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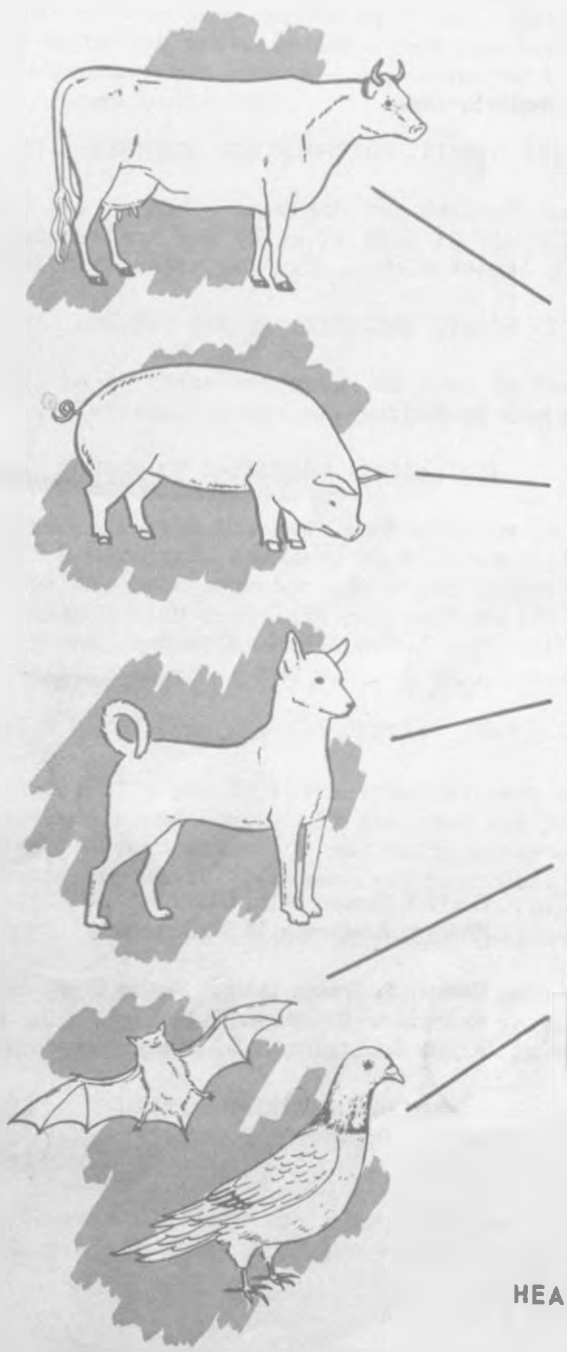
ANNUAL SUMMARY
PSITTACOSIS 1970

