The object of this department is to place at the service of our farm readers the advice of an acknowledged authority on all subjects pertaining to soils and crops. Address all questions to Professor Henry G. Bell, in care of The Wilson Publishing Company, Limited, Toronto, and answers will appear in this column in the order in which they are received. When writing kindly mention this paper. As space is limited it is advisable where immediate reply is necessary that a stamped and addressed envelope be enclosed with the question, when the answer will be mailed direct.

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Corn Improvement

ment of this crop in Ontario.

the crop. They are:

es growth of stalk or straw.

Phosphoric Acid-which causes root

of starches and sugars in the ear of tained four acres and I applied the

riers, that will dissolve in soil waters, the unfertilized plot. supply them in fertilizers. For in- "The soil was a good clay loam and turally thought that one of them was be of pure nitrogen. The remaining was sown with clover, in 1920 it had V. 12. Even the Syrian soldiers shout: "If God be for us, who can be shout: "If God be for us, who can be encountered diffi-86 lbs. is natural organic carrier. The pure nitrogen would be useless to the plant, but as carried by blood and plant plant

Unfertilized corn yield.... 30 Or gain from fertilizers of 17 to 33 seen with the eve."

Pennsylvania Exp. Station 35-year

Purdue Experiment Station published an exceedingly interesting find recently. In some sections the idea is prevalent that all that is necessary to do is to return what the crop takes out of the soil. The Indiana Station made an extensive study of the amount of plantfood removed by the corn crop, and reported as follows:

"It is to be noted that in this investigation the corn plant when supplied with a proper amount of water took up about the same amount of phosphoric acid, about 35 per cent. more nitrogen and more than twice as much potash as authorities usually state that the crop contains."

These figures would indicate the necessity of much more liberal fertilizing of corn if largest yields of best quality are to be obtained.

Now as to farmers' results:

In 1920 Mr. Henry Hartley grew wix 1-5 acre blocks of corn, which he

"The plot manured and fertilized is by all odds the best. The corn was very tall, and nearly all of it ripe. The plot not fertilized at all shows the stalks very uneven in height, and Britain's Wise Foreign Policy. small in size. Where 250 ibs. were A distinguished British commentator noticeably more ripe ears, but these of Egypt. were small. In the 500 lb. plot, the ears were still larger and more maplas both manured ad fertilized a meet

(By Henry G. Bell, Director, Soil and very large percentage of the ears

of corn is by modification of the plant- and no fertilizer ears were produced Israel were frequently at war during V. 17. Open his eyes. Elisha did not food at the disposal of the crop. In at the rate of 2,800 lbs, to the acre. 2, Kings 11: 23-25; pray that a heavenly host might be all probability the kind and quantity On the plot receiving 50 lbs, of the of plantfood would have very little 3-8-3 fertilizer ears produced were of plantfood would have very little 3-8-3 fertilizer ears produced were been more serious with Israel in these fest to his servant. "It was a momenteffect upon modification of certain 4,200 lbs. On the plot receiving 100 wars had not the Assyrians kept the ary unveiling of what always was." characteristics of corn, such as color lbs. fertilizer 4,800 lbs. of ears were kingdom of Damascus busy defending The mountain. This was the hill on of kernel, height of ear, dimensions produced. On the plot receiving 150 their own borders. In the following which Dothan stood. The Syrian host of ear, etc., but the balance of plant- lbs. there were 5,600 lbs. of ears. On story it was not a regular war but a had crept up the hill during the night food and the quantity available, to a the plot receiving 50 lbs. of fertilizer sort of guerilla campaign. His ser- (v. 14); but the heavenly host was very large extent determines the yield, plus a light dressing of manure there the quality of that yield and the earling were 4 200 lbs. of every large extent determines the yield, plus a light dressing of manure there wants; his chief military commanders. There too. Horses and chariots of fire. My camp. Some scholars would amend What was said in the note on 2: 11, the quality of that yield and the earli- were 4,200 lbs. of ears. On the plot the Hebrew text to read: in such and may be repeated. The Hebrews ness of maturity—three points of receiving manure only there were 2, such a place let us set "an ambush." thought that Jehovah, as Lord of immense importance in the improve- 800 ibs. of ears. I should have added If that reading be correct the refer- Hosts, had a great heavenly army and that the weights given are for acre ence would be to a raiding band rather in this there would be a muster of To fully appreciate these facts it yields. I wish to say that the differ- than to a large army. is necessary to recall that there are ences in maturity of the ear for silage V. 9. The man of God; that is, the dwell in a fiery light and his army three important constituents of plant- purposes were distinctly in favor of well-known man of God, Elisha. In resembled, in appearance, this fiery

izers, each of which has its own indiment been evident in test plots, but could see what was taking place in vant who saw the invisible are the last of secure the best results. It is is a pleasant informal social evening. vidual part to play in the growth of general crops have shown similar the distance. (See I Sam. 9: 1-10, 20.) Syrian host who, stricken with blind-Nitrogen or Ammonia—which caus reports on an extensive fertilizer test prophet was more to Israel than an this condition they were led from Do-expenditure could mean greater effi- to much fine community co-operation conducted last summer as follows:

