplified in dried fruits, seeds, leaves, etc., which we can preserve for years, whilst in a moist state they soon become corrupt. With a moderate degree of moisture, decomposition proceeds most rapidly and successfully. An excessive quantity of water retards it, because when substances are entirely covered with water their heating, and at the same time the access of air, are prevented.

The exclusion or non-exclusion of *air* from fermenting vegetable and animal remains, occasions a great difference in the nature of the decomposition. In the first case, as, for example, in the decomposition of animal manure, when piled together in large and compact heaps, and of urine in the drainings' reservoir, in the steeping of flax, in the fermentation of potted cheese, etc., gasses and vapors of highly disagreeable odor are generated, which may be regarded as partially putrefied or partially consumed substances; they are produced from want of air, or, more accurately speaking, of oxygen. This decomposition is called, simply, *putrefaction*. It has the greatest analogy to charring or dry distillation, where, as for example, in the manufacture of common illuminating-gas, or in charcoal piles, from deficiency of air, half-burnt, strong-smelling combinations, tar, ammoniacal gas-water, pyrolygneous acid, etc., are likewise generated in large quantity. On the contrary, when the air can freely enter,

these offensive gasses and vapors combine with more oxygen, and now undergo *complete* putrefaction or combustion; and the products so eliminated are destitute of smell. This kind of decomposition, which is most analogous to complete combustion, and, like this, takes place with abundant air and a proper draught, is called *decay*.

Why putrid drainings, and putrid manures, when applied to meadows or fields, diffuse at first a powerful odor, but lose this smell a short time afterwards, is therefore very simply explained: they lose their odor, because they can now absorb oxygen in any quantity from the air, and from the process of putrefaction can make a further transition into that of decay.

If moist vegetable or animal tissues lie in a room from which the air is entirely or partially excluded—for instance in a cellar which has no ventilation, or in a chest, etc.—then in the undisturbed, damp air, a decomposition takes place, consisting partly of putrefaction, partly of decay—the well-known process of *moldering*, recognized mainly by its close smell, and simultaneous production of mold, fungi, and spongy excrescences. By the addition of water, this kind of decomposition may be converted into putrefaction; by the introduction of a current of air, into decay; or, lastly, it may be brought entirely to a close, if by means of ventilation, all moisture is evaporated, and the decaying body becomes completely dry.

In common conversation, the words “putrefaction,” “moldering,” and “decay,” are deemed synonymous in meaning, and the one or the other of these words is used at the pleasure of the speaker to designate the changes under our consideration. In the majority of cases, it is indeed a matter of indifference, and in a strict sense not at all incorrect, inasmuch as in most decomposing bodies all three processes are of simultaneous occurrence; externally, with free access of air, decay; in the midst, between both, moldering. Here, however, reference must be made to a distinction in these processes, the knowledge of which is important in a practical respect; we mean, the fact that we have to consider putrefying and moldering substances only as a half-prepared or half-finished nutriment for the plants in cultivation; *decaying substances, on the contrary, as a fully prepared or perfected vegetable nutrient*. By the putrefaction and moldering of manure, its constituent elements are put in training for a brisk decay, but by decay are first transferred to those combinations which are consumed by plants for their nutrition. Putrefaction and moldering may be compared, in this respect, to the

soaking, maceration, or parboiling of our food; decay, on the other hand, to its full and finished dressing. Peat is composed of putrefied vegetable organs; pond-mud is equally rich therein; in the same manner, we very frequently find in the subsoil considerable quantities of putrefied or moldering vegetable tissue, for instance, what is called moor-earth, etc. All these substances must notoriously lie a longer or shorter time in the air, before they are serviceable to plants. The transformation they thereby undergo follows from what proceeds; they pass over from a putrefied or rotten state into that of decay.

In arable land the decay of manure can only take place in its upper surface, so far as this is loose and accessible to air. If, therefore, a rapid operation is desirable, it must only be superficially plowed in, especially in heavy soil. The deeper it is introduced into the ground, and consequently excluded from the air, the more tardy and slow must be its decay, and therefore its operation.—STOCKHARDT'S *Chemical Field Lecture.*

Married in Spite of Their Teeth.

Old Governor Saltonstall, of Connecticut, who flourished some years since, was a man of some humor, as well as perseverance in effecting the end he desired. Among other anecdotes told of him by the New London people, the place where he resided, is the following:

Of the various sects which have flourished for their day, and then ceased to exist, was one known as the Rogerites, so called from their founder, a John, or Tom, or some other Rogers, who settled not far from the good town aforesaid: The distinguished tenet of the sect was their denial of the propriety and scripturality of the form of marriage. They believed 'it is not good for man to be alone,' and also that one wife only should cleave unto her husband. But then this should be a matter of agreement merely, and the couple should come together and live as man and wife, dispensing with all the forms of the marriage covenant. The old Governor used frequently to call upon Rogers, and talk the matter over with him, and endeavor to convince him of the impropriety of living with Sarah as he did? But neither John nor Sarah would give up their argument. It was a matter of conscience with them; they were very happy to-

gether as they were; of what use, then, could a mere form be? Suppose they would thereby escape scandal, were they not bound to take up the cross, and live according to the rules of the religion they professed? The Governor's logic was powerless. He was in the neighborhood of John one day, and meeting with him, accepted an invitation to dine with him. Conversation, as usual, turned upon the subject.

"Now John," said the Governor, after a long discussion of the point, "why will you not marry Sarah? Have not you taken her to be your lawful wife?"

"Yes," replied John, "but my own conscience will not permit me to marry her in the form of the world's people."

"Very well, but you love her?"

"Yes."

"And respect her?"

"Yes."

"And cherish her, as bone of your bone, and flesh of your flesh?"

"Yes certainly I do."

"And you love, obey, respect and cherish him?" he continued, to Sarah.

"Certainly I do."

"Then," said the Governor, rising, "by the laws of God and the Commonwealth of Connecticut, I pronounce you to be husband and wife!"

The ravings and rage of John and Sarah were of no avail; the knot was tied by the highest authority in the State.

THE AGE OF A HORSE.—A man who wanted to buy a horse asked a friend how to tell a horse's age.

"By his teeth," was the reply.

The next day the man went to a horse dealer, who showed a splendid black horse. The horse-hunter opened the animal's mouth, gave one glance, and turned on his heel.

"I don't want him," said he; "he's thirty-two years old."

He had *counted* the teeth.

THE BLOODHOUNDS.

THE gallant officer had been taken prisoner by the Mexicans, with some privates in the daring band he commanded. All had escaped, and a pack of Mexican bloodhounds were laid upon their trail. The fugitives had gained a high, small platform in a precipice, and,—writes this truly adventurous author :

"We stood for some moments gathering breath and nerving ourselves for the desperate struggle. I could not help looking over the precipice. It was a fearful sight.

In a vertical line, two hundred feet below, the stream came rushing through the canyon, broke upon a bed of sharp, jagged rocks, and then glided on in seething, snow-white foam. There was no object between the eye and the water; no jutting ledge, not even a tree to break the fall—nothing but the spiky boulders below, and the foaming torrent that washed them.

It was some minutes before our unnatural enemies made their appearance, but every howl sounded nearer and nearer. Our trail was warm, and we knew they were scenting it on the run. At length the bushes crackled, and we could see their white breasts gleaming through the leaves. A few more springs, and the foremost bloodhound bounded out upon the bank, and throwing open his broad jaws, uttered a hideous growl. His comrades now dashed out from the thicket, and joining in a chorus of disappointment, scattered upon the stones.

An old dog, scarred and cunning, kept along the bank until he had reached the top of the canyon. This was where we had made our crossing. Here the hound entered the channel, and, springing from rock to rock, reached the point where we had dragged ourselves out of the water. A short yelp announced to his comrades that he had lifted the scent, and they all threw up their noses and came galloping down. There was a swift current between two boulders of basalt. We had leaped this. The old dog reached it, and stood straining upon a spring, when Lincoln—a celebrated hunter and an Irishman—fired, and the hound, with a short 'wough,' dropped in upon his head and was carried off like a flash!

'That counts one the less to pitch over,' said the hunter, reloading his true rifle.

Without appearing to notice the strange conduct of their leader, the others crossed in a string, and, striking the warm trail, came yelping up the pass. It was a grassy slope, such as is often seen between two tables of a cliff, and as the dogs strained upward, we could see their white fangs and the red blood that had baited them, clotted along their jaws.

Another crack from Lincoln's rifle, and the foremost hound tumbled down the gorge.

'Two rubbed out,' cried the hunter, and at the same moment I saw him fling his rifle to the ground.

The hounds kept trail no longer. Their quarry was before them—their howling ended, and they sprang upon us with the silence of the assassin. The next moment we were mingled together—dogs and men—in the fearful struggle of life and death. I know not how long their strange encounter lasted. I felt myself grappling with the tawny monsters, and hurling them over the cliff. They sprang at my throat, and I threw out my arms, ramming them fearlessly between their shining rows of teeth. Then I was free again, and, seizing a leg or a tail, or the loose flaps of the neck, I dragged the savage brute towards the brink, and summoning all my energies, dashed him against the bluff that he might tumble over.

Once I lost my balance, and nearly staggered over the precipice. At length, panting, bleeding and exhausted I fell to the earth. I could struggle no longer—I looked around for my comrades. Clayley and Raoul had sunk upon the grass, and lay torn and bleeding. Lincoln and Clane, holding a hound, were balancing over the bluff.

'Now, muster,' cried the hunter, 'give him a good hirst, and see if we can pitch him clar, on tother side—he-woo-hoo,' and with this ejaculation, the kicking animal was launched into the air.

I could not resist looking after. The yellow body bounded from the face of the opposite cliff, and fell with a heavy splash upon the water below.

Thank God. He was the last of the pack."

ANCIENT AGRICULTURISTS.—The first three men in the world were, a gardener, a plowman, and a grazier; and if any man object that the second of these proved a murderer, he will please remember, that as soon as he was so, he quit our profession and began to build a town!

How to Choose a Good Milch Cow.

WE copy the following remarks on the points indicative of a good milch cow, from the supplement to a recent English edition of Prof. MAGNE'S *Treatise on Milch Cows*, by JOHN HAXTON. They are stated with great clearness and judgment, although, perhaps, in a very few cases, undue prominence may be given to some particulars:

"The points to be attended to in judging a good milch cow, are, by universal consent, considered to be, shape and size of the animal, both as a whole and in detail; texture of the skin and hair; development of the lactiferous parts; temperament or habit of body and disposition; and finally, strength or endurance of constitution. A maximum development of these points marks out a first class cow of the breed to which she belongs; but the milking properties differ in endless variety, not merely as these points are prominent or the reverse, but also in proportion to the circumstances of climate, soil and treatment. The *ecusson* test of M. GUENON is a new element in the question; and when fully established, and better understood, will probably occupy the first rank among the external signs, which indicate the natural milking properties of cows; but as yet it is rarely recognized in Britain. How far M. GUENON'S observations have been borne out, will be discussed hereafter; meantime, we shall direct the reader's attention to those points which experience has proved to possess a marked influence on the milking properties of cows.

Shape.—Whatever may be the breed to which a cow belongs, there are certain points of configuration which are considered essential as regards her milking properties. There may be, and are frequently, great discrepancies between the one and the other; but still, generally speaking, the rule holds good that, all things being alike, the cow which approaches nearest to a certain standard will be the best milker. The head must be rather lengthy, especially from the eye to the point of the nose; the nose and muzzle should be cleanly cut, and free from thick skin or fleshy lumps; the cheek bones thin, and in like manner devoid of thick skin or flesh; (not thick chopped;) eye prominent, of a placid and benignant expression, with little of the white exposed to view. If horned, the horns should taper gradually to a point, and have a clean surface, free from rugosities; the breed will determine the shape and set of the horns.

