

I rejoice at this opportunity to offer you my fraternal greeting. I wish that instead of this general salutation I could take you each by the hand and greet you in a more personal, more social and less formal manner. But as I do not see any such pleasant exercise set down on the programme I will, figuratively speaking, get just as near to you as the lofty proprieties of a speech will let me.

There are several sorts of public harangue, such as, for example the oration, the address, the lecture, and the talk. The oration is, as you know a very elevated

affair, constantly inclined to shake
 from its wings the dust of every day
 life - to rise above the muddy earth
 and mix itself up with the stars.
 The talk on the other hand is a use-
 ful, unpretentious domestic bird
 that scratches in the soil, never takes
 to its wings except under extreme ex-
 citement, and even then indulges
 in short-flights only. But however
 different the sombre fowl and the
 soaring eagle in capacity for
 flight you and I know that for
 purposes of ordinary life one Brah-
 ma of the right breeding is worth
 all the eagles in Christendom.
 Now in my earlier days when all
 was gold that glittered and every
 glow worm a star of the first mag.

Mildude, so far as my own feelings went I took to the oration as naturally as the duck takes to water. But since the lapsing winters have left their snows upon my head and things around me have clothed themselves in sober and neutral colors, I have learned to shun the more showy qualities of speech, and to cast my thought in the mould of the plainest and simplest saxon.

Not always to the satisfaction of my friends however. Some two years ago at the urgent asking of an injudicious neighbor I engaged to speak at a Sabbath School picnic. When the important hour had come and I had ascended the platform with many dignita-

ries it was with no little dismay that I heard myself announced, in fourth of July fashion, as the orator of the day. As soon as I had got my breath a little I said that I could discharge no such ponderous piece of artillery as an oration into the ranks before me but that I would give them an off hand sort of common talk instead. Judge of my astonishment when at the close of my effort I had begun to indulge in the comfortable reflection that I had not done discredit to the occasion, the Chairman arose and said that the President had to be sure got the attention and kept it but that he for his part was very sorry that he could

not have given them an oration.

And now my friends having furnished you a glimpse of the manner of my address and promised that it shall at any rate be free from any display of rhetorical fireworks let me approach the matter.

You will not be startled at the originality of the announcement that "Life is a struggle." Indeed I spine that that venerable and respectable proverb has met your eyes or greeted your ears before to-day. But perhaps I shall impart a bit of novelty to this ancient saying when I add that life is a struggle and that I am glad of it. That is I am glad that life is a struggle because under the present

arrangement of mundane affairs a struggle is the only means by which man rises from the lower to the higher state. It is in fact the great God-appointed method by which the world progresses and humanity gets on successfully. It is true that the sentence against our earliest ancestor "In the sweat of thy brow shalt thou eat bread" was pronounced as a curse. But along with the curse was bestowed also the power to turn the curse into a blessing. All down the line of history from that day to this it has looked very like a curse whenever the sweat has produced the bread and nothing else with it. It has looked like a curse whenever and wherever the sweat has been exhausting and drastic and the sup-

ply of bread it gained meagre and insufficient. It has seemed a curse when human life has been given over to sweat and where bread has been regarded the only thing in it that is worth the winning. It has been a curse where toil ~~has~~ was unaided by skill, uncheered by hope, unshared by love and where its scanty returns just sufficed to meet the cravings of the stomach; that toil in fine which is sordid and groveling, unthinking and unproductive, which turns the toiler into a drudge with strong arms and broad shoulders but with a head which is merely an empty knob. Such toil is a curse and forever will be. It blunts the intellect, animalizes the worker and reduces

8
him to the level of the ox he drives. ~~A~~
~~struggle~~. Then life is indeed a strug-
gle - a struggle in the darkness - a
struggle whose tendencies are down-
ward and whose efforts are blind,
cheerless, hopeless, and the curse be-
comes exceedingly heavy.

But when toil is guid-
ed by intelligence and taste and
skill, when head and hand work
harmoniously together, when every
effort is the nice adjustment of
means to an end, and when the
very forces of Nature are utilized
and compelled to help the worker -
then the sweat becomes healthful
and humanizing, the bread sweet
and abundant, the toil is dotted
all along with triumphs. Life is

a struggle but the struggle is glorified by constant victory - The demon of drudgery is transformed into the Angel of intelligent labor, and the curse becomes a blessing.