"I am pleased to give you the result to the preservation of Israel." izer on corn herewith. The field in helpful intervention of the prophet. Potash—which causes the formation which I conducted the experiment concorn, and strengthens it to resist fertilizer at the rate of 250 lbs. per here suggests anger rather than agi- anticipated the Christian treatment of acre and found the corn matured fully nere sugg These three plantfood are never ten days earlier and produced twenty stratagem had repeatedly miscarried. mercy and kindness. used in their pure form. Suitable car- five bushells per acre more gain than Called his servants; because he sus-

stance, 100 lbs. of blood carries 14 the fertilizer 2-12-2. In 1919 this field playing into the hands of the Israel- odds were against him.

other nitrogenous substances, includ- valuable information re the value of learned the reason why their raids ence and contempt of the cultured places. ing manure, it is highly valuable.

Fertilizers increase corn yields and hasten the ripening of corn crops. To substantiate these claims allow me to present results obtained by agricul
The most powerful forces in the from our carthly places.

The most powerful forces in the from our carthly on Ensilage Corn, making a gain of was saying in his private chamber.

The horses and contempt of the children contempt of the children and contempt of the c present results obtained by agricul- 1.7 tons per acre with fertilizer alone, Such a man was dangerous. tural experiment stations and results and 3.1 tons per acre with 250 lbs. obtained by our own Ontario farmers: of fertilizer and one load of manure V. 13. The Syrian officers kept faith to be certain of their reality. teachers reporting truants to officers Ohio Exp. Sta.—25-year test shows: per acre. Mr. Warnica's experience is themselves informed by some means. This is true even in the realm of the and the matter receiving little or no Bus. per acre. especially interesting, since it shows of Elisha's whereabout. He is in physical world. Who has seen the life Unfertilized corn yield ... 28
the great value of fertilizers in has—
Fertilized corn yield ... 40 to 47
Or gain from fertilizers of 12 to 19
the great value of fertilizers in has—
that grows in the blade of grass, or a
flower, or a leaf, or a stock of wheat?
Who can measure with a yard stick recalls the following points:

siderably better than the one heavily Gen. 37: 17.) Fertilized corn yield 47 to 63 manured. Moreover this could be

due to fertilizers of 19 bushels per fertilizer to have made such a showing of a larger army? Yet in his agita- gestive story of man supported by the foregoing figures will show you that is quite satisfied that a little manure gerous a man must be put out of the is very near. large increases are being obtained and some fertilizer is much better way. They came by night. Their plan 4. Faith sees the rich harvest of our equal to the heavier application of they could not make on Elisha. manure for ensilage corn.

farmers have filled their silos with water and fibre rather than with good nutritious ensilage. The value of corn being matured beyond the glazing stage before being put into the silo was brought out by Purdue Experiment Station in their bulletin No. 175. This publication claimed that the matured corn held 30 to 50 per cent. more A Generous Pie. "My little boy of two from each section who would (a) Dr. Waugh, in charge of this

consideration of Ontario dairy farm- -twenty of us." "Well, we'll have around the schools and perhaps the mention here. ers. As to whether or not it pays, it to co-operate them, for I want to go next plank will not be as difficult to (b) School Nurse: the most logical is an easy matter to figure the cost to the Institute meeting to-morrow, obtain in the next few years. fertilized at different rates five with- of 200 to 300 pounds of fertilizer per too. You get the potatoes washed and out manure, and one with manure and acre and compare it with the value of peeled and I'll make a big pie and you fertilizers. The report on his test the gain. Positive results are so ap- can heat it on the school stove." parent it is unnecessary to figure an

HENRY G. BELL.

