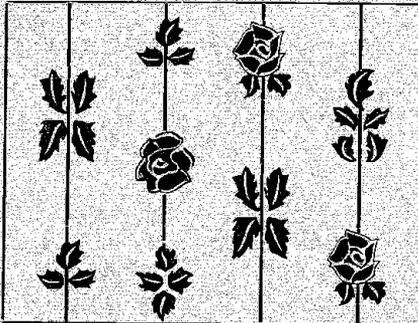


Arizona Live Stock Sanitary Board.

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BIENNIAL REPORT
OF THE
LIVE STOCK
SANITARY BOARD
OF ARIZONA



1897-1898



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Biennial Report

of the

Live Stock Sanitary Board

of Arizona

for the Years 1897-1898.

Report of the Live Stock Sanitary Board for the years 1897-1898.

THE NEW LIVE STOCK LAW.

Arizona has now in her statute books one of the best laws ever passed for the protection of the stockman. The present live stock sanitary board has been charged with the very onerous and thankless task of putting this new law into effect, and it has proved very laborious. Few foresaw the immense amount of work that this would entail, but today the work is complete and the new law is working smoothly and satisfactorily. Under our old system of registration of brands by counties it was possible and of frequent occurrence for one man to record a brand in one county and another man purposely or accidentally, to record exactly the same brand in an adjoining county. Inasmuch as the animals wearing these brands ranged at will over the country and the county lines offered no barrier to their travels, it was a source of endless confusion and litigation.

Arizona was the last of the range states to do away with this county system and have one central place where all brands must be recorded, and where one set of men could pass on the granting of new brands. As at present enforced it is impossible for two men to have exactly the same brand anywhere in the Territory, with the exception of those which under the new law were transferred from county records and they, of course, will be respected. But as owners are learning that their brand is given by others than themselves they are applying to the board for new brands and gradually the duplications will be done away with.

As examples of this duplication under the old law I will state that there were no less than twelve owners using the "X" brand, the "F" brand, the "A" brand, the "N" brand, the "Z" brand, and the "J" brand, besides hundreds of cases where two men had the same brand in use in different counties. The dangers of this were not so apparent until our heavy shipments of cattle began and the inspectors were confronted with the difficulty of determining to whom the cattle belonged when they had the same brand. Past live stock boards have found themselves sorely perplexed to determine to whom to pay the money for stray animals when half a dozen claimants appeared, each owning in some county the brand worn by the stray.

Phoenix, Arizona, Janua

Hon. N. O. Murphy,
Governor of Arizona.

Sir:

I have the honor to submit, in accordance with the la
Report of the Live Stock Sanitary Board of Arizona, to
Legislature.

A careful reading of this report will, I am sure, ec
of the importance of this work to the stock interests of A

Very Respectfully

WILL C. B.

Report of the Live Stock Sanitary Board

for the years 1897-1898.

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There are now upon our brand books something like 8,000 brands and marks, and the protection afforded to each owner is almost absolute. He can transfer his brand in exactly the same manner as a piece of real estate, and men buying cattle can at once find from the record in whose name the brands are recorded and whether there are any liens or other attachments upon the cattle.

Of course, in putting into effect such a large work there has been some friction and difficulty. Many cattlemen did not avail themselves of the provisions of the law to transfer their brands from the old records, hence found themselves barred from obtaining their old brands. This, of course, was unfortunate, but was not the fault of the law, nor its enforcement. It was wholly the fault of the men themselves. The present board took hold of this work at a very critical period, when, owing to the severe illness of the secretary, it was months behind, and the work of the office was piled up mountain high. New issues had to be met by new rulings, many delicate points had to be considered and acted upon, and conditions which were not foreseen when the law was passed were taken up and handled to the very best of our ability. This was an exceedingly hard and disagreeable task, especially as the members of the board were all business men whose private affairs demanded their constant attention. Yet for over two months the work was carried forward with the assistance of as many clerks as could work around the books until today it is completed.

The board members neglected their own business, working many days from 9 a. m. until midnight in order to hasten matters, and when I say that we have personally compared every one of these 8,000 brands in order to guard against mistakes, and that over one thousand additional brands were compared and rejected owing to conflicts with other brands I think the work of the board will be appreciated.

In addition to this, thousands of letters were received and promptly answered, the daily mail of our office for several months averaging close to 200 letters, while the office work was often seriously delayed by the number of visitors who called to personally inquire as to points under the new law.

It has been the aim of the board to answer every inquiry as promptly and fully as possible and we have been most fortunate to secure the services of Mr. H. Harrison as secretary. Mr. Harrison's work in the office has been highly satisfactory. He has been extremely diligent in hastening to complete the work of the board and the books and records of the office are a monument to his ability, skill and neatness.

In addition to the work entailed by this new law the ordinary routine work of the office has been kept up to date, which in itself is a matter of no small importance.

The amount received for stray animals this year far exceeds that of any previous year. It is a pleasure to state that at this time there is not a single stray claim where the claimant has any right to the money whatever, unpaid.

With the brands of the whole Territory at his hand the chairman is able at once to determine to whom the money should go, except in cases where the brand is not recorded, when it has been our rule to require some satisfactory evidence of ownership before paying the claim. It should be borne in mind that there are parties all over the Territory who make it their business to scan the columns of the stray list and put in a claim for every animal advertised for which they can see the least possible chance for getting the money. The principal objectors to the operations of this law are this class of persons, who, when their claims are rejected, rail against the board and deem themselves aggrieved.

It is only just to ourselves to say that the board is sincere in its efforts to pay these claims to the rightful owners and that in the majority of the cases the claimants are utter strangers to us, so that we can have no possible personal motive in making our decisions. The same point will hold good in the matter of the rejection of brands. It would be by far the easiest way for us to allow a brand, if it were possible to do so, but inasmuch as under the law we are held responsible for our actions in protecting brands already recorded we are forced to be careful and just to all parties.