The neck should be long, thin, and free from loose skin. A good milk cow may be deer or ewe-necked, but never bull-necked. The chest and breast should be deep, rather than broad, and the brisket should project downward and forward; and, whether large or otherwise, should be round, well-shaped, and without loose folds of skin depending from it. The girth behind the shoulders, moderate, and arising more from depth than breadth of chest; shoulders rather narrow at top; back-bone on a line with the shoulder-top; ribs arched, and well home to the haunch-bones, which should be wide apart, and form a straight line across, neither depressed in the center, at the lumber vertebræ, nor drooping at the extremities; hind-quarters lengthy, and the rump or tail-top nearly on a line with the back-bone; thighs rather thin, but broad, well-spread, and giving plenty of room for the udder; belly projecting outward rather than downward, with plenty of room for food; the udder should be larger in a lineal direction—that is, well backward as well as upward—between the hind legs and forward on the belly; also broad in front, filling up the space between the lower flanks, but rather short vertically—a deep hanging udder, from its swinging motion, being always the cause of great fatigue to the animal when walking; the teats should be moderately long, straight, and equal in thickness from the udder to the point, and also at considerable and equal distances from each other; the two front teats especially should be well apart, and the direction of all four should be outward. When full of milk, the udder should be greatly enlarged in size, and, when newly emptied, shrink in a corresponding degree, and the skin gather into soft creases. The mammary veins running on each side of the belly, large throughout their whole course, and swelling into large puffs at or near their junction with the udder; thigh veins also large and easily felt by the hand.

Of all these shapes, the more important are the long, finely formed head; long, thin neck; rump nearly on a line with the back-bone; broad quarters; long udders from back to front; and large veins underneath the belly, and downwards, from the loins and thigh, to the udder. When seen in front, the body of a good milk cow should present the appearance of a blunted wedge, the apex of which is the breast and shoulder. Seen from behind, she should present a square, well spread shape. Seen sideways, she should be lengthy, but not lanky.

Skin, Hair and Color.—The skin is ever a true index of the milk-

ing properties of the cow. It should be soft and flexible on every part of the body, especially on the back-ribs, and also on the rump-bones, situated on each side of the insertion of the tail. The latter is a point much prized by dairymen ; so much so, that a very successful farmer in Cheshire, Mr. JABEZ WRIGHT, told the writer that, in buying a cow, if the skin on the rump was soft and easily lifted from the bone, he never sought for further signs of her milking powers. Of course, while feeling this point, Mr. WRIGHT's practiced eye would at once take in, at a glance, those other points which constitute the *tout ensemble* of a good milker ; but the one referred to he considered indispensable. The skin in these parts will vary, however, according to the condition of the cow. If full of flesh, the skin may be loose, and yet the animal be a poor milker ; but if in lean condition, with loose skin on the rump-bone, she will milk well and fatten quickly when dry. The skin on the ribs is of the next importance ; and if it corresponds in softness and looseness with that on the rump-bones, another point of excellence is established. These two points conjoined are correct exponents of the internal constitution, and are always accompanied with more than an average tendency to milk freely and fatten rapidly. The former indicates a more than ordinary power of producing milk ; the latter, a great aptitude to fatten ; and their conjoined presence indicates the union of both tendencies. The skin on the udder generally partakes of the quality of that on the rump and ribs, and will therefore be soft and flexible, in proportion to their softness and flexibility. Still there is a difference to be observed, viz : that the skin of the udder must not be thick, whereas thickness on the rump and ribs is quite consistent with the best properties, provided it be loose, soft and flexible. In fact, a thickish, soft hide, generally indicates hardness of constitution, from its greater capability to resist or modify external influences, whether of climate or cuticular irritation from the bites of insects.

The hair is the next point to be studied. It should be moderately long, closely set, and above all, soft and woolly. As the thick soft skin is an indication of hardness, much more so is this the case when covered with long, thick, woolly hair. A bare, hard-haired cow, is ever to be avoided by the dairymen as well as the grazier.

If even a moderate milker, yet she will be a great eater, and never pay for her food.

Color is immaterial, and depends on the breed. A brown cow is

supposed to give milk rich in butter, while a black cow gives much milk, which is poorer in butter. A white cow looks larger than she really is, while a black one looks smaller. According to the law of absorption and radiation of heat, a black cow will absorb much solar heat in summer, and radiate, or throw off, a large amount of animal heat in winter. On the other hand, a white cow will absorb less heat in summer, and radiate less in winter; and the practical result is, that the black cow is too warm in summer and too cold in winter, while the white one is cool in summer and warm in winter. This is somewhat opposed to the popular idea on the subject, which attributes a cold appearance to a white animal in winter, and the contrary to a black one; but that this is a popular fallacy may be seen, independent of the scientific explanation of the phenomenon, from the fact that the native or wild breed of Britain were all white, and are so still in Chillingham Park, where the animals are never housed; and also from the fact that white is the prevailing color of all arctic animals—bears, foxes and hares, all being of this hue. The practical conclusions deducible from the fact that a black cow absorbs much heat in summer and radiates much in winter, are: *first*, she must be more susceptible of, and more injured by, sudden atmospheric changes than a white cow; *secondly*, in cold weather she will lose much heat by radiation, and hence must eat more food to keep up the animal heat at its proper temperature. Again, in warm weather she will require less food for this purpose than a white cow, but will be oppressed with heat, and more liable to profuse perspirations. The result of these conditions on the milking properties of the two animals will be, that the black cow will be liable to have her milk injured in quality by an excess of heat, and consequent irritation of the system, and profuse perspiration, in summer; while, on the other hand, the cream or oily part of it will be diminished in quantity in cold weather, by the cow using more of the food she eats to keep up the natural heat of her blood. This accounts, in some degree, for the popular notion that the milk of a black cow is generally poorer in butter than that of a white or mixed color.

Temperament and Constitution.—Animals, like human beings, are differently developed in their nervous, sanguineous, muscular and lymphatic constitutions, and their tempers and dispositions vary accordingly. Each breed of cattle is characterized by peculiarities of temper, activity and endurance. The Ayrshire cow presents a good specimen of the union of the nervous and sanguine temperaments,

in which the latter predominates. The North Highland cow also possesses a union of the same temperaments, but the nervous predominates, which gives her a restless and even fierce aspect. The Short-horn possesses a temperament in which the lymphatic is largely developed; she is slow and sluggish, but all the more disposed to fatten on that account. The muscular temperament is disappearing before the march of improvement, as animals of this description are neither good for the grazier nor the dairy, being fleshy, thick-skinned, and poor milkers. Constitution is the result of natural temperament and physical configuration, but each temperament has its own particular diseases to which it is liable. The nervous temperament predisposes to fevers, the sanguine to inflammations, and the lymphatic to lung diseases; but as these temperaments are never found distinct, but always combined together in some proportion or other, the peculiar diseases to which these unions give rise, are as endless as the constitutions themselves.

Atmospheric causes, and artificial treatment, also impress certain physiological characteristics upon cattle. Exposure to cold, when young, has a tendency to develop those parts of the system whose office it is to protect the vital functions from being injured by this cause. When an animal is early exposed to cold, the hide thickens, and becomes covered with long thick hair. It becomes innured to exposure, and is little affected by atmospheric changes. A long continuance of such treatment, as is the case of the kyloes, from one generation to another, soon impresses a peculiar habit of growth upon them, and this in time settles into a fixed and permanent temperament, or physiological character. Even, however, among individuals of the same breed, exposed to the same external influences, there are great discrepancies as regards individual constitutions. Some are more hardy than others, simply because certain causes, either accidentally or designedly induced, have given them better digestive powers, stronger lungs, and more vital energy. This superiority of constitution, whatever may be its cause, is generally indicated by a large round body, a soft flexible skin, by no means thin, which is covered with a thick coat of soft, silky or woolly hair. A large paunch is usually the sign of an animal which can, and will consume a great quantity of fodder, in the shape of hay or straw; and this we know, by experience, to be one of the best indications of a good, healthy, hardy, thriving animal, whether cow, horse or sheep. Strength of constitution can be transmitted as well as other peculi-

arities; so that a careful breeder, by always breeding from animals that he knows to be of good constitution, will ultimately succeed in strengthening his stock."

A PREMIUM FOR EXPERIENCE.—The following passage from Prof. NORTH'S Address before the Oneida Co. Agricultural Society, is worthy of consideration :

" It is to be hoped the day is not distant, when our Agricultural Societies will be so reformed, that premiums shall be paid for imperishable ideas, as well as for perishable crops. A good yield of corn is less worthy of a prize, than a good treatise on the best way to raise corn. Pay twenty dollars for a premium on the best orchard in the country, and only one man is encouraged by it. Pay twenty dollars for a treatise on the best method of managing apple trees, and the whole world of fruit-growers gets a benefit. There is a precious volume of agricultural knowledge hived away in the memories of farmers that never comes before the public, simply because it is never invited. Many a successful cultivator of the soil has died, making no sign, who might have bequeathed to society a legacy of valuable information. In place of offering the farmer five dollars for driving his pet Durham cow to the Fair, offer him double the money if he will bring also his budget of experience in the dairy business. Society will be thereby a gainer, and the dignity of rural pursuits will be fittingly vindicated.'

GRAIN IN GREAT BRITAIN.—The imports of grain into great Britain, for the calendar year of 1853, was equivalent to 85,619,532 bushels of wheat; in 1854 it was 63,267,240 bushels, and in 1855, 50,227,608 bushels. The estimate for the next year is that 40,000,000 bushels will be wanted, of which Russia, it is supposed, will supply 10,000,000 bushels, Prussia 10,000,000, and other European countries 5,000,000, leaving 15,000,000 bushels to be furnished by the United States.

More About Terra Culture.

WE publish the following letter from Dr. COBB, of Michigan, both on account of its own worth and interesting matter, as well as for appending thereto some further remarks upon the same topic.

INGHAM, Ingham Co., Mich., Sept. 25th, 1855.

PROF. F. G. CARY, COLLEGE HILL:

DEAR SIR:—Yours of the 5th was received last Saturday the 13th; and in reply, I must give it as my opinion, most decidedly, that although my opportunities for testing the application of the laws of vegetable physiology, discovered by Prof. Comstock, under the name of 'Terra-Culture,' will not enable me to do him, or the subject, justice; yet the facts and results coming under my observation and experience, fully demonstrate the truth of his doctrines; and most freely will I furnish them to you.

As farming is not my legitimate business, my experience has been necessarily limited; being confined to the cornfield and garden, and a little fruit trees. Last year I had the best crop of corn I ever raised, with far less labor than I had previously considered necessary. This year, the drought has not injured my fields half so much as those of my neighbors. I have a good growth, well eared, and should have had a good crop if the frost had held off two weeks longer. Many have told me this fall, that in consequence of the drought, more than half of their corn was not eared at all, and none have fair ears; mine is well eared, with as fair ears as usual. Previously to last year, I have often had my corn blown down, while growing, by heavy winds. Prof. Comstock's explanation on this point has proved perfectly correct. The growth being more vigorous, the stalk will break before it will bend. This summer a heavy wind *broke* down some, but not a stalk *bent* down. * * * * *

I consider his theory of great value in the cultivation of garden vegetables, both as it regards the vegetation of the seeds, and maturity of the plants, as my garden has borne ample testimony for the last two seasons. Previously, some seeds always failed to vegetate, now I have to pull out many plants to give the desired number room in which to grow.

If, in my reply, I have missed the points which were the object

of your solicitude, please name them, or any one in particular, and I will answer you as fully as my experience will admit.

Very respectfully,

DANIEL J. COBB, M. D.

