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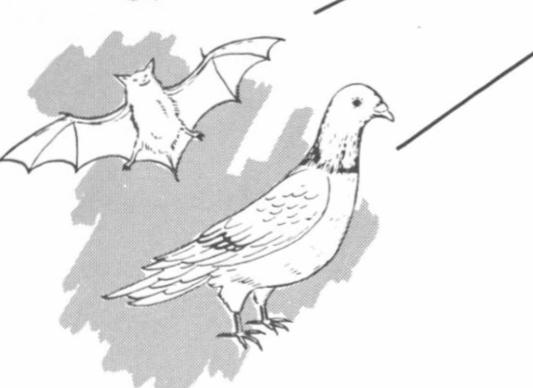
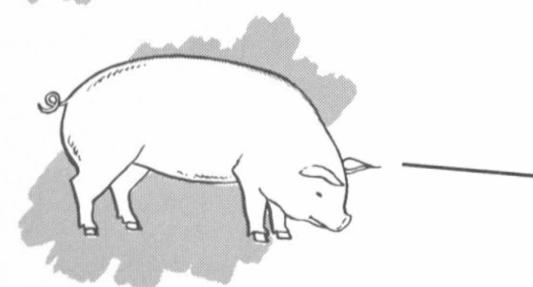
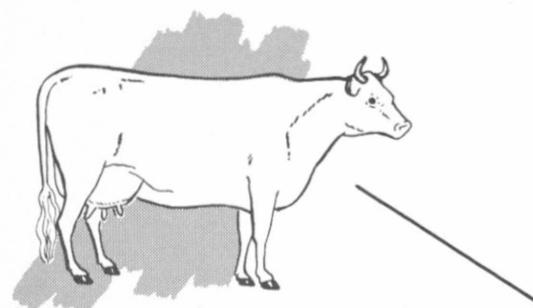
ANNUAL PSITTACOSIS  
SUMMARY, 1965

NOVEMBER 1966

COMMUNICABLE DISEASE CENTER

# ZOONOSES

## SURVEILLANCE



### PSITTACOSIS

- I. SUMMARY
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PSITTACOSIS-ORNITHOSIS
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U. S. DEPARTMENT OF  
HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE

# PREFACE

Summarized in this report is information received from Health, Agriculture and Wildlife Officials from the various States and their counterparts in the Federal government. Much of the information is preliminary. It is intended primarily for the use of those with the responsibility of disease control activities. Anyone desiring to quote this report should verify the data at its original source for accuracy and interpretation.

Contributions to the Surveillance Report are most welcome. Please address to:

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## I. SUMMARY

A total of 61 cases of psittacosis in man were reported from 22 states during 1965, 8 cases more than in 1964. Parakeets were the most frequently mentioned probable source of human infection, with pigeons being next in frequency.

Two turkey ornithosis outbreaks, both associated with low human morbidity, were reported during the year. One occurred in Minnesota causing three human infections and the other occurred in Virginia, resulting in one human case.

## II. HUMAN PSITTACOSIS, 1965

The geographic distribution of the 61 human cases of psittacosis reported during 1965 was very similar to the 53 cases reported in 1964. Twenty-two states reported human cases; 15 of these states also reported cases in 1964. Four states reporting human infections in 1964 did not report any cases for 1965.

States reporting four or more human cases in 1965 were California (12), Texas (8), Illinois (5), Minnesota (5), New York (4), and Tennessee (4).

The two most common reservoir hosts in past years, parakeets and pigeons, accounted for 58% of the 48 cases for which exposure data were furnished. Parakeets were listed as the most probable source of infection on 23 of 48 epidemiologic follow-up forms (48%) and pigeons on 5 of the 48 (10%).

It is interesting that only 4 human cases were traced to two widely separated turkey outbreaks. In the past, turkey epizootics generally resulted in large numbers of human cases contracted during handling and processing (e.g. 71 cases in 1956 and 200 in 1954). Improved plant sanitation or other precautionary measures may have been responsible for the low human incidence during the 1965 outbreaks. No specific factor was reported by the Minnesota or the Virginia Health Departments as responsible for the low incidence of human infections in the contaminated turkey processing plants.

