ANNUAL NARRATIVE REPORT

Apache County, 1946.

by

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County Agricultural Agent
St. Johns, Arizona
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III. Summary of Activities and Accomplishments.

Our activities this year, as in the past, has been coordinated as closely as possible with the desires of the County Farm Bureau, and all other government agencies.

We spent this year the equivalent of three months with our range livestock people in the County. We were however, successful in having twenty-two different cattlemen dip their cattle for lice. Our standard dip recommended for this, was one pound rotenone, ten pounds of sulphur to 100 gallons of water.

By dipping our cattle twice; 17 to 21 day intervals, we were successful in controlling our lice, seemingly to about a 100 per-cent. However, we did recommend dipping the Neagle cattle with DDT and sulphur. This, while we only dipped once, we found it was a success; doing the work practically as good as two dippings with rotenone and sulphur.

By the use of a power spray and with the cooperation of Dr. J. N. Roney, Extension Entomologist, Vinson Butler, Mitt Wiltbank, Cleve Wiltbank, Clive Wiltbank, Lee Wilhelm, Laverl Hall and Wallace Hall, we sprayed several thousand head of cattle with DDT trying to control two types of deer flies, mosquitoes and horn flies. This work commenced June 17th and ended August 30th.

We are sure that we can control horn flies for about five weeks on our higher elevation ranges. We can control about 80% of the deer flies, for about four weeks. We have no record as to the amount of mosquitoes controlled, but we feel that we got about 80% of them for about four weeks. Then at the end of four weeks, we are recommending that we spray again. A conservative estimate derived from this spraying, is about thirty pounds per animal.

As a result of our dipping our activities this year, we are recommending that the ranchers,
especially in the mountains, spray their cattle three times at twenty day intervals. This we feel will control both lice and flies.

We recommended for the control of grubs that they treat their cattle December 15th and January 15th with equal parts of rotenone and sulphur; this to be worked in the hide dry. We had ten ranchers treat for grubs.

Most of our people who treated their cattle for lice and grubs also treated them for ticks using pine tar and cottonseed oil.

Demonstrations on cancer eye and lumpy jaw were successfully given in this County this year in six different communities.

We had four Clubs in the County this year with a total enrollment of fifty-one members, thirty-eight of whom completed their projects.

We have recommended Sodium Chlorate, six pounds per square rod, for the control of weeds. We were successful in having the people at Vernon, Nutrioso and Eager apply two thousand pounds this year. Because bind weed is such a serious menace to our farming operations, we are going to spend a lot of time next year on this project.

In horticulture, we gave fruit tree demonstrations in five communities in the County, and practically all varieties of apples in the County were identified.

In our grasshopper control work, we scattered bait on 2,500 acres of land which we figured caused a savings of $3,600. As a result of the cooperation of Dr. Roney, Extension Entomologist, and the USDA Grasshopper Control Division, we have a good supply of grain on hand for next year.

As a result of our field crop experiments this year we feel that we would recommend velvon as the best barley, Bridger as the best oats and Kubanka for the best wheat.

We also did work in Rural Sociology by
making a survey of the farms at Alpine, which will furnish us with the basis of future work in that area.

We published forty-five Farm and Garden Notes in the local paper.

We cooperated with the Triple-A; R.E.A.; F.S.A. and the Seed Loan Administration when possible.
IV. County Program of Work.

A. Project Activities and Results.

1. Range Livestock.

Our County program of work this year was based on information from past and present projects. Our main project however, was the follow up work on the control and eradication of parasites on our range livestock. We did not however, neglect any of the rest of our work, but since livestock is our major industry, we feel that we should spend quite a bit of time with these people.

a. Lice: Lice control on cattle, which was done in cooperation with Dr. Roney, Extension Entomologist, from the University of Arizona, is becoming a little easier each year, since more people are learning that lice control is profitable, and are shaping their affairs so that they can control the lice. We hope someday that the public will learn how to control lice and do it as well and methodically as they do black-leg at the present time. Real progress has been made and we are much encouraged with the present outlook.