As an illustration of the difficulties in determining the ownership of strays I will state that for a stray steer sold at Fort Huachuca in 1897 there were no less than ten claimants. I think six of them had this brand recorded by transfer from county records, while the balance had unrecorded brands. These ten claimants came from almost every county in the Territory, and the board, after carefully comparing the claims, paid the money to a party living at the shipping point but whose brand was not on the territorial books. Although his brand was not on record he furnished us good evidence that he owned cattle in this brand, and as he lived and owned cattle right at the point of shipment it was deemed justly his steer. As a matter of fact nearly every other one of the claimants, upon learning that their claim had been disapproved, wrote the board complaining of their action.

Inasmuch as it is frequently charged that the board has refused to pay claims for cattle bearing unrecorded brands or where perhaps the earmarks of the stray did not exactly coincide with that of the party claiming the animal, I cite these instances to show the cattlemen the many difficulties that surround these matters and to assure them that we are trying to deal justly and fairly with everybody, whether his brand be recorded or not. Nor does it matter how old a claim may be, whether it is three months or three years, if parties can prove their claim they will surely receive their money.

THE NEW LIVE STOCK LAW.

Probably no law was ever passed but that it was necessary to alter and amend it, yet I think the present live stock law of Arizona is remarkable for its clearness and lack of ambiguity. It has already stood

the test of several legal attacks, and the rulings of the board, which under the law are part of the law, have been sustained by the decisions of both courts and the attorney-general. The board is but voicing the sentiment of the large majority of the cattlemen of Arizona in asking that no changes be made in the Act No. 6 of the Nineteenth Legislature.

I am sure that few can realize the amount of care and labor that was expended upon this act, in order that it might be as near perfect as possible. The live stock laws of every state in the Union were searched for good points and the various sections rewritten a dozen times before it was finally submitted for action.

Inasmuch as its provisions have not been in force quite two years it is deemed wise to allow it to remain in its present shape for at least two more years when any weak points it may have will doubtless be discovered. I therefore sincerely trust that the stockmen in the Twentieth Legislature will allow this Act No. 6 to remain on our statutes unchanged.

NEW LEGISLATION.

The cattlemen in conventions held at Tucson and Phoenix, at which representation from nearly every county in the Territory were present, appointed a committee to meet in the city of Phoenix and discuss the necessary legislation affecting the cattle industry.

But four changes in the laws were referred to this committee and of the four, the committee has reported in favor of two.

The first and most important is the changing of the punishment for cattle stealing from grand to petit larceny. It is claimed that this change will result in more frequent convictions, at a less cost to the county, and witnesses, and will remove the great plea made by jurors who have found men "not guilty" of cattle stealing that "they hated to send a man to the penitentiary for stealing a \$10 calf."

The second change recommended by this committee refers to the duties of the inspectors. Under the law it is made their duty to swear out warrants against and arrest all parties whom they know to be, or have information that they are, violating any of the live stock laws of the Territory, but while this duty is placed upon them by the law no payment was authorized for doing it, and they are therefore forced either to neglect their duty or make arrests at their own expense. This is not right and it was the unanimous recommendation of the committee that inspectors be paid for this service the same fees and mileage as is now allowed by law to the sheriffs of the various counties. This will be but justice to the inspectors, will enable them to do their sworn duty under the law, and will, I am quite certain, result in many arrests for violations of the laws which now go unpunished.

Bills covering these two points will be drawn up and submitted to the Twentieth Legislature and the board most heartily endorses their provisions.

SANITARY WORK.

This past year has been an unusually active one in this line, and our very capable and efficient Veterinarian has worked literally day and night to protect the health of the Territory.

Taking them up in their importance, the most serious trouble was over a shipment of cattle from below the government quarantine line in Texas. To thoroughly understand this it is necessary to explain that the United States government, which establishes this line, allows cattle from below there to go anywhere in the United States between November 15th and January 15th. The idea of this is that the cold weather of those months will kill the ticks which carry the disease germs, and so no harm may come to the cattle coming in contact with those from below the line. This will hold good so far as northern climates are concerned, but in our warmer latitudes it will not do. The question has never arisen, however, because few cattle had been shipped into Arizona except high-bred animals, which were naturally free from disease. This shipment was offered the Southern Pacific railroad at El Paso about December 16th, 1897, which road asked for permission to bring them into our Territory under our rules. As the cattle were heavily infested with ticks, and came from below the line, they did not have nor could they procure a clean bill of health from the government inspector at El Paso.

The matter came before the board at a full meeting and after several days of delay and careful investigation we decided that under our laws we had no power to keep these cattle out in this open season, but the instant they crossed the Territorial line we could place them in quarantine and hold them until all danger was past, owner to pay all expenses of quarantine.

We hardly expected the owner to accept these conditions, but to our surprise he did so, and the cattle had to come. They were met at the state line by Dr. Norton and were placed in a close quarantine for about ninety days, at Willecox, until every evidence of danger was gone.

However, so fearful were the cattlemen in the vicinity that there were still some lurking germs of fever left that they voluntarily made up a purse to buy the cattle and ship them out of the country rather than allow the owners to turn them loose on the open range at Willecox, as they desired. The cattle were then taken to a pasture and kept by themselves for two or three months and sold for beef.

The willingness of the cattlemen of Willecox to lose over \$1,000 before they would risk the danger of infection, even had the board and Dr. Norton assured them there was positively no danger, is a strong argument in favor of the most stringent rules against such danger. The board has now taken such steps and published such rules as will prevent anything of the kind happening in the open season again. We are too far south to trust to the winters to kill the ticks. And it is a satisfaction to state that our position in this matter has met with the hearty approval of the head of the Bureau of Animal Industry, Dr. Salmon, who is assisting us in every way.

Hardly had we got rid of these Willcox cattle when the cattlemen of California, whose herds were starving, owing to the drought in that state, were knocking for admission.

