

EAST AFR. PROT

2571

Rec. Br. Am. A

1919

USASIN GIYU RAILWAY
GROWING

Encloses memoranda. Asks if message of encouragement
can be sent to farmers of Usasin Giyu.

Last previous Paper

Outline.

These papers about the Usasin Giyu railway are
interesting as showing that the scheme of a trolley line,
leading to construction of a railway, is now publicly
discussed in F.A. and is welcomed by the settlers in the
Usasin Giyu, that the contractors, who wish to have the work
of this railway itself, are willing to undertake the work
and that the settlers will guarantee part, say a
quarter, of the cost of construction. On the question of
compensation we are awaiting replies from the Press and
the Govt. to our communications on 11/22. We cannot
return this for a week or two.

The papers on wheat growing in F.A. are very
interesting and amplify things that we have mentioned
at the time the in short of the report in
Chicago. See also file 57321/19, which I
place just below this paper that the 1919 wheat crop has
failed, whether through drought or frost is
not stated.

Next subsequent Paper

0/5666

COPIES
RECORDED
INDEXED

the interest taken in the development of
the Basin. It is by Mr. Long will be contained, and say
that Mr. Long is awaiting certain information which
is necessary to enable him to take a decision on the
question of communications with the plateau.

and send copy of the letter and all
enclosures with copy of our reply to the U.A. and say
that should be given if the note is not at all giving in
it could be revised as a result of our instructions
to the officers with the same as to be done by the
office.

In copying the letter to the U.A. and to the
other offices copies as well as that at the
direction of the U.A. we can give the information to
the U.A. and about when growing.

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2571

Washington, D.C. 1799

Dear Sir,

I have the honor to acknowledge the receipt of your letter of the 14th inst.

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of encouragement & good will
to take back to the Father
the Union, such as I feel
you will understand, that
are found when we feel cut
off from the Home Government
& that there is a lack of
sympathy; instead of the
feeling that we are not working
together for the Empire.

I remain

Yours very faithfully,
Devinot Genl. O'Meara

Uasin Gishu,

24th June 1918.

To
D. G. O'Mahony, Esq.,
Sergeant.

Sir,

Knowing that you are proceeding to England we request you in the name of this Committee, to do everything in your power to further the interests of this District, and to make such representations to the proper authorities, in conjunction with the Hon. Mr. W.C. Hoey, as may be thought necessary.

We feel that an excellent opportunity now presents itself for direct representation upon some of the many problems with which this district is handicapped, and the presence of two such prominent Uasin Gishu Settlers may do much to aid in the solution of these problems.

I am,

Sir,

Your obedient servant.

H. J. Scholfield

DISTRICT COMMISSIONER,
CHAIRMAN, District War Committee.

Countersigned

J. J. Shaw
Secretary, Railway Committee.

PLATEAU DISTRICT

Unanimous Feeling of Settlers.

£33,000 Quaranter.

A large and representative gathering of settlers in the Usin District took place at Midoret last Saturday, September 7th.

The meeting was convened by the Usin District Railway Committee and was presided over by Mr. C. Parker Houston.

The object of the meeting was to place before the public the proposals for the extension of the trolley line from the Midoret Railway to Midoret. It was made clear that the Government had received some authoritative strong representations in favour of the construction of trolley lines.

A resume of the work done by the Railway Committee was given, and this was followed by expressions of views and discussion regarding the proposed extension as it is at present.

The following figures forwarded by the Railway Committee to the Government, of the probable production in the district which would be transported over the trolley line were supported by the public. It was understood that these figures refer to a period of twelve months and would be sufficient to justify the decision to build the trolley line:-

Timber	20,000	tons per annum
Wool	5,000	" " "
Flax	2,000	" " "
Sisal	2,000	" " "
Wheat	1,500	" " "
Coffee, etc.	500	" " "

This must be added to the inland traffic of say 5,000 tons, making a total of 10,000 tons, which would, in all probability, increase to 15,000 tons.

The resolution was passed without dissent:-

That the Government of the West Africa Company be urged to give the necessary attention to the construction of a trolley line between the Usin District and Midoret, and that the Government be urged to construct a trolley line, this meeting is unanimous in

supporting the immediate construction of the proposed trolley line from Mansuett to Madorst, and desires Government to sanction same, and to open negotiations with Messrs Pauling and Co., with a view to the undertaking the construction of a line and the supplying of material.

The confidence in the success of the trolley line, and the possibility, in case of need, to sign a guarantee in favour of the same, supported by a number of persons from the line, was expressed by nearly a hundred, with distinction, at a meeting held on the 12th of December, 1900. This guarantee, which will represent this sum per annum, and be valid for three years from the date of completion of the line to Madorst. It is anticipated that, as the line increases the sum represented by the undertakers will be £30,000 per annum.