applied, the stalks are more even in in a recent book of cutspoken essays length. The plot both manured and says that the Americans have made fertilized was by all odds the best, Cuba for the first time a really Spanthis being decidedly noticeable at a ish island by driving out its incomdistance. The greatest difference of petent Spanish governors and so atall between the plots was in the ma- tracting immigrants from Spain. He turity of the corn, and the yield of also finds that in hauling down the ence. On the unfertilized plot, most French flag in Canada England proat the ears were simply nubbins, with moted the only flourishing French of the interest taken in this line of and (we are quite within our province wary little corn on them, but with an colony. England helped the Dutch to occasional ear nearly mature. The multiply in South Africa and has addmiot with 250 lbs. of fertilizer had ed millions to the native population

Committees this rather than by for future ill-health. Have you ever stopped to think how organizing separate Home and School ture, and in the 750 lbs. plot there was this country would fare if there were Councils. A branch may have among built conform to all requirements of still a difference in both the yield of no forests no wood to supply the its membership women from two, health and education. If Institute ripe sars and the maturity. In the thousand and one necessities of do three, four or possibly more school members at the meetings study a

The Sunday School Lesson

FEBRUARY 26

Elisha's Heavenly Defenders, 2 Kgs. 6, 8-17. Golden Text

of Elisha's extraordinary power as a guardians. prophet. In those lessons he used that V. 16. Fear not. This would be the pect and confidence.

I. A King's Plan, 8-10.

Chatham, Thursday, Jan. 26, 1922.)

Dundas Co., conducted a similar test.

The report of his test reads as follows:

The second means of improvement

"On the plot receiving no manure

United String was Damascus. This kingdom bordered on Israel on the north. The king's name is not mentioned but in all probability Benhadad is referred to. Warred against Israel. Syria and the lows:

"On the plot receiving no manure Israel were frequently at war during V. 17. Open his eyes, Elisha did not

food which the plant gets from the soil, or from manure, or from fertilizers, each of which has its own indi
izers, each of which has its own indi
the fertilized plots."

Well-known man of God, Elisha. In the schools, the trusted by the faculty of second sight. It was the special faculty of the seers, like Samuel, who is the second sight. It was the special faculty of the seers, like Samuel, who is the second sight. It was the special faculty of the seers, like Samuel, who is the second sight. It was the special faculty of the seers, like Samuel, who is the second sight. It was the special faculty of the seers, like Samuel, who is the second sight. It was the second sight. It was the special faculty of the seers, like Samuel, who is the second sight. It was the second sight in the schools, the trusted substance.

In contrast to Elisha and his service the best results are invited. The object is the second sight in the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the section teachers of all the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the section teachers of all the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the section teachers of all the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the section teachers of all the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the section teachers of all the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the section teachers of all the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the schools, the trusted substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the schools, the schools substance. (See ch. 2: 11, Hab. 3: 8; a new school comes up in the schools substance. (See ch. 2: 11, Hab. 3: 8; a new school come gains. Mr. Walter Holmes, of Eberts, With this remarkable faculty "the ness, did not see even the visible. In an improper building when the same tion may get acquainted. This leads

II. A King's Anger, 11, 12. pected treachery among them. He na-

III. A King's Revenge, 13-17.

V. 14. If the Syrian king had rea- eyes and touch with our hands.

Such findings are of great import- Risen early, and gone forth. "Appar- full harvest. This is in line with the ance, especially for the dairying sec- ently he had gone out of the city be- insight of Jesus himself: "I, if I be

to heat and eat it.

community progress.

Their aims are to secure:

Makers.

The following points from the pro- forward.

Time Between B.C. 833 and B.C. then rushed back in terror." The early rising of the servant spoiled the ele-Place Dothan, ten miles north of ment of surprise in the Syrian's attack. How shall we do? a most na-Connecting Links In the two pre- tural question for one who saw merely vious lessons we have had instances the visible foes and not the invisible

power beneficently for certain indi-counsel of a braggart if it were not viduals. In this lesson he used it for for the statement which follows. "The Israel as a whole. We should note the expulsion of a reasonable fear is gaingrowing importance of the prophet's ed only through a reasonable trust."

position in Israel. In moments of They that be with us, etc. What
grave national danger he helped his Elisha meant, of course, was not that people, and thereby he won their res- the Israelite army was larger han the Syrian army, but that the people of God were surrounded by heavenly Crop Improvement Bureau. Delivered were fit for seed."

the Aramean confederacy whose capital city was Damascus. This kingdom stand Elisha for he had no idea of tal city was Damascus. This kingdom the heavenly guardians until his eyes hordered on Israel on the north. The

chariots. God was also thought to

opened. In antiquity a conquered Phosphoric Acid—which causes root army were generally treated ruthless-growth and hastens the ripening of my experiment with special fertil—"not once or twice"—so also was the ly and were often completely annihilated in the result of the raids were frequent—the way a fine touch of kindness. ated. It was a fine touch of kindness that Elisha showed the Syrians when V. 11. Sore troubled. The Hebrew and then dismissed. In this Elisha He was enraged that his one's enemies to conquer them with

Application.