## III. INCIDENCE OF AVIAN PSITTACOSIS-ORNITHOSIS

Since avian infections are generally not reported unless there are associated human cases, the actual incidence in birds is not known. Although effective prophylaxis and therapy against psittacosis has been developed, i.e. chlortetracycline (CTC) administration in the feed, sporadic localized epidemics continue to occur.

Psittacines. Parakeets are by far the most numerous pet birds in the United States and are most frequently involved in outbreaks. According to the available data on sources of infection, twelve of the 23 human cases traced to parakeets in 1965 occurred in pet bird owners and five cases were in pet bird breeders or dealers.

Some of the problems that still exist in control of psittacosis in parakeets are illustrated by four retail store outbreaks reported from the State of Washington (See part V - Reports from the States). One human case was related to an outbreak in Olympia and one case occurred in a person who took care of psittacine birds in a Tacoma retail store.

Poultry. Of the two outbreaks among turkeys in 1965, one occurred in Virginia and the other in Minnesota. The Virginia outbreak caused high mortality in several turkey flocks and resulted in many condemnations at the processing plant. The man responsible for unloading the live turkeys upon arrival from the ranch was severely infected. The ornithosis strain isolated from this outbreak was tested and found to be highly virulent for mice and most laboratory animals.

The Minnesota outbreak resulted in 3 human cases. Ornithosis isolates from Minnesota turkeys have been relatively low in virulence in the past and no overt human illness had been reported prior to these 3 cases.

No reports of outbreaks in ducks were received, but one outbreak in chickens was apparently responsible for a human illness in Oregon. A 12-year-old boy in Oregon developed generalized illness five months after arrival at a poultry farm. The previous tenant at this farm reported high mortality in chickens due to "bronchitis" (diagnosis not confirmed). The boy had been in the chicken house in which the ill and dying chickens had been kept. His serum was positive for psittacosis in the CF tests at a titer of 1:256. The litter from the chicken house yielded viable ornithosis agents in the first mouse passage.

#### IV. THE DISTRIBUTION OF PSITTACOSIS-LYMPHOGRANULOMA AGENTS

A recent comprehensive review by Dr. Karl F. Meyer presented at the Conference on Trachoma and Allied Disease (August 25-31, 1966) graphically demonstrated the wide distribution of the Psittacosis-lymphogranuloma (P-L) agents in human and animal populations. Some of the items from this review are briefly outlined below.

The psittacosis-lymphogranuloma-trachoma group is exceedingly widespread in its distribution, in three different parameters: geographic prevalence, host species spectrum, and pathogenicity variation. Many of the reported observations concerning the wide range of these organisms are quite recent. Probably they are much more important members of the microbial world than was suspected in the past.

Human Infections. It has been known for at least 30 years that psittacosis, lymphogranuloma venereum, trachoma and inclusion conjunctivitis are etiologically related. Psittacosis is zoonotic, transmitted from a bird reservoir to man; whereas, the other three are apparently transmitted directly from person to person. Recent findings suggest that the P-L group may also be venereally transmitted, causing abortion, as well as a distinct syndrome consisting of chronic urethritis, conjunctivitis and arthritis (Reiter's syndrome). The question is posed whether members of the P-L group may be present in other body systems of man (e.g. the gastrointestinal, circulatory, respiratory), but have not been detected because of insufficient numbers of attempted isolations.

Bovine Infections. Several distinct diseases of cattle have been associated with P-L agents and some of these cause pathogenic manifestations resembling those described in man. These are encephalomyelitis, pneumonitis, enteritis, non pathogenic intestinal infection, abortions due to invasion of the fetus, resulting in liver degeneration and keratoconjunctivitis, and polyarthritis of calves.

It is as yet uncertain which of the agents cause distinct disease entities and which may be responsible for more than one condition.

