

Mr. Savley:

Will you carry
to the friends here in Wash-
ington and to every one
who has contributed to
this elegant and appropri-
ate gift the warmest
thanks of a warm heart.

Tell them I appreciate
the conditions under ^{which}

The gift - is made to me
and I assure you and
them it will be kept as
you would approve.

We are all working
together for the upbuilding
and improvement of the
Southland, I by sitting pa-
tiently here and waiting
you, all of you, by doing
the noble work of the
Farmers' Demonstration Work.

Mrs. Seaman A. Knapp.

Dear Sister Maria;

Yours of the 6th rec^d the 11th
Am happy to learn that none of you
are sick, and wish I could send some
my Charcoal-Tablets or some other
good digestive for Minnie. I have been
reduced very low for strength since my
last letter. Housecleaning - must be
done. Three women & one man (whitewash)
set a small house in a whisk. Mr. M.
has had two long vacations & Mrs M. three,
her last in Essex & a Tapestry carpet
for Chamber came with her. House is clean
Company to-morrow. Mr. M. has a swollen leg &
goes out cautiously. I am making blen-
ders in letter-writing I see - Not knowing where I
is, I mix everything up & ~~send~~ direct to you.
Seeman reported a delightful visit.

I wrote Seaman in ^{Care} of Dr. Fay to be sure & stay
a month & get well settled & said, I have money to pay
Mr. M. and the Dr. is paid. I was anxious for you to ^{stay} until
you wanted to see home and did, ^{pay} Mr. M. my pin-money and
when he next wrote he forgot to state for which month he
sent the money. Instead of remaining well, I have had worse
Hayfever than any previously. Nerves & Heart give me days like
Sister Martha. Dr. Everett always has a remedy, so they Tele-
phone for him rather than see me suffer. We have had
a light frost & a hail storm recently which will be
serviceable to many who are ailing. Hope rain & dampness are
over for now. One thing I have, of which nothing else can equal,
daily proof that God is my Rock, and my refuge, and my
hiding place from all the storms of life; has been for many years.

Why did the Lord take, on the 30th of Oct. so useful a man
as James M. King and leave ^{me} us who are useless.
A mystery we are not ^{to} know. I will trust Him still.

I had better explain how I came to have more than
usual. Rev. Mr. Titus made me a present of ^{my} paper for the year and
three other papers cost me nothing, then I sent for cloth for
a jacket; they could find no good cloth & the jacket itself
came & no price, - said it would be ready for Christmas.

Now I have tired ^{you} all out, if you will forgive me I will
say I have strong love for my friends & ask God to bless
them abundantly & ^{keep} them in the hollow of His hand.

Your loving Sister
Mary.

My Dear Mr Carnegie

When I had the honor
of presenting ~~our~~ Co-operative work
for a better Agriculture and a higher
general life at Mr Rockefeller's Tentative was too
limited to even outline one phase of it.
The teaching of practical
agriculture to the country boys
in ^{such} a practical way that it will
instill a love of the farm and how
to make it pay farmers. This can be done
by extending our Co-operative
demonstration work to ^{country} school
boys from 12 to 16 years of age
and have the demonstration on
their fathers farms, all work to
be done by the boys. I have
fully tested the plan on about
1100 boys and it is a perfect success
The additional cost ^{where work} is less than
25 cents per farm for one year. If
this could be generally inaugurated
it would be the greatest revolution
along educational lines in the world's
history. We need ^{financial} help to carry
out the plan upon a large scale.
I want the privilege of explaining

2 The details to you for your
advice and assistance and
it would gratify me much
if you will allow the name
of the worlds greatest philanthro-
pist to be given to the plan
Call it: "The Carnegie plans for
rural training" - Cities and
towns have been helped but
the country boy seems to have been
forgotten -

^{a short time} Will you kindly allow
me this work at your pleasure
^{a short time} to present my plan
in detail I have the honor to
remain
Yours Sincerely

Har Andrew Carnegie
New York

Levinus A Knapp

Spl Agr in charge Farmers
Cooperative Domestic
Federation

^{Inst.}
~~Main~~ Agricultural Bldg
No 434

1090-9144

The following letters from reliable planters and leading citizens in territory of heavy rainfall and fully infested with the boll weevil,—many of them from the alluvial sections,—are self-explanatory. They are fair samples of hundreds in our office.