From the numerous letters received in reply to our inquiries similar to the one above—uniformly favorable to the theory of Terra Culture, in addition to the results of experience made since hearing its disclosure—I am induced to accredit much more to its claims, than when first presented. Believing no theory valuable unless it will stand the rigid test of analysis and experiment, our indorsement of its claims will correspond with the number of well attested experiments which go to establish such claims. Not that we shall scout the candid, and deliberate, and well-formed opinions of others—by no manner of means—for, if we can believe nothing except what we have ocular demonstration to prove, a large amount of the information we have, and upon which we daily rely, would be expunged from our encyclopaedia, and all that is called science, must be made to depend for its verities upon what we ourselves have successfully and fully demonstrated. But our position is this: we are not satisfied to take for granted, upon the statement of another, where interest, or caprice, or ignorance of the true cause, may have biased the judgment, or greatly modified our conclusion. In agriculture, especially, it is not difficult to find a contrariety of views, on almost any of its doctrines and practices; and it is the easiest thing in the world to secure testimonials. Look at the string of names to every quack medicine that is brought to our notice. How many universal catholicons to every disease and ailment that flesh is heir to. One would think that Socrates knew not what he affirmed, when he said ‘There was no place out of Attica where people did not die,’ if we believed all that was said of the wondrous effects of this or that. Again, in agriculture, we are so subject to be imposed upon by the sophism, which in the language of the logician, is called *non causa pro causa*, or assigning as the cause of a result that which is not the cause, that we are compelled to make great abatements in the statements which are often made with great candor and plausibility.

Different minds view matters very differently, but when the case is fully stated, the facts fully presented, it is our province to decide accordingly; and this is what we desire in relation to this, and every

other subject, without passion, without prejudice. There are a great many, in these days, who some how or other enjoy an extravagant reputation for wisdom, who never give a decisive and unequivocal opinion in any case. Like the Delphic Oracle, they are always sure to be right, because the prediction would fit any result. In the present case, though not in accordance with our nature, without any pretensions to infallibility, it may be safe in us to adopt the same course.

We have been giving some attention to various experiments for a few weeks past in the cereals. We have just sowed our forty-eighth variety of wheat; we have also completed sowing some forty-six kinds of grasses, mostly received through the United States Patent Office.

The difference in the product of these grains, after having been sowed but four weeks, was surprising; the Terra-cultured weighing eight times as much as the common-cultured. We exhibited to our class in college a stool of barley, the product of one grain, which in six weeks had tillered fifty-two stalks, and upon inspection, many more seemed to be germinating, distinctly visible upon removing the outer leaves. Our observations in relation to the newly discovered law of vegetable physiology—to fruit and fruit trees—to shrubs and plants—have been, up to this time, quite satisfactory, and have materially modified our views as to the propriety of many practices recommended by those high in authority. As our attention has been directed especially to wheat, to modes of culture recommended, most approved, etc., we have thought it would not be uninteresting, to give our readers a specimen of the inculcations of our Savan, after the light of all the traditions, and history, and science of near two thousand years—and, from our present, as a stand point—note the progress, and especially the *degree of uniformity, or contrariety presented by such survey.*

We will begin our quotations from what may be called the great Agricultural work of our times, which ramifies through every agricultural periodical or paper in our country, and whose light most are disposed most implicitly to follow—*Loudon's Encyclopaedia of Agriculture*—we shall confine our readings chiefly to the preparation of the ground, manner of sowing and quantity of seed.

"On soils really calculated for wheat, summer fallow is the first and leading step to gain a good crop of that grain. The first furrow should be given before winter, or as early as other operations on the farm will admit; and every attention should be used to

go in as deep as possible : for it rarely happens that any of the succeeding furrows exceed the first one in that respect. The number of after-plowings must be regulated by the condition of the ground and the state of weather.—LOUDON, Page 814.

“The season for sowing wheat on clays is generally the latter end of autumn ; on early turnip soils, it is sown after clover, or turnips, at almost every period, from beginning of September till the middle of March ; but the far greater part is sown in September and October.”—Page 815.

“The quantity of seed, necessarily depends both on the time of sowing, and the state of the land ; land sown early requiring less than the same land when sown in winter, or spring ; and poor land being at all times allowed more seed than rich. The quantity, accordingly, varies, from two bushels or less, to three, and sometimes even to four, per English Statute Acre,” (which is the same with our acre. The “Imperial bushel” is 68 cubic inches larger than that of the United States. Here is certainly margin enough for all !)—Page 816.

“The modes of sowing wheat, are, either broadcast, ribbing or dibbling. The first mode is by far the most general, more especially in the north of England, and Scotland ; and the seed is for the most part covered by harrows.

Many farmers alledge, that, wheat which is harrowed in, is apt to be thrown out in spring ; or, if not thrown out at that season, that it does not tiller well, and that the stalks are apt to ‘dwindle away,’ and fall down in the following season. It is certain that this is the case in many parts of England ; by which there is not sufficient covering for the seed. To guard against these evils, it is a very general practice in most of the southern counties, when wheat is sown broadcast, to plow it in with a shallow furrow.

Drilling, however, is extensively practiced in some districts, and is becoming more general on lands infested with the seeds of annual weeds, especially when sown in spring.—This is for the purpose of cultivating with the hoe.

The dibbler carries on three flags, or turned furrows ; going on some yards upon one of the outside furrows, and returning upon the other, after which he takes the middle one ; and thus keeps his three droppers constantly employed ; and at the same time there is no danger of filling up the holes with his feet. The droppers put two or three grains of wheat in each hole ; but much time and patience are necessary to teach them to perform the business properly and quickly. An expert dibbler will hole half an acre in a day ; though one third of an acre is reckoned a good day’s work. The seed is covered by means of a bush harrow ; and from one bushel to six pecks is the usual quantity for an acre.”

What would our prairie farmers say of this treatment ? It is certain that it will not soon be adopted by them !

In the *American Agriculturist* of 1845, vol. i., pages 123 and 124, we have the following instructions, quoted from the London *Farmers’ Magazine*, certainly no mean authority :

“Our crops of wheat in this district are very apt to be thrown out in spring, by alternate nights of frost and days of sunshine, whereby the roots, if the plants are not entirely destroyed, are so injured, that to support nature, the plant throws out side shoots, and there being no firm hold on the ground, becomes what, in England, is called root-fallen,

and lodges long before the grain is ripe. To get the better of these faults, we sow our wheat by a plow drawn by two horses, five or six inches deep, and cover it with the next furrow at ten or eleven inches breadth. We never harrow after sowing, and the wheat is covered by the deepest part of the furrow.

Another advantage of this plan of sowing, is, that all trouble and time of harrowing is saved; and if sudden rain comes on, the sowing is stopped at once, without the risk of being half drowned. The ground is also much more cloddy in winter, thus affording shelter to the young plants, and an excellent cover for grass seeds, if sown in a dry, bleak, frosty morning, without harrowing, by the decomposition, and falling down or moldering of the ground as the day advances, and the effects of the sun are felt on it. My experience is, that harrowing is injurious."

On page 272 of the same work, we have the system of wheat cultivation adopted in western New York:

"The wheat is sown in a clover turf—which LOUDON says, page 214, is extremely hazardous—time, from the 10th to the 15th September. The quantity of seed is one and a quarter bushels per acre.

HATCH's machine is used here in sowing wheat and all other kinds of grain; with this, a boy will sow about twenty acres in a day."

A good day's work, certainly!

In vol. iii. of 1845, we find these instructions:

"Winter grain is best sown in drills about six inches apart, as it is thus more exposed to the sun; the air also circulates more freely through it. Next to sowing in drills, we prefer plowing in the grain sown broadcast from two to three inches deep."

"When the ground is in good condition to receive the seed, it should be sown and harrowed in, with a heavy drag, burying the seed about three inches. The experiment has been tried for a series of years, in Scotland, of plowing it in to a depth of six inches." —Page 276, vol. iii., 1845.

"On one of the best cultivated farms in England—that of the Duke of Bedford, at Woburn—Mr. BUMERS, the farm manager, states, that he employed boys to dibble one hundred acres of wheat. The holes were made with a stick, or dibble, three inches asunder in the row, the distance between the rows being nine inches; and the number of 'dibs,' per acre, amounted to 232,320."

Here we have one of the best and one of the most successfully cultivated farms in the entire realm, where we would suppose the best modes would be adopted, and yet what does our author say further on the same page?

"A great diversity of opinion prevails on the subject of drilling and dibbling wheat; and from the respectability of the differing parties, there is reason to believe these opinions are held in equally good faith."

The same may truly be said to be the case in our own country.

Every man has his own way, and is as tenacious of it as he is of the articles of his religious creed; and, as a general rule, the more absurd his opinions and practice are, the more tenacious is he. One of our most successful wheat growers, and one who has borne the palm for quantity and quality of product, recently gave us this direction:

"First plow the ground ten inches deep, at least; then manure, being careful to spread equally, harrow thoroughly, lay out in lands of seven steps, prepare your seed by first making it thoroughly wet with salt water, then lime with quick-lime as much as will adhere; (this is recommended by LOUDON,) prepare no more than you would sow the same day, sow as usual from a bushel and a half to two bushels to the acre, and plow it in about three inches deep."

This may serve as a specimen: to record every freak and fancy would fill a volume—and from this hasty survey we are called upon to decide upon that practice which will result in the greatest amount of produce, with the most economy of time, labor and expense. And what do we find? confusion, worse confounded the further we proceed. In the rehearsal above, every law of vegetable physiology is set at defiance, with a practice strangely diverse and opposite. *This is not science.* There are laws in the vegetable, as well as in the animal world. These laws are uniform, and will, if known, by our faithfully conforming to them, be attended with no uncertain results. But what do we find in our review?

As to *quantity*, we are authorized by good practice to sow from two or less, to four bushels per acre. As to *time*, from September to March. As to *preparation*, one says plow as deep as possible, and harrow as often as you please, or until your soil is rendered completely friable; another, there is great advantage in having it turned up lumpy, for the benefit of the dissolution which is subsequently to cover the bare roots thrown out by the frost. One says harrow in shallow; another, load your harrow so that it may be put in at least six inches; another don't harrow at all. One says plow in deep to keep the growth from spouting out; another says, plow shallow; and as to depth, they all vary from two to six inches! Now, as we stated, we intend to reserve our opinion in relation to these matters, until we have heard others, who differ from us, express theirs, and then we *may* adventure ours, assured from the experience of the past, *that this is the part of wisdom.* Hence, we invite free expression of opinions on this subject.

"The Wife for Me."

HORACE HASTINGS was a sober, sensible, enterprising bachelor, of some seven and twenty years, who, having obtained an excellent reputation for his industry and integrity, and having made himself useful to the mercantile firm in Boston, with whom he had served an apprenticeship, was at length invited to a partnership in the concern. For some time he had been encouraged to anticipate this elevation, and he soberly and energetically entered upon the new duties of his position. When business crowded, he had but little leisure to mourn his celibate condition; but when the hurrying season was over, and hours each day hung heavy upon his hands, he could not help thinking how delightful it would be had he but a house and a gentle wife of his own. His pecuniary circumstances now warranted such luxuries; and he resolved to marry when he could find a lady 'just suited to his mind.'

Near a country village in Maine, not a thousand miles from Bangor, lived an old friend of his father; and being on a collecting tour in that region during the autumn months, he determined to accept an oft repeated invitation to spend a few days with the old gentleman, and sent a note announcing his coming.