Ovine Infections. These parallel the pathologic manifestations seen in cattle and include enzootic abortion, pneumonitis, non pathogenic intestinal infection, lamb polyarthritis and contagious keratoconjunctivitis. Again, it is not certain how many distinct etiologic agents are involved.

Caprine Infections. These are probably similar to bovine and ovine, but not as widely documented and include pneumonitis, non pathogenic intestinal infections, and abortion.

Porcine Infections. P-L agents are probably responsible for some arthritides, keratoconjunctivitis, and generalized septicemic disease.

Avian Infections. Parrots and related psittacine birds were the first recognized reservoirs of the P-L agents. It is now well established that birds constitute an extremely widespread source of these agents. Most avian infections are generalized and septicemic, resulting in death or prolonged illness including excretion of highly infectious droppings. Cage bird species, poultry, and wild birds may be natural reservoirs. Feral pigeons are a vast, world-wide reservoir. A total of over 100 species of Aves have been found naturally infected.

Avirulent or low virulence infections are known to occur in ducks, turkeys, pigeons, and chickens. Specific organ diseases, described in mammals, caused by P-L agents may be present in birds also, but have not been sufficiently explored.

#### V. REPORTS FROM THE STATES

From 1956 until June 1965, importation of psittacine birds into the State of Washington was limited by regulations of the State Department of Health. The human incidence of psittacosis in the State had been reduced from a high of 25 cases in 1956 to no human cases reported in 1962, 1963, and 1964.

Beginning in June 1965 the Washington State Board of Health modified the regulations to allow unlimited numbers of psittacine birds to enter the State provided that permission to ship them into the State was obtained from the State Department of Health. It was recommended, but not required, that shippers feed the birds for at least 15 days on tetracycline impregnated seed before shipment into the State of Washington. From June 1 to December 31, 1965, well over 10,000 psittacine birds were shipped into the State.

The first outbreak occurred in October 1965 when several birds in a shipment of 50 parakeets from California died at a variety store in Tacoma. One of the two dead birds submitted to the State Health Department Laboratory was found positive for psittacosis. These birds, reportedly treated with CTC-impregnated seed prior to shipment, had been received by the store in September 1965. Upon arrival they had been placed in cages with untreated birds from local aviaries. A canary which had died at the store was also found positive for psittacosis by the State Health Department Laboratory.

The second outbreak occurred in November 1965 in a Tacoma department store where 13 of 36 parakeets imported from California late in October had died. One of the dead birds was confirmed as positive by the State Health Department Laboratory. The 15 remaining birds, still present at the store, were killed and sent to the George William Hooper Foundation for examination where nine were found to have psittacosis (60% infection rate). It was found that the 36 birds had been shipped from California without prior treatment with CTC-impregnated seed and without authorization of the Washington State Department of Health.

The person in charge of handling the parakeets at the store had been ill for three weeks with symptoms compatible with psittacosis and demonstrated a CF antibody titer rise to the disease.

The third outbreak involved a farm and garden store selling parakeets in Olympia, Washington. It was recognized because of a human case of psittacosis apparently contracted from a parakeet purchased at this store in November 1965. Within two weeks after the owner had received the bird, he was hospitalized with a disease tentatively diagnosed as viral pneumonia. Blood specimens taken during the acute stage and at 1, 2, and 3 months after date of onset showed a slight titer rise of psittacosis CF antibodies. Two days after the patient was hospitalized the parakeet died and was subsequently found to have been infected with psittacosis by the State Department of Health Laboratory. Birds at this store had been received from the local aviaries implicated in outbreak Number 1. Samples of parakeets from the aviaries were obtained and a low incidence of psittacosis infection was found in one of the breeder sources. The aviary was quarantined and birds were treated with CTC-impregnated seed.