Up to last fall our standard dip was one pound of 5% rotenone, 10 pounds of wettable sulphur to 100 gallons of water. However, last fall we dipped approximately 500 head of cattle for the Neagle Brothers, with 14 pounds of wettable DDT, 10 pounds of wettable sulphur to 100 gallons of water. We were very anxious to try this dip, because with this we hoped that we could eradicate lice with one dipping instead of the two dippings we used with our standard rotenone and sulphur. The results of this dipping seems to be very encouraging. At the end of five months, which was May first, their cattle were in better shape than they were July first the previous year; they fed two to three tons less cake than they had the previous year; some of their bulls and other cattle, which were lousy at the time of dipping, picked up in flesh almost immediately; that there was enough DDT left on the backs of these animals on May first to kill the first crop of horn flies that came out. However, as soon as the old hair shed off naturally, all the DDT went with it.
We therefore, are of the strong opinion in this County that one dipping with DDT will kill lice. Our hope was to follow this up this year, check results and see what happens. We still expect that we will do this before the winter is over. If this can be done it will not be long until we should have some valuable, information for the cattlemen of this County.

Bill Spence and the Traweek Ranch dipped their cattle with the Cooper's Dip for the control of lice. This dip seems to control lice or keep them down, but whether this controls lice better than DDT, rotenone and sulphur, we do not know definitely. However, the Cooper's Dip is an arsenical dip and will kill cattle if they by any chance happen to drink it, whereas the other sprays will not. Therefore, at the present time we are not recommending Cooper's Dip in this County.

The following people dipped their cattle for lice last year, and so far as we know all of them got good results.

The Jarvis Brothers  
Chilcott Ranch  
Clyde Wilhelm  
Lee Wilhelm  
Bob Francy  
John Udall  
Minor Hall  
Clive Wiltbank  
Hews Wiltbank  
Milford Hall  
Joe Nelson  
Bill Spence  
Mitt Wiltbank  
George Crosby  
Vincent Butler  
Traweek Ranch  
Claude Phipps  
W. E. Wiltbank  
Roy Neagle

b. Horn Flies: This past year we have attempted to kill horn flies, two varieties of deer flies, mosquitos and lice by spraying our cattle with a power spray with a solution of 3 pounds of DDT to 100 gallons of water.

On June the 17th we sprayed about 500 or 600 head of cattle at the greer allotment, which is about 8,000 feet elevation.
Our observations through the different weeks that followed indicated very conclusively that we had practically a 100% control on horn flies until about the middle of August, and about 80% control of deer flies through the season. Just what results we secured on the control of lice will not be known until we make an examination this winter. However, we are planning on next year to continue on with our spraying of cattle during the summer, in such a way and at such intervals that we can control flies and lice. Seems like that because we do have so many flies which have to be taken care of during the summer that economy would dictate that we try to take care of our lice at the same time we do our flies.

We sprayed 400 head of cattle for Lee Wilhelm on the 19th of June, and he was sure that it controlled the horn flies for seven weeks, and that he had noticable gains from the livestock as a result of this work. We also sprayed 500 steers for John Leverton in August. He was so impressed with the results that he is going to buy him a spray of his own next year. Also, we sprayed in late August about 400 head of cattle for Leverl Hall. He doesn't know exactly how much gain it caused his cattle to make, but since the flies were controlled he is sure that this work has caused his cattle to make material gain. He is sure however, that bulls which before spraying would leave all the rest of the cattle and go off by themselves to fight flies, would after spraying very calmly content themselves with the other cattle. This alone probably paid for the spraying many times. We hope another year that we will be able to check the results of contented bulls on the range more accurately than we have this year.

Melvin and Harold Greer and Albert Brown dipped their cattle this summer trying to control lice and flies, and are sure that the extra weight of about 50 pounds per calf was due to this dipping of their cattle. Anyway, they are so much encouraged with the results that they are going to buy them a spray next year, and hope to spray their cattle two to three times.

This year the Lockhart Cattle Company sprayed their cattle on November 16th with rotenone and sulphur with a small amount of wettable DDT added. The spray they used was run on rather high compression which was sprayed on the cow after she was caught in a little convenient shute. They had four nozzles coming out from the bottom of the shute and four on either side. In this way the material could be administered to the animal fairly well, but they didn't have drainage pens in connection with this, so that a 100 gallons of this material only sprayed about 100 cows.
This it by far more expensive than the dipping vat, on material. It is also a good deal slower than the dipping vat. In cold weather it also freezes up the pipes, which makes it hard to keep going. I cannot see any advantages to this spray over dipping, except possibly, where one had 100 or so head of cattle to be treated for lice, which would save priming a large vat of $500 gallons.