But let us set forth in its true character that sort of labor wherein skill and intelligence are wanting and give it if we are able a little more sharpness of outline. In the first place it is mere routine and has in it none of the elasticity of progress. Season after season it goes its unvarying round making no more advancement than a mule in a treadmill. To borrow a happy expression from another it never marches forward but perpetually

expends its energies in merely marking time. It has so profound a veneration for antiquity that it cannot depart by a hair's breadth from the ways that antiquity had of accomplishing its ends. And so it plods on moiling and toiling through all the years gathering its straws with eyes fixed on the ground unheeding the golden crowns which the genius of progress offers from above. Now this sort of dead work is prolific of perpetual mischief. It hatches its sure swarm of evils which like the locusts of Egypt devour every green thing that enlivened humanity values. Among the more prominent of these evils may be reckoned

1st - Its demoralizing effect on the worker himself.

2nd Its pernicious effect on the earth which man was appointed to subdue, beautify and improve.

3^d Its inferior and scanty returns which have a tendency to constantly diminish.

As to its demoralizing effect on the worker himself history and the world are full of examples. Whenever progress is paralyzed and society degenerates you will find that all labor is unthinking drudgery, and that the laborer is consequently ignorant and stolid. Even the nineteenth century ^{supplies} its full quota of specimens of similar

debasement. The condition of the laborer in Spain, in Mexico, in South America and in the Southern States to day verifies the principle I present. The truth is that when labor becomes a mere tension of the muscles without any intellectual element in it then muscle attains its full development and intellect dies out from lack of exercise. Man becomes all brawn and no brain. What is worse he transmits this load of muscle and lack of mind to successive generations. In this condition the worker is only a blind force at war with the blind forces of nature around him. It is when the worker becomes an intelligent

force, when his work brings into play in just-balance the moral and intellectual powers as well as the muscular that the struggle is crowned ^{not only} with a full measure of fruits but ripens the character of the worker and rounds him out into a symmetrical man.

As to the pernicious effect of unintelligent routine labor on the earth we inhabit it might find easy proof in a multitude of instances. Whenever, for example, the slave has constituted the laboring force of a country the soil has been impoverished at so rapid a rate as to threaten a national calamity. The improvidence of routine labor guided by skill does not return to the soil

the nutrition which even the stunted
 crop annually consumes. It gives
 over nature's fertilizers to be dissipa-
 ted by the winds, the sunshine,
 and the rain, and leaves the crop-
 ridden land barren and worthless.
 Throughout the south thousands
 of exhausted acres, offered for a
 trifle in the market, or thrown
 open to commons attest the melan-
 choly fact. Under the reign of
 unthinking routine all the use-
 ful arts go surely to decay. Archi-
 tecture provides the merest shelter,
 presenting nothing to improve the
 taste or beautify the landscape.
 All the products of art, over which
 unquestioning routine presides
 show a peculiar rudeness, flimsi-

liness and dilapidation. The

fact is that when labor is effort put forth in the darkness it cannot adjust its means to the ever changing conditions of nature. It has in it none of the facile adaptation which her constantly varying moods demand. Consequently its success is an accident, its final result sterility, and the face of nature, on which it leaves unsightly scars is a witness against it forever.

That the fruits of such labor are scanty and precarious, is a fact frequently brought to our notice. The land which is most subject to the devastations of famine is that in which labor is

degraded and consequently lacks all intelligent helps. The country whose working population is limited to one or two staple articles of food, keeps that population in a state of hopelessness and helpless ignorance. The Cracker of Florida is as diligent and hard working as any Yankee, but his processes are primitive and unvarying, his tools rude and clumsy, his ignorance is something marvellous, and his prejudice against innovation utterly invincible.

The consequence is that his clothing is of Southern cut, his sole diet is pork and hominy, his sole luxuries tobacco and whiskey. If times grow hard the pork and

honing may be diminished
 but the tobacco and whiskey he
 will have so long as he can beg,
 borrow, or steal them.