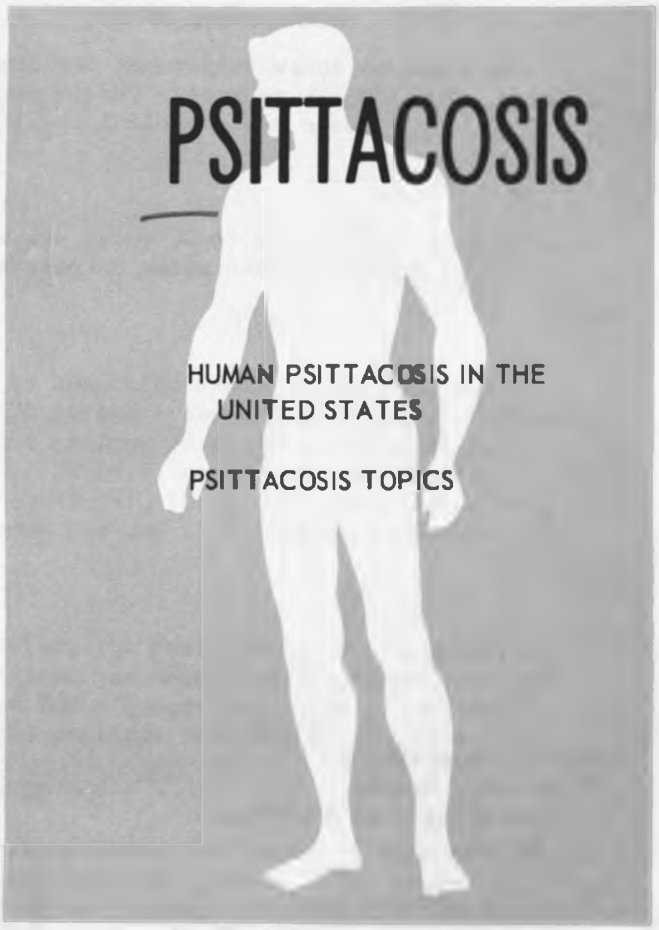
JUNE 1971

CENTER FOR DISEASE CONTROL

ZOONOSES

SURVEILLANCE





U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

PREFACE

Information summarized in this report is intended primarily for those responsible for disease control activities. Anyone desiring to quote this report should verify the data at the original source for accuracy and interpretation.

Contributions to the surveillance report are most welcome. Address:

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HUMAN PSITTACOSIS IN THE UNITED STATES

I. SUMMARY (Table I)

Sixteen states reported a total of 36 cases of human psittacosis with onsets in 1970, 23 less than were reported in 1969. In addition, three case reports were received on cases with onsets in 1969, increasing the 1969 case total from 56 to 59. Epidemiologic case reports were received on each of the 36 human cases by the Office of Veterinary Public Health Services, Center for Disease Control.

II. GEOGRAPHIC DISTRIBUTION (Table I)

New York and New York City reported the largest number of cases in 1970. California reported seven cases, and New York reported eight cases; together they accounted for 42 percent of the total cases. Of states reporting cases in 1969 and 1970, seven reported an increase over 1968, 13 recorded a decrease, and 2 reported the same number of cases. Cases were reported from five states that had no cases the previous year; six reported cases in 1970, but not in 1969. Eight states have not recorded any cases in the past 10 years, and 18 have not reported any cases since 1965.

III. TEMPORAL DISTRIBUTION (Figure 1)

Of the 35 cases in which the date of onset was known, more cases occurred in January and May (5 each) than in any other month. December was the only month in which no cases occurred. No seasonal peak of incidence was noted.

IV. AGE AND SEX DISTRIBUTION (Table II)

Of the 36 cases reported, 22 were in the age group 30-49 years (58.6 percent). Sex distribution was unremarkable; there were 20 males and 16 females.

V. SOURCE OF INFECTION (Table III)

Parakeets were the most probable source of infection in 10 of the 36 cases (27.8 percent), compared with 14 cases (24 percent) the previous year. Parrots were the most probable source of infection in four cases (11.1 percent) in 1970, compared with eight (14 percent) in 1969. In 1970 four cases were associated with pigeons, two with chickens, and none with turkeys. Three cases were associated with aviaries at zoos; two were in employees, and one was in a visitor to the aviary.

VI. MAJOR SYMPTOMS AND THERAPY (Table IV)

In the 33 cases in which symptoms were noted, the most frequent were fever, pneumonia, and cough. In one case the patient was asymptomatic, and her illness was detected while she was being examined for a concurrent illness. Of the 31 cases for which treatment was reported, 24 patients received tetracycline.

VII. IMPORT OF PSITTACINE BIRDS (Figure 2)

During 1970, approximately 215,000 psittacine birds were imported into the United States through U. S. Public Health Service treatment centers. The number imported per month varied greatly from 7,000 in June to 39,000 in November.

VIII. SELECTED CASE REPORTS

CALIFORNIA

A 46-year-old California man had onset of illness on March 25, 1970. Symptoms and clinical findings included severe headache, profuse diaphoresis, fever to 102°F.,

arthralgia, cough, and pleuritic chest pain. Signs of pneumonitis and pleural effusion were noted on chest X-ray. Serologic tests for psittacosis showed a rising CF titer, from 1:8 on March 28 to 1:256 on April 13. Tests for influenza A and B, adenoviruses, Q fever, and Mycoplasma pneumoniae were negative. The patient was treated with penicillin and tetracycline and had a gradual recovery.