1. A prophet unafraid, though the

Purdue Exp. Sta., Indiana—12-year ern limit of the corn belt. The report from Damascus to Egypt." Joseph love? We behold the effects of elecwhich passed the great carayan road or a gallon measure the power of was in Dothan when his brothers sold tricity. We see the proofs of life. "Two plots fertilized were con- him to the Midianite merchants. (See But our richest beliefs are about things that we cannot see with our

soned the matter out perhaps he 3. A good man surrounded with the Mr. Warnica stated that he would life Elisha knew the movements of a with the diabolical. In the lesson pastest shows an increase in corn yields never have believed it possible for small band, would he not also know sage we have this thrilling and sugacre. And so I could go on, but the in comparison with heavy manure. He tion the Syrian king felt that so dan-knowledge that God cares, and that he

than a whole let of manure and that was to make a surprise attack. But present efforts. How often have Chrisa liberal application of fertilizer is that was the very kind of an attack tian missionaries like Morrison, Livingstone, Chalmers and many others. V. 15. The servant; the successor to sown the seed of the gospel and been Elisha's former servant, Gehazi, v. 27, content to abide God's time for the tions of Ontario. Too frequently dairy fore he discovered the besiegers and lifted up, will draw all men unto Me."

2. School Improvement.

we have already had we could not go

to say) spiritually (as well) benefit

future citizens who lay the foundation

(b) To see that schools now being

For Home and Country

The Women's Institutes and the Schools

Educational Aims of the Rural Home- overlooked that were it not for what

1. Co-operation between Institutes for scholastic accomplishment here

and schools through Home and School and often—too often—the foundation

SMOKE CHUM/ The Tobacco of Quality 1/2 LB. TINS

and in packages

they will be ready when discussion on teachers of all the schools, the trusarmy. He used his supernatural gift than to Samaria where their eyes were ciency. (Rural School Plant by throughout the year, and a cordial

> (c) To give attention to consolidation wherever it is practicable. Branches can secure from the Dept. of Education copies of the pamphlet. Consolidation of Rural Schools and of the Act and Amendments relating.

> (d) To look into the matter of continuation schools. A step toward both consolidation and Rural High Schools. 3. Attendance to 16 Years of Age at

The horses and chariots of the Lord they should have as future citizens. fill the air, if we have the spirit of (c) Truancy Cases come to light of further attention is dropped, to the

injury of the child and the nation. 4. Competent Teaching:

(a) Of necessity school work and ence and manual training-not in all cases by the regular teacher.

(c) What about having a duly qualified teach have a group of schools?

5. Education for: (a) Retarded children.

(b) Illiterate. (c) Non-English speaking.

6. Teachers' Salaries. These should be large enough to

ing houses are provided."

enable them to live comfortably. 7. Teachers' Boarding Places.

that decent, warm, comfortable board- digestive troubles.

8. Medical Inspection and Follow-up Work.

protein and one and a half to two and little girl came home last night visit their own school, gaining a work, says the Dept. of Education de the hinging together of two four-foot times as much carbohydrates as did demanding meat pie for their school friendly co-operation between teacher, pends on the Women's Institute to be gates and adjusting in the corner and lunch to-morrow," said an Eastern pupils and Institute (instance several eyes, ears, hands and feet in helping along the wall of the shed. If corn ripening can be so hastened Ontario secretary at a recent Insti- cases: games, soap, towels, etc.), to carry out their program. This is and the quality of feed from it im- tute meeting. "Well, I'll make you Mainly we want the mothers to see so familiar to all members now that proved, we would recommend this one each," said I. "But, mother, we either through their own eyes or those only its importance and close connecphase of improvement to the wider want enough to go around the school of their committee conditions in and tion with rural betterment permits

factor in carrying out follow-up work 9. Hot Luncheon.

day, and children and teacher unite conforming more nearly to our during the teacher's absence at noon present-day standard. It must not be hour.

10. Educational Associations.

tee on Education and Better Schools render further service by improvebranch belong to this. of the Ontario Women's Institutes in ments which, while costing very little (a) Through this agency a more efdicate the range and practical nature in themselves, will very materially ficient trusteeship could be sought.

> enced in favor of women on school 11. University Extension. To establish these courses.