In view of this public confidence it is anticipated that the Government will make every endeavour towards an early start upon the line, a step for which is so manifest in the interests of the Basin, and the Victoria District in particular, and the Protectorate in general. Telegrams were received from Mr. Goldberg and Mr. Jacobs of Madorst, expressing their cordial co-operation, and requesting that their names be placed on the list of those willing to sign a guarantee.

It was stated that Mr. Dawley, the representative of Messrs Pauling and Co., had agreed to recommend to his firm the construction of the trolley line, and the meeting has undertaken to arrange a guarantee of £30,000.

A MEMORANDUM ON WHEAT IN BRITISH EAST AFRICA.

At the present time wheat is grown chiefly in the following districts (1) Njoro. (2) Usin Gishu Plateau. (3) The Government Experimental Farm, Kabete.

(1) The undulating grass plains of Njoro lie halfway between Nairobi and the Victoria Nyanza at an elevation of roughly 6,500 feet. The district possesses two great advantages - first - the Uganda Railway passes to the Southernmost portion, and secondly - there is no clearing to be done owing to the fact that the rather fine and sandy soil supports little else but Rank Grass.

(2) The Usin Gishu Plateau is situated to the north of the Railway and East of Mount Elgon. The Plateau wheat growers are under the disadvantage of being from 40 to 100 miles from the Railway, some settlers on the Trans-Africa road, and of having to perform a considerable amount of clearing or slash-and-burn. The only road that connects them with the railway is an earth track unsuitable for heavy traffic during nine months of the year. The soil is rich in lime and phosphates. The climatic conditions of Usin Gishu may be said to be extremely favourable, the altitude being from 5,500 to 7000 feet. The average rainfall is about 60 inches. There are two seasons, the wet season and the dry season. The wet season commences towards the end of April and ends in October. During these 7 months there is an average of about 40 inches of rain - most of the rain falling in June and July. The mornings and evenings are very cool and the nights quite cold, the average evening temperature at 5 P.M. being 55, at 6 A.M. 45, and at noon 72 °.

(3) The Government Experimental Farm, Kabete, is situated some 7 miles to the North west of Nairobi, in the Kikuyu Native Reserve, where the soil is a rich chocolate coloured loam, the altitude is 6000 feet.

Many years ago wheat was grown by the early Settlers on the plains below Nairobi and later at Njoro where excellent harvests were reaped from such wheats as Gluyas, Bobs and Thew (all Australian) for the first two seasons. The third season the crops were completely destroyed by the black stem rust (*Puccinia graminis*). This has been the general experience of wheat growers with the Type wheats and it was not until wheat breeding on Mendelian lines was undertaken that wheat was considered to be a profitable crop.

In 1910-1912 hybridising experiments were carried out by Mr. R. H. Evans of the Agricultural Department, both at Kabete and at Lord Delamere's Njoro Farm. Mr. Evans had studied this subject under Professor Harfen at Cambridge in the summer of 1910, and on his return to this country had breeding cages erected both at Kabete and at Njoro, similar to the one at Cambridge.

In the meantime some 144 varieties of wheats had been imported from various parts of the world and grown at Kabete and at Njoro to form the basis for hybrids. As the Italian wheat Rielti had proved in previous years to be much more resistant to rust than any other variety though of poor qualities otherwise, it formed one parent of a large number of hybrids. At Kabete the work was carried on faster owing to the two rains in the year, and it soon became evident that some very promising hybrids had arisen. These were carefully selected according to such characters as resistance to rust, early maturity, good milling grain, strong straw, etc.,

In 1911 the Njoro wheats were attacked by an *Aphis* (*Toxoptera graminum*) which was already known to do serious damage to wheat in the United States. For two reasons this *Toxoptera*

did considerable damage.

A full account of the sudden appearance of this pest was published at the same time in the Annual Report of the Agricultural Department by the Government Entomologist, the season was exceptionally dry and favourable for the spread of the insect. Parasites introduced from America died, but all took their places naturally and though the *Aphis* is to be found in wheat fields at the present day, the local parasites and other preying insects suffice to keep it well under control. No damage has been recorded from this pest since 1912.

In 1912 Mr. Evans resigned from Government service on account of the small pay he was then drawing but continued for some time in charge of the experimental wheats at Njoro by arrangement with Lord Delamere.

In 1913 the Kabete wheats were handed over to Mr. W. Dowson on the somewhat illlogical ground that as he knew about rats some of which attacked wheat, he must therefore know about wheat breeding as well.