The man is a roofer and had had contact with pigeon droppings and dead feral pigeons on the roofs of buildings in San Francisco about 2 weeks prior to the onset of his symptoms. He and his wife also own about 600 pigeons that are intended for the commercial poultry market. They did not own or have contact with psittacine birds. The wife had not been ill but had a CF titer of 1:16 for psittacosis, indicating exposure to this group of agents at some time.

Two squabs from the patient's flock appeared listless and ill. These birds, along with six apparently healthy young squabs, were obtained for testing by the Viral and Rickettsial Disease Laboratory, California State Department of Public Health. At necropsy, the two sick squabs and one of the others were found to have either conjunctivitis, enlarged spleens, pericarditis, or air sac abnormalities. Impression smears of the air sacs, spleens, and pericardial sacs, and histopathological examination of fixed tissues revealed elementary bodies and pathologic changes suggestive of ornithosis. Tissues from these birds were also positive for ornithosis by indirect fluorescent antibody tests. Intraperitoneal inoculation of tissue specimens into young mice resulted in illness, ascites, and evidence of ornithosis in the mice at 1 to 2 weeks by histopathological and fluorescent antibody staining methods.

Eight other young pigeons from the flock were also examined at the California Department of Agriculture laboratory. Necropsy findings included mild to moderate caseopurulent air sacculitis in six and splenomegaly in five; two had dried feces around the vent.

Smears made from the air sacs and stained with Macchiavello stain revealed elementary bodies suggestive of those seen in ornithosis; however, Mycoplasma synoviae was isolated from the air sacs, and it can be confused with the elementary bodies of ornithosis on stained smears.

Serum samples from these eight birds were tested for complement fixing antibody at the National Animal Disease Laboratory, Ames, Iowa. The CF antigen was prepared with a strain of Chlamydia originally isolated from a pigeon at the California Department of Agriculture laboratory. Two of the serum samples had a titer of 1:512, one a titer of 1:64, and one a titer of 1:8; the other four were negative.

The entire pigeon flock was treated with chlortetracycline for 45 days, and the premises disinfected in an attempt to eliminate the disease.

Although the exact source of the patient's infection was difficult to determine, since he had been exposed to both wild and domestic pigeons, it appeared likely that he acquired the disease from his own flock (1).

NEW YORK CITY

In September 1970, the New York City Health Department reported a case of psittacosis in a 30-year-old woman who lives in the Bronx.

On January 10, 1970, the woman experienced shaking chills, malaise, and fever. Despite treatment by a local physician with erythromycin, her temperature spiked to 105° F. She was admitted to the hospital on January 14. She was toxic and complained of chest pains, rales were audible over both lung fields, and X-ray revealed bilateral basilar pulmonary infiltration. Her white cell count was 12,000 per cubic mm.

On questioning, the patient (No. 1) stated that on December 29, 1969, 13 days before onset of her illness, she had purchased a parrot. On the basis of this history, a clinical diagnosis of psittacosis was made, and the patient was treated with tetracycline. Blood drawn from the patient on January 16 was negative for psittacosis at a dilution of 1:4; a second serum sample drawn on January 23 had a CF titer of 1:128. The greater than four-fold rise in titer over this period confirmed the clinical diagnosis of acute psittacosis infection.

Further investigation revealed that when the patient went to the hospital, she left the parrot at the home of a neighbor. The neighbor noticed that the bird had diarrhea; it died on January 24. The neighbor reported that she had sudden onset of chills, fever, and non-productive cough on January 26, 2 weeks after she took the parrot. On January 27, she was admitted to the hospital with chest pains in the right side; her temperature on admission was 102° F. Rales were audible over the right lung field, and chest X-ray showed infiltration. Her white count was 14,700. Since the patient (No. 2) became asymptomatic and the pulmonary infiltration cleared in response to a therapeutic course of penicillin alone, physicians concluded that pneumonia had been caused by a bacterial agent and not by the psittacosis agent. Neither the patient's husband nor her four children became ill, although they were exposed to the sick parrot. Chlamydia psittaci was not isolated from the sick parrot postmortem.