> > Too Many Parties.

sections. Why not appoint a committee number of plans for school buildings, October of each year, to which scientific instruments.

understanding and support of the teachers in their aims.

One of the many good results this year has been the passing of the following resolution by the Institute:

Inasmuch as there is a tendency to multiply parties, entertainments, and organizations for children of school age, it is resolved that we as an Institute and as individuals use our influence to have these recreations confined to Friday nights and Saturdays. It is resolved that since excitement and fatigue of frequent parties and not a necessity in the majority of long-continued practices for entertainments are detrimental to the health of the child, we endeavor to have them (b) Home girls and boys should replaced as far as is reasonable by receive more attention as too often outdoor exercise and quiet home re-

Sheep dividends depend on the care

given the flock at lambing time. A good winter ration for pregnant ewes is composed of good hay, clover or alfalfa, unthreshed pea straw, roots that rural schools should not be made and silage. If thin, grain should be to bear all the inexperienced teaching. added. Salt and water should be sup-(b) Of agriculture, household sci- plied liberally and regularly. As the ewes approach lambing time reduce all feeds, especially roots and silage. During the first twenty-four hours

the feed should be light, after lambing. A warm drink with a light feed of pulped mangels and grain is good. Within three days the ewe may be brought back to the full ration, then fed milk, as well as hay and roots. When the lambs are eight or ten

days old they will nibble fine hay and grain, and thereafter should be provided with a separate trough and rack Almost every place—town or coun- where they may learn to eat. No feeds try-reports difficulty in securing a for this purpose excel oats, bran, oilsuitable, if any, boarding house for cake and good fine clover hay. Make the teacher. "If country districts wish all changes gradually from winter good teachers, in addition to giving quarters to pastures, both for ewes better salaries they must see to it and lambs, avoiding scours, bloat and Ewes lambing in cold weather must

have comfortable quarters. The floor must be dry, well bedded and level. It is often best to have individual

How much outdoor exercise should the dairy herd have during the winter months? Some dairymen confine their herds to the stable almost con-(a) Of buildings now in existence. Wherever possible to promote this, tinuously throughout the winter It would not be wise to scrap all the perhaps by having a woman who lives months, while others carry out the This is the simple wholesale way little red one-roomed school houses. nearby prepare soup, cocoa, or what-reverse extreme by keeping their in which hot lunch is provided for one They have served a purpose in our ever is being served at her house, cows out in the yard all day. Both country school in an Institute com- national education and for financial bringing it to school, or in securing practices are extremes, and both inmunity. Soup, cocoa, chocolate, some- and other reasons, it is impossible to a woman to go to the school, prepare calculably impair the productive effithing hot is provided for each cold replace them at once with buildings the hot dish and act as supervisor ciency of the dairy herd. Good judgment is necessary in handling dairy cows in winter in order to obtain pest results. The average dairyman fol-These are being formed throughout lows the practice of turning his cowe the various counties and it might be into the yard to water and exercise. gram chosen by the Standing Commit- These buildings may be made to well to have a member from each I have followed both methods of water in the stable. I believe, however, that it is best for the dairy, herd to have daily exercise during the winter when (b) Public opinion might be influ-the weather is favorable. I do not think it a good practice to allow the cows to stay out in the yard until they become chilled, as this impairs large yields of milk and increases the cost of production.

Fish, birds, and animals afford sur-Dundas Women's Institute give an er indications of the coming of bad Annual Educational "At-Home" in weather than even the most delicate HAS NEVER FINER II

"TANLAC MA SWEEP OF BLES," DECI RONTO (

Wife and D Greatly Benefit ter Med

"Tanlac fixed me quit taking it three I've been feeling g said Thomas Brown Street, Toronto, emp Davies Co.

"Indigestion and was my trouble, an before I got Tanlac bad shape. Why, if tea and ate a little breakfast I would ! be in awful distress. and pies alone, and as though I had a b of my stomach. 1 great deal, too, and shooting pains arou nearly worried the !

"After taking Tar daughter thought sa they got me to try it proved to be the ed. Why, it has ma of all my troubles : very best kind of a eat just anything i feel as fit and fine a tife. Tanlac is who my case and I don' of it."

Tanlac is sold by

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Better to hold yo Minard's Liniment to

Sur Variations-Duncans hie, Tennochy.

Racial Origin-Scott with some of the fo ment from the Ga Scottish Gaelic, am

ands. ion other than a English and Gaeli are entirely differe thie, or Duncan His of Athel, and the Duncan) Reamhat. The English design

the reign of King name of Robert, the All of the foreg and the second s

Wh