The work of separating and selecting the numerous varieties has been carried on during the past five years and as varieties exhibiting the important characters mentioned above were not fixed (1934) attention was paid to less obvious characters. Chief among these were colour of straw, chaff and grain, length of awns etc.

Details of Mr. Dowson's experiments will be found in the Annual Reports of the Agricultural Department for the years 1913 following.

In 1914 he visited Lord Delamere's Njoro farm in company with Mr. Evans and examined with him some 350 hybrid selections and varieties of wheat.

In 1915 Mr. Evans left Lord Delamere's employ and went to the front. The experimental wheats then passed through the hands of a number of Managers with the result that the whole 350 varieties were hopelessly mixed.

The wheat one sees growing to-day at Njoro is a mixture of all sorts which possess but one common character - namely - equality of height so that it can be stripped by a harvester. As quite half the varieties are later maturing than the others and all harvested together when the early lot are ripe, half the resulting grain is unripe and becomes much shrivelled as a consequence.

Better results would be obtained if the mixture were cut with a binder when the later maturing varieties were perfectly ripe, then stacked for some time and finally threshed. But this however, there is not sufficient time in dealing with the area with a very limited amount of machinery, 5000 acres usually grown in large blocks in the Njoro district which produce a crop of roughly 15 bushels to the acre and owing to the immature nature of half the grain the bushel rarely averages more than 85 lbs.

In 1915 Mr. Dowson managed to obtain 5 acres for a single variety of wheat at Kabete and sowed this plot with a certain selection of the Hybrid Nut Cut X Egyptian No.3. This variety was highly resistant to both black and yellow rusts (*P. graminis* and *P. glumarum*) respectively, and he wished to grow enough seed to have a milling and baking test made and enough over to sow for the next season. This wheat had always done splendidly in small plots and when sown in the five acre block again produced a very fine crop of 15 bushels to the acre harvested, several bushels being accounted for by the numerous flocks of small birds.

numerous blocks of small wheat. The wheat matured in 5 months. Very little rust was observed although separated from it by a road was a 7 acre block of this wheat (sent in by the Manager of the farm) which was almost completely destroyed by P. graminis. The following is a report of a milling and baking test undertaken by the local millers.

"Appearance - the wheat received appears to be a very good milling quality and rather above the medium strength. Upon threshing the weight per bushel is 48 lbs. which indicates a wheat well matured and quite suitable for milling. Milling - this wheat made a small amount of a fairly clean bran, the flour is granular and heavy, the colour in colour the colour would be greatly improved if the wheat were milled in a really high class milling plant. Baking - we send you herewith a loaf baked from the wheat and has a good colour and the bread is palatable, the texture of the crumb is very fair but not so fine as from a high class flour. The only defect we have found is the rather dark colour but as we previously stated is not altogether the fault of the wheat we would say that the flour, for bread making purposes, is better than Indian Superfine."

From the above it will be seen that this particular selection is not only a good milling wheat but also produces flour of sufficient strength to bake a good loaf. The Red Fire hybrids should also yield similar results, judging from the fact that Red Fire wheat has always maintained its strength in whatever country grown; in fact these selections of Red Fire X early Rieti should be similar to Professor Biffin's Bargeyn's Fire.

Both the ~~two~~ two hybrids Red Fire X early Rieti and Nut Cut X Egyptian No. 3 have been distributed in small quantities (2 bushels) to settlers in various parts of the country and have for the last two seasons produced excellent crops. Two of the wheat growers on the Uasin Gishu Plateau have had sufficient seed of these two selections to be able to supply many other settlers, and it is hoped that at the end of this year a milling and baking test will be made of the Red Fire X Early Rieti hybrid.

The yield per acre of these two hybrids from small blocks sown by some settlers ~~XXXXXXXXXXXXXXXXXXXX~~ on the plains below Nairobi reached 25 bushels. Owing to the war many settlers now at the front who had started wheat obtained either from Kabete or elsewhere, have had to discontinue this crop owing to their continued absence from their farms.

Turning to the wheat of the Uasin Gishu Plateau; for the past 6 years a number of settlers have successfully grown a mixture of wheats obtained from South Africa. The areas on the Plateau are much smaller than those at Njoro and range from 10 to 100 acres, there are however, more wheat growers on the Plateau and their cultivation is very much better than any seen on the large white lands of Njoro. Chief amongst this South African mixture were Zwart Bard (Black Beard) and a very similar wheat but with white awns known as Golden Ball. They possessed the great advantages of being extremely resistant to rust, of having strong straw which withstood very heavy rain, and of being early maturing (45 months). When however, tried at Kabete they proved a failure for they became susceptible to rust and matured much later. On the lime and phosphate containing soil of the Plateau wheat area, the yield per acre is on the average 25 bushels of 65 lbs. weight.