At the appointed time he reached the residence of his old friend, and found that the family were prepared and pleased to welcome him as a guest. In the parlor were two young ladies, well dressed, and quite handsome. He was duly introduced to Miss Jane and Charlotte, and found them accomplished and sensible young ladies. Being just now very susceptible to tender passion, he was easily pleased, and exerted his powers to render himself agreeable to the flattered maidens. He succeeded, of course. Sensible men, of his age and prospects, always do, when they try. And his eyes, wandering in conversation, from one handsome, intelligent face to another, he caught himself several times mentally inquiring—' Which would make the better wife ? '

The mother and a neat looking maid were seen at intervals passing from the kitchen preparing supper. The girl who set out the table, and spread the white, stainless cloth, and arranged the plates, seemed to do it gracefully and quietly, as if she had made such duties a study as a science, and won a passing glance of admiration as a very

neat and pretty servant—a model of a ‘help.’ Altogether, he thought it was a charming family. When they sat at the cheerful supper, and he tasted the light, home-made bread, and the sweet, fresh butter, and the thinly sliced home-cured beef, the hot, well-flavored tea, the excellency and good taste manifested in the whole ordering, he felicitated himself upon having found so pleasant a home, even if it was for a few days. After the supper was over, and the table was cleared, a third young lady, very neatly dressed, entered the room, and was formally introduced to him as one of the sisters, Miss Sarah. He was not a little surprised to find that the neat servant girl, whose handiwork had won his admiration, was one of the sisters. He found her sprightly, cheerful and accomplished, and he thought a little more graceful than Jane, who was the older, or Charlotte, who was younger than herself.

He thought a little more meanly of himself for having taken her to be a hired girl in the family, but not a whit more meanly of her for having revealed herself in that capacity. And his perplexity was somewhat increased as he sat down on his bedside in the chamber to which he was shown by his host, and said to himself, ‘which of the three?’

In the morning, after a night’s sound sleep—for he was not sufficiently in love to keep him awake—he entered the breakfast-room, and was soon joined by the two young ladies who had first welcomed him. Sarah was not yet visible; but when they sat down at the table, and Jane had poured the coffee, Sarah came smiling in behind a clean white apron, and with a steaming pile of hot buckwheat cakes in her hand, which from the hue of her cheeks, she had just been baking. If there were a blush on her cheek, any eye might see it was forced there by the fire, and not by any sense of degradation on account of the office she gracefully filled. She greeted the guest with a welcome smile, deposited her load of eatables, and returned to the kitchen, whence she tripped again in a few minutes, with another plate of cakes, most beautifully baked by her own skill. Horace ate a large quantity of them, more than enough to satisfy hunger, because of the beautiful little hands that made them. And then he wandered over the farm with the old man, and prated of horses and cows, and crops, as though he knew something about them, as well as broadcloths and calicos. At dinner time, Jane and Charlotte were in the parlor waiting for him, and Sarah, as usual, was bustling about the kitchen. ‘I do wish,’ said he, *sotto voce*, ‘that one of those girls

would take Sarah's place in the kitchen a little while, that I might find out some of their housekeeping qualities, and that I might have a little more chat with her."

"But he waited for such a change in vain, though he found some opportunities of converse, and discovered all he wished to know just then about her mental qualifications and acquirements; and at the close of the fourth day, just before he got into bed, he slapped the white counterpane emphatically, and said to it—as there was nobody in the room, I suppose he must have spoken to the counterpane or the bedpost—'She's the wife for me.'

The next day was the outer limit of his visit; and as he stood at the window after breakfast he saw Sarah, with that witching white apron, trip out into the orchard, to shake down some apples, for it was baking day, and pies were to be made. Horace strolled out after her, and shook the tree, and helped to pick up the apples, and carried the basket as they returned slowly to the house. What it was he whispered in her ear she never told, but she seemed not displeased, though evidently surprised, and a little frightened.

A year after, Horace was at the house of his old friend again, and this time Sarah was not so much in the kitchen. There were great preparations for a wedding going forward, and in a few days Sarah became Mrs. Horace Hastings; and now, in a splendid Boston mansion, she fully justifies the wisdom of her dear husband's choice, by being to him a most excellent wife, and a superlative housekeeper.

A PHYSICIAN, passing by a stone-mason's shop, bawled out, "Good morning Mr. D. Hard at work, I see. You finish your grave-stones as far as 'In memory of,' and then wait, I suppose, to see who wants a monument next?"

"Yes, yes," replied the old man; "unless somebody's sick, and you are doctoring him—then I keep right on."

PRACTICAL SCIENCE.—Grandmamma—"Well Charley, and what have you been learning to-day?"

Charley—"Pneumatics, gran'ma!—and I can tell you such a dodge! If I was to put you under a glass receiver, and exhaust the air, all your wrinkles would come out as smooth as grandpa's head."

The Chinese Sugar-Cane.

FROM our first acquaintance with the Chinese Sugar-Cane, we were most favorably impressed with its merits, and at once predicted its value to American agriculture. From that time we have aimed to collect all the facts derived from the experience of those interested in the culture of this interesting plant; and in our August number we published the experiments of Mr. ORTH, of Indiana, and of Dr. RAY, of Long Island, in relation to the culture and merits of this Asiatic plant now seeking for naturalization in America. Specimens of this Sugar-Cane have been frequently exhibited in Cincinnati, as the products of the gardens in the vicinity of the city; and the Horticultural Society has repeatedly given it prominence in their exhibitions. But its merits have not yet, by any means, as we think, been considered and appreciated, even by our most intelligent agriculturists; and, when placed on exhibition, it has been regarded merely as a quiet and reserved indorsement, more than as a hearty commendation of its rare qualities, and valuable adaptations to our domestic culture.

The specimens exhibited, as grown in our vicinity, on both sides of the river—in Ohio and Kentucky—have presented the most gratifying demonstrations of a most perfect and vigorous development of the plant, even to the full ripening of the seed—all showing its complete and ready adaptation to the soil and climate of this region. The successful experience of Mr. ORTH and Dr. RAY, above referred to, go to show most conclusively, that in localities both inland and coastwise, and in a latitude as high as 42° north—which would embrace northern Illinois, Michigan and New York—its adaptations to soil and climate would remain unimpaired. From all the manifestations of its character, which have thus far come to our knowledge, it would seem, indeed, that its adaptations to the diversified conditions of soil and climate, are as ample as is the Indian corn, which flourishes throughout all the regions of this continent, from the Lake of the Woods to the Gulf of Mexico.

This new and immigrant plant, commends itself to our friendly notice, under three different aspects of utility:—as a seed-bearer, as a forage crop, and as a sugar-yielder.

The seed of this plant is developed in a manner similar to that

of our common broom-corn ; to which, indeed, the whole plant presents a striking resemblance. The seed is, however, of a dark brown color, almost black, in its outward appearance, but quite white and mealy within. It is much heavier than the broom-corn seed, and the yield far more abundant ; and, unlike any others of the corn or cane kind, this plant sends off seed-bearing shoots not only from the top extremity, but also from the joints below, successively. Three hundred seeds, planted by J. MCKEE, of Georgia, produced a yield of three pecks of seed, weighing 32 pounds, which is equal to about 44 pounds to the bushel. This weight signifies the presence, of course, of a large amount of nutritive matter, and it is found that both cattle and swine partake of it eagerly, and seem to thrive upon it ; though the quantity yet produced has not been sufficient to feed the seed extensively to animals. We can therefore only say that so far as tried, the seed is both wholesome and acceptable to our domestic animals. As food for poultry, the seed has been more completely experimented with ; and all experience testifies to its superior value in this particular. Chickens eat it greedily ; nor would it seem strange that our Asiatic poultry—Shanghais, Brahmas, etc.—should rejoice to regale themselves with the same food, which fattened their ancestors in the poultry yards of China ! The seed has been ground and employed for bread in France, and is frequently resorted to for that purpose among the Chinese ; but we do not presume that it can in anywise become a substitute for our bread-grains in this country of abundance. But for the food of poultry and stock, the seed promises to become an item of no inconsiderable importance.

Its virtue and value as a *forage-crop*, when the stocks are cast and fed as ‘fodder,’ were alluded to as of great moment, in our August number. A communication from Mr. J. MCKEE, of Ga.—referred to above—found in the *Scientific American*, goes to corroborate our views, then expressed in relation to its value as a forage crop ; and which shows, moreover, that this Asiatic stranger is by no means punctilious as to the particular locality assigned for its new *habitat*, and that it thrives equally as well in the ‘sunny south,’ as in Indiana or Long Island. In his communication on ‘growing the Chinese Sugar-Cane,’ Col. MCKEE says :

“ Some time during the last winter I obtained about three hundred seeds of the ‘Sorgho Sucre’ from the Patent Office, which I planted on the first of May last, on land that had been cleared three years ago. I laid the field off in checks three feet apart for

corn. In some of these hills I planted the seeds of this sugar-cane, dropping eight seeds in a hill, making thirty-seven hills in all. I worked the cane precisely as I did the corn, giving it three plowings and three hoeings. In four months from the time the seed was planted, the cane was fully matured. It then measured ten feet six inches high, and one inch and three-eights in diameter at the butt end. The joints average twelve in number to the cane, measuring from six to eleven inches long, the shortest at the bottom and the longest at the top. As soon as the seed was ripe, another head of seed put up out of the second joint from the top, and in a short time grew as high as the original head, though not quite so large. By the time the seed on this head began to turn dark, a third head sprung up from the third joint, which was about the size of the last head, and now a fourth head is making its appearance from the fourth joint. Where this shooting forth of new heads would end, if no frost should come to kill it, I can not tell. The roots, where I cut off some of the canes some time ago, are sending up new sprouts, some of which are four inches high. I am of the opinion that the Sorgho Sucre is a perennial plant, and would grow all the time if there were no severe cold to kill it. *It appears to surpass everything we can plant in producing fodder for cattle.* There are commonly twelve leaves on a cane, and these measure, on an average, three feet long, and three inches and a half broad. We commonly plant two stalks of corn in a hill. I had eight canes in the same space, each cane producing full as much fodder as one stalk of corn. At this rate, which is to me matter of fact, one acre of cane will produce as much fodder as four acres of corn. But I am persuaded that I might have planted the cane in drills of three feet apart, dropping eight seeds in every space of eighteen inches, and by this means have *eight times as much fodder as corn would produce.*

One head of seed that I picked up at random measured three gills, and one gill contained eight hundred seeds. I then selected a large head, and measured it, and found it to contain four and a half gills of seed. The thirty-seven hills that I planted produced three pecks of seed; this, after drying it two days in the sun, weighed thirty-two pounds. I had no mill to squeeze the cane, in order to make experiments in syrup and sugar. I made a little roller, which I thought might press out some of the sap, but it was a failure, for want of power. It flattened the cane, but did not press out the sap, of which the cane appeared to be full. I twisted a joint with my hands after

being flattened with the roller, and obtained about half a gill of sap, which was as sweet as any of the sap of the sugar-cane of the South. I intend, Providence permitting, to plant at least half an acre next spring, and procure a proper mill and boilers, and make a thorough experiment."

Jos. MCKEE.

Juno, Lumpkin Co., Ga., Sept., 1856.

The same characteristic of this plant that makes it valuable as a forage crop—i. e., the large per cent. of sacharine matter contained in its composition—renders it perhaps still more important as a *sugar-yielder*. It was in view of its adaptations to the production of sugar, that the French government directed the importation of this plant from China into France, where it has been cultivated for this purpose with gratifying success. As our common sugar-cane of the South can not be reared beyond a certain limited range of latitude, whereby our sugar raising districts are confined to particular regions of comparatively limited extent, it would be a national benefit of inconceivable value, to furnish a plant that should enlarge this sugar-yielding region to an indefinite extent. This, the Chinese Sugar-Cane at present, promises to do for us and the world! The magnitude of the blessings of such a boon, surpasses the capacity of human conceptions to comprehend!