Generally speaking therefore, I am sure that the real dipping vat is to be recommended instead of a stationary spray as they have at the Lockhart Ranch.

When we dip in the fall in this County it is very important to try and get the dipping done early in the morning so that the cattle would be dry by evening. Because the dipping vat is much faster than the Lockhart spray I feel that we should stay with the old dipping vat.

From all information that we can acquire from people who have dipped their cattle for lice and sprayed their cattle for lice and flies, the results have been very encouraging.

We feel therefore, that if we can keep our people dipping and spraying at the right time; at the right intervals; with the proper equipment; the proper amount of material, that we will have our lice, deer fly and horn fly problem pretty well solved in a few years. We are aware of the fact however, that our stockmen are just learning to do these operations; that we must be as sure as we can that all the details of this work are followed through. If this can be done, in a very few years the major part of our livestock people should be convinced of the benefit of this work; should have the material to do it with, and the know how to put it over. Anyway, this is our hope and our plan, and we are working hard even though it necessitates a lot of running around to be sure that all the technicalities of this work are followed through each time a man works his cattle.

c. Grubs: Grubs in this County have been and are at this time a very serious menace to our livestock industry, causing cattle to run in the spring to such an extent that often they do lose their lives as a result of this running, and so it irritates them materially when the grubs are on their backs. Up until the last few years we knew of no practical method of attacking this problem.

Originally our thought was to try and kill lice and grubs at the same dipping in the fall.
That is we figured that since rotenone and sulphur kills grubs as well as lice, that we could dip late in December and get lice and grubs with these two dippings. However, since it was so cold when this work had to be done in December to be effective on grubs, we have decided that we will fight our lice in connection with our flies during the summer and possibly early fall, and treat our cattle for grubs as an independent operation. We recommend so far that rotenone and sulphur mixed fifty fifty be applied to the cows back in dry form, or as a dust. Three or four people can run four or five hundred head of cattle through a shute applying this powder to the backs of cattle in a very few hours.

John Hall and W. E. Wiltbank followed out these instructions fairly well last year, and are very much encouraged with the results of the work. It was a real consolation to them to see their cattle calmly grazing in the spring of the year at the time they would normally be running from heel flies.

We are going to do everything possible this winter to have as many ranchers apply the grub control material as possible. In each case if we can we are going to do two things: We are going to supervise the application of the material, and then check results in the spring.

Mr. Lee Wilhelm who sprayed his cattle this spring with DDT and who during November butchered several of his animals which were sprayed at that time, seems to think that he has fewer grubs than he has had in any years in the past. It is possible therefore, if cattle are sprayed at the proper time of the year, that DDT will kill the heel fly when he goes to laying eggs on the cattle.

We hope next year to experiment with this to see if this is true.

d. Ticks: Ticks in cattle have been controlled in various ways but not as thoroughly as they have in the last few years. Most of our people who have dipped cattle for lice also applied pine tar and oil to the ears to kill ticks. This has naturally helped to reduce ticks, and it looks like it will become a common practice among our cattle-men in the future. However, because it is quite a job to round up cattle and get this done it may have to always be done in connection with the dipping operations.

e. Cancer Eye: Cancer eye in cows has been taken care of mainly by men who were trained for this work by Dr. Pister some two years ago.
Since these boys have learned to do this work and are quite efficient at it they are not only doing this job themselves, but are showing others how to do it. In this way the control of cancer eye is becoming more or less a common practice among our cattlemen.

f. Lumpy Jaw: Since we have a good deal of lumpy jaw in Apache County it is becoming more of a common practice among our cattlemen to control it. We have at least fifty trained men who do this work. However, we did give this last year probably ten demonstrations on how to control this.

We don't look upon our lumpy jaw to be much of a problem, because of the skills of our cattlemen to control this disease.

2. 4-H Club Work:

In January of this year we organized 4-H Clubs in Alpine, Eagar, and St. Johns, in Home Beautification projects. Our plan was to have all the Club Members plant shrubs and otherwise take care of the lawn in such a way that they would make real progress with their own Home Beautification work.