Zwart Bard and Golden Ball are hard wheats from a milling point of view and do not produce flour of great strength, so that of themselves it is not possible to make a white loaf of good shape and size.

In 1914 a wheat called Equator was introduced to the Plateau and Njoro. This was a hybrid whose parents have been lost and was distributed before the general mixing up of the Njoro wheats. Equator has likewise proved very resistant to rust, has a good strong straw but matures rather late, about 6 months. Some Njoro mixture introduced in 1916 was also tested in 1917, that it has been decided to discontinue wheat in spite of the fact that it produced flour of very good strength.

Finally there is a single selection of Rieti wheat on one farm which has done exceptionally well for the past 6 years and is early maturing (5 months). Quite recently (Feb. 1918) a milling and baking test was made of this variety which was highly satisfactory in every way.

During Mr. Dowson's absence on leave in 1916-1917 the Kabete wheats unfortunately got badly mixed and damaged, and only a certain amount was saved. These were sown and a quantity of another selection. A portion was supplied to the Settlers.

The chief pests of wheat are innumerable flocks of small birds which account for quite 1/3 (one-third) of the crops at Njoro and Kabete, but these have not so far troubled the Plateau. The insect enemies and rust have been overcome - loose smut is sometimes met with in type wheat but never in hybrids.

The Kabete hybrid wheat particularly certain selections in the two crosses Early Rieti and Red Pife and Egyptian No. 3. Cross put out - have done well in all parts of the country wherever tried and produced a strong flour from which good bread can be baked.

On the other hand type wheats such as Golden Ball and Stuart Bard have proved successful in one area only, namely the Uasin Gishu Plateau.

Owing to the shortage of Kabete hybrids for milling purposes it has been found that a mixture of equal parts of Plateau wheat and of Njoro mixed Hybrids, grinds well and makes excellent flour for baking.

For the future management of Experimental Farm Wheat it is urgently necessary that a Cerealist could be appointed to carry on the work which was so well begun in 1910. The Cerealist should also work at the important question of improving Maize and should receive from the Government every possible assistance to carry out this important work.

In the above account of the wheat industry of East Africa an endeavour has been made to show the present favourable position as a whole for its farth future development.

The initial problem of breeding a variety highly resistant to rust and at the same time possessing the necessary quantity of strength, has been solved.

The one great obstruction to the development of the wheat industry in the Uasin Gishu Plateau is the difficulty of communications. All transport has to be done by wagons and oxen and as the harvest of wheat is not completed until the end of December, it only leaves from January to the middle of March for the transportation to the Railways, three months during which oxen are badly required on the farms for ploughing and preparing land for Maize, Flax, Beans etc.,

In January 1918, two large and representative meetings were held representing the Settlers of Uasin Gishu. They discussed and considered the ways and means of speeding up the increased production of wheat as requested by the government so as to make

The following is a list of wheats grown at the present time in British East Africa -

One area	Mixture of Rieti hybrids.	Badly grown but resistant to rust & producing 'strong' flour.
Wasin Gishu District	Equator.	Very resistant to rust but producing 'weak' flour.
	Golden Ball	
	Zwart Bard	
Kabete - few remaining sections of.	Rieti	Very resistant to rust and producing 'strong' flour.
	Early Rieti X Red Fife	
	Egyptian No. 3 X Nut Cut	All highly resistant to rust.
	Egyptian No. 3 X Thew	
Egyptian No. 3 Yellow Fife		
	Indian No. 17	
	2 hybrids whose parents have been lost	

-6

The wheat weighed clean 64½ lbs. per bushel.

Flour	1st. grade	62%
"	2nd. "	10.72
Bran		14.09
Pollard		6.18
Chaff		4.09
Loss		.92

100 %

The baking test showed very good results.

Strength and Bulk exceptionally good. Colour rather dark, but does not impair the sweetness of the loaf.

(Sgd.) Albert H. Harley,

Mill Manager. Unga Ltd., Nairobi.

14th. January, 1918.

The President,
The War Council.
Nairobi.

Sir. I submit herewith a report on the Uasin Gishu wheat which I have recently inspected.

The term Uasin Gishu wheat comprises that grown upon the plateau proper on the Trans Nzoia and that grown in Nandi.

The chief variety grown at present is the South African wheat, a black eyed hard wheat, which is however, mixed with some 20% of softer varieties.