That the present promise of this plant, in this sugar-yielding particular, is not without reasonable foundation of fulfillment, seems evident from the facts already communicated. For, in the first place, it is found to be capable of successful and ready acclimation throughout all the temperate zone, and within the tropics will probably flourish as a perennial, as Col MCKEE suggests. And, in the second place, the abundant wealth of sacharine matter in its composition, places it beyond rivalry as a sugar-yielder.

Of its ready acclimation we have spoken above; of its sugar-yielding properties we now proceed to speak. It will be remembered by the readers of our August number, that in Mr. ORTH's report—in Indiana—he states, in this particular, that he “cut *six stalks*, placed them successively upon a flat board, took a rolling pin, and as well as this simple machine enabled it to be done, expressed and saved the juice. The result was, I obtained two table tumblers full of juice. But *the half was not saved*. This was boiled down, and produced one of the same tumblers half full of good, pleasant-tasted molasses, about as thick as the common molasses obtained in the

stores. But as my object was simply to ascertain the quantity rather than the quality, of saccharine matter contained, this juice was neither strained nor clarified, and therefore, its taste was not equal, of course, to what it would be under more careful treatment. From all that I could observe, concerning this plant, I am fully convinced that 15 per cent. of good clarified sugar could be obtained. My simple experiment produced about 25 per cent. of molasses."

We give republication to this extract for the purpose of laying the facts therein set forth, along side of the statement made by Hon. RICHARD PETERS, of Atlanta, Georgia, showing that its location at either north or south, produces no appreciable change in its sugar-yielding properties. In a recent circular, published by Mr. PETERS, on the "Chinese Sugar-Cane and Georgia Syrup," he says:

"I feel it my duty to make known to the southern public the result of my Syrup-making from the Chinese Sugar Millet, in hopes that others who have sown this valuable variety of the Millet, may be induced to work it up into Syrup this season.

I send you a few joints of the Cane and a sample of the Syrup, of which I have made several barrels.

I obtained my start of seed during the spring of 1855, from D. REDMOND, Esq., of the *Southern Cultivator*. I considered it a 'humbug,' from its close resemblance in seed and growth to the 'Guinea Corn,' until my children, towards fall, made the discovery of its being, to their taste, equal to the true Sugar-Cane.

This year I planted one patch, April 15th, another, May 18th, near Calhoun, Gordon county, on land that would produce, during a 'seasonable' year, forty bushels of corn per acre, and this year not over twenty bushels.

Seed sown carelessly in drills, three feet apart, covered with a one-horse plow; intending to 'chop out' to a stand of one stalk six inches apart in the row; but failed to get a good stand, and the seed came up badly from the deep and irregular covering. Worked out same as for corn, plowing twice and hoeing once.

By suggestion of Gov. HAMMOND, of South Carolina, I determined to give the Syrup-making a fair trial; consequently ordered from the Messrs. WINSHIP, of Atlanta, a very complete horse-power mill, with vertical iron rollers, that has worked admirably, crushing out juice for eight gallons of Syrup per hour, worked by two mules, with one hand to put in the Cane, and a boy to drive.

On the 13th of this month, finding the seed fully ripe, I had the fodder pulled, and the seed heads cut.

Yield of fodder per acre, 1,000 to 1,300 lbs.

Yield of seed per acre, 25 bushels of 36 lbs. to the bushel.

First trial of mill, 70 average canes gave 20 quarts of juice.

606 average canes, passed once through the rollers, gave 38 gallons 1 quart of juice; passed a second time through, gave 2 gallons of juice; the 40 gallons, 1 quart, gave 8 gallons thick Syrup.

I carefully measured an eighth of an acre, having the best canes, and the best stand, another eighth having the poorest canes and the poorest stand. The result I give below, the canes having passed once through the roller.

BEST EIGHTH OF AN ACRE.

Yield of juice from 3,415 canes	-	253 gallons.
" " syrup from 253 gals. juice	-	58 $\frac{1}{2}$ "
Rates per acre of syrup	-	468 "

POOREST EIGHTH OF AN ACRE.

Yield of juice from 2,550 canes	-	179 gallons.
" " syrup from 179 gals. juice	-	43 $\frac{1}{4}$ "
Rates per acre of syrup	-	346 "

Weight of 30 selected canes	-	-	49 $\frac{1}{2}$ lbs.
" " juice pressed out	-	-	25 $\frac{3}{4}$ "
" " crushed cane	-	-	23 "
Loss in crushing	-	-	$\frac{3}{4}$ "
Weight of crushed cane dried in sun	-	-	9 $\frac{1}{3}$ "

The following tests were made at the mill, by Dr. ROBERT BATTEY, of Rome, Georgia, a graduate of the Philadelphia College of Pharmacy:

Specific gravity of juice	-	-	-	1.085
" " syrup	-	-	-	1.335
" " New Orleans syrup	-	-	-	1.321
Thermometer applied to syrup	-	-	-	77°
" " juice	-	-	-	70°
Saccharometer " juice	-	-	-	25 $\frac{1}{2}$ °

The juice should be placed in the boilers immediately on being pressed out, then boiled slowly, until the green scum ceases to rise; then stir in a tea-spoonful of air-slaked lime to five gallons of juice; continue skimming and boiling until the syrup thickens and hangs down in flakes on the rim of the dipper.

I have made the clearest syrup by simply boiling and skimming, without lime or other clarifiers.

The lime is requisite to neutralize a portion of the acid in the juice; the true proportion must be determined by well-conducted experiments.

The cost of making the Syrup in upper Georgia, in my opinion, will not exceed ten to fifteen cents per gallon. This I shall be able to test another season, by planting and working up fifty acres of the cane.

I am satisfied that this plant will enable every farmer and planter in the Southern States to make at home all the Syrup required for family use; and I believe that our Chemists will soon teach us how to convert the Syrup into Sugar, for export, as one of the staples of our favored clime.

Obtaining such unlooked for success, with the Chinese Sugar-Cane, I concluded to try our common Corn. From a 'new ground,' planted 3 by 3, one stalk to a hill, a week beyond the roasting-ear stage, I selected thirty stalks.

Weight of 30 stalks,	-	-	-	$35\frac{3}{4}$ lbs.
" " juice,	-	-	-	$15\frac{1}{4}$ "
" " crushed stalks,	-	-	-	$19\frac{1}{2}$ "
Loss in crushing,	-	-	-	$\frac{1}{2}$ "
Yield of Syrup,	-	-	-	$1\frac{1}{2}$ pints.

The Syrup of a peculiarly disagreeable taste, entirely unfit for table use.

RICHARD PETERS.

Atlanta, Georgia, September, 1856."

This thorough experiment by means of proper machinery, in Georgia, serves to corroborate the opinion expressed by Mr. ORTH of Indiana, in relation to the sugar-yielding properties of this plant. And, should further experience confirm these views, and fulfill these anticipations concerning the qualities and adaptations of this plant, the benefit conferred by its introduction to American Agriculture, will outstretch the power of arithmetic to compute, and of numbers to express.

THE test of good humor is to wake a man up in the middle of the night, and ask him to lend you five shillings. If he makes the change without grumbling, he is a good humored man.

The Immensity of the Universe.

THE space in which the system composing the universe moves is il-limitable. Were we to attempt to assign its limits, what would we imagine to be beyond? The number of worlds is infinitely great; it is inexpressible, indeed, in numbers. A ray of light traverses 180,000 miles in a second of time. A year comprises millions of seconds, yet there are fixed stars so immeasurably distant, that their light would require millions of years to reach our eyes. We are acquainted with animals possessing teeth, and organs of motion and digestion, which are wholly invisible to the naked eye. Other animals exist, which, if measurable, would be found many thousands of times smaller, which, nevertheless, possess the same apparatus. These creatures, in the same manner as the larger animals, take nourishment, and are propagated by means of ova, which must, consequently, be again many hundreds of times smaller than their own bodies. It is only because our organs of vision are imperfect, that we do not perceive creatures a million of times smaller than those. What variety and what infinite gradations do the constituents of our globe present to us in their properties and their conditions! There are bodies which are twenty times heavier than an equal body of water; there are others which are ten thousand times lighter, the ultimate particles of which can not be known by the most powerful microscopes. Finally, we have starlight—that wonderful messenger which brings us daily intelligence of the continued existence of numberless worlds, the expression of an immaterial essence which no longer obeys the law of gravitation, and yet manifests itself to our senses by innumerable effects. Even the light of the sun—with the arrival of which upon earth, inanimate nature receives light and motion—we cleave asunder into rays, which, without any power of illumination, produce the most important alterations and decompositions in organic nature. We separate from light certain rays, which exhibit among themselves a diversity as great as exists among colors. But nowhere do we observe either a beginning or an end.

A FARMER returning home in his wagon, after delivering a load of corn, is a more certain sign of national prosperity, than a nobleman riding in his chariot to the opera.

Coffee.

A BRAZIL correspondent of the New York *Journal of Commerce* gives an interesting sketch of the history of this universal beverage, so popular among all nations, whether civilized or semi-civilized, which have become acquainted with its properties. Wherever it has gained a foothold, its advance has been sure. It has never made a retrograde movement, though assailed by ecclesiastical bodies, or by colleges of physicians of every school. Mohammedan Muftis thundered anathemas against it more than three centuries ago; the wittiest writers of the Court of Louis XIV. squibbed it. The illustrious Dr. Murray (Allopathic) reproaches coffee, when indulged in too freely, with producing vertigo, trembling of the limbs, cutaneous eruptions on the face, hysterics, hypochondria, etc., etc. Hahnemann, the great high priest of homeopathy, accuses it even of causing the decline of the German (his own) race.

Coffee is a native of Abyssinia, and not of Arabia, as many believe, and abounds in the province of Kaffa, whence it derives its name. The coffee tree was not transplanted from Abyssinia into Asia until the fifteenth century, when its culture was begun in Arabia Felix, where, in the environs of Mocha, it grows to perfection. The western world learned the use of coffee from the Orientals; but how the Orientals learned to use it is a difficult question to solve. An Arabian author of the 15th century records that it was a Mufti of Aden, who, in the 9th century, was the first to use coffee. At this epoch it was already known in Persia, where common tradition ascribes its discovery to one Mollah Chadelly, a pious Musselman, who was much troubled by drowsiness during his nocturnal meditations. He invoked Mahomet to come to his aid, who caused his faithful Mollah to meet with a goat-herd, who led him to a coffee tree, and informed him that whenever his goats ate of the berry of that tree, they passed the whole night wide awake, leaping and capering. The devout Mollah prepared an infusion of the berry, which, after drinking, gave him for the whole night a most delectable state of sleeplessness. He made known his discovery, which was adopted by all the dervishes and doctors of the land, and the new beverage rapidly became popular over the whole Orient. There are other versions of the discovery of the use of coffee as a beverage. It is

believed that the dervishes learned this means of overcoming sleep from the Canobite Christians of Thebes and Ethiopia, who adopted the practice of drinking coffee. The Mohammedan priests soon became enemies of the new beverage, however, as it led the people to forsake the mosques and flock to the coffee houses, and they hurled the fiercest anathemas against it, but without avail.

Before the 17th century, coffee was only known by name in France, and it did not become fashionable until Solomon Aga, the Turkish ambassador to the Court of Louis XIV. gave an *eclat* to coffee by offering it to the high-born dames of the realm. Curiosity and vanity led them to the Aga's residence, where he received them with oriental magnificence, and coffee was the rage. About the same time it became a favorite in Vienna, the method of its preparation having been learned from some Turks captured in battle. Twenty years before, it was introduced into England by a British merchant, returned from Constantinople. In France, the coffee-house became exceedingly popular, and notwithstanding the immense quantities of wine drank in France, there is probably no country, except Turkey and the United States, so thoroughly given to coffee. Tea is hardly known outside of the great cities. A significant index of the universal use of coffee, is the fact that what we call a tea-spoon, the French invariably call a *coffee-spoon*.