Another outbreak occurred in another variety store in the Tacoma area which received parakeets from the California supplier mentioned in the first outbreak. One of three birds that died at this store in February 1966 had been submitted to the State Department of Health Laboratory and was found to have psittacosis. Investigation disclosed that 95 birds had been imported by the store from California during December 1965 and that deaths had been occurring among the birds since their arrival. Only 17 birds remained in the store at the time of the investigation, the other 78 having either died or been sold. The 17 birds were killed and submitted to the George William Hooper Foundation where 5 were found to have psittacosis (29% infection rate). No human cases were traced to this outbreak. An investigation of the feeding operation in California suggested that not all birds in the shipment had undergone CTC treatment.

#### VI. PROMPT INVESTIGATION AND REPORTING

Since the finding of a human or animal case of psittacosis may signal the occurrence of an outbreak not only locally but also nationally, it is strongly urged that epidemiologic investigations of suspected or confirmed cases be initiated promptly. It is requested that a National Psittacosis Surveillance Report form be completed for each human case and a copy of the report sent to the Veterinary Public Health Section at the Communicable Disease Center. Copies of the report form are available upon request from the CDC.

TABLE 1  
REPORTED PSITTACOSIS CASES

STATE	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Alabama	2	1	1	1	2	-	-	-	-	-	-
Alaska	-	-	-	-	-	-	-	1	-	-	-
Arizona	-	1	1	-	-	1	-	1	1	-	1
Arkansas	2	-	1	-	-	1	-	-	-	1	-
California	40	56	27	17	17	12	10	10	14	14	12
Colorado	2	5	4	-	2	1	-	2	-	-	-
Connecticut	2	5	10	1	7	4	2	6	3	-	2
Delaware	-	1	-	-	-	-	1	-	-	-	-
District of Col.	-	-	-	1	-	-	-	-	-	-	-
Florida	-	-	-	1	-	-	-	-	-	1	1
Georgia	14	10	11	2	3	-	2	-	3	4	-
Hawaii	-	-	-	-	-	-	-	-	-	-	-
Idaho	15	2	4	2	5	-	1	-	-	-	-
Illinois	40	39	18	7	11	7	7	4	11	6	5
Indiana	-	5	3	-	-	-	-	1	-	-	-
Iowa	8	7	5	6	1	-	-	-	-	1	-
Kansas	2	1	-	1	1	1	-	-	-	-	-
Kentucky	3	2	-	-	-	2	-	-	1	-	1
Louisiana	4	2	-	-	-	-	-	-	-	-	-
Maine	-	3	-	2	5	-	-	-	-	-	1
Maryland	3	5	5	1	-	-	-	1	-	-	2
Massachusetts	3	12	5	3	2	2	3	1	2	2	1
Michigan	1	7	3	5	2	3	2	3	4	3	1
Minnesota	32	64	36	22	22	4	2	4	1	1	5
Mississippi	-	4	-	-	1	-	-	-	-	-	-
Missouri	2	3	1	2	-	-	-	4	-	-	-
Montana	3	5	2	-	-	-	-	2	1	-	-
Nebraska	-	-	-	2	-	-	-	-	-	-	-
Nevada	-	-	-	-	-	-	-	-	-	-	-
New Hampshire	-	1	-	1	-	-	-	-	-	-	-
New Jersey	10	2	-	2	-	-	1	1	-	3	-
New Mexico	2	-	-	1	1	-	-	-	-	-	-
New York	36	48	24	18	13	9	6	6	5	2	4
North Carolina	9	75	4	2	-	-	1	3	1	1	1
North Dakota	3	5	-	-	-	-	-	-	-	-	-
Ohio	14	13	10	3	1	1	-	1	2	3	2
Oklahoma	3	-	2	-	-	-	-	-	-	-	-
Oregon	6	45	15	9	1	3	2	1	2	1	1
Pennsylvania	15	22	30	9	25	27	6	5	-	2	1
Rhode Island	1	1	-	-	-	-	-	-	-	-	-
South Carolina	2	1	1	1	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-	1	-	-	-	-
Tennessee	3	23	7	4	3	8	6	1	1	2	4
Texas	13	33	6	2	4	-	23	-	17	1	8
Utah	1	2	7	1	-	1	3	1	2	-	2
Vermont	-	-	-	1	-	-	-	-	-	-	-
Virginia	10	18	10	4	-	-	1	-	-	1	1
Washington	9	25	5	1	1	2	2	-	-	-	2
West Virginia	-	-	-	-	-	-	1	-	1	-	-
Wisconsin	18	14	20	22	17	24	18	20	4	4	3
Wyoming	-	-	-	1	-	-	1	-	-	-	-
<b>TOTALS</b>	<b>333</b>	<b>568</b>	<b>278</b>	<b>158</b>	<b>147</b>	<b>113</b>	<b>102</b>	<b>79</b>	<b>76</b>	<b>53</b>	<b>61</b>