In the Sergoit district towards the Nzoia river, it is present in the Zwartbaard variety from 10% to 25%, while in the South East corner of the plateau on the Nandi border and in Nandi itself an almost soft, white-grained wheat is to be found forming about 10% of the Zwartbaard mixture. Some of these mixtures make a satisfactory milling and baking wheat without any addition of the Njoro wheat.

Zwartbaard varies as to the hardness according to the soil upon which it is grown; for example that grown on light red loam in the Sergoit area is extremely hard and flinty; whereas grain grown on the Nandi forest soil - a rich dark loam with lime has a variegated appearance and contains a good deal of starch.

Zwartbaard has been grown for the last 4 - 5 years and has proved very resistant to rust; it is in addition a heavy yielder and of short duration (4 1/2 months). It is usual to sow rather thickly, 80 - 90 bush being used to the acre. The yield is nothing less than 6 bags per acre and as much as 8 is expected in some places. The difference I imagine, is due largely to the condition of the land. For instance in the Sergoit area towards the Nzoia river, I have never seen cleaner wheat land anywhere in the Protectorate. All the work of these estates is performed by machinery; whereas in the South East corner the work is done by hand, and the land has grown many more weeds (and therefore less wheat). This no doubt is due in part to the fact that the rains lasted longer in this corner than elsewhere. But these areas cannot be said to be dirty when compared with some of the wheat fields at Njoro; where apparently, very large areas are put down wheat without proper preparation before hand. This wheat is also grown successfully on the Trans Nzoia but only in small quantities.

After several seasons a large quantity of Equator wheat has been grown for the past two seasons. This originally came from Njoro, I believe, and seems to have acclimatised itself successfully to the plateau conditions.

It is an awnless, red-chaffed maccaroni wheat not so hard as Zwartbard and takes 7 months in which to ripen. It is grown in the Bergoit area towards the Nzoia river, is an excellent milling wheat and when mixed with an equal quantity of Zwartbard produces an admirable flour.

Another Njoro wheat which is probably a hybrid (it has been grown in the Bergoit area for the past two seasons under the name of "Nandi Corn" but it is not proposed to grow any more of this variety as it has rusted badly) (1917)

"Nandi Corn" is however an excellent milling wheat of fair weight, and when mixed with Zwartbard, and Equator, in the proportion of "Nandi Corn" 25% Equator, and 50% Zwartbard produced, according to reports received from Unge, some of the finest flour ever milled.

Two other hybrids have been grown successfully on the plateau and are of my own selection, namely "Kabete Hybrid" and "Kabete Hybrid No. 2". I saw about 15-20 acres of these hybrids. They are all 7 months duration. The first is a soft wheat and makes an excellent loaf without any other flours.

These Kabete Hybrids have been grown successfully on the Nzoia for the last two years and it is proposed to extend the area of these two varieties.

All the above mentioned varieties have so far proved resistant to rust and it is of interest to note that the Equator (a soft wheat) had a very good crop during 1917 without becoming in any way affected with rust, whereas "Nandi Corn" and Rieti, growing with Zwartbard have rusted badly.

To sum up there are on the Plateau, in Nandi and on the Nzoia the following varieties of wheat :-

- Zwartbard, mixed with Rieti and other soft varieties.
- Equator, a soft awnless wheat.
- Kabete Hybrid.
- Kabete Hybrid No. 2.
- Nandi Corn (not to be continued)
- Rieti hybrid No. 1.
- Rieti Hybrid No. 2.

It is the best and grain this year some of the best flour ever put on the market and I hope the Government will encourage its production in his power to increase the area is however, the difficulty of preparing a large acreage of wheat in the area available, and also the fact that the last years income will have to be

BRIEF HISTORY OF WHEAT BREEDING. RESULTS OBTAINED IN
THE EAST AFRICA.

Wheat in British East Africa is an exotic crop and was introduced some seventeen years ago into the highlands of this territory by missionaries who grew a small patch for their own requirements. Some four or five years later, the Government established a Department of Agriculture, an experimental farm was opened, and amongst other crops a few varieties of wheats were grown experimentally, some of these gave very promising results; this encouraged a few settlers round Nairobi to turn their attention to this crop and several small areas were sown with wheat, one exception however, was that of an Australian settler who put some five hundred acres under wheat with seed obtained from India, this was grown on the plains close to Nairobi, but the enterprise had to be abandoned owing to the crops being destroyed by rust.