Up to the 18th century all the coffee which was consumed in Europe came from Arabia, but in 1699 the Dutch introduced the plant into Batavia, where it grew to perfection, and in 1710 a plant was sent to the botanical gardens of Amsterdam, where it flourished. An off-shoot was presented to Louis XIV., who sent it to the Jardin des Plants, and it became the ancestor of all the coffee plantations in the West Indies; the French government succeeded, in 1820, in introducing it into Martinique.

It is uncertain when the coffee plant was carried to Brazil, but nowhere has its growth and cultivation been so extensive and rapid. There are merchants living, who saw the first small cargo shipped from Rio Janeiro, and now that port is the largest coffee mart in the world. The exports from that port for the year ending June 30, 1855, were 2,352,284 bags, (of 160 lbs. Portugese,) nearly one-half of which immense amounts came to the United States. Good "old washed Rio" coffee is said to be equal to the best of Java.

Subsoil Plowing.

DEEP plowing is a practice so fully justified, and its benefits so uniformly admitted, that to argue the question seems needless. Yet, notwithstanding it is in accordance with the deductions of sound philosophy, and the results of experience, there is still a wonderful remissness in a great majority of farmers, particularly in the cultivation of field-crops.

In the garden, the farmer yields to the dictates of common-sense and experience. He plows, or spades to a good depth, presuming that his extra labor will be rewarded with an extra growth of vegetation. But behold how sudden the transition! He leaves his garden with the conscious experience of the utility of deeply stirring the earth, and at the same time aided by established scientific principles, that the greater the depth of the soil, the more ample will be his reward; but with all the lights of science corroborated by his own experience, he goes from his garden to his plow, spell-bound with all his ancestral associations and delusions. ‘My father practiced skimming, and so must I!’ Such at least is the practice—though few will adopt the language—of nine-tenths of the farmers of our country. There is no point in agriculture of more vital importance, or upon which more depends, than upon the proper preparation of the soil. And this is especially the case in the growing of the cereals. And so long as any one continues the skimming process, just so long his hopes will be blasted, notwithstanding the frequent and constant admonitions of the unalterable laws of vegetation. By reference to our article in this number on the sowing of wheat, the diversity and contrariety of views on this subject are equally apparent with those on the depth of sowing, quantity per acre, etc.

One fact which we would here notice—which no doubt has often been observed by farmers, is, that moist seasons—if the rain is not too abundant—with a proper degree of warmth—are sure to promote a vigorous and luxuriant growth of vegetation. Why so? It is not because so much moisture is absolutely necessary for such growth; but *nature*—ever mindful and ever ready to confer upon the tillers of the soil its choicest blessings—does mechanically with water, what the farmer neglects to do with the plow. The water softens the *subsoil*, which the plow has never reached, rendering it permeable

for the leading, as well as the small fibrous roots, which readily perforate the soil in search of those nutritious ingredients and qualities which form the plant.

In moist seasons, then, due credit should be given to the work of nature, and the farmer may well thank Nature for *her* labors in giving to his soil a deep *tilth*, which his own negligence, or want of observance of nature's laws, had failed to effect.

The average depth of plowing, as performed in this country, does not exceed five inches. Consequently, if the fallow was in grass the previous year, the tenacity of the soil is such, that the subsequent plowings and harrowings, bring the surface to a very shallow depth of loose friable soil. The tender roots of wheat, can not penetrate the hard and compact subsoil, especially when laid directly upon this subsoil, as most authors recommend, especially when they plow it in. The plants thus situated, are compelled to deviate from the course nature designed, and obliged to wander about near the surface in search of the necessary aliment to constitute their growth, unless copious showers should seasonably come to their aid.

The process of freezing and thawing comes next in order; and as the roots have obtained but a slight hold upon the soil, the work of expansion and contraction lifts the wheat high and dry, from its shallow bed, to give room for a more hardy race of vegetation. What may have thus escaped *hanging*, is in danger of being *drowned* when the wet of spring comes on, or if any be left, of being burnt up with the heat of summer. The surplus water, finding no means of escape, other than the inequality the surface furnishes, or by evaporation, is retained so long as to prove destructive; and when dried, indurates into the consistency of soapstone, which is alike destructive. Then if the gentle dew should fall as a temporary substitute for rain, the indurated and almost petrified surface absorbs but a small portion of the moisture, and readily yields it again to the first rays of the morning sun. Here is the great secret why our western lands so rapidly deteriorate in the production of the wheat crop. Our first crops are twenty-five and thirty bushels, but soon run down to an average of less than half that amount. Our soil is peculiarly adapted to wheat, and if properly managed would be inexhaustible. The cause or causes, of much falling off, may with propriety be attributed to constant cropping, and returning nothing to the soil; but in a greater degree it is attributable, to the want of a greater depth of loose and pulverized soil. The thin stratum has

been nearly exhausted of its fertilizing properties, and often only needs a stirring of the substratum, to reanimate and stimulate the growth of this great staple, as well as the summer crops. We here appeal to every farmer who cultivates a clayey soil, whether or no upon exhaustion he does not suffer from excessive moisture or excessive drouth. By stirring the subsoil, then, all or nearly all, the evils attending shallow plowing, would be obviated. We are fully persuaded that subsoil plowing would be of incalculable advantage, if practiced generally. But there seems to be in this—more than in some other things—a wonderful reverence for the infallibility of our forefathers; and it is to be presumed that for years to come, as our forefathers *skimmed*, so will we, until the cream shall be absolutely all taken off, and nothing but the *bonnyclabber* left, or until starvation shall stare them in the face; and then they will not reform as long as they have it in their power to *pull up stakes*, and *go west*. Many are now taking this course, and are purchasing rich lands in Illinois and Kansas, to run over again the same improvident round, coming to the sage conclusion that farming here will no longer pay. We have now in our mind's eye, fields deserted, overgrown with stunted briars, and a useless grass, something like moss, which to our certain knowledge, were never plowed more than four inches and a half deep. Such persons, who would thus beggar posterity, and starve earth's future millions, should be made to suffer the penalty—at least for a time—to which they are certainly subjecting others.

SOMETHING WORTH SEEING.—Those who are interested in curious and useful mechanical inventions, will be gratified by calling at Moore & Chester's, South-east corner of Walnut and Fifth streets, where there is on exhibition a machine to manufacture all kinds and sizes of ropes and cables, yet dispense entirely with a rope-walk. It can be placed on a table in a parlor, and made to turn off rope at the rate of seventy feet a minute, and this rope more evenly twisted than it can be in a rope-walk. One man can take charge of three machines, and turn out from one to one and a half tons of rope per day. The chief beauty of this machine is the excellent work it performs, and the extreme simplicity of its construction—a child having once seen it can understand its operation, and it can scarcely get out of order. By the revolution of a single main shaft, a contra-motion caused by friction is produced, which twists the strand, lays

the rope, stretches, reels and coils it ready for market. All other modes of rope-making must be superseded by this, which deserves the warm encomiums it has received from many eastern papers.

From an Address by the Hon. Josiah Quincy, Jr.

The Tallow-Chandler's Son.

"**T**HREE are, in agricultural life, great opportunities of individual usefulness. The effects of example and precept extend farther than we can imagine. When you throw wheat into the ground, you know what will be the product; but when you exemplify or inculcate a moral truth, eternity alone can develop the extent of the blessing.

About a hundred years ago there lived in Boston a tallow-chandler. He was too ignorant to give, and too poor to pay for his children's instruction; but he was a wise and an honest man, and there was one book upon whose precepts he relied, as being able to instruct his children how to live prosperously in this world, as well as to prepare them for another.

We are told he daily repeated to them the proverb: 'seest thou the man diligent in business? He shall stand before kings.' In process of time this tallow-chandler died and was forgotten. But the good seed had fallen upon good ground. One of his little boys obeyed his father's instruction; he was diligent in his business and he did stand before kings, the first representative of his native land! He lived as a philosopher, to snatch the lightning from heaven; as a statesman, to wrest the scepter from tyrants. And when he died, he confessed it was the moral teachings of his father, added to a little learning he picked up in a town school in Boston, to which he owed his success, his happiness and his reputation. He did what he could to testify how sensible he was of these obligations. He bequeathed liberally to his native city, the means of inducing the young to improve their advantages, and to enable the industrious to succeed in their callings. And he erected a monument over his father, to tell his virtues to another age. But the glory of the father was in the child. His son's character was his noblest monument. The example that son set, of industry, perseverance and economy, have excited, and are exciting many to imitate them. And thousands yet unborn, may owe their success and happiness to the manner in which a text was enforced, by a poor tallow-chandler upon BENJAMIN FRANKLIN."

Our Botanic Garden.

IN connection with the Experimental Farm of this College, the Botanic Garden is a prominent subject of attention. Twenty acres of land, lying adjacent to the Polytechnic Hall, is now separated from the farm proper, by a high paling and hedge, and dedicated to Flora and her beautiful science. This land is admirably adapted to the purpose intended. It is much diversified in surface; and the landscape art, in the hands of Mr. KERN, the accomplished Actuary of the garden, has added greatly to the beauty of its forms. An artificial lake, of small extent indeed, yet so ingeniously indented with promontories, bays and estuaries, seems to the view many times as extensive as it really is. This imitates the serene and beautiful in nature, having its green, grassy shores, gently sloping, and gracefully curving to the water's edge. Another lake, smaller in extent, affects the picturesque and rugged in nature, having bold and rocky shores, and a cool fountain beneath a shelving and pilastered rock—a *grotto*, to all intents and purposes. Both these lakes have agreeably disappointed us in maintaining a full supply of water—deep and tolerably clear—during the unprecedented drought of the present year. Moreover, a sinking spring and a natural bridge, improved—but not originated—by art, add to the interesting diversity of the grounds. Besides the pleasing effect of this diversity, as scenery, it serves the purposes of the garden by affording the varying conditions of surface, soil, moisture and exposure, requisite to the growth of species of plants, varying equally in habit, from all parts of our country.

Some progress has been made during the present year, in stocking these grounds with trees, shrubs and herbs, as intended. The *coniferae*—evergreens—are quite fully represented; so are the *salicaceæ*—willows, etc. Here are also already seen most of the New England birches, entire strangers to these parts. Most of the *Magnoliæ* from the South are also flourishing here, and numerous others. That extensive collections should have been made in a single year, in addition to the preparation of the buildings and grounds, was not to be expected. Yet a great work has been done, and we are now prepared to welcome in this garden, and hospitably entertain any and every species from the wild woods and prairies—from the mountains and the marshes which our collectors can gather in, or

which our botanical friends—far and near—may see fit to send us, whether roots, seeds, or cuttings.