Meetings were held with Club Members in St. Johns and Alpine where we had Club Leaders who cooperated with this work enthusiastically. It was impossible to get our Club Members to do the work. Possibly had the parents cooperated; making trips with the boys to secure shrubs etc., this project might have gone over. Therefore, when this seemed impossible to put over we changed our club from Home Beautification to Garden and Livestock Clubs.

Meetings were held monthly sometimes twice a month with our Clubs giving all the assistance possible. We had a field day at the Milky Way Hereford Ranch where we looked over good Hereford cattle and otherwise meeting for the first time on a County basis with our Club Members.

We had planned on making a trip to Tucson, but due to a disease that was prevalent in the State the trip was cancelled. However, at the end of the year we had our of fifty-one members thirty-eight complete their projects. This we considered a fairly good percentage of completions.

3. Weeds:

We have spent a lot of time this year in our weed control work.
We held meetings with the Stockholders of the St. Johns Irrigation Company, and the Lyman Resevoir Company, for the purpose of getting them to put forth an effort to get rid of bind weed; especially under the Lyman Project.

We also made field trips with different groups at demonstration plots where different farmers had eliminated weeds by various methods of weed control. We made many farm visits for the expressed purpose of showing the farmers how to eliminate weeds in the St. Johns area. However, we were not successful in getting a great deal of weed eradication done in St. Johns this year.

We held meetings in Nutrioso and Vernon and made trips to Nutrioso with people to show them results of our efforts in weed eradication. We were successful in getting people in Vernon and Nutrioso and some at Eagar to do quite a bit of work on weed eradication.

We recommended Sodium Chlorate put on at the rate of six pounds per acre in September for the control of bind weed and other perennial noxious weeds. If done as recommended this should get about 98% of the weeds this season.

We have had quite a little bit of work done to eradicate weeds with 2D4. This material must be put on when the plant is six to ten inches high in the summer and six hours before it rains. This has given, in some cases practically 100% control, but in other cases they were not successful.

Bind weed can be controlled in Alpine, Nutrioso, Greer, Vernon; and part of Eagar, Concho; and under the Lyman Dam Project in St. Johns, providing our farmers will use all the knowledge available and put forth a lot of hard work. If this is not done within ten years practically all the land will be infested with bind weed. If this condition is permitted by the farmers the cost of eradication in the near future will almost be prohibited.

4. Horticulture:

With the cooperation of Mr. Tate, Extension Horticulturist, we were successful in treating trees, which looked yellow and sick, with Iron sulphate, and brought them back to a healthy looking condition. We put four pounds to a tree at the Carl Haws orchard, and we were delighted with the results.
We also distributed 350 Agriculture Extension bulletins Number 130, entitled ARIZONA HOME GARDENING.

We never have been very successful in growing tomatoes in Round Valley and Nutrioso and the rest of our higher elevation towns.

This year Mr. Millett at Concho planted his tomatoes in rows, pruning them in such a way that they would run up on a trellis. Then in the fall of the year, just at the first frost Mr. Millett cut corn and stacked it up against his tomatoes to keep them from further freezing. In this way the tomatoes would ripen from forty to fifty days longer than they would normally.

Another year we hope to have our people in the higher elevation towns apply this same idea to their tomato plants with a hope that they will be more successful in producing tomatoes.

This year we went through our orchards and identified the best fruits we have in the County. The varieties we identified are as follows:

Grimes Golden  Winesap
Wolf River      Jonathan
Stayman Winesap Arkansas Black
Belflower       Winesap (Old Fashioned)
Starking (Double Red Delicious)
Delicious      Stayman Winesap
Golden Delicious Jonathan
Red Rome        Ben Davis

Northwest Greening

5. Grasshoppers:

Our work with grasshoppers started in April, with the cooperation of Dr. Koney, Extension Entomologist, when we checked the grasshopper material, to make ready for the grasshopper work, which was commenced in earnest in May.

The Agent generally made trips each week to check on stations established in Round Valley and St. Johns.