The Department of Agriculture was reorganized, a new experimental farm opened, several new varieties of wheats were introduced from South Africa, Australia and India. Some of these varieties were quite unsuitable for cultivation owing to their high susceptibility to "rust", while other varieties produced good crops but appeared to withstand the attacks of the rust fungus. The season unfortunately did not continue for more than a season or two, in which, these wheats deteriorated and became more and more unsuitable until eventually most of them had to be discarded as unsuitable for further propagation. While these experiments were being conducted at the Government Farm, Kariakoo, a keen interest was taken by the Hon. D. B. de la Beche, C.B., who is now at Njoro, where large quantities of wheat, for the first few years good results were obtained, the only wheat grown in the Njoro district being of the

variety which is very susceptible to rust, but which has the characters that are unsuitable for the country, viz. it is very weak in the straw and takes a long time to mature.

When these wheat crops were first sown, the wheat were imported from the United Kingdom, but it was found that the wheat did not do well in the country, and eventually had to be abandoned as being unsuitable for cultivation in this country.

The opportunity of results obtained with wheats at Njoro, caused wheat growing to be given up to a large extent in several parts of the country, at Njoro, however, which may be considered the wheat growing district in the Protectorate, the cultivation of wheat was still continued, but to a smaller extent. The wheat crops of Njoro in conjunction with the Government, decided that it was expedient that a cerealist should be appointed to undertake the breeding of wheats to meet local conditions and to withstand the attacks of rust.

In September 1910, the writer was deputed by the Director of Agriculture, to proceed to Njoro and undertake the work of breeding wheat by selection and hybridisation, at this time there were some forty two varieties of wheats at Njoro, these had just begun to come into ear and were ready for hybridising, the most promising varieties were selected and the following crosses made :-

No. 1.	Rieti	crossed by	Bobbs.
" 2	"	"	Gluyas.
" 3	"	"	Australian.
" 4	Thew	"	Rieti
" 5	Egyptian	No. 3	X Thew
" 6	"	No. 1	X "
" 7	"	No. 4	X "
" 8	"	No. 2	X "
" 9	Rieti	crossed by	Feederation.
" 10	Thew	"	Early Rieti.

Rieti wheat was selected as the chief parent, owing to its susceptibility to rust, Egyptian No. 3 is immune to the black rust (*Puccinia graminis*) but highly susceptible in certain seasons to the golden rust (*P. glumarum*). The other parents, Bobbs, Gluyas, Thew etc. possess such good qualities as stiff straw, good grain, beardless heads etc. but cannot be relied on to withstand rust.

During October of the same year, a wheat-breeding cage was erected at Sabete Experimental Farm, on the same lines as that at the Cambridge Experimental Farm, this was sown in November with the seventy six varieties of wheats most of which were supplied by Professor Biffen.

During January and February I had plenty of material to work upon at Sabete, and made the following crosses:-

No. 11.	Red Fife	crossed by	Rieti
" 12.	Egyptian No. 3	X	Yellow Fife.
" 13	Nut Cut	X	Egyptian No. 3.
" 14	Egyptian No. 3	X	Bobbs
" 15	Thew	X	Egyptian No. 3.
" 16	Bobbs	X	Egyptian No. 4.
" 17	Early Rieti	X	Bobbs
" 18	Chinese White	X	Early Rieti.
" 19	Red Fife	X	Golden Fife.
" 20	Bobbs	X	Early Rieti.

The above mentioned crosses were treated in the most Mendelian manner, their behaviours and characters were recorded and a strict account made of individual plants. The second year's seedling from these crosses have produced many fine specimens of satisfactory types of wheats, surpassing the best of the parent wheats were desired and aimed at when the original crosses were made.

A reference to my report on the wheat-breeding at Sabete, printed in the annual report of the Department of Agriculture for the year 1911, will give a more detailed account of the work done.

show particulars and details of the work carried out each year.

Since the beginning of the experiments in wheat-breeding selection and hybridisation from 1910. These wheats have been given every chance of exposure to infection by rust, being invariably sown alongside of plots that were put under highly susceptible wheats, the object being to determine the amount of immunity present in the various crosses produced. It has not been the case, it would be very difficult in the case of the plots to tell whether immunity to disease really existed. Furthermore, it would have been difficult to compare the degrees of susceptibility of the different cultures produced.

During the period 1913 - 1914, the writer was not in government employ, but, continued to carry on the wheat experiments on the Delamere's Njoro Estate.

The present position as regards the production of wheats by selection and hybridisation, is of a highly satisfactory nature. Many types have been produced that possess the characteristics that have been sought after and have after five consecutive generations resisted infection from rust. Many types, under the same conditions, have been to more or less degree affected by rust and the majority of these have been discarded, only those possessing slight susceptibility, carrying other good points are being retained to act as parents for the purpose of making further crosses.