These three fatal draw-
 backs to the prosperity of mere mus-
 cular toil, carried on with a
 stolid indifference to better meth-
 ods was strikingly illustrated
 in South California, a region
 which I visited more than twenty
 years ago. The scenery was grand
 and impressive beyond expression.
 Long ranges of granite mountains
 rose abruptly from the plain,
 crowned their summits with
 perpetual snows, and penciled
 their rough outlines on a cloudless
 sky. Extensive valleys lying be-

Between these ranges, watered by
 the purest streams, were covered
 from boundary to centre with
 flowers which represented in their
 brilliancy all the colors of the
 spectrum. It seemed as though
 Nature had fashioned the land-
 scape in one of her most felicitous
 humors. Eternal winter frowned
 above - Perpetual summer smiled
 below, and one sweep of the eye
 took in the whole grand picture -
 Yet human habitations and the
 traces of a crude industry were
 blots upon the picture. "Man alone
 was vile". The people were besotted
 and ignorant, their houses were
 of one story, roofed with grass
 and pitch, floored with clay

imexpressibly dirty and full of
 vermin. In the valleys fed vast
 droves of cattle in whose forms long
 interbreeding had developed the
 head, horns, bones to a size out of
 all proportion to those valuable
 parts which furnish marketable beef.
 Whenever the owners desired to use these
 cattle for draft they collected them in
 a corral and with the aid of a half
 score of men yoked them in pairs by
 lashing their horns to a straight stick.
 Then attaching two or three pairs with
 a driver on each side to a pointed
 log they scratched the earth and
 called it plowing. The character of
 the worker, the condition of the country,
 the meagreness of the proceeds & under
 the influence of a stupid and sense-

less system of labor were all displayed together. Has ever a beautiful country so marred by the crude and misdirected efforts of a thriftless population?

But let us return from our journeyings in distant lands and bring this matter nearer our own doors. Charity begins at home and a practical address, delivered to practical people, though radiating widely for its examples ought at any rate to end there. Surely no interest can be more closely interwoven with the welfare and prosperity of a people than its system of labor. Certainly no question can be of more vital moment than what that system is, how it can be improved and made to turn out better and more abundant

products with the least possible waste of muscle and material. The character of the labor and the cost of production stand in uniform relation to each other as cause and effect. Other factors affecting the result remaining the same if you render the first more effective you will diminish the last in a constant and unvarying ratio. The grand problem then with every producer is how to bring every process by which dead matter is changed to the marketable product to the highest attainable perfection. To make such a division of labor that brute force shall do the dead work and the human arm the skilled work - to give to the hand and the eye of the worker

such quickness and cunning that while he habitually saves all the waste of breakage and loss of time he shall without exhausting effort achieve the most rapid and finished execution. And the whole problem resolves itself into the one grand question of political ^{economy} namely how to gain the largest possible moiety of bread with the least possible moiety of sweat. But though this problem will as the years pass come nearer and nearer solution we may never expect and ought not to hope for humanity's sake that it will ever reach the point where the sweat may be represented by zero and the bread by infinity.

For life would be valueless without its struggle. In every

noble attainment - it is what the struggle makes it. I thank God that eternal vigilance is the price of liberty not only but of every treasure attainable to man on earth or in heaven. Let us have the struggle but let it be a struggle forever upward. Let it be attended by every intellectual incitement and crowned by perpetual conquest.

But nowhere does intelligent labor, the trained eye, the skillfull hand, the ready and accurate judgment bring forth perfect fruits sooner or more certainly than in the business of Agriculture. Farming is a pursuit which it is supposed that any man ^{with} force of will and strength of muscle

may successfully follow. The idea
 has somehow got foothold in pub-
 lic opinion that a man is fitted
 for the farm by virtue of his unprofic-
 uousness for everything else. Even the
 farmer himself often gives color and
 currency to this idea by sending
 his most promising son to College
 where he goes into the hopper a com-
 mon hand and comes out at the
 spout an incipient lawyer, doctor,
 or divine. And this sort of grinding
 at the old classical mill has been
 kept up by material gathered from
 rural life until the grit is far too
 large for the wants of the world,
 until indeed the professions are so
 overcrowded that thousands of young
 aspirants find it impossible to

gain therefrom an honest and
 honorable living. But in truth it
 is a huge absurdity to suppose
 that dullness and stupidity have
 a natural birthright to the farm.
 They may supply its needed its
 needed muscular force but they
 cannot supply the judgment
 and foresight essential to success
 in its higher and nicer processes.
 Farming requires sense as well as
 sinew and a great deal of it.
 The term Agriculture, once signi-
 fying only the tilling of the field
 now binds together so to speak
 a whole bundle of handicrafts.
 each one of which demands sep-
 arate experience and practice
 so that the man is rarely found

Whose eye is true and whose head
 is level in them all.* "To say that
 farming is a humdrum business
 requiring little vigour and no
 special training betrays a fatal
 misconception of its real requirements.
 So far from demanding no special
 preparation, the compassing of its
 highest results demands a wide
 and varied knowledge. It ~~might~~
 may be safely affirmed that no one
 man ever gathered in all the science
 that underlies its various branches
 or possessed all the skill which each
 of its handicrafts calls into exercise,
 and no man has attained so much
 of skill or knowledge in one of
 these even that he could not gain
 more to an evident advantage.

The garden, the orchard, the cul-
 ture of the grasses, grains, timber,
 and esculent roots, drainage,
 fencing, farm machinery, farm
 architecture, the raising of hogs,
 sheep, horses and cattle, every one
 of these branches of farm industry
 has been brought from its early rude
 condition up to its present excellence
 by patient observation repeated exper-
 iment and unyielding perseverance.
 and they have never emerged from
 their primitive rudeness whenever
 these essential elements of intelli-
 gent labor have been wanting.

Compare for example the Lexan Ox
 with the improved Short-Horn.
 The Lexan is lank and leggy,
 large boned and heavy headed

high in flank and twist, narrow and pinched in chest and loins, slab-sided, gothic ribbed all horns and hide and gristle and tail. To sum him all up, the offal, the parts that bring absolutely nothing at the butchers greatly exceed in size and weight the parts that furnish the salable beef, and these last are not only light and meagre but they are tough and leathery to boot.

Turn now to the Short Horn and how striking the contrast. All the parts that are without value in the market are exceedingly light and delicate. Horn, head, limb and bone are reduced to the smallest compass consistent.

with the health of the animal
 while those portions that carry the
 valuable beef are developed to
 extraordinary fullness. Loins
 and chest are broad and heavy,
 twist and flank are deep, the
 long hind quarter, the full
 shoulder, the round body, the
 delicate muzzle, the slender
 shank approach the symmetry
 of the perfect model. The entire
 animal is so got up as to turn
 a given quantity of food into
 the largest amount of juicy
 round end roast and Sirloin,
^{with} ~~into~~ the least amount of gristle
 and bone. Scrutinize these two
 specimens narrowly. The contrast
 between them is full of instruction.

Both are the products of human labor. Both have been domesticated by man and applied to ~~the~~ supplying the same human want. Both are machines constructed for the purpose of converting vegetable products into marketable beef. But one of these machines compares with the other about as the pointed log of South California compares with the modern steel plow or as the old fashioned sickle compares with McCormick's ^{sickle} Reaper. The one changes food largely into well mottled meat, the other changes food largely into bone and horns and leathery muscle. The one is therefore fed at a sure and perpetual profit, the other at a sure and perpetual

Waste. The grand difference between these two animals is that the one is the result of labor which was without system, skill, or foresight. The other is the result of labor which was directed by study and patient thought and close observation and unremitting care.

But let us inquire a little more precisely what qualities of mind were exercised in applying the laws of progress to so valuable a race of animals as the improved Durham. For if I mistake not the inquiry will serve to illustrate the fact which I am trying to impress namely that the more of thought and learning we crowd into labor the more per-

fact and abundant its products
 will be, and that on the other
 hand whenever labor is, in all its
 helps and incentives, wholly divorced
 from learning its products are
 apt to become like the Texan
 or exceedingly lank and lean.
 The races of domestic animals im-
 proved beyond the common stock
 for some special purpose have
 sprung solely from close observation
 from careful selection and from
 judicious feeding and treatment.
 To some horses for instance the
 race forming processes have impart-
 ed just the form and fibre most
 capable of sustained and rapid
 speed. To others just the weight of
 bone and muscle which is most

effective for heavy draft. The improvers of cattle have shaped the milch cow after so faultless a model that whatever the mouth devours the udder restores in the largest measure of the richest milk. They have moulded the ox on such a pattern that he carries the fullest development just where the flesh brings the highest price. In fact the Durham ox by reason of his size, symmetry, early maturity, and tendency to take on fat is a complete triumph of the breeder's art and those who brought him up from the level of the common stock to his present excellence have shown all the rare capacity possessed by men who have wrought successfully

in the field of invention and labor-saving machinery all the world over.

They were men of learning. To a profound knowledge of anatomy and physiology of the bovine species they added a minute acquaintance with all the complicated laws of animal inheritance. They were men of imagination. They formed a perfect ideal which none as yet had realized but which when reduced to fact would enhance the quality of a great staple article of food. They were men of indomitable will. They gave years of patient work and waiting to the accomplishment of their laudable purpose counting a life time well spent

if it secured a better model for the dairy or the flock. Such were the men who bequeathed to the world the improved races of domestic cattle. Let us accord them a place side by side with the great inventors in other departments of human progress.

Need I hesitate to say that a degree at least of the same ability, of the same knowledge, the same clear headedness, the same keenness of vision and unyielding persistence are just as available on every farm of the great North-West whereon ~~the~~ sheep, swine, horses or cattle are bred as on the farms whereon the improved breeds were originated. The truth is through-

out God's Universe" Knowledge is power", and nowhere is that truth more square edged than on the farm, and not only is Knowledge power on the farm but efficiency is power, promptness, shrewdness, unlimited patience, practice, manual skill, and common sense, are all power on the farm. And these essential elements of power united in just balance constitute the special education which should fit the farmer for the farmer's work. It is idle folly to say as some have said that the training which imparts the very knowledge and heightens and sharpens the very faculties which the farmer is to use unfits these

faculties for practical action
in their proper field. Where can
you find the man who knows too
much about farming and its
underlying laws to make a
successful farmer and where a-
gain can you find the man who
has too much good judgment,
good sense, and good pluck in
matters of the farm to make the
farm productive. This is what I mean
by education for the farm and
this is what every Agricultural
College ought to mean when it pro-
poses to restore the farmer's son to
the farm so equipped that he will
add new zeal, new fire, new force
and consequently more abun-
dant fruits to all its various

branches. The farmer needs a Scholastic training that will bring muscle and mind into a truer harmony, such a training as will bring him into closer contact and sympathy with the things he has to do. a training that will not only enable him to form and execute his plans but to fight and exterminate his enemies also. *

Noxious insects and animals, noxious weeds, drought, untimely frosts, hail and wind, the water of marshes, the diseases of animals and plants, these are the foes with which he must have perpetual strife, and by which if he be not wise and watchful

he will be perpetually worsted. There are some of these indeed against which no knowledge of science in its present condition will wholly avail. Yet the man who has mastered all known facts concerning them, their causes, duration, and cure, so far as discovered, has beyond question an immense advantage in weighing over against them. All over the land there is a deplorable ignorance of the commonest pests that infect the farm, and consume the earnings of the farmer's toil. How many agriculturists have any acquaintance with the habits and homes and breeding of the common rat that can be made available in

his extermination? Against how many do scores of gopher hills annually rise up in judgment? How many orchards are annually given over to the worms when a moderate knowledge of entomology would save both the tree and the crop? The yearly waste from this source alone would build and endow half a dozen Agricultural Colleges. It is high time that Science should give effective aid to the destruction of these noxious feeders. There is an urgent necessity for a general onslaught to be made upon those innumerable pests that season after season make such alarming havoc with our crops of fruit and grain. There is a necessity as ur-

gent that all the quadrupeds and birds which are naturally destructive to these should be carefully multiplied. With every returning summer comes the resurrection of the swarms of borers, Curculios, weevils, worms, and the like which combine in countless hosts to rob the farmer of the products of his labor. Particular families of these have of late generated with such alarming rapidity as to begot a well grounded fear that their numbers will result in the utter annihilation of the crops on which they feed. In some quarters this fear is already realized. The locust, once valued for its enduring wood and grateful shade has yielded to millions of perforations

which have well nigh reduced its
 limbs and trunk to dust. The plum
 tree which once offered its sure fruits,
 round, ripe, and milting, now casts
 them annually to the ground blighted
 and worthless. In all manner of veg-
 etable delicacies the worm is demand-
 ing to be served first. The time may
 come when no man can taste an
 apple, whose skin unflecked and un-
 stung, shall forbid the apprehen-
 sion that the first incision of the
 teeth shall reveal a slimy occupant.
 The time has already come when to
 indulge in the luxury of green
 peas is to devour a host of insavory
 grubs which are the progeny of a
 prolific weevil. These various de-
 stroyers, threatening such wide

spread evils demand the wisest and most vigorous measures for their extermination. Such measures can be founded only on an accurate knowledge of their form, habits, metamorphoses and modes of propagation. Now the science of entomology reveals to the student all the forms and phases and wonders of insect-life. It shows all the mysteries of reproduction, at what season and where the egg is deposited, how long it remains an egg. When the grub comes forth, its structure, food, habits, whereabouts, duration, how with millions of fellow grubs it works its mischief to the crop, then coils itself up and lays itself away to rest awhile in the

Chrysalis state from which after all these vicissitudes it emerges a perfect insect, lives its brief period, lays innumerable eggs and is gathered to its fathers. Having such intimate acquaintance with the times, seasons, changes, and modes of growth of insects that are harmful to vegetation a man may go about their extermination intelligently, but without it he can only make in some instances at least such blind endeavors as will lead to blundering failure.

The case is not very different when we consider the weeds that infest the soil and absorb the nutrition needed for the useful plant. The farmer may indeed be

able by the experience and observation gained from practice largely to rid his fields of these unwelcome intruders, but he will accomplish this with greater certainty and often with less expense of time and effort if he knows specifically and accurately their nature and ways. In so far as his experience and observation take into account the habit of the particular weed, its time of germinating and seeding and method of sowing they will in fact be scientific, a farmer whose experience is so grounded will attack his enemies in the period of ~~their~~ weakness so that when they die under his vigorous assaults they shall die a death from which there is no resurrection.

Such a farmer will not delay to root out some solitary thistle until it has given its countless seeds to the breeze. He will not while assiduously cultivating the rest of his farm leave some neglected corner to mature a baleful crop and sow its seeds broadcast on the winds. He will not while keeping his corn field carefully clean leave a thick hedgerow of weeds on its border to ripen and stock it thoroughly for the next season. This study of plant life as illustrated in the common weeds is not only highly useful but it is full of interest also. Evidently they are Nature's favorites and she has devised all sorts of expedients for their preservation.

To one she has given seeds which are equipped with wings so that they may fly on the winds to sunny spots where they spring up and bring forth fruit some fifty thousand and some a hundred thousand fold. Another she has taught to break itself off when mature, commit itself to the prairie breezes and get itself tumbled all over the country scattering its seed as it goes. Another still, the purslane, spreads on the ground and sends numerous tiny rootlets downward all along its fleshy stems so that it needs to be hung up in the sun before it will consent to die - So fleshy and

juicy and full of vitality is it that if it be torn from the ground any time after flowering, it will put off dissolution until it has ripened and sown its innumerable seeds. All such facts, each suggestive of its prevention are made familiar by the study of Botany and Vegetable Physiology. A student may indeed be a botanist without being much of a farmer but if he is to be a farmer, if he is to make onslaught on noxious weeds and troublesome shrubs, a mastery of these will surely enable him to fight them with deadliest weapons and find a surer victory.

The world is progressing. Human happiness, comfort, health, wealth, and intelligence, are slowly but surely increasing. No cancer has eaten into the heart of Society but has found its certain cure. Great errors one after another have been surely vanquished. Every huge evil that looms darkly against the skies of human hope disappears as the gliding years pass on. Tyranny, slavery, oppression and bad conspiracies of whatever sort have bitten the dust. The past is strewn with prostrate giants slain by a few small pebbles from the sling of truth. From all the ages that have fled comes a voice saying "Let suffering hu-

"Manity never despair." On every
 side the bow of promise spans
 the darkened sky. The gulf that
 for centuries has interposed be-
 tween labor and learning has been
 leaped. And labor and learning
 hand in hand have said to the
 Mountain "Be thou removed and
 cast into the sea" and the Mount-
 ain has obeyed them. All things
 good and beautiful and true have
 caught a new impulse from this
 new Union. Under this new impulse
 all human interests are advancing
 with a velocity forever increased.
 The farm will not be left behind. Look-
 ing backward over its obscure annals
 I see a rayless and stolid drudgery
 vanishing like a spectre into the

dim past, while forward through
the long vista which intelligent la-
bor has opened before me I discern
for it the glow of a fairer future.