We tried to get people to plow the land in the winter or get turkeys to help control our grasshoppers, but we were not successful. However, we did distribute bait on two thousand five hundred acres of land and protected three thousand one hundred acres of land. We figured the people at that, lost eighteen hundred dollars
worth of crops, and our estimate was that they saved three thousand six hundred and five dollars of crops.

We have on hand for next year plenty of poison, and a fairly good supply of bran.

This past season our bait formula was six pounds of Sodium Fluosilicates to 100 pounds of bran or mix. The mix was two to three parts of sawdust to one part bran.

6. Field Crops:

In our field crop this year we experimented with different kinds of field crops at Eagar. The following is the result of our efforts:

We have been experimenting for several years at Eagar with different varieties of field crops. At the present time the best yields of the different varieties of field crops are as follows:

The trebi barley produced the highest yield both in 1945-46. This is the result that we had ten years ago on a similar experiment. However, its two year average yield was but slightly higher than the smooth awn velvon eleven barley. Because the velvon smooth awn practically eliminates sore mouth in cattle when the straw is fed to the livestock for hay, the awn in trebi is so rough that the hay is not nearly as valuable as the velvon. Therefore, since in Apache County our barley has value both as straw and hay for livestock, we feel that we should recommend velvon barley for Apache County.

In past years we have always recommended the Markton Oat for Apache County. However, the recent work in this County proves that the variety known as Bridger had the highest yields both in 1945-46 of any varieties we had, and ten bushels higher than the Markton Oat. Therefore, it seems that we should change completely from the Markton Oat to the Bridger Oat.

Hope wheat has been recommended as a result of experiments as the best wheat for Apache County for the last ten or fifteen years. However, according to our present experiments, Kubanka wheat gave the highest yields in 1946, while the highest two year average of all the wheats we tested in this County in 1945-46, was what is known as Ld. 153. Therefore, it seems advisable at this time that we recommend Kubanka or Ld. 153 instead of Hope.
Where these different seeds may be secured is a problem. However, we will do everything we can to locate them. If you are interested and will write me a card stating the varieties and the amount you want we will see what can be done for you.

For the last five or six years we have been trying to get the people in Apache County who are farming on dry land to use what is known as a Lister Drill. This spring we were successful in getting the people in Alpine to hire one of these drills from a farmer in Vernon to plant part of their crop with. We have made observations every week or ten days for the whole summer on the advantages of this drill. We feel that it has the following distinct advantages over an ordinary drill.

1. It will put seeds sown probably two or three inches deeper than an ordinary drill, which means in this County that all the seeds will be put to moisture, whereas possibly in all other cases only 2/3 of the seeds will be put to moisture.

2. At the time of planting a great majority of the weeds are killed out by either the plow or covered by dirt which is thrown up by the Lister Drill.

3. Can be planted on a contour so that the small furrows made by this Lister Drill will hold a great deal of moisture.

4. Since we grow crops at an elevation of 8,000 feet this drill may be used in such a way that when the early morning sun warms up the soil adjacent to the young grain plants it will produce frost and stimulate growth.

5. By planting in the furrows with this Lister Drill wht wind doesn't cut off the plants in the spring as it would by planting with an ordinary drill.

7. Rural Sociology:

    This year as a result of A. E. Ballantyne, Rural Sociologist, a survey of Alpine was made.
Agronomic data on barley varieties grown in 5 unprotected randomized 12 foot rows at Eagar, Ariz. 1946.

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Agronomic data
on oat varieties grown in 5
unprotected randomized 12 foot
rows at Eagar, Arizona, 1945-46,
and average yields for 1945-46

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Agronomic data on wheat varieties grown in 5 unprotected 12-foot rows at Eagar, Arizona, in 1946, and average grain yields for 1945 and 1946.

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Agronomic data on wheat varieties continued.

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No Rust.
This hasn’t been completed and final data is not available, but soil samples were taken and sent in to see if commercial fertilizers would help the soil at Alpiney any, and other work has been done on this survey. We hope to continue this another year, and make new surveys at Nutrioso and possibly Vernon.

B. Miscellaneous Activities:

1. Farm Labor:

   We haven’t had any farm labor problems this year that we could help with. Therefore, our activities along this line has been limited.

2. Farm and Garden Notes:

   We have attempted each week to publish in the local paper Farm and Garden Notes, a sample of which will be enclosed in the Annual Report.