It is not intended to imply by what has been said that a variety be produced of a character that is capable of withstanding disease that it is certain to do so for all times, this may prove to be the case with certain cultures, but the rule need not apply in every instance. Like other orders in the botanical world certain varieties adapt themselves to their natural habitat, while others thrive even better than in their natural habitat, while others cannot be made to thrive successfully in a foreign atmosphere. Whatever however much care and attention may be bestowed upon them, the same may be applied to new bred cultures of wheats, some may grow by acclimatisation, while others may only be capable of holding out for a few seasons and then gradually deteriorate. This brings one to the conclusion that the best course to adopt is to gradually introduce new crosses every season to keep up as high a standard as it is possible to obtain.

During the current year at Njoro, one hundred and seventy plots were sown with wheats and barleys bred by selection from individual plants and those produced by hybridisation. As regards wheat only in this paper, no mention need to be made of barley.

Most of the wheats bred at Njoro have been harvested and have yielded sufficient seed to sow about six hundred acres next season. The majority of these consist of some six different types that are combined with characters that have been looked for, namely a high degree of immunity to rust. Amongst these are several types bred from Australia and India, which are excellent wheats in their own countries but do not seem to hold out for more than a season or

The seed resulting from next year's sowing, should almost be sufficient to meet the requirements of all the wheat growers in the country.

In conclusion I would repeat, that new crosses should be introduced each year, and that facility and encouragement be granted to this important branch of agriculture.

Satisfactory results have been achieved and amply justify the continuance of this work even on a larger scale if necessary for the benefit of those interested in this crop and the Protectorate generally.

I feel confident that all who have taken an interest in and have inspected the experiments from time to time, will be glad that they have been carried out to a successful conclusion.

(Sgd.) George W. Evans.

The Standard Bank Of South Africa Limited
10 Clements Lane Lombard Street
London 2nd December, 1918

X
22

E.C.4.

Mr. Anthony Esq.,
Grange Con.,
County Wicklow,
Ireland.

Dear Sir,

EAST AFRICAN WHEAT.

Referring to your mail about a fortnight ago,
we now have pleasure in sending you copies of two reports by some
friends of ours on the five samples of wheat you left with us.
We trust the reports will be of benefit to you.

I am, dear Sir,

Yours faithfully,

Manager.

Dear Sir,
 In reply to yours of the 21st instant, we have to inform you that we have placed the five samples of Wheat grown in British East Africa which you sent us before some miller friends of ours, and they reply as follows:-

"In the first place we would point out that it is practically an impossibility to give an opinion as to the Milling properties of the Wheat in question, because in order to do this it is necessary to actually put a grist on the Mill, as the only proper test is the resultant ~~flour~~ in the loaf, particularly in the case of Wheat grown in an area, the soil and climatic conditions of which we are not familiar with.

However, we have examined the samples, and we give you the following opinion on same, which is purely based on examination:-

- | | | |
|---------------------------|----------------|--|
| Quator | <u>"No. 1.</u> | A useful wheat possibly equal to Southern Plate. |
| Golden Ball | <u>"No. 2.</u> | Not suitable for English Milling, being of a harsh flinty nature, but probably would find a free market in Italy for the manufacture of macaroni. |
| The & Bobs
Hybrids | <u>"No. 3.</u> | Quite a useful class of Wheat so far as could be judged, and we would estimate that it is about equal to No. 2 Club Calcutta so far as this market is concerned. |
| The & Redfife
Hybrids. | <u>"No. 4.</u> | Also a useful type of Wheat, in our opinion equal to Red Winter Wheat from America. |
| The
Hybrids | <u>"No. 5.</u> | Same remarks apply as to No. 3. We regret that we cannot give you a fuller report |
| | | than the above, (apparently, that could only be obtained by actually working the Wheat. |

Dear Sir,

We are in receipt of your favour of the 21st. Instant, and have examined the five bags containing samples of Wheat grown in British East Africa.

We think it is only right to tell you that in examining such small quantities of Wheat anyone is apt to give a wrong opinion as the peculiarity of Wheat is that until it is actually milled it is impossible to accurately gauge the millable properties of the wheat, especially is this the case when such wheat is grown in an unknown climate and soil. Experience teaches us that these two exercise a great influence in determining the millable properties in wheat, and of course, East Africa in this respect is unknown.

From a business point of view, we should put samples No. 1. and 4 about a par. They represent a very useful wheat, and we think might be taken as equal in value to Red Winter Wheat grown in America, or the Wheat grown in Southern Argentina. This is a wheat which for yield and milling extraction is about as useful as any wheat that could be grown. We think that No. 1. is slightly superior to No. 4 inasmuch as it presents what we call a wheat with slightly more strength, namely; a wheat which together with fine yield combines a property which enables the flour to absorb moisture.