That so little attention should have been given heretofore, to scientific collections of plants, is much to be regretted. We do not speak of *flower* gardens, where only plants remarkable as curious, or beautiful, are admitted. These are sufficiently abundant, perhaps; some indeed, in this vicinity, are wonderfully extensive and beautiful, but none are of value in science, as exponents of any known Flora. There is not at present, west of the Alleghenies, a *botanic* garden worthy of the name. East of that range, there is the Cambridge Garden of small extent, but in tolerably good condition; and Bertram's garden near Philadelphia, is in a ruinous state; but none at all comparable to the Kew Gardens of London, or the Jardin de Plants of Paris, where nearly every flora may be seen in a living state. A garden containing a full representation of the Phæno-gamous Flora of the United States, would be an object of unspeakable interest, and honorable to our State and our country. To consummate such an object would be well worthy the attention of Government, either State or National. To such a garden the student of Nature might resort, sure to find the plant he seeks, though native of the 'South Pass,' or the 'Everglades' when at home. There too, he would behold—saved from utter extinction, and safely enclosed in this floral asylum—many lovely species of our own native plants once common, but now unknown in our borders, having been swept away by the tide of advancing civilization, like other tenants of this once unbroken wilderness. Many such were recognized by those old botanists, whose names are indentified with our flowers—Pursh, Nuttall, Lea, etc., etc.—as common tenants of our woods in this vicinity, which the botanist now searches for in vain. What pleasure would be his, again to behold a blooming Calypso, a modest Alchemilla, or a Quercus Leana! In such a garden, also, the student of Nature would see what so few have seen, *entire families* of plants, growing adjacent, and subject to his immediate comparison and recognition. Think, O ye botanists, of an arboretum composed of the 30 species of our native Willows! of the 27 species of the American Oaks, or the 7 known sorts of our Native Magnolias! With what delight would you feast in a patch of violets, where our 32 known kinds recognized by science, should sweetly bloom together in emulous beauty! Think, too, of a *parterre* of the 131 species of Asters, so graphically described in Torry & Gray's American Flora, or of

their 98 sorts of Solidays blooming together within one glance of the eye!

Such are the ideas which we hope to realize in this Garden at no distant day; and the enterprise is worthy of the earnest co-operation of all the lovers of science, and friends of human progress.

SHARPENING EDGED TOOLS.—We translate the following from a German scientific journal, for the benefit of our mechanics and agricultural laborers:

"It has long been known that the simplest method of sharpening a razor is to put it for half an hour in water to which has been added one-twentieth of its weight of muriatic or sulphuric acid, then lightly wipe it off, and after a few hours set it on a hone. The acid here supplies the place of a whetstone by corroding the whole surface uniformly, so that nothing further but a smooth polish is necessary. The process never injures good blades, while badly hardened ones are frequently improved by it, although the cause of such improvement remains unexplained.

Of late, this process has been applied to many other cutting implements. The workman at the beginning of his noon-spell, or when he leaves off in the evening, moistens the blades of his tools with water acidified as above, the cost of which is almost nothing. This saves the consumption of time and labor in whetting, which, moreover, speedily wears out the blades. The mode of sharpening here indicated, would be found especially advantageous for sickles and scythes."

TO PROMOTE HEALTH IN CATTLE.—Mix occasionally one part of salt with five or six parts of wood ashes, and give the mixture to different kinds of stock, summer and winter. It promotes their appetite, and tends to keep them in a healthy condition. It is said to be a remedy for bots in horses, murrain in cattle, and rot in sheep.

Feed all animals regularly. They do not only look for their food at the usual time, but the stomach indicates the want at the usual period. Therefore feed morning, noon, and evening, as near the same time as possible.

THE EXECUTION OF MAJOR ANDRE.

THE principal guard-officer, who was constantly in the room of the prisoner, relates that when the hour of his execution was announced to him in the morning, he received it without emotion, and while all present were affected with silent gloom, he retained a firm countenance, with calmness and composure of mind. Observing his servant enter the room in tears, he exclaimed, "Leave me till you can show yourself more manly." His breakfast being sent to him from the table of General Washington, which had been done every day of his confinement, he partook of it as usual; and having shaved and dressed himself, he placed his hat on the table, and cheerfully said to the guard officers, "I am ready at any moment, gentlemen, to wait on you." The fatal hour having arrived, a large detachment of troops were paraded, and an immense concourse of people assembled; almost all our general and field officers, excepting his excellency and his staff, were present on horseback; melancholy and gloom pervaded all ranks; the scene was affecting and awful.

I was so near during the solemn march to the fatal spot, as to observe every movement, and participate in every emotion, which the melancholy scene was calculated to produce. Major Andre walked from the stone house in which he had been confined, between two of our subaltern officers, arm in arm; the eyes of the immense multitude were fixed on him, who, rising superior to the fear of death, appeared as if conscious of the dignified deportment which he displayed. He displayed no want of fortitude, but retained a complacent smile on his countenance, and politely bowed to several gentlemen whom he knew, which was respectfully returned. It was his earnest desire to be shot, as being the most conformable to the feelings of a military man, and he had indulged the hope that his request would be granted. At the moment, therefore, when he came suddenly in view of the gallows, he involuntarily started back, and made a pause. "Why this emotion, sir?" said an officer by his side. "I am reconciled to my death, but I detest the mode."

While waiting and standing near the gallows, I observed some degree of trepidation—placing his foot upon a stone and rolling it over, and choking in his throat, as if attempting to swallow. So soon, however, as he perceived that things were in readiness, he stepped quickly into the wagon; and at this moment he appeared to

shrink; but, instantly elevating his head with firmness, he said, "It will be but a momentary pang;" and, taking from his pocket two white handkerchiefs, the provost marshal with one, loosely pinioned his arms, but with the other, the victim, after taking off his hat and stock, bandaged his own eyes with perfect firmness, which melted the hearts and moistened the cheeks, not only of his servants, but of the throng of spectators. The rope being appended to the gallows, he slipped the noose over his head, and adjusted it to his neck without the assistance of the executioner. Colonel Seammel now informed him that he had an opportunity to speak, if he desired it. He raised the handkerchief from his eyes, and said, "I pray you, bear me witness that I meet my fate like a brave man!" The wagon now being removed from under him, he was suspended, and instantly expired.

The Black and Green Teas of Commerce.

IT is a remarkable fact that the subject of the difference between the black and green teas, has been, until recently, a matter of great uncertainty. The Jesuits, who had penetrated into China, and Mr. Pigou, were of the opinion that both the black and green teas were produced from the same plant; while Mr. Reeve believed that they were manufactured from two distinct plants. Now, as regarded himself, he (Dr. Royle) had adopted the view that the best kinds of black and green tea were made from different plants; and examination of tea samples seemed to confirm that view, but a repetition of the experiment had not done so. Mr. Fortune, subsequent to the China war, having been sent out to China by the Horticultural Society of England, made inquiries on the subject. He there found the *Thea bohea* in the southern parts of China employed for making black tea; and in proceeding as far north as Shanghai, he found the *Thea viridis* used in making green tea near the districts where the best green tea was made. So far, therefore, the information obtained seemed to confirm the view of two different species of *Thea* being employed to make the two different kinds of tea; but Mr. Fortune, in visiting the district of Fokien, was surprised to find what he conceived to be the true *Thea viridis* employed in making *black* tea in districts near where the best black tea was made. He took plants

with him from Fokien to Shanghai, and could find no difference between them. It was still, however, desirable to get specimens from the district where the black and green teas of commerce were actually made, and this had latterly been effected. In consequence of the great success which had attended the experimental culture of tea in the nurseries established in the Himalayas, Mr. Fortune was again sent to China by the East India Company. He proceeded to the northern parts of the country, in order to obtain tea seeds and plants of the best description, as the most likely to stand the Himalaya climate. Mr. Fortune procured seeds and plants in great numbers, and sent them to the Himalayas, where they have been since cultivated. When he had reached Calcutta, the tea manufacturers whom he had brought with him, made, from plants in the Botanic Gardens, black and green tea from the same specimens; so that it was evident it was the process of manufacture, and not the plant itself that produced the green tea. All who were acquainted with the difference between black and green teas, knew that they could be prepared from the same plant without the assistance of any extraneous materials, though it was a common thing for manufacturers to use indigo, Prussian blue, turmeric, etc., in coloring the tea. Dr. Royle showed specimens of the black tea plant from the Hwuyehou districts. No specific difference could be observed between the two specimens.—*Eng. Paper.*

The Great Wrought-Iron Gun.

THIS wondrous instrument of warfare has now been waiting for three weeks the arrival of some of the Government officials to test its power. So far it appears to have surpassed the anticipations of even military officers. An instrument weighing nearly 22 tuns, manufactured of wrought-iron, and throwing a ball of upwards of 400 pounds weight a distance of more than four miles, with its present degree of elevation, and with a very small quantity of powder, is what was not expected by the military men present at the experiments. Such is the ease, too, of loading the gun, ponderous though it is, that it can be charged and fired again in less than ten minutes. Of its destructive powers little is yet known; but if the effect of the trial made on Thursday, the 22d ult., be any evidence—

namely, the smashing to fragments a slab of iron a tun weight and $4\frac{1}{2}$ inches thick—no walls yet constructed would stand before its terrible projectile force; and it is not too much to say of the gun, that, within range of the finest line-of-battle ship in the world, one charge would be sufficient to completely destroy the largest ship that ever sailed.

The mere flight of the ball as seen close to the gun is no test of its power. He who would wish to see the effect of the missile must go to a distance of a little beyond $2\frac{1}{2}$ miles. The ball can be distinctly observed in its career, although the noise made in its rapid transit through the air may affect even a strong nerved person, and cause him to believe himself on unsafe ground. As soon as the ball drops, it tears up the ground for some distance, and sends the sands many yards high in the air. It then plunges on in its course, and continues to do so until it is fully spent. The excavation made in the ground on its first descent is two or three feet deep. Slung on Mr. Julius Roberts' principle, at an angle of 15 to 25 degrees, the ball could be projected a much greater distance, while its destructive effect would be greatly increased. If such a gun were employed against a place like Odessa, where all the public buildings and all the principal houses are bomb proof, a few hours would suffice to level it.—*Liverpool Mercury.*

THE POTATO A HEATHEN.—A correspondent, more hurt than indignant, writes to us upon our recent disparagement of the potato—declaring it to be a household god which we have rudely thrown from his pedestal to set thereon the new idol of hominy. This finding of a fictitious yet plausible substitute for so genuine and valuable a staple of feed, will, he thinks, tend to lessen the interest in the growth and scientific study of it, and so diminish the one indispensable dish on every table. We sit rebuked. Praised be potatos for ever. But in claiming any manner of *pious standing*—household godliness—for this vegetable, does our correspondent know that he errs, and that *the potato is a heathen?* Does he know that it has been battled against by the church, as an unworthy infidel? We must inform him that Scotland at one time made the growth of the potato illegal, *because it is not mentioned in the Bible!* In an article on the history of it, (which we saw some time since in the *Quarterly*

Journal of Agriculture) this fact is stated among the hindrances to its introduction into Great Britain. It was first cultivated in the fields of England in 1739. But, *for years afterwards*, it was not admitted into Scotland, from the zeal of preachers in declaring it an unholy esculent, blasphemous to raise, sacrilegious to eat. “Famine at last,” says the historian, “gave an impulse to the innovation, and, during the latter part of the eighteenth century, the excellent qualities of the potato became generally understood.”—*Home Jour.*

A SCRAP.—Summer, with its feathered choristers, its fruits and flowers, its sultry heat and parched fields, is past. Autumn, with withered foliage and the various hues which bespeak decay, is already here; its hollow moaning winds and frosty breath are a prelude to approaching winter, usually a season of gloom and melancholy to those who are accustomed to view only the dark side of nature. To others it is fraught with many pleasurable associations, its long and delightful evenings are enjoyed with a zest, which measurely compensate for the toils of summer. To none is this season more welcome than the farmer; when the labors of the day are ended he has leisure to enjoy the society of his family, which the busy season hardly afforded him. If possessed of a literary taste, he has an opportunity for its indulgence; and should the companion of his life be blest with a congenial spirit, there are many opportunities for enjoyment and improvement. No man is better fitted for the true enjoyment of life than the cultivator of the soil, who can contemplate nature in all her various moods, not only with a poetic, or philosophic vision; but with the eye of a Christian.

THE SECONDS OF ETERNITY.—Prof. Mitchell, in one of his recent lectures, describing the gradual tendency of the earth’s orbit to assume a circular form, used the following magnificent illustration:—“Its short diameter was gradually lengthening and would continue so to expand until it should become perfectly circular, when it would again contract to its original shape and dimensions. And so the earth would vibrate periodically, and these periods were measured by millions upon millions of years. Thus,” said Prof. M., “the earth will continue to swing back and forth, and to and fro in the heavens, like a great pendulum beating the *seconds of eternity*.”