   In these notes we have tried to give the farmers information that was timely and helpful. We feel that a great deal of good has been accomplished from this effort.

3. Triple A:

   Our Triple A activities has been to attend all Triple A meetings. We have attempted to give the farmers advice on Triple A activities and benefits.

4. R.F.A.:

   We have attended two or three R.F.A. meetings this year trying to organize the people at Hunt so they could participate in this work, and attempted to give assistance when called upon, along this line.
Farm-Garden Notes

by
D. W. Rogers, Farm Agent, and

We have been experimenting for several years at Eagar with different varieties of field crops. At the present time the best yields of the different varieties of field crops are as follows:

The barley produced the highest yield both in 1945-46. This is the same results that we had ten years ago on a similar experiment. However, its 2 year average was but slightly higher than the smooth awn velon 11 barley, because the velon smooth awn practically eliminates sore mouth in cattle when the straw is fed to the livestock, and because when barley is cut for hay the awn in trebi is so tough that the hay is not nearly as valuable as the velon. Therefore, since in Apache county our barley has value both as straw and hay for livestock, we feel that we should recommend velon barley for Apache county.

In past years we have always recommended the Markton Oat for Apache county. However, the recent work in this county proves that the variety known as Bridger had the highest yields both in 1945-46 of any varieties we had and ten bushels higher than the Markton Oat. Therefore, it seems that we should change completely from the Markton Oat to the Bridger Oat.

Hope wheat has been recommended as a result of experiments as the best wheat for Apache county for the last ten or fifteen years. However, according to our present experiments Kubanka wheat gave the highest yields in 1946, while the highest two year average of all the wheats we tested in this county in 1945-46, was what is known as Ld 153. Therefore it seems advisable at this time that we recommend, Kubanka or Ld. 154 instead of Hope.

Where these different seeds may be secured is a problem. However, we will do everything we can to locate them. If you are interested and will write me a card stating the varieties and the amount you want we will see what can be done for you.

Type of Farm and Garden Notes published practically every week in the County paper.
Fig. Dipping cattle, John Hall Ranch, 1946.
'Fig. Giving lumpy jaw treatment, 1946.
Fig. Weed Control Demonstration's 4-H Club
Eagar, Arizona, 1946.

Fig. 4-H Club kids at the Milky Way Hereford Ranch, 1946.
Fig. Contented cattle after spraying for flies at Greer, 1946.

Fig. Cutting cattle, Bert Colter Ranch, Springerville, Arizona, 1946.
Fig. Preparing cattle for dipping at Greer, 1946.

Fig. Getting dipping vat ready at Round Valley, 1946.
Fig. Building water tank under the Triple-A, 1946.

Fig. Showing how turpentine weed has come in on the land after the grass was killed due to over grazing, 1946.
Fig. Starting dipping vat, 1946.

Fig. Showing healing of range under normal grazing conditions in Apache County, 1946.
Fig. Examining cattle for lice, 1946.

Fig. How turpentine weed causes show to melt immediately around plant before other places, 1946.
Fig.  Showing healing of range under normal grazing conditions in Apache County, 1946.

Fig.  Examining range at Sanders, 1946.
Fig. Treating cattle, John Hall Ranch, for grubs, 1946.
Fig. Preparing cattle for dipping at Greer, 1946.

Fig. After dipping cattle we had lunch at Greer, 1946.
Fig. Mixing grasshopper poison, St. Johns, 1946.

Fig. Chili in the curing stage, St. Johns, Arizona, 1946.
Fig. Giving lumpy jaw treatment, 1946.
Fig. Showing heavy crop of apples, J. Burgess, Eagar, Arizona, 1946.
Fig.  Showing heavy crop of apples, J. Burgess, Eagar, Arizona, 1946.

Fig.  Apples, Haws Residence, Eagar, Arizona, 1946.
Fig. Feeding silage to cattle in Round Valley, 1946.

Fig. Alcid Rothlisberger, cutting corn at Eagar, Arizona, 1946.
Fig. Parade at Alpine, July 24, 1945.

Fig. Part of the parade in Springerville, July, 1945.
Fig. Part of the parade in Springerville, July, 1946.