California being also below the line and badly infected with ticks, it was decided by the board to be a wise policy to refuse them admission. This led to many criticisms upon us by parties who do not understand the conditions that exist in California, and it must be confessed that with hundreds of miles of grass lying idle it did seem hard to refuse them entrance. But self-preservation is the first law of nature, and in trying to do our California friends a favor we were liable to do ourselves an irreparable injury that would have ruined every cattleman in Arizona and placed us forever below the fated "fever line." Subsequently one or two states did admit California cattle, and inasmuch as several cases of fever have developed among the native cattle, it is deemed strong evidence that we were indeed wise to refuse to let them come in. In this connection I think it but right to refute the statement that we even refused the cattle from California passage through the Territory because they had to be unloaded en route. Quite to the contrary we established a yard at Peach Springs, on the Santa Fe Pacific, and at Arizola, on the Southern Pacific, to be known and used as "quarantine yards," and kept solely for infected cattle.

In regard to the cases of fever imported into the Salt River valley from California, and which have been watched so closely from its discovery, I am happy to say that while we shall keep the suspicious ranches in a close quarantine for some time yet, we feel that we have nearly stamped out every vestige of fever.

Your attention is called to a brief report made by Dr. Norton, Territorial Veterinarian, on this subject, and submitted herewith. The cattlemen of Arizona owe to Dr. Norton a debt of gratitude for his work in this matter. His high standing with the Washington authorities enabled us to act and be in harmony at all times with the Bureau officials and they placed in his hands the entire management of this case, well knowing that he would handle it with absolute integrity and justice. Had it not been so, it is the opinion of every man posted on the subject that we should have been in quarantine long ago and our live stock industry ruined. It is no overestimate to say that a quarantine on Arizona, such as California has, would lower the value of cattle all over the Territory fully 50 per cent, if not more.

The last trouble was with our neighbors on the south. Fever ticks have been found for some time in the Arispe district in Mexico, and as early as December last the attention of the Bureau at Washington was called to the danger of our being infected by these Mexican cattle. They replied that they were carefully watching it and would not allow any fever cattle to cross the line.

Early last May Dr. Norton was called to Bisbee to look at some cattle there and after several days of careful investigation enough evidence was found to warrant him in refusing admission to our Territory, although no objection was made to their being loaded at Bisbee for

shipment to other states, provided the Bisbee yards were cleaned and fumigated. However, as no one else wanted them any more than we they were turned back and not allowed entrance.

The general government is still investigating and we are co-operating with them in every way to protect the health of the cattle of Arizona. Among the horses there has been some slight trouble with glanders. Curiously enough two cases, one in Navajo county, and the other in Maricopa, can be traced back to a horse that came into Arizona some years ago from Utah. It is evident that the dread disease lies dormant for a long time, until the proper conditions give it an opportunity to develop. I am glad to say that in these cases it has been confined to the horses first afflicted and no spread of the disease has been discovered. There has been a constant call for the services of Dr. Norton from all parts of the Territory, and it has been a hard matter to attend to all of them. Glanders is so greatly dreaded and so easily spread that every man having a horse suffering with a bad cold thinks it is the glanders and at once demands the presence of Dr. Norton. This, of course, is what he is supposed to be paid for and what he is presumed to do, but as the expense of sending him on these errands is very heavy, Dr. Norton always endeavors to satisfy himself that there was some real danger before subjecting the Territory to this expense. As a sample of these calls, at one time this spring there were demands for him to come and see suspicious horses at Bisbee, Holbrook, Clifton and Prescott.

We have always urged on owners of stock to be certain that they had a genuine case before sending for the Territorial Veterinarian and have found ourselves criticized because we have not at once, upon the receipt of letters, sent Dr. Norton to their ranches. Nevertheless, we have always endeavored to be as consistent as possible, and while not ignoring the least call for such services, to be quite certain that it would justify the expense before sending him.

Among the hogs there has, fortunately, been no recurrence of the severe visitation of the disease that cost the hog raisers of Glendale and vicinity so dearly a few years ago, but at the same time a watchful eye is kept upon all importations of hogs, none being admitted until they have been carefully examined and found absolutely healthy.

FUNDS.

Under the law creating this board it was made the duty of the chairman to transfer to the Territorial Treasurer all moneys for strays which have been in their hands unclaimed for more than one year. In accordance with this law I transferred on July 1st, 1898, to the Territorial Treasurer the sum of \$3,500, being the amount of moneys in our hands so unclaimed.

It is a matter of congratulation for the cattlemen to feel that this board, which was created for their benefit and protection, is so nearly

self-sustaining and virtually costs the taxpayers but little. The expenses of putting into effect this new law have been very heavy, especially as the law made it the duty of the board to do certain things but made no appropriation to pay for them. In these cases we obtain from the Attorney-General his written opinion as to our rights on the premises.

INSPECTION SERVICE.

The inspection service was never in better condition than it is present. The system is as near perfection as is possible, where there is no stated salary and only the fees to pay for the work done. Mexico and other states pay their inspectors a regular salary and this means get the very best men for the work.

Of course at the large shipping points it is an easy matter to get this place, but in the little towns and mining camps, where stealing cattle for beef is constantly going on, it is a very hard matter to get a good man who will see to it that the law is strictly enforced. Changes in the service have been made only when for the good of the service, and then only after careful investigation has shown the man to be incompetent. It is a very pleasant matter for me here to be able to acknowledge the support given this board by yourself when assistant to the office of governor, by directing us to "remove no man from the office nor appoint any one on account of his politics nor at the request of any political party, but to appoint and keep in these places only such inspectors as were satisfactory to the stock raisers of Arizona." This has been the policy of our predecessors in this office and will, I trust, be the policy of all our successors, to the end that the cattlemen may get the very best service possible from the law, regardless of what political party may be in power.

NUMBER OF LIVE STOCK IN THE TERRITORY.