Source Annual supplements, NOVS and CDC

**TABLE 2**  
**SOURCE OF INFECTION IN 942 HUMAN PSITTACOSIS CASES**  
**UNITED STATES, 1955 – 1965**

YEAR	PARAKEETS	TURKEYS	CHICKENS	DUCKS	PIGEONS	OTHER	TOTAL
1955	129	3	5	–	–	5	142
1956	128	71	20	21	–	10	250
1957	117	1	2	–	8	4	132
1958	52	24	4	–	–	4	84
1959	58	5	7	–	6	5	81
1960	26	1	2	–	3	2	34
1961	33	27	3	–	1	5	69
1962	27	2	2	–	3	4	38
1963	15	–	–	1	9	3	28
1964	17	1	–	–	10	8	36
1965	23	4	4	–	5	12*	48
<b>TOTAL</b>	<b>625</b>	<b>139</b>	<b>49</b>	<b>22</b>	<b>45</b>	<b>62</b>	<b>942</b>

\*Includes: 8 No known bird contact – 3 Finch – 1 Laboratory exposure.

**TABLE 3**  
**EXPOSURE CATEGORIES IN 962 HUMAN PSITTACOSIS CASES**  
**UNITED STATES, 1955 – 1965**

YEAR	PET BIRD BREEDER	PET BIRD DEALER	PET BIRD OWNER	POULTRY PROCESSOR	OTHER	TOTAL
1955	6	27	96	6	7	142
1956	9	9	111	96	28	253
1957	8	12	73	–	47	140
1958	1	3	25	21	35	85
1959	3	5	17	4	38	67
1960	–	1	25	1	13	40
1961	1	2	21	27	23	74
1962	2	–	9	3	32	46
1963	–	3	22	–	6	31
1964	5	4	13	–	14	36
1965	3	2	15	7	21	48
<b>TOTAL</b>	<b>38</b>	<b>68</b>	<b>427</b>	<b>165</b>	<b>264</b>	<b>962</b>