An investigation was undertaken to determine where the parrot had come from and whether other birds in the shipment had been ill. The parrot had originated at an approved treatment center in South America, where birds destined for the United States are treated with tetracycline for 45 days. The birds arrived at the wholesale importer in one of three shipments: 60 parrots arrived on November 14, 1969, and two shipments, including conures, parrots, and jays, arrived on December 6. About 50 dead birds were found among the 1,000 received on December 6. A New York City Health Department veterinarian examined 16 of the birds postmortem and found evidence of suffocation. Eight additional birds were sacrificed and examined, but no evidence of current infection was found.

In addition to the birds received in November and December 1969 from South America, the importer had also received birds from Africa, California, and Texas. All birds were separated by species and kept in cages in an area of 10,000 square feet on one floor of the establishment. However, various species of birds were mixed to fill orders for individual pet shops. Chlortetracycline-treated imported birds were exposed to other imported birds, as well as to birds raised domestically, at the wholesale establishment, where cross infection could have occurred.

The incubation period of 13 days after purchase of the parrot suggests that patient No. 1 contracted her serologically-proved illness from the bird, although Chlamydia psittaci was not isolated. A serum sample drawn from patient No. 2 on February 10 was negative for psittacosis at a dilution of 1:4. This finding 14 days after onset of illness was consistent with the clinical diagnosis of pneumonia not caused by the psittacosis agent.

Officials of the New York City Health Department felt it was noteworthy that no other cases of human psittacosis were reported in New York City in the 4-month period after this case occurred (2).

PSITTACOSIS TOPICS

I. PSITTACOSIS IN THE NETHERLANDS, 1970

Dr. Chris J. Vermeulen, Veterinary Officer of Public Health, Netherlands, has furnished us information on 19 human cases of psittacosis that occurred in the Netherlands in 1970. The possible source of infection in the cases was parakeets

for eight patients, parrots for three patients, carrier pigeon for two patients, canaries for two patients, other caged birds for two patients, and unknown for two patients. The age and sex distribution of the 19 cases is given below:

	Male	Female	Total
0-20 years	0	0	0
20-29 years	1	1	2
30-39 years	4	0	4
40-49 years	1	2	3
50-59 years	2	1	3
60 years	6	1	7
TOTAL	14	5	19

Due to the threat of poultry diseases including Newcastle disease, a prohibition on the importation of parrots and parrot-like birds has been issued.

II. PSITTACOSIS IN ENGLAND AND WALES

We have received the following information from Dr. J. R. H. Berrie, Senior Medical Officer, Department of Health and Social Security, United Kingdom. Psittacosis in man is not statutorily notifiable in England and Wales. Information on the incidence is obtained from the results of laboratory tests conducted on paired sera by the Public Health Laboratory Service. A rise of at least fourfold in antibody titer to the psittacosis/ornithosis group of viruses is accepted as evidence of psittacosis. The following table shows the number of cases which have been recorded for the period 1963-1970.

Year	Cases
1963	23
1964	29
1965	48
1966	41
1967	66
1968	57
1969	62
1970	52

On November 1, 1966, the Parrots and Miscellaneous Birds (Prohibition) Order, 1953, which forbade the importation of psittacine birds into Great Britain, except in special circumstances, was revoked, and there has since been evidence of an increase in the importation of exotic birds. The average annual number of reported cases of human psittacosis for the period 1963-1966 (i.e. until shortly after the revocation of the Order) was 35; whereas the average for 1967-1970 was 59, an increase of 69 percent. However, the proportion of these infections acquired by contact with imported psittacine birds was not determined since epidemiological information was incomplete.