The following figures, taken from the report of the Board of Equalization, shows the number and value of live stock in the various counties in the Territory:

County	Horses		Mules		Asses		Swine	
	No.	Value	No.	Value	No.	Value	No.	Value
Apache.....	2,493	\$43,032.00	42	\$1,055.00	134	\$ 660.00	200	
Cochise.....	4,001	56,904.00	164	3,211.00	206	988.00	61	
Cocouino ..	3,068	62,911.00	21	960.00	39	175.50	209	
Graham	3,608	72,160.00	197	3,993.80	395	3,633.00	482	
Gila	3,048	46,315.00	119	2,553.00	257	1,268.00	450	
Maricopa....	4,458	105,337.00	212	5,312.00	31	165.00	5,505	1
Mohave	2,377	70,205.00	27	595.00	88	440.00	87	
Navajo	2,414	46,529.00	39	1,060.00	73	452.00	276	
Pima	5,372	73,182.00	319	7,700.00	51	376.00	534	
Pinal	2,057	30,855.00	85	1,560.00	50	207.00	187	
Yavapai.....	6,403	103,496.00	82	2,015.00	220	2,104.00	743	
Yuma.....	434	6,186.00	58	1,015.00	6	30.00	363	
Total.....	40,183	723,112.00	1,365	31,029.80	1,550	10,498.50	9,097	2

REPORT OF CATTLE SLAUGHTERED AND SHIPPED.

TOWN	Shipped Out	Inside Shipments	Slaughtered	Strays Reported	
Arivaca.....			98		
Ash Fork.....	9911	302	47	9	
Aravaipa.....			92		
Arizona.....	598	279			Hogs..... 262
Apache.....			581		
Buenos Ayres.....			39		
Bowie Station.....	201	193	16	4	
Bisbee.....			1797	5	
Big Bug.....					
Beison.....	8033		249	4	Horses..... 3
Calabasas.....	4306	2454		1	Horses..... 36
Crittenden.....	1362		127	1	
Clifton.....	5108		1380	1	
Congress.....	581	1470	592	9	
Chaparral.....			51		
Concho.....			2		
Canon.....			5		
Crown King.....			86		
Casa Grande.....			54		
Duncan.....	372				
Don Luis.....	8453				
Florence.....			338		
Fredonia.....				5	Horses..... 206
Flagstaff.....	5174		341		
Greterville.....			32		
Gila Bend.....	803	68	31		
Glendale.....	8538	1300	172	10	Hogs 6825—Horses... 22
Globe.....	292		1851		
Fort Grant.....			373		
Geronimo.....	14047	166	56	32	
Hackberry.....	3128	183	188		
Holbrook.....	13407	1234	318	36	Horses..... 64
Fort Huachuca.....	3260		311		
Jerome.....			1210		
Kingman.....			697		
Kirkland.....	4762	975	133	11	Horses..... 27
Mammoth.....			341		
Mesa.....			514	8	
Morenci.....			699		
Mayer.....		212	297		
Nogales.....	1503	23	446		
Navajo.....	2483		82	1	
Oro Blanco.....			7		
Prescott.....	26	310	2065		
Phoenix.....	7692	2365	3892	21	H... 1649—H, M & B... 95
Palomas.....			45	2	Hogs..... 790
Pearce.....			292		
Pautano.....	1573		40	6	
Peach Springs.....			8		
Peoria.....					
Redington.....			192		
Seligman.....	4796	93	107		
San Carlos.....			1494	1	
Springerville.....	1878		6		
San Simon.....	7145				
Sonoyta Station.....	1646			2	
Sahuarito.....			1		
Safford.....	1605			3	
Steam Pump.....			147		
Solomonville.....	992			1	
San Xavier.....					
Santa Maria.....					
Tucson.....	17215	860	5573	40	Horses..... 85
Tombstone.....			241		
Tempe.....	7570	1918	462	3	
Ft. Thomas.....			97		
Table Mountain.....			53		
Wickenburg.....	882	737	11	7	
Willcox.....	27945	171	383	6	Horses and Mules... 132
Winslow.....	2004	90	707	2	
Williams.....	557		1654	3	Horses..... 62
Yuma.....	342	4	1917		Hogs..... 83
Totals.....	174029	15597	32451	228	H... 9112 Horses... 682

NOTE.—The "inside shipments" being those within the Territory are mainly for slaughter, and should not, therefore, be considered as part of the totals, as they are taken up under the head of "slaughter."

J. C. NORTON, D. V. M., Veterinarian, Phoenix.

A short report from Secretary Harrison shows the work that been performed in the office during the year. I have heretofore allu to Mr. Harrison's efficiency, and a visit to the office and an exam tion of the books and records will certainly convince the visitor of truth of these assertions.

Respectfully submitted,

WILL C. BARNES,

Chairman.

January 10, 1899.

To the Live Stock Sanitary Board,
Gentlemen:

I have the honor to submit the following brief report of the wo done in this office for the year 1898:

During the year there have been recorded 1,595 brands, 1,523 which were original applications, and 72 transfers from county record which were sent in prior to July 1st, 1897, but not recorded.

Three hundred and sixty-seven of the brands referred to have bee placed on record since July 1st, 1898, requiring a 10-cent documentar stamp, all certificates that had been sent out without said stamp wer recalled, and there are now some 65 still out that have not yet bee returned for stamping. During the same period, the correspondence o the office has been as follows: Two thousand five hundred skeleton mimeograph letters, of which no copies were taken, referring to rejecte brands, suggestions and notification of acceptance, and 3,640 letters, as shown by the letter books of the office, making a total of 6,140 letters, or 16 per day, besides the mailing of stock laws, inspectors' sup plies, etc.

During the year there were sold 229 strays, at the various inspec tion points within the Territory, amounting to \$3,480.11, an average of \$15 per head. The following statement shows the condition of the stray fund for the year:

January 1st, Balance in Bank	\$3,428.88	
January 10th, E. O. Stratton.....	871.42	
July 1st, C. W. Pugh.....	164.85	
January 1st, to December 31st, strays sold.....	3,480.11	
		<hr/>
	\$7,945.26	
Paid into General Fund.....		\$3,500.00
Paid out for strays.....		3,488.29
Balance on hand December 31st, 1898.....		956.97
		<hr/>
	\$7,945.26	\$7,945.26

Two hundred and eleven stray claims were paid, covering 228 head of cattle, amounting to \$3,488.29, an average of \$15.30 per head.

The following is a list of the various inspection points together with the number and class of cattle shipped and slaughtered for the year ending December 31st, 1898.

Very Respectfully,

H. HARRISON,

Secretary.

County	Cattle		Sheep		Goats	
	No.	Value	No.	Value	No.	Value
Apache	8,908	\$ 93,181 00	75,924	\$ 150,048.00	821	\$ 1,618.00
Cochise	61,063	656,615.75	6,330	12,060.00	1,366	2,724.00
Coconino	18,794	192,638.50	183,750	367,500.00	185	219.00
Graham	61,825	655,200.00	1,016	2,032.00	2,485	4,970.00
Gila	42,757	421,785.00	5	10.00	4,384	8,968.00
Maricopa	24,213	308,254.00	8,539	17,078.00	1,052	2,104.00
Mohave	25,705	257,050.00	6,800	13,600.00	500	1,000.00
Navajo	8,022	93,264.00	86,022	172,044.00	517	1,034.00
Pima	56,781	573,160.00	2,315	5,630.00	152	304.00
Pinal	26,274	328,415.00	4,300	8,600.00
Yavapai	56,661	571,355.00	25,367	50,734.00	3,117	6,234.00
Yuma	837	8,370.00
Total	397,240	4,158,364.25	399,968	799,936.00	14,568	29,136.00

This statement shows that we have upon the assessment rolls in Arizona 397,240 head of cattle, valued at \$4,158,364, and 399,968 head of sheep, valued at \$799,936.

There can be no doubt but that these figures are very much below the actual number and value, and that a true and conservative estimate would give us at least 600,000 head of cattle, valued at about \$12,000,000, and not less than 600,000 head of sheep, valued at fully \$1,500,000.

But at even the assessed valuation on the live stock industry, is next to lands, the largest tax producing element in our territory, and surely is entitled to every care and safeguard the law can give it.

The total number of cattle shipped and slaughtered during the year 1898 was 206,400 head. It is safe to assume, however, that in spite of the heavy shipments made from every station, Arizona has quite as many cattle as last year.

As for sheep, in addition to the splendid natural increase, we have received from the drought-stricken regions of California, almost 100,000 head of fine graded sheep, which are scattered over the ranges of northern Arizona, and which have added very materially to the tax producing resources of those counties.

In allowing these sheep entrance into Arizona, the Live Stock Board took every precaution to guard against bringing in any disease. Every bunch was carefully dipped before shipping, and a certificate was demanded from a competent veterinarian stating that they had been so dipped and were free from any contagious diseases before they were allowed to cross the line.

Owing to the drought Arizona could also have received several thousand head of cattle from California, which would have been a very welcome addition to our herds, they being of a superior class and breeding, but owing to the prevalence in California of the dreaded fever tick, it was deemed advisable not to allow them to come in and mix with our native cattle. This point has been touched under the head of "Sanitary Work."

The present membership of the board is as follows:

WILL C. BARNES, Chairman, Holbrook.

J. A. MARSHALL, Member, Phoenix.

W. F. NICHOLS, Member, Willcox.

H. HARRISON, Secretary, Phoenix.

BRIEF REPORT OF DR. J. C. NORTON, TERRITORIAL
VETERINARIAN.

Phoenix, Arizona, January 10th, 1899.

Gentlemen of the Live Stock Sanitary Board:

This report covers principally the work done between June and December 31st, 1898.

GLANDERED HORSES.

Since the last regular meeting of the entire Sanitary Board, there has been considerable work for the Veterinarian among the horses in this valley. On May 23d, last, I detected and destroyed a glandered horse, then owned by Mr. Savage, which was supposed to have been driven into the Territory from Utah. This was the first case of glanders discovered in the valley since 1894, when 50 head of glandered horses and mules were killed in the vicinity of Tempe and Mesa. This disease had been in the neighborhood nearly two years before it was discovered.

Since I destroyed the glandered horse in May I have, in tracing various horses that have been exposed, examined over two hundred head of horses, tested with Mallein twenty-one, and detected seven glandered horses and two glandered mules. The glandered animals, most of which were destroyed and burned, were the property of the following named parties: H. J. Willis, 2 Mules; I. S. Barnes, 2 Horses; Johnson, 1 Horse, (two others had died); Steele, 1 Horse; Williscraft, 1 Horse; Cottrell, 2 Horses. All of the glandered horses were found in the neighborhood of Phoenix, and in most cases their infection could be traced to other glandered horses.

All animals that had been positively exposed were quarantined at least for a time, and tested if necessary.

At one time there were 125 head of horses and mules in quarantine yet I have been able to manage matters so that the territory was out of no expense for feed, except in one case, where the owner was not in the country. The expense in this case was only about five dollars. Last Thursday I detected a very suspicious case in a horse in one of the corrals in this city. The owner of the horse returned to the city last night with nine head of horses and mules, and I find that one of them also presents very suspicious symptoms.

I have placed them in temporary quarantine.

A part of the above mentioned ten animals I have been able to detect before they were very liable to spread the disease. In one case a horse was found and destroyed before any others had contracted the disease, although about one hundred were exposed.

In this temperate climate this disease, like tuberculosis, may lie latent for many months, yet at all times such an animal is very dangerous. I cannot think but that we shall find several more cases of glanders in this valley before we are again free from the disease.

This outbreak convinces us that our rules for the admission of stock cannot be too strict. The animal that brought this infection was driven in overland. Such admissions are, of course, never reported

TEMPE QUARANTINE DISTRICT.

I am glad to report that the quarantine district for the coming year will be very small, only about one-tenth as large as last year.

The regulations ordered by the board a year ago and the orders given by myself during the year, have been obeyed in nearly every instance, and the results have been very satisfactory to all concerned.

The only serious difficulty we have had during the year, was in enforcing the rule that required all cattle kept off from certain infected lands. Mr. J. E. Sturgeon on August 11th placed about 140 head of cattle on a piece of land known as the "Price tract" in Sec. 14, T 1 S, Range 4 E. As this was the second time this party had violated the quarantine rules by placing cattle upon this particular piece of land and as it was in the center of a badly infected section, I could not see how other fields could be protected without placing a guard to watch these cattle in accordance with Sec. 31 of the Sanitary Laws. I therefore placed Mr. J. H. Harris, the Tempe Inspector, in temporary charge of the cattle.

On August 31st Messrs. Marshall and Barnes of the Board accompanied me to inspect the cattle in question. On examination we found the cattle infested with young fever ticks, which they had no doubt obtained from this land on which no cattle had been held for nearly six months, thus proving that the tick can live over that long, in this valley, without gaining access to an animal.

These members of the Board directed that Mr. Harris continue to guard the cattle, at least until December 1st and that he repair the fence around the land.

I visited the cattle from time to time during the fall, and on December 1st Mr. Barnes of the Board and myself visited the cattle and examined them again and found them still infested with ticks, though but few were found.

Many of the cattle were fat at this time.

December 2nd Mr. Sturgeon paid to Mr. Harris, the guard, the expenses of the quarantine (about \$312.00) and the guard was discontinued. Since then I have allowed Mr. Sturgeon to ship all of the cattle that were fat for immediate slaughter. There are still on the ranches in quarantine about sixty head of cows, which I hope will be in condition to ship about March 1st.

A Mr. Mont Ellingson also placed cattle on a quarantine tract of land without my permission, but as the land was his own property, well fenced and somewhat isolated, I only required him to hold the cattle on this particular tract until sold for shipment for immediate slaughter. These cattle were all shipped last month.

These two tracts of land are the only ones known to be infested with ticks a year ago, that are still suspicious. All the others were free from cattle during the entire year and no ticks have been discovered on any of the cattle that have been placed on them this winter.

During the past year two small dairy ranches have been discovered that are infested with a few fever ticks. One of these ranches was detected by finding ticks on three calves that were sold from it. A few

days before I learned of this infected ranch, a small herd of steers been pastured on it and afterwards removed to the Mesa country placed these cattle in quarantine at once to prevent any possibility the infection spreading further. Most of the cattle were sold month for slaughter. The balance are still on the same ranch, w is owned by a Mr. Bauer.

Though we may well be encouraged with the progress in this w yet tick infection is so easily spread that we are not safe until al fection is stamped out.

In this connection I deem it wise to publish with this extract f my report made to your body two years ago relative to Texas f So many questions have been asked of me as to the life of the manner of transmitting the disease, etc., that I am quite certain it prove of great interest to stockmen generally.

It is especially to be noticed that the plan suggested therein carefully inspecting the cattle on every ranch and all cattle shipped carried out and the very best possible results obtained and also further investigation has proved the truth of my assertions as to conditions in the Salt River valley that favors the destruction of tick. The result of this work has been that Arizona is still above quarantine line and now there need be no fears for the future as as the present rules of the Sanitary Board are rigidly enforced.

SPLENETIC FEVER OR SOUTHERN CATTLE FEVER.

Texas fever is now more commonly called splenetic or south cattle fever, because cattle coming from many of the southern sta as well as Texas, may infect northern or susceptible cattle with fever.

For many years, or in fact, until within the last two years, se tists have been in the dark as to what was the infective principl southern cattle fever and how the disease was transmitted from animal to another. It was noticed that southern cattle were, as rule, healthy and that they carried disease only during the war part of the year and were harmless during the winter months. cause the disease was often contracted by cattle that had never e in contact with southern cattle, but had simply been pastured a them or had only crossed their trail, it was thought that the infect principle, whatever it might be, was deposited by the southern ani in it saliva, urine or faeces. The latter theory, that the germ was posited with the faeces, was readily accepted by many, because, tho the disease developed all along the trail of the southern animal, greatest losses were sustained at the camping places or where the tle were held for a time. At these places, naturally, more excren of all kinds was deposited.

It was finally discovered that there was a microparasite in the blood corpuscles of the southern animal of malarial origin. This

ganism or germ when introduced into the blood of susceptible cattle from the climate where the mercury registers zero (F) or lower, or where the altitude is more than one thousand feet above sea level, multiplies rapidly, attacking and destroying the red blood corpuscles of the affected animal. This breaking up of the red blood corpuscles causes derangement of the vital organs because supplied with degraded blood. This condition of the liver, spleen, kidneys and other vital organs produces high temperature (fever), loss of appetite, and usually death in the affected animal. Whenever but few of the germs are introduced into the animal the animal is able to overcome their effect, but if a sufficient amount is introduced to cause the breaking up of 60 per cent of the red blood corpuscles of the blood at one time, death results.

The principal symptoms of southern cattle fever are: High temperature (105 degrees to 108 degrees F.) which can be readily detected even by touching the skin of the animal, which will be dry and hot; red urine due to the coloring matter of the broken down red blood corpuscles (haemoglobin) which has been filtered out from the blood by the kidneys; loss of appetite and usually cessation of rumination with more or less constipation, and the faeces passed will be quite hard and sometimes tinged with a red color.

The experiments of the United States Bureau of Animal Industry made during the last six years have proven that the only way that southern cattle fever can be transmitted to susceptible animals is by inoculation, and the only way that it has thus far been proven that this inoculation is made, except when done mechanically, is by means of the animal parasite known as the southern cattle tick (*Boophilus bovis*.)

LIFE HISTORY OF THE SOUTHERN TICK (*Boophilus bovis*.)

This tick is similar to the common ear tick, found frequently on our mountain cattle, but is found on the body of the animal, principally on the protected parts between the thighs and on the udder of the cow or the scrotum of the steer. That all stockmen may understand fully how this little parasite may carry the germ of the disease from one animal to another, I will give briefly its life history.

We will commence with the young tick just hatched from the egg (Larva stage) when it appears as a small, brownish colored insect, having three pairs of legs and measuring about .026 of an inch long. The tick during this stage of its existence has greater powers of resistance than at any other time, having been known to live for several months without any perceptible change and with no other nourishment than that obtained from the air. They crawl but little laterally, but climb vertically on grass or weeds and remain with their heads uppermost until they come into contact with an animal from whose blood they can procure nourishment for further development. They are provided with a pair of tacklers, one on either side of the head.

with which they attach themselves to the skin of the animals, and when once attached never move about on their hosts.

Their mouth is an elastic tube with which they penetrate the skin and draw blood from the veins and arteries of their hosts. It requires from 21 to 23 days for the tick to mature after it gains access to the body of the bovin. During this period it molts (shed a coat or shell) twice, the first time at the end of one week, when the fourth pair of legs appear (nymphal stage, tick $\frac{1}{8}$ inch long), and again at the end of the second week when it is sexually mature. Copulation now takes place and the male ticks soon drop off and die. The female tick remains attached to its host for several days longer and becomes engorged with blood, causing its elastic skin to expand until it is often one-half inch long and one-quarter inch wide. After the second molting or during the last week of the ticks are on their host they are easily detached without casting the animal. When fully engorged with blood they will appear as dark, grayish, oblong bodies, only partially covered by the animal's hair. As soon as the female tick drops to the ground it secludes itself under some excreta or other favorable shelter and if the weather is not too cold commences to deposit eggs within two or three days. It has been found, by experiment, that the tick deposits eggs from eight to fifteen days according to the size of the tick and the time of the year. Each mature tick deposits from five hundred to two thousand eggs and then dies. These eggs appear as reddish brown oval bodies. The eggs will hatch in about three weeks if the weather is sufficiently warm (75 to 85 degrees F.), but they may lie latent for many weeks and then hatch, providing the cold has not destroyed them.

As to how the tick transmits the disease. Each female tick, before dropping from its host, engorges with blood containing fever germs, which are transmitted to each egg deposited, and the young tick, when hatched, still retains the infection. When on the animal the tick attaches itself and draws blood sufficient to break the outer shell and then injects back into the veins of its host the surplus blood and at this time infects the animal with germs of the disease. Microscopical examination of the blood of animals on whose bodies young ticks have been placed prove the fever germs were never in the blood until after the first molting of the tick, which is six or seven days after the ticks are placed on the animal. Thus the germ gains entrance to the blood of susceptible animals and at once begins to multiply and destroy the red blood corpuscles.

Length of time required to develop a generation of ticks under favorable conditions:

From time of depositing eggs to hatching	20 to 45 days
From time of hatching to adults on bovine	21 to 23 days

Life of generation	41 to 68 days
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The following are brief answers to some of the questions most frequently asked by stockmen:

About three or four days after the first molting, which would be about ten or twelve days after the tick gains access to the animal, the fever will first be noticed.

The animal will usually die in from five to ten days from the time the fever is first noticed. If several ticks infected the animal about the same time death will quite likely be the result.

The symptoms of southern fever will be noticed in northern cattle about thirty-seven days after the tick infested cattle are placed in fields with them. The mature ticks that drop from the southern animal the first day deposit their eggs in about seven days. These are hatched under favorable conditions in about twenty days and the young ticks at once crawl on to the susceptible animal. Ten days later the fever will be noticed in the animals to which several ticks have gained access on the first day after hatching. Five to ten days later some deaths will occur. Thus it is plain that it will be from forty-two to forty-seven days from the time the tick infested cattle are placed with the susceptible cattle before the first deaths will occur. Susceptible cattle placed in the same field twenty-seven days after the tick infested cattle will die within fifteen or twenty days because the young ticks are at this time just hatched and ready to infect them. Susceptible cattle can be pastured with southern cattle for twenty days without any danger, but must be removed before the young ticks hatch out.

An animal may die from an acute attack of southern cattle fever and yet the ticks on its body be so small that they may not be noticed. This is possible because the tick has not had sufficient time to molt a second time (14 days) or if molted has not grown sufficiently to be easily detected. For this reason the ticks that drop from a northern animal that dies from acute attacks of southern fever will often be unable to deposit many eggs. This has led some to believe that the ticks that drop from the northern fever infected animal cannot under any conditions transmit southern cattle fever. If the northern animal survives the disease long enough to allow the tick to mature and gorge itself with blood there is no doubt but that the eggs deposited by such ticks when hatched, will be more or less able to transmit the disease. They will not be likely to transmit as virulent a form of the disease. Often in the north the cold weather prevents the hatching of the second generation of ticks.

HISTORY OF THE DISEASE IN ARIZONA.

The stockmen of Arizona have reason to congratulate themselves that nowhere within the territory are the conditions such that southern cattle fever is indigenous.

We have had a few slight outbreaks of the fever, but it was in all instances traceable to infection from cattle brought to the territory.

I first discovered cattle suffering from southern cattle fever in Arizona in a herd of cattle brought to the territory by Mr. Powell from

Southern California in June, 1894. They were a mixed lot of cattle brought from four different ranches in Southern California and all were infected with southern cattle fever before leaving California, except those from one ranch. Thirty head of the cattle from this ranch died within forty-five days after their arrival. The carcasses were all burned and the remainder of the herd were not allowed to be moved from the ranch until cold weather in the fall, when they were shipped to the Los Angeles market. No cattle were allowed on the ranch during the next summer, and no trace of the disease has since been reported in that vicinity.

November 10, 1896, I was called to investigate the cause of the death of seven head of cattle belonging to Mr. F. L. Brill, that were being fed at the time on the ranch located about eight miles south of Tempe. On investigation I learned the following from Mr. Brill and others:

November 10th the cattle, consisting of 340 head of cows, steers and bulls, were driven from Mr. Brill's ranch on the north side of Salt river to the ranches, where I found them (Sec. 13 and 14.)

November 18th. One two-year-old steer was found dead.

December 5th. Two bulls were found dead.

December 8th. Three cows were found dead.

December 9th. One cow was found dead.

Neither the owner nor the man in charge of the cattle knew anything about the symptoms presented by the animals before death, nor even the length of time they were sick. The owner of the ranch said that no cattle had died on the ranch during the summer except those from bloat.

Though the last animal died more than forty hours before my arrival I held a post mortem examination on it. Mortification had so far advanced that nothing definite could be determined. The only condition noticed that caused me to suspicion the presence of southern cattle fever was the red colored urine found in the bladder. Though I had known of no southern cattle ticks in that vicinity, yet I examined the carcasses of all seven dead animals carefully, as well as the ground about them for ticks, but found none. Ticks, however, as a rule, drop off from the skin soon after the animal dies and besides, few ticks are likely to be found on an animal so late in the season. I examined every animal in the herd carefully, but found but one sick animal. I saw no ticks on any of the herd. I visited the cattle again December 15th, and found no more sick, and the one that was ailing on the 10th inst. was apparently improving. As there was some very sudden changes in the weather at the time these cattle died, and finding no positive proof of any contagious disease, I was forced to believe that they died from the usual causes. (Note: This ranch was placed in close quarantine and subsequently our fears were verified by finding ticks upon the cattle placed on it the following summer, 1897, proving without question that the seven head of cattle died of southern cattle fever. These cattle were afterwards sold for slaughter during the winter of 1897-98. No cattle were placed on this ranch from March 1st,

1898, when cattle were again placed on the ranch and no ticks have been found. (J. C. N. Jan. '99.) So few were affected, even among such a large number, because placed on the infected field so late in the season (Nov. 10), that only a few ticks were able to attach themselves. The two-year-old that died on the 8th day (Nov. 18th) likely died from natural causes, because sufficient time had not elapsed for it to become infected with the fever. The other six head lived from 20 to 29 days after being placed on the ranch, which is from five to ten days longer than is usual. The explanation for this long period is that on account of the cold weather but few ticks gained access to them during their first days on the ranch. It is possible if the sudden changes in the weather had not come just at this time, few, if any, of the cattle would have died.

I recently found three southern cattle ticks (*Boophilus bovis*) on some cattle about to be shipped from Tempe that were the property of Mr. Sturgeon. Under your direction I have since quarantined the ranch where these Sturgeon cattle had been and informed the owner that the cattle now on said ranch must not be removed except for immediate shipment to market, and that no more cattle will be allowed on the same during the coming summer.

Though but comparative few ranches of the valley are infested by this particular tick, yet it is of such great importance to the future welfare of Arizona that it be entirely eradicated from the territory, that a careful inspection of the cattle on every ranch in the valley should be made during the coming summer, and the tick infested ranches located. No cattle should be allowed to be removed from these infested ranches earlier than December 1st, as other ranches would thus become infested. During the following winter the tick infested ranches should be abundantly irrigated, and the next summer they should be quarantined against all cattle, but could be used for hay and pasturing horses, hogs and sheep. This plan is pursued in order to starve the cattle ticks, which, fortunately, cannot mature without obtaining the blood of the bovine. Ploughing the ranch would also, no doubt, destroy the ticks.

In this way Arizona can soon again be entirely free from this infection.

The young tick when hatched has great powers of resistance and has been known to live, even in the colder climates of the east, for four months. As to how long the tick can live in this valley, with irrigation, etc., is not known, and can only be determined by experiment. I have proven that the mature tick that drops from the animal after December 1st soon died without depositing eggs. I have at the present time some eggs exposed to our winter climate, both with and without irrigation, to learn the extent of their resistance. There is no doubt but any infection that is carried from one summer to another is harbored in the eggs.

CONDITIONS IN THE SALT RIVER VALLEY THAT FAVOR THE DESTRUCTION OF THE CATTLE TICK.

There are several agencies that tend to retard the multiplication of ticks in the Salt River valley.

1. Our alfalfa lands are all heavily irrigated many times during the winter months, which, together with the low temperature, will destroy the major portion of the tick eggs deposited the fall before.

2. The larger portion of our ranchmen cut from one to three crops of alfalfa hay from their lands in the spring and summer before placing stock on them. This allows for one or more irrigations of the land after the young ticks are hatched, before they are supplied with cattle on which to mature. These irrigations will no doubt destroy many ticks that would otherwise have had attached themselves to cattle and thus matured to again deposit eggs.

3. As I have found that the female tick will soon die when exposed to the direct rays of even our winter sun I can see no reason why, when they are exposed to the rays of the Arizona summer sun (temperature 150 degrees F.) many of them will not be destroyed. I think this may be one explanation why, when the California cattle above referred to, could be driven for ten miles in this valley in the month of July without a single outbreak of the fever, or even ticks developing on any of the ranches passed.

(Note. It has since been positively proven that all ticks as well as eggs, exposed to the direct rays of the sun, even in alfalfa fields, are destroyed. J. C. N., Jan. '09.)

STOCK SHIPMENTS INTO NEW TERRITORY.

During the past year two hundred and fifty telegrams have been received relating to admitting stock through or into the Territory. Over five hundred telegrams and sanitary orders have been issued besides letters written along this line.

Though many shipments of stock were offered that were not accompanied with the proper health certificates, yet I have admitted them without inspection in many cases where I have felt quite sure they originated in a healthy district, and especially if the shipment was small. In only one instance am I sure that infection has been introduced during the past year by imported stock. A shipment of horses from California no doubt brought in a few fever ticks. I was in the east at the time the horses were admitted, but I inspected them on my return and have taken such precautions that I think no harm can follow. Under the rule made June 2nd for the admission of stock from below the government quarantine line, two small shipments have been admitted. W. W. Cooke shipped 103 head of calves from Phente, Cal., to Gila Bend, and a car of cows was shipped from Colton, Cal., to Phoenix. Both shipments stood inspection, and were held in quarantine for thirty days without showing any signs of infection.

I have had many letters of inquiry about admitting cattle from below the line, but the rule stops all shipments that are intended to be placed on the range, and ticky cattle are not likely to start this way, so long as they must have a certificate of freedom from ticks before starting.

Very respectfully,

J. C. NORTON,
Territorial Veterinarian.