S. A. KNAPP,
*Special Agent in Charge,
Farmers' Cooperative Demonstration Work.*

WASHINGTON, D. C.,
November 14, 1910.

[COPY]

THE COMMISSIONER OF AGRICULTURE,
AUSTIN, TEXAS.

ED R. KONE, Commissioner.
SAM H. DIXON, Chief Clerk.

October 9, 1910.

DR. S. A. KNAPP,
Room 434, Agricultural Building,
Washington, D. C.

MY DEAR SIR: I desire to express my endorsement of the splendid work you are doing in behalf of the agricultural development of our splendid State. Your Demonstration agents are rendering great service to the State and deserve the cooperation of every patriotic citizen.

I wish to state that this Department appreciates the magnificent services you are rendering the American farmer and the Southern farmer in particular, and that anything that I can do to aid in the general work in Texas I shall gladly do. Is there any suggestion that you can make that will enable this Department to more closely cooperate with you and your staff of agents in furthering the work you have inaugurated to improve agricultural conditions in this State?

I have had the cooperation of some of your demonstration agents in the Institute work I have been carrying on for the past eighteen months, and splendid results have been secured.

I have lent the influence of this Department to the organization of Boys' Corn Clubs, but realizing that this work was inaugurated under your guiding hand I have not attempted to supplant your efforts by any independent movement; and shall not do so.

I have had many years experience on Texas farms both in growing the staple crops of the State and the care of livestock, and indorse your cultural teachings in full. I know the principles advocated by you are sound.

Respectfully,
(Signed) ED R. KONE,
Commissioner.

[COPY]

FIRST BAPTIST CHURCH,
W. F. FRASIER, Pastor.
TIMPSON, TEXAS, October 18, 1910.

DR. S. A. KNAPP,
Washington, D. C.

DEAR SIR: I feel it my duty to express to you my appreciation of the valuable work of the Farmers' Cooperative Demonstration Work in my section of Texas.

Though not a farmer myself, no man feels a greater interest in it than I. A few years ago our section of the State suffered materially from the boll weevil. Your Demonstration Work has proven beyond question that cotton can be successfully grown despite the weevil.

Your local representative, Mr. G. W. Orms, in his persistent work among the farmers has stimulated every phase of the farm life, as evidenced by the great display of agricultural products at our fair this season. It was my pleasure to

handle and aid in arranging practically every product on exhibition and the praise accorded east Texas exhibits were profuse.

This work, I believe, is doing an untold amount of good to the country and we are to be congratulated on having such assistance as the Department is giving us.

I just feel as though I *must* write you is the reason I do so. It is seldom a town preacher takes stock in such developments as these, but I do and am willing to talk "farming" and assist this work in any way possible.

Very truly yours,

(Signed) W. F. FRASIER, *Pastor*,
First Baptist Church.

[COPY]

VICKSBURG, MISS., August 8, 1910.

DR. S. A. KNAPP,
Washington, D. C.

DEAR SIR: I have just received a copy of your Circular No. 32 entitled "Cotton, the Greatest of Cash Crops" and write to ask if it is possible to mail me one hundred copies of same, to distribute to my tenants and others. I read it at the time you made the address at Greenville, but realize its importance more since I am in the fight against the weevil.

I have found by following your advice I have been able to keep the weevils almost entirely out of fields, while fields adjoining are almost destroyed. You are doing a great work but it is hard to make our negroes learn at once. Most of them have to learn by experience, which is expensive. The cotton in this section is generally a failure when it could have been saved by following your advice. I have considerable cotton that at present looks to make a full crop, where crops surrounding it are failures.

Hoping you will be able to let me have one hundred copies of your address, I am,

Respectfully,

(Signed) W. F. BRABSTON.

If you can't mail, express at my expense. Send to Vicksburg, Miss.