TABLE 4

## HUMAN PSITTACOSIS CASES - UNITED STATES 1965

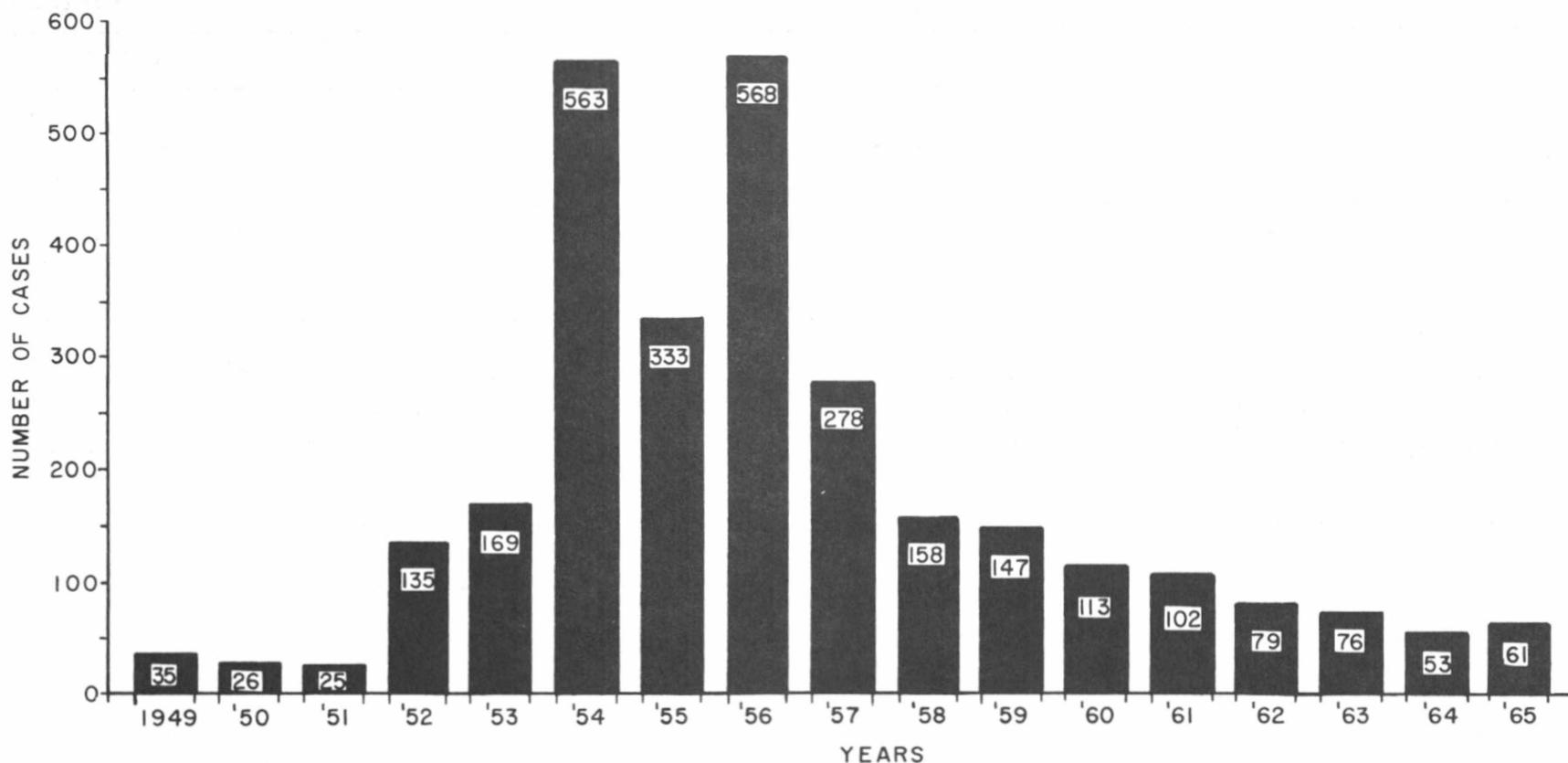
## AVAILABLE DATA ON SOURCES OF INFECTION AND EXPOSURE CATEGORIES

EXPOSURE CATEGORIES	SOURCE OF INFECTION							TOTALS
	PARAKEETS	OTHER PET BIRDS	CHICKENS	TURKEYS	DOMESTIC PIGEONS	DUCKS	WILD BIRDS	
PET BIRD BREEDERS	3							3
PET BIRD DEALERS	2							2
PET BIRD OWNERS	12	3						15
POULTRY PROCESSORS			2	4	1			7
OTHER	3		2				5	10
NOT SPECIFIED	3						8	11
<b>TOTALS</b>	<b>23</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>1</b>		<b>5*</b>	<b>48</b>

\*Includes 4 wild pigeons and 1 unknown wild bird

SOURCE: Epidemiological reports submitted by States to Communicable Disease Center