References:

1. Center for Disease Control: Veterinary Public Health Notes, Sept 1970
2. Center for Disease Control: Veterinary Public Health Notes, Jan 1971

TABLE I – HUMAN PSITTACOSIS, UNITED STATES, 1961-1970*

STATE	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970*	T
Alabama	0	0	0	0	0	0	0	0	1	0	
Alaska	0	1	0	0	0	0	0	0	0	0	
Arizona	0	1	1	0	1	0	0	1	0	0	
Arkansas	0	0	0	1	0	0	0	0	0	1	
California	10	10	14	14	12	6	2	9	15	7	
Colorado	0	2	0	0	0	0	0	0	0	0	
Connecticut	2	6	3	0	2	1	2	3	6	1	
Delaware	1	0	0	0	0	0	0	0	0	0	
Dist. of Col.	0	0	0	0	0	0	0	0	0	0	
Florida	0	0	0	1	1	0	1	0	2	0	
Georgia	2	0	3	4	0	0	0	1	1	1	
Hawaii	0	0	0	0	0	0	0	0	0	0	
Idaho	1	0	0	0	0	0	0	0	0	0	
Illinois	7	4	11	6	5	1	0	1	0	0	
Indiana	0	1	0	0	0	0	0	0	0	1	
Iowa	0	0	0	1	0	0	1	0	0	0	
Kansas	0	0	0	0	0	1	1	0	0	1	
Kentucky	0	0	1	0	1	0	0	0	0	0	
Louisiana	0	0	0	0	0	0	1	0	4	0	
Maine	0	0	0	0	1	0	0	0	0	0	
Maryland	0	1	0	0	2	0	0	0	5	2	
Massachusetts	3	1	2	2	1	4	5	1	0	0	
Michigan	2	3	4	3	1	0	1	6	1	3	
Minnesota	2	4	1	1	5	3	2	0	4	1	
Mississippi	0	0	0	0	0	0	0	0	0	0	
Missouri	0	4	0	0	0	0	0	0	0	0	
Montana	0	2	1	0	0	0	2	0	0	0	
Nebraska	0	0	0	0	0	0	0	0	0	0	
Nevada	0	0	0	0	0	0	0	0	0	0	
New Hampshire	0	0	0	0	0	1	1	0	0	0	
New Jersey	1	1	0	3	0	1	0	1	0	2	
New Mexico	0	0	0	0	0	0	0	1	1	0	
New York	6	6	5	2	4	1	3	6	4	8	
North Carolina	1	3	1	1	1	1	0	1	1	1	
North Dakota	0	0	0	0	0	0	0	0	0	0	
Ohio	0	1	2	3	2	1	1	3	4	1	
Oklahoma	0	0	0	0	0	0	1	0	0	0	
Oregon	2	1	2	1	1	1	0	0	1	0	
Pennsylvania	6	5	0	2	1	4	3	1	5	1	
Rhode Island	0	0	0	0	0	0	0	0	0	0	
South Carolina	0	0	0	0	0	0	0	0	0	0	
South Dakota	1	0	0	0	0	0	0	0	0	0	
Tennessee	6	1	1	2	4	3	3	2	0	0	
Texas	23	0	17	1	8	12	9	6	0	3	
Utah	3	1	2	0	2	0	0	0	0	0	
Vermont	0	0	0	0	0	0	0	0	0	0	
Virginia	1	0	0	1	1	2	0	0	0	0	
Washington	2	0	0	0	2	1	1	0	1	0	
West Virginia	1	0	1	0	0	0	0	1	0	0	
Wisconsin	18	20	4	4	3	6	1	1	3	2	
Wyoming	0	1	0	0	0	0	0	0	0	0	
Totals	102	79	76	53	61	50	41	45	59	36	6
Puerto Rico											

*Provisional Data

Source: Case reports submitted to CDC, Morbidity and Mortality Weekly Report

TABLE II

36 CASES OF HUMAN PSITTACOSIS BY AGE AND SEX DISTRIBUTION, UNITED STATES, 1970*

AGE (Years)	SEX MALE	FEMALE	TOTAL	PERCENT OF TOTAL
0-9	0	1	1	2.8
10-19	2	0	2	5.6
20-29	0	2	2	5.6
30-39	7	3	10	28.0
40-49	6	5	11	30.6
50-59	3	1	4	11.1
60-69	1	1	2	5.6
70+	1	2	3	8.3
Unknown	10	1	1	2.8
Total	20	16	36	100.4
Percent of Total	55.5	44.4	99.9	

Source: Case reports submitted to CDC

* Provisional Data

TABLE III

36 CASES