METEOROLOGICAL TABLE.

*Observations made at Farmers' College, College Hill, Hamilton County, Ohio, Latitude 39° 19', W. Lon. 7° 24' 45"
for the month of October, 1856, by Prof. R. S. Bosworth. Height of Station above the Sea, 800 feet.*

BAROMETER, CORRECTED FOR TEMPERATURE & CAPILLARITY.				OPEN AIR THERMOMETER.				CLOUDS—COURSE & VELOCITY.				WIND—DIRECTION & FORCE.				RAIN & MELTED SNOW.			
7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	Mean.	Hour Began.	Hour Ended.	Am't Inch.	
1.28 900	28.870	28.918	28.896	34.0	51.0	45.0	43.3	10	Snow.	5 S.W. 810 Nimb.	0	S. W. 3	S. W. 2	5 A. M.	7 A. M.	0.013			
2.28 916	28.966	29.066	28.983	40.0	63.0	46.0	49.6	0	1 Cirrus	0	0	S. W. 3	S. W. 0	N. 1	9 P. M.	0.900			
3.29 159	29.100	29.150	29.136	47.0	73.0	65.5	61.8	2	S.W. 4	3	W. 610	N. 7	0	S. 2	N. 1	10 P. M.	0.900		
4.29 225	29.162	29.170	29.186	64.0	77.5	66.0	69.1	2	S.W. 1	0	2	S. W. 1	S. W. 1	0	S. W. 1	0			
5.29 220	29.154	29.165	29.180	59.0	82.0	63.0	68.0	2	0	6 S.W. 1	0	0	S. W. 3	S. W. 3	0	S. W. 3	0		
6.29 215	29.194	29.219	29.210	61.0	80.0	65.0	68.6	6	N. 1	2 S.W. 1	0	0	S. W. 2	S. W. 2	0	S. W. 2	0		
7.29 290	29.239	29.257	29.262	57.0	80.5	60.0	65.8	0	0	0	0	0	N. 1	0	0	N. 1	0		
8.29 310	29.218	29.228	29.252	57.5	82.0	63.0	67.5	0	0	0	0	0	S. E. 1	0	0	S. E. 1	0		
9.29 295	29.208	29.290	29.234	58.5	82.0	63.0	67.8	0	2	S. 1	0	0	S. E. 1	S. E. 1	0	S. E. 1	0		
10.29 260	29.158	29.175	29.198	56.0	79.0	62.0	65.7	0	0	0	0	0	E. 1	E. 1	0	E. 1	0		
11.29 212	29.163	29.200	29.192	56.5	80.0	62.5	66.3	0	0	0	0	0	Cirrus	Cirrus	0	Cirrus	0		
12.29 218	29.141	29.119	29.160	55.0	82.0	62.5	66.5	1	0	2 S.W. 1	1	Cirrus	0	S. 1	0	S. 1	0		
13.29 060	28.984	29.105	29.050	64.5	71.5	51.0	62.3	10	S. W. 6	10	N.W. 510	N. 6	0	N. 5	N. 5	N. 5	N. 6		
14.29 158	29.200	29.328	29.230	42.0	45.0	39.0	42.0	10	N.E. 4	10	N.E. 4	N. E. 8	0	N. E. 5	N. E. 5	N. E. 5	N. E. 6		
15.29 400	29.364	29.378	29.381	32.5	48.0	45.0	41.8	0	8 N.E. 4	9	E. 1	N.E. 3	0	N. E. 4	N. E. 4	N. E. 4	N. E. 4		
16.29 320	29.200	29.194	29.238	42.0	54.0	47.0	47.6	10	0	4 N.E. 1	8	0	N. E. 1	N. E. 2	0	N. E. 2	0		
17.29 114	29.056	29.070	29.080	43.0	52.5	46.0	47.2	10	N.E. 4	10	Smoke	N. E. 2	0	Smoke	N. E. 2	N. E. 2	N. E. 2		
18.29 166	29.160	29.213	29.180	41.0	61.5	42.0	48.2	10	Smoke	10	Smoke	0	0	S. W. 1	S. W. 1	S. W. 1	S. W. 1		
19.29 326	29.256	29.260	29.180	42.0	66.0	50.0	52.7	8	Smoke	0	0	0	0	S. 1	0	S. 1	0		
20.29 238	29.295	29.308	29.280	42.0	71.0	53.5	55.2	0	0	0	0	0	0	S. 1	0	S. 1	0		
21.29 450	29.245	29.216	29.304	49.0	75.0	59.0	61.0	4	Cirrus	0	0	0	0	S. E. 1	0	S. E. 1	0		
22.29 200	29.070	29.050	29.107	60.3	80.5	68.0	69.6	0	2 S.W. 1	0	0	0	0	S. W. 2	S. 2	S. W. 2	S. 2		

REMARKS ON WEATHER.

1. Snowing this morn--unusual at this season.
 3. Loud thunder between 1 and 2 P. M. in North.
 4. A warm, June-like day.
 13. Red.smoky clouds all day; in P. M. it was very dark, with ghastly red light.
 23. Wind ch'd at 3 P. M., with dense smoke, which affected the eyes and made it very dark. Query—Where does it come from?
 29. A snow squall at 7 A. M.

REMARKS. — The Barometer high all this month, and the weather dry. The Forest leaves fell earlier than usual.

MINIMA.

MONTHLY EXTREMES.

MEXICO

	7 A. M.	2 P. M.	9 P. M.	Month.	7 A. M.	2 P. M.	9 P. M.	Month.
Barometer,	21st. 29.450	15th. 29.364	15th. 29.378		29.450	1st. 28.900	1st. 28.870	29th. 28.855
Thermometer,	13th. 64.5	82.0	22nd. 68.0		82.0	31st. 29.0	30th. 43.0	31st. 32.0

EXPERIMENTS WITH CAST IRON.—The interesting fact has been developed by experiments of the Ordinance Department, that iron, by repeated fusion up to a certain number of times, is thereby greatly improved in strength. Guns cast solidly, and those cast hollow, through which latter water was made to circulate after casting, showed an astonishing difference in their relative strength, difference being in favor of the hollow cast gun, which is attributed to the method of cooling—the solid gun, contracting from the outside, exerting a strain upon the arrangement of the particles of the metal in the same manner or direction as the strain of the discharger. The experiment also showed that old castings are a great deal stronger than new. Eight-inch guns, proved thirty days after being cast solid, stood but 72 charges; thirty-four days, 84 charges; one hundred days, 731 charges; and six years, 2,582 charges. This phenomenon is accounted for by supposing that the particles strained in the cooling, re-adjust themselves in the course of time to their position, and become free or nearly so.

HOW MUCH SHOULD A COW EAT?—Cows, to give milk, require more food than most farmers imagine. J. W. Johnson, writing from Munich to the *Country Gentleman*, gives an interesting report of some experiments which have been made in Bavaria, from which the following is an extract:—"Our trials have confirmed the view that cows, to give the greatest possible quantity of milk, must daily receive and consume one thirtieth of their live weight in hay, or an equivalent therefor. If more food be given, it goes to the formation of flesh and fat, without occasioning a corresponding increase in the yield of milk; but if, on the contrary, less food be furnished, the amount and value of the milk will be greatly diminished."

WATER RUNNING UP HILL.—Dr. Smith, in a lecture on geology, at New York, mentioned a curious circumstance connected with the Mississippi River. It runs from north to south, and its mouth is actually four miles higher than its source, a result due to the centrifugal motion of the earth. Thirteen miles is the difference between the equatorial and polar radius; and the river, in two thousand miles, has to rise one-third of this distance, it being the height of the equator above the pole. If this centrifugal force were not continued, the river must flow back, and the ocean would overflow the land.

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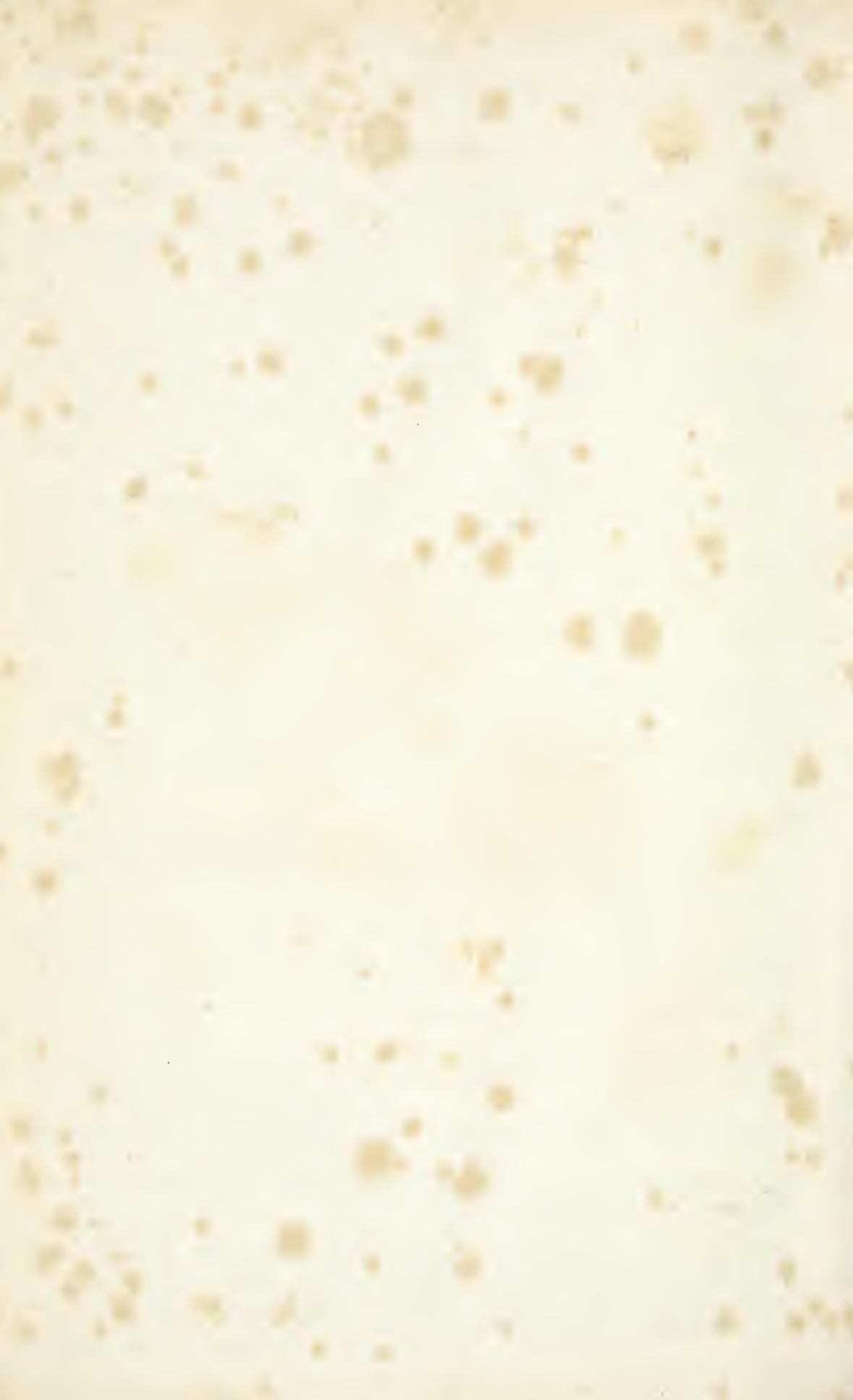
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