This leads us to No. 3 which we should designate as a dry wheat with a certain amount of strength, as explained above, but inferior to No. 1 and 4 in its likely flour production. It savours somewhat of the average quality of Indian Wheat which is notable for its small moisture content.

As regards samples No. 1 and 4, these represent Wheat of a hard, dry nature. We get a certain quantity of such wheat from America, and it is termed there either Durum or Macaroni Wheat. At the time the war was on, from Russia, there was a certain amount of wheat of a hard nature sold under the term Taganrog Wheat. It is not a wheat that could be sold in any large quantities in this country, although it might meet a better sale in some Continental countries especially Italy. A certain quantity of this Wheat would be taken by millers, especially should it so happen that these other wheats were such at a particular time, such as they could see an advantage in using some of this hard flour.

... rather because of its powers of absorption of moisture or because
of its following influence on other wheats. We have known such a state of
things to exist. We have found quite a big demand for Macaroni wheat
and it would be unwise for your friends to reckon on such a demand
that it would be safer to point out to them that it is not a wheat
which would find a great favour in milling circles in this Country.

30th January, 1918.

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His Excellency,

The Acting Governor

Of The East Africa Protectorate

...Nairobi...

Your Excellency,

At a General Meeting of Settlers of the Usin Gishu held at Eldoret on the 12th instant, the matter of transport of wheat and other foodstuffs, the production of which the Government is urging in increased quantities, was considered.

We the undersigned were appointed as a committee to advise your Excellency on this subject.

At the present we have been able to ascertain that it is estimated that during this year the production of wheat will amount to approximately 30,000 bags, with every prospect of a considerable increase from year to year.

To convey the above quantity of wheat alone to the station at Londiani, with the waggon and ox transport available, would take from six to nine months. As the harvest of wheat is not completed here before the middle of December, it would mean that the above amount of wheat would have to be carried down between December and at the latest the middle of March, namely months during which oxen are required for cross-ploughing and preparing land for the planting of crops such as maize, beans, flax, etc. This means that all oxen which might be available for transport, would be in use for this purpose. After March-April the Londiani-Eldoret road might be safely stated as usually unfit for waggon transport until November. We should further like to point out that oxen which would in past years have been available for transport purposes, will now, in view of the Government's recent appeal for increased production, be utilised for increasing cultivation.

The Usin Gishu is able to produce vast quantities of foodstuffs and so far in this petition we have dealt exclusively with the inability of transport of wheat alone, whereas all maize, beans, flax, peas, and other produce must be conveyed by the same means.

the question of overcoming the difficulty of transport of produce
could be met by the immediate construction of a railway to the
plateau, and this we your petitioners would urgently place before
Your Excellency's notice. Failing a railway we would offer the
suggestion that the government should supply the necessary means of
conveyance which would only be practicable during the few months of
the year when the road is passable.

Trusting the matter may receive Your Excellency's favourable
consideration,

We have the honour to be

Your Excellency's Most Humble Servants,

CO
PUBLIC RECORD OFFICE LONDON

0.
2571/19 to CP

John

Annual 5/2/26

DRAFT.

MINUTE.

Monday, 17 Jan
Tuesday, 17 Jan

- Mr. Middle.
- Mr. Lambert.
- Mr. Road.
- Mr. Fiddes.
- Mr. Hewins.
- Mr. Long.

Dear Sir,
By January 1919

I am to thank the rest
 of your letter of the 14th of Jan
 to inform me that you was
 not assured that the [unclear]
 taken in the [unclear] of
 the [unclear] [unclear] [unclear]
 [unclear] will be [unclear] by
 his lordship, who is [unclear]
 certain [unclear] [unclear]
 [unclear] which [unclear]
 [unclear] [unclear] [unclear]
 If [unclear] [unclear] [unclear]

Copy for [unclear]

vertical

573 224

Ansd 70663

22 January 1919

Draft

Dear Sir,
In reply to your letter of the 11th inst. regarding communication with the Hon. Mr. John Phillips, I have the honour to enclose to you a copy of a letter from the Director of the Public Health Service, with enclosure, regarding the publication of the report on the results of the study of the influenza epidemic in the United States, 1918-1919, as published by the Public Health Service, Washington, D. C., 1919. The report is available for distribution to those interested in the country of origin and is being sent with a view to securing copies for the same.

only

11/27/19

11/27/19

11/27/19

11/27/19

(P) Miller