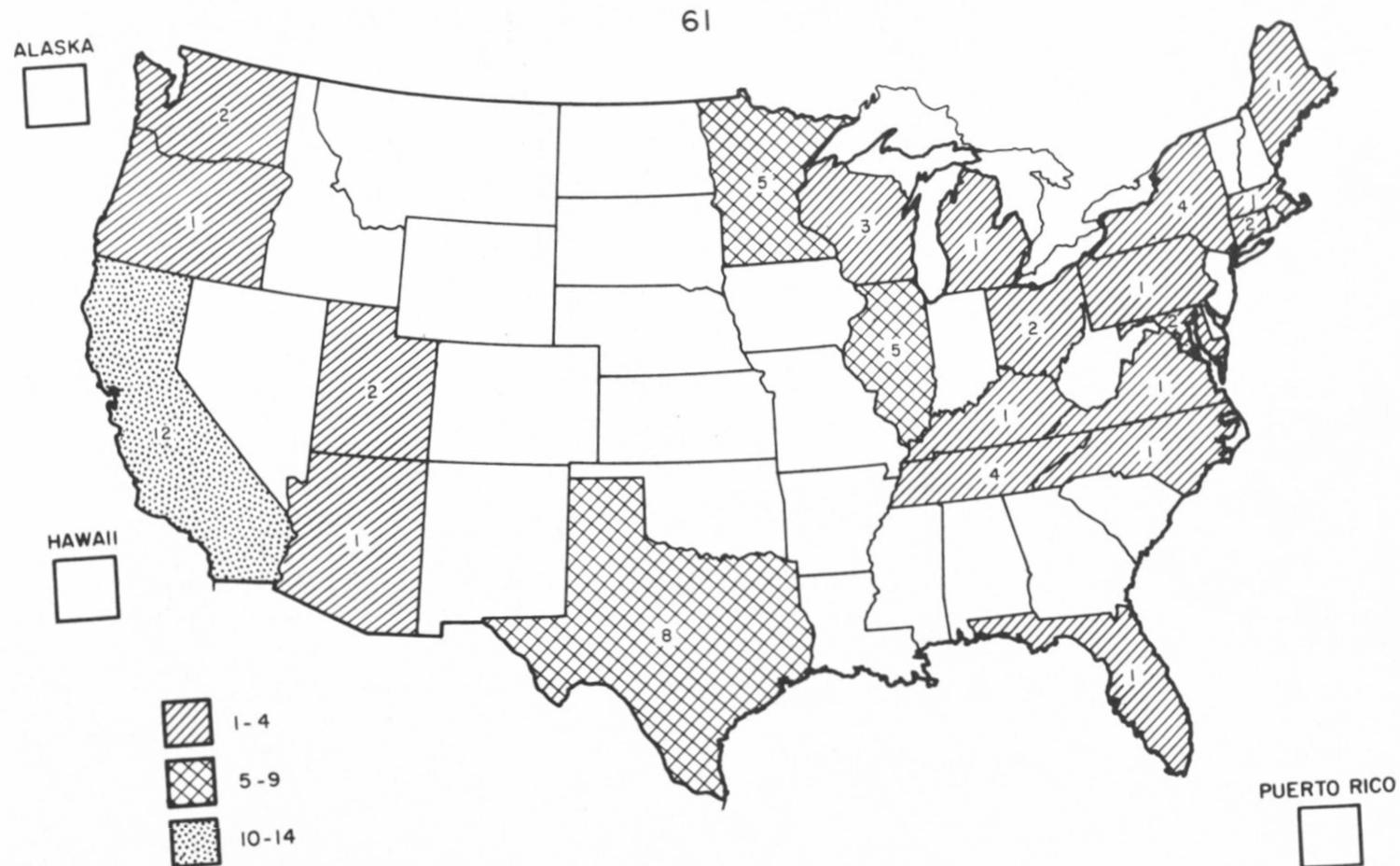
*Figure 1*  
REPORTED HUMAN PSITTACOSIS CASES  
1949-1965



SOURCE: NOVS AND MMWR  
DHEW/PHS/CDC, ATLANTA, GA.