[COPY]

LIVINGSTON, TEXAS, October 17, 1910.

MR. W. F. PROCTER, State Agent,
Farmers' Cooperative Demonstration Work,
Tyler, Texas.

DEAR MR. PROCTER: I am sending you, under separate cover, photographs of cotton made in the field of Mr. K. W. Jackson, of Livingston, Texas. Mr. Jackson grew this cotton on his Trinity River Bottom farm, eight miles west of Livingston.

Now, as to conditions and yield will say: that I have never seen cotton grown under more adverse conditions in east Texas than this was. This farm is one of those low bottoms that is surrounded by a very heavy timber growth which makes an ideal place for weevils to hibernate. This land was not kept very clear of weeds, burrs and grass last season so there was quite a lot of litter that furnished them additional quarters. This cotton was planted about the 10th of April but the frost that fell the night of the 25th ruined the stand and Mr. Jackson replanted this field the last days of April. This second planting came up to a very good stand and grew off well until about the 8th of June, at about which date the weevils began to show up in goodly numbers and we had a very heavy rain which was followed up by rain and showers very nearly every day until the 10th of July. This gave the weevils full sway for a month with the very best weather for them to multiply and very adverse conditions for culture. It looked as though there were ten weevils for every form and the prospects for any crop at all were very poor. Yet Mr. Jackson continued the fight right ahead, plowing with his brush attached, when possible, using the hoe and catching weevils when it was impossible to plow, making unrelenting war on this pest at all times and continuing the fight right up to the day he began picking, and succeeded in producing a good crop. Off the eight acres in the block from which this photograph was taken he will average 1,600 pounds seed cotton per acre. This is ginning him about 36% lint or 576 pounds lint cotton per acre. And off his entire farm of more than 150 acres he will produce an average of about 1,000 pounds seed cotton per acre. Mr. Jackson

says that if he had cultivated all his farm as he did the eight acres he would have averaged more than one bale per acre.

As to yields on adjoining farms where they have not used intensive methods of culture, I find that they are producing about one bale to every four acres. Of course some are doing far better than this, but this will be a general rule. Some of the farmers who are not cooperating with us directly have gotten better seed and are unconsciously following out our instructions to a very great extent, and they are invariably getting better crops than the fellow who "sticks to the same old rut."

Mr. Procter, I could have found fields that have been worked under our instructions that have made better yields than this one has, but I think that it would be impossible to find one anywhere where the weevil infestation was greater and where the prospects were more gloomy in June and July than they were in this particular field.

Yours very truly,

(Signed) T. O. WALTON,
Local Agent.

[COPY]

DR. S. A. KNAPP,
Washington, D. C.

GILBERT, LA., Oct. 21, 1910.

DEAR SIR: I have rigidly adopted your methods of raising cotton under boll weevil conditions, with the result that I will get eighty-eight (88) five-hundred-pound bales on about ninety (90) acres of land. The making of cotton under weevil conditions with your methods is a certainty where the seasons are normal.

Yours very truly,

(Signed) L. M. CALHOUN, JR.

[COPY]

DR. S. A. KNAPP,
Washington, D. C.

GILBERT, LA., Nov. 10, 1910.

DEAR DR. KNAPP: I inclose you a picture of my demonstration cotton taken October 1, 1910. One picking had been taken off of this cotton before the picture was taken. We ginned 79 bales of 500 pounds each off of 80 acres. It seems that with your methods cotton can be made on the rich, fresh alluvial lands of the Delta country profitably, regardless of the boll weevil.

Yours truly,

(Signed) L. M. CALHOUN, *District Agent,*
Farmers' Cooperative Demonstration Work.

[COPY]

DR. S. A. KNAPP,
Washington, D. C.

GRAND CANE, LA., 10 | 10, 1910.

DEAR SIR: My place near Grand Cane is hill land of a sandy nature, red clay subsoil, about twenty-five years in cultivation. I break my land in the fall and winter, and generally re-break in the spring. Use generally 300 pounds of fertilizer,—cottonseed meal and acid phosphate,—per acre. I pick up the squares until late, cultivate shallow and often and late, and have never made less than half a bale per acre since the advent of the boll weevil.

I am planting rye and oats this fall for winter grazing and winter cover crop. I plant peas thick in my corn when I lay by the corn. I find the Bunch variety of clay pea to be the surest seeder on hill land.

I am cultivating 40 acres in cotton this year; have gathered 22 bales of cotton and am about done. Triumph cotton is my favorite.

Respectfully,

(Signed) G. W. TULL.

[COPY]

LOGANSPORT, LA., 10 | 17, 1910.

DR. S. A. KNAPP,
Washington, D. C.

DEAR SIR: I have been farming according to suggestions of the local Demonstration Agent for three years—that is, preparing my land deep, early and thoroughly; planting best early-maturing seed; cultivating shallow, and all the time until late in the growing season. I have made each year not less than 1,000 lbs. seed cotton per acre. My land is sandy hill soil, about 20 years in cultivation. I use 200 lbs. commercial fertilizer per acre. Under the old method of farming it takes from 3 to 5 acres of such land as mine to make one bale of cotton.

(Signed) H. C. CLARK.

[COPY]

BROOKE & WOOLWORTH
ATTORNEYS AND COUNSELLORS AT LAW
ROOMS 1, 2, 3 M & F NAT'L BANK BLD'G
CARTHAGE, TEXAS.

October 24, 1910.

DR. S. A. KNAPP,
Washington, D. C.

DEAR SIR: While I am not a farmer, still, having lived in an agricultural country all my life I watch the doings and progress of that class of our citizens more than any other, and note with delight the steady improvement which has been made along agricultural lines since the advent of the boll weevil in this county.

I do not think that the work of your Department, in its demonstration work, which has been done through your Mr. Orms, can be too highly commended, and I think that much lasting good has been accomplished. The farmers as a class are in better shape financially at the present time, in my opinion, than for years.

This letter is written simply as a citizen who appreciates the efforts of your Department in this county.

Yours very truly,

(Signed) J. G. WOOLWORTH.

[COPY]

GILBERT, LA., Oct. 21, 1910.

DR. S. A. KNAPP,
Washington, D. C.

DEAR SIR: This community has rigidly adhered to your recommendations as to how to raise cotton under boll weevil conditions, with the result that they have made a profitable crop this year—many of them as much as a bale per acre. I feel no hesitancy in saying that any farmer can make a profitable crop of cotton under weevil conditions with the methods you recommend. The work has been of incalculable value to the farmers here.

Yours truly,

(Signed) R. M. WARD.

[COPY]

TIMPSON, TEXAS, October 18, 1910.

DR. S. A. KNAPP,
Washington, D. C.

DEAR SIR: As a young man deeply interested in the development of the agricultural industry in the South and especially of this portion of east Texas, I desire to volunteer a letter of appreciation of what the Farmers' Cooperative Demonstration Work and its able representatives here have already done and are now doing in this field.

As a demonstrator myself I speak from experience; and yet one has but to open his eyes and behold the wonderful development that has been brought about since what we call the "Agricultural Agent" entered this section about four years ago. Under their method of cultivation—by putting in less acres, giving more intensive cultivation, using fertilizer, giving more space to the individual stalk, making more preparations prior to planting and stirring the soil later in summer—

but I shall protest then
laying out the road & shall
sue for damages of one hundred
dollars

Fred Stockwell

2201 California St
San Francisco -

Dear Friend and school mate -

I have the sad duty of
telling of the death of my
beloved husband - the 27th
of February -

He was in perfect
health and wonderful vitality -
for his age - but "the bolt
came off the clear sky," and
he was stricken down so
suddenly that only when the
peaceful end came, did we
realize that he was gone -
Hopeful - cheerful

and with perfect faith, he
died happily as he lived; for
as Wordsworth puts it,

"The fountain of youth, like the
kingdom of Heaven, is within us -
and he lived that always."

I wrote to Union College
for addresses of his class,
thinking you were in it, but
it must be that you were in
the one preceding, hence this
delay, and now I write without
knowing your address -

I have cherished among my

precious possessions, the
memorial to Mrs Kaapp.

It was worthy of her and
for you to have compiled
it, is an honorable deed.

Had any address been given
it would have been
acknowledged - now I send
this hoping it will reach you.

Among our school mates,
should you know of any of
their addresses, I should
be most grateful if you
would send them to me -

Not long after you visited
us in Oakland, Mr McChesney
resigned his position and
we lived in Mill Valley near
San Francisco for a few years,
afterwards coming to San
Francisco to make a home
for my son George - a surgeon
of some celebrity -

Elora has a reputation as an
artist and has for many years
lived in New York City - Should
you visit New York, it would
give her pleasure to see you -
27 West 33rd St is her studio -

Alice is a home girl; of great solace to me in my bereavement - and in every way a noble woman -

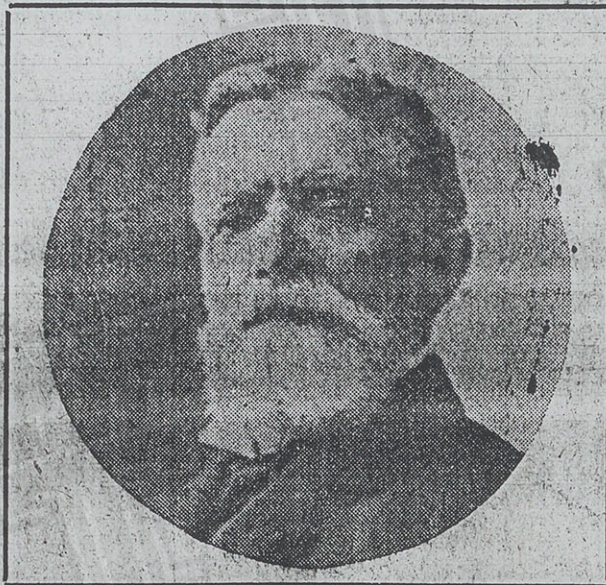
With your large family of children filling honourable positions, you cannot be lonely, and your public life must be very absorbing -

I should be very pleased to see you here should your work bring you to this coast, perhaps you may come in 1915 - You will always find us by Dr George M'Chesney's address -

Very cordially your old school mate and friend -
Apr 12 - Sarah Jewett M'Chesney -

JOSEPH B. M'CHESNEY, BELOVED PRECEPTOR, IS LAID TO REST

Joseph Burwell
McChesney,
former
Oakland
Educator,
whose funeral
was held this
morning



WITH only the members of the family gathered about the casket, funeral services for Joseph Burwell McChesney, for thirty-five years connected with the Oakland school department, were held at 11 o'clock this morning at the McChesney home, 201 California street, San Francisco. The Rev. Mr. Gale officiated. None but relatives were present later at the interment in Cypress Lawn cemetery.

The distinguished educator was nearly 80 years old at the time of his death, but his splendid health and strength remained unimpaired until about three weeks ago, when he was seized with the illness which resulted in his death. He had the appearance and carriage of a much younger man, and many who knew him intimately express surprise on learning that he had lived a decade past the three-score years and ten.

As a mark of honor and respect, flags were set at half-mast on the Oakland city hall, at the flagpole on Broadway and Sixteenth street and on some of the local schools, the council passing the following resolution at the meeting yesterday morning:

"Resolved, that the flags of the city be hoisted at half-mast on the city hall and at Broadway and Sixteenth street, out of respect to the memory of J. B. McChesney and as evidence of his long and useful service as principal of the Oakland high school, a service second to none in behalf of the people of this city."

McChesney's connection with the Oakland school department began in 1866, and within three years he had developed advanced classes in a single room, so that by 1869 he was giving high school training to a number of

his pupils. Out of that single room he built up the high school of Oakland, laboring for thirty-two years to bring it up to the highest standard of efficiency.

Many of the most distinguished men in the state received their high school diplomas from the veteran principal, among them Senator George C. Perkins, former Governor George C. Pardee and many other men who have achieved distinction in honored professions and mercantile lines, including Fred Stratton, collector of the port, Superior Judge Fred Henshaw, George Dornin, Guy C. Earl, Charles Stetson Wheeler and Robert M. Fitzgerald.

McChesney resigned in 1901 and for a time he lived in Mill Valley, but later came to San Francisco and accepted a post in the immigration service of the government, serving in the Chinese inspection bureau up to the time of his death.

J. B. McChesney was born in Schenectady, N. Y., on October 12, 1832. He came to California immediately after his graduation from Union college, Schenectady, and sought employment as a civil engineer, but failing to find a suitable opening, he entered the educational field, doing his first work as a school teacher in 1858 in Oroville. During the same year he married Miss Sarah Jewett in Forbestown, Butte county, and they lived in several northern towns before establishing the family home in Oakland.

The surviving members of the family are Sarah McChesney, the widow; Dr. George Jewett McChesney, of San Francisco; two daughters, Miss Alice McChesney of San Francisco and Miss Clara T. McChesney, a New York artist, and a brother, Albert E. McChesney of Syracuse, N. Y.

REPLY TO W. C. WELBORN.

Editor Herald:-

Kindly accord me space in your valuable columns in which to comment as briefly as practicable on certain statements and conclusions of the W. C. Welborn article in your issue of May 2nd. W. C. Welborn is Vice-Director of the Texas Agricultural Experiment Station. His article, reproduced by the Herald from the Dallas (Texas) News, purports to be a "review" of "Field Instructions for Farmers' Cooperative Demonstration Work" by Dr. S. A. Knapp. The Welborn critiques and reviews are a source of endless amusement to the farmers and agricultural reformers of Texas, and no one ever dreams of taking them seriously. Being a Texan myself and perfectly familiar with this learned gentleman's vagaries, I should have deemed a reply to the article in the Dallas News entirely superfluous; but the reproduction of it in the Herald, which circulates extensively in my territory where Dr. Knapp's work has only recently been introduced on a large scale, and where Prof. Welborn is but little known, seems to justify a reply.

Referring to Dr. Knapp's bulletin, the reviewer fires his opening gun thus: "The statements are all made with a positiveness that would lead one not acquainted with the facts, to suppose that these methods

have all been fully tested out, proved and agreed upon". They have. Almost every cultural method advocated by Dr. Knapp has been in constant practical use in the farm economy of Texas and large portions of other Southern states for nearly a decade. If that is not sufficient time for a satisfactory test of any new system of doing things, humanity had better set it's will resolutely against all propositions for change or reform lest the world's work be held up and it's time consumed in experimental research. The fact is these methods had all been thoroughly tested and proved before they were given to Southern agriculture at large. No one knows this better than does Prof. Welborn. When this gentleman takes up arms against these methods, he arrays himself against the most intelligent and progressive farmers of the South. They are the original sponsors for the methods. Dr. Knapp has simply gathered their ideas and methods, improved upon them and published them for the benefit of the agricultural masses.

The invasion by the cotton boll weevil of the fields of the Texas farmers set the brightest of the practical agricultural minds of that state to work to find a check. Dr. Knapp attacked the problem in the fields with these farmers and together they found the check, applied it and restored to full productiveness thousands of abandoned cotton farms all over the state. The work spread rapidly into neighboring territory until today practically the entire Southern sisterhood of

states is covered. This proof of the merits of Dr. Knapp's methods is conclusive to everyone except Prof. Welborn.

"Fall plowing, the earlier the better, is not a general rule by any means", says paragraph three of the review. Observe how well he agrees with Dr. Knapp in this statement, and then think how he is wasting his valuable time in trying to establish a distinction without a difference. Dr. Knapp says: "The object of deep fall plowing is mainly to increase the supply of plant food and the storage of moisture in the soil. While this preparation is of great value on rolling lands and nearly all lands so long in cultivation that plant growth is medium or less, there are some soils that for the production of cotton better not be deep fall broken, such as very rich and moist river bottoms and the virgin black prairies of the Gulf States, for the evident reason that there is already too much plant food available in the soil, with abundant moisture; conditions that make for an excessive growth of the cotton stalks and a consequent decrease in the fruitage, even under ordinary conditions". Prof. Welborn: "On clay soils it (fall plowing) often contributes to lateness instead of earliness next spring". Dr. Knapp: "Thin gray soils overlaid with yellow or stiff clay near the surface, most of the post-oak flats, and the comparatively level coast lands should

be broken in ridges 5, 6, or 7 feet wide, according to the crop to be planted". Prof. Welborn: "Unless the land is sown to winter cover crops it (fall breaking) often contributes to washing, leaching and compacting with the heavy winter rain". Dr. Knapp: "Always plow in the fall before the winter rains set in; the earlier before the first of October, the better. Always use a cover crop of oats, barley, wheat, or rye, if possible". Two minds that have but a single thought, as it were: and yet Prof. Welborn would have the reader believe that he is laboring patriotically to put down a strange new agricultural heresy that takes no heed of circumstances or conditions. Dr. Knapp advocates deep fall breaking with certain exceptions and seventy five per cent of the best farmers of the South, especially in the boll weevil districts, are practising it. The Mississippi Experiment Station at Stoneville practices it to the extent of breaking their corn and pea stubble, as do all the others with which I have any acquaintance.

Deep plowing next comes in for animadversion. Listen! "I cite the Georgia Station, which failed through some ten years to find any benefit from subsoiling". Says Bulletin No. 63, of the Georgia Experiment Station: "Thorough breaking and commingling of the upper soil, gradually increasing the depth to 8 or 10 inches, using plow and harrow, is more effective than deeper but less thorough pulverizing".

These are the depths advocated by Dr. Knapp. The reviewer again: "I also cite the work in Alabama, Mississippi, Texas, etc." Prof. J. W. Fox, Director of the Experiment Station at Stoneville, Mississippi, is an earnest advocate of deeper breaking, and has his land broken as deep as two mules can draw a plow through it. He regrets that, owing to the stiff, gummy nature of much of the land, he cannot break it deeper. "Subsoiling", says this gentleman further, "is a matter costing \$5.00 and \$6.00 an acre". According to Dr. Knapp's method of running a scooter or other plow in the same furrow behind the turn plow, two mules and one man will easily subsoil an acre a day. If the feed of the mules cost 80 cents a day, the farm hand will come in for a handsome rake-off of \$5.20 per day. Considering the cheapness of living on the farm, this would be enough to tempt the judge to discard his ermine, and the statesman his toga, in order to become farm hands. Subsoiling, even according to the crudest methods, does not cost more than \$1.50 per acre. With a disc plow still better work can be done at half this expense. The cost of deep plowing with a disc plow is about 50 cents per acre more than shallow plowing.

Subsoiling is the universal method employed in Virginia and North and South Carolina, in producing large crops of cotton and corn, and in restoring worn out fields on clay lands.

"The general advice to give more distance between the rows and to thin the plants more is probably all

wrong", says the critic. Prof. Welborn should print a million bulletins containing this gem of wisdom for free distribution among the pagan cotton farmers of the South. Wider spacing of the rows was one of the first changes that all of them made at the first invasion of the weevil. Now we learn that it is all a huge mistake! And it is more than passing strange that this is the case, since every man who ever entered a cotton field knows that wide rows and plenty of sunshine operate as a powerful check to the ravages of the boll worm. Many people, including such eminent personages as Dr. Hunter and other entomologists, will doubtless persist, however, in believing that sunshine is inimical to the best welfare of the weevil, and that under boll weevil conditions, it is very difficult to make a crop of cotton with close planting and narrow rows. There are others who believe that even if there were no cotton insects, a well developed and well fruited stalk of cotton is better than two slender and poorly developed ones with little fruit on them. It must have space for roots and tops to do its best.

Dr. Knapp's statement is that some of the large boll varieties resist the weevil better, while the gentleman says that his experiments do not indicate that the large boll varieties of cotton resist the weevil better than the small boll varieties. This is to be regretted, as the experience of a vast majority of the best farmers of the South not only indicates, but proves

conclusively, that some of the large boll varieties, as stated by Dr. Knapp, are the most resistant. So much have the tests been in favor of the large boll cottons that it has been almost impossible in late years to supply the demand for seed of the Mebane Triumph, Cleveland Big Boll, Rowdon, and other large boll varieties.

The discing and harrowing of the soil during the winter after it has been broken in the fall he calls "Impracticable for most cotton raisers, even if proved beneficial". But why impracticable, why pray? Each discing or harrowing with a cultivator will cost only about 20 cents per acre. Besides, the work is done at a time when a majority of the farmers, especially the tenant class, have nothing else to do. As every farmer other than the theoretical kind knows, thorough preparation of the land for a crop curtails from one-third to one-half the early cultivation of the crop. Where is the wisdom of waiting till the rush of crop time to do work that may as well be done during the winter when there is more leisure?

Apropos of Dr. Knapp's advice to work cotton frequently, he says: "It would require over seventeen workings, costing no less than \$7.00 to the acre in all, to fulfill this recommendation even when riding cultivators, cleaning a row at a time, are used". Allowing for the interference of untoward weather conditions, and the use of the tooth harrow, the actual cultivations will not be more than half this number.

The reports show that 9 cultivations are about the limit. With the improved machinery now used by our best farmers the cost of seventeen actual workings would not be more than half his estimate. Then divide that \$7.00 by 4 and the result, \$1.75 per acre, will be approximately the cost of the most intelligent cultivation. But even if this cultivation did cost \$7.00 per acre I submit that it would still pay. Let us draw a comparison. Prof. Welborn's Bulletin "Corn and Cotton Experiments for 1908", does not show that he made a yield of more than 860 pounds of seed cotton in any case. I can give him the names of hundreds of farmers who made in 1908 from 1200 to 2200 pounds of seed cotton to the acre. The difference between these and Prof. Welborn's yields would pay the entire cost of production and leave the farmer a handsome balance. Why haggle over an increase in the cost of production when the profits are increasing so much faster? The experience of every good tiller of the soil is that it costs less to cultivate frequently and thus have no weeds, than to follow the common plan and use the hoe more.

HARROW WITH THE TOOTH HARROW, just before planting, immediately after planting, and again as soon as the plants are up, is universally practiced in the great corn producing states, to prevent forming crust, exterminate weeds, and promote growth. The plan has been tested on cotton, and proved a complete success.

In criticising Dr. Knapp's advice to run a tooth harrow across the rows, Prof. Welborn seems entirely to forget that Dr. Knapp places his principle reliance on frequent light cultivations, during which the infested cotton squares are brushed off by means of a pole or brush attached to the plow or cultivator. Here again he makes the familiar mistake of supposing that methods recommended for conditions quite dissimilar are all to be employed on the same plot of land and wants to know how the cotton can be harrowed every three days if it is to be cultivated every seven to ten days. It is hard to believe that a man of Prof. Welborn's understanding could have inferred that both of these plans were to be put into execution at the same time.

The last paragraph of this remarkable argument says, referring to the bulletin of Dr. Knapp: "It makes recommendations enough to cost, if carried out, two-thirds of a bale of cotton to every acre cultivated". Doubtless it would cost a bale to the acre to carry out all the recommendations for all sorts of land and all manner of conditions on a single plot of land. But where is the physician who would undertake to exhaust all the remedies and resources of materia medica on a single case of sickness? It would be a good parallel for the Welborn mistake. One of my demonstrators who has faithfully carried out on a field of corn all the recommendations for a soil of that character

finds that it has cost him to date \$1.60 per acre, including the distribution of an application of fertilizer since he began cultivating. The remainder of the work cannot cost more than \$1.00 per acre. The average expense incurred by my demonstrators is even less than this.

For fear of making this article too long I have taken no notice of two or three minor points in Prof. Welborn's criticism. Only the most important have been considered. Throughout the article his arguments are equally as poorly grounded and his conclusions fully as preposterous as those which I have examined. Prof. Welborn is an apostle of agricultural conservatism gone to seed, a brilliant man sadly gone astray. It is always a sign of weakness when a man commences by misrepresenting what he intends to oppose.

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