REVISED OCT. 1965

Figure 2  
REPORTED HUMAN PSITTACOSIS CASES - 1965



Key to all disease surveillance activities are the physicians who serve as State epidemiologists. They are responsible for collecting, interpreting, and transmitting data and epidemiological information from their individual States; their contributions to this report are gratefully acknowledged. In addition, valuable contributions to Zoonoses Surveillance reports are made by State Public Health Veterinarians; we are indebted to them for their valuable support.

STATE	STATE EPIDEMIOLOGIST	STATE PUBLIC HEALTH VETERINARIAN
Alabama	W. H. Y. Smith, MD	
Alaska	Thomas R. McGowan, MD	
Arizona	Philip M. Hotchkiss, DVM	*Philip M. Hotchkiss, DVM
Arkansas	Wm. L. Bunch, Jr., MD	Harvie R. Ellis, DVM
California	Philip K. Condit, MD	Ben Dean, DVM
Colorado	C. S. Mollohan, MD	Martin D. Baum, DVM
Connecticut	James C. Hart, MD	
Delaware	Floyd I. Hudson, MD	
District of Columbia	William E. Long, MD	
Florida	E. Charlton Prather, MD	George D. Coffee, DVM
Georgia	W. J. Murphy, MD	James B. Nichols, DVM
Hawaii	Ralph B. Berry, MD	John H. Richardson, DVM
Idaho	John A. Mather, MD	John M. Gooch, DVM
Illinois	Norman J. Rose, MD	
Indiana	A. L. Marshall, Jr., MD	Paul R. Schnurrenberger, DVM
Iowa	Ralph H. Heeren, MD	Dan Schlosser, DVM
Kansas	Don E. Wilcox, MD	S. L. Hendricks, DVM
Kentucky	Calixto Hernandez, MD	George A. Mullen, DVM
Louisiana	John Trautman, MD	Joseph W. Skaggs, DVM
Maine	Dean Fisher, MD	Charles T. Caraway, DVM
Maryland	John H. Janney, MD	
Massachusetts	Nicholas J. Fiumara, MD	
Michigan	George H. Agate, MD	Kenneth L. Crawford, DVM
Minnesota	D. S. Fleming, MD	Julian M. Karasoff, DVM
Mississippi	Durward L. Blakey, MD	Donald B. Coohan, DVM
Missouri	E. A. Belden, MD	
Montana	Mary E. Soules, MD	Edmund R. Price, DVM
Nebraska	E. A. Rogers, MD	
Nevada	B. A. Winne, MD	
New Hampshire	William Prince, MD	Oscar Sussman, DVM
New Jersey	W. J. Dougherty, MD	Donald J. Dean, DVM
New York State	Julia L. Freitag, MD	Jeroham Asedo, DVM
New York City	Harold T. Fuerst, MD	
New Mexico	Kathleen Hawkins, MD	
North Carolina	Martin P. Hines, MD	Jack H. Russell, DVM
North Dakota	Mr. Kenneth Mosser	
Ohio	Calvin B. Spencer, MD	Monroe Holmes, DVM
Oklahoma	R. Leroy Carpenter, MD	Ernest J. Witte, VMD
Oregon	Edward L. Goldblatt, MD	Eduardo Toro, DVM
Pennsylvania	W. D. Schrack, Jr., MD	
Puerto Rico	Rafael A. Timothee, MD	Frank M. Lee, DVM
Rhode Island	James E. Bowes, MD	Luther E. Fredrickson, DVM
South Carolina	G. E. McDaniel, MD	A. B. Rich, DVM
South Dakota	G. J. Van Heuvelen, MD	D. Pomar, DVM
Tennessee	C. B. Tucker, MD	
Texas	Van C. Tipton, MD	Wayne H. Thompson, DVM
Utah	Robert Sherwood, MD	
Vermont	Linus J. Leavens, MD	
Virginia	James B. Kenley, MD	
Washington	E. A. Ager, MD	
West Virginia	L. A. Dickerson, MD	
Wisconsin	Josef Preizler, MD	
Wyoming	Robert Alberts, MD	

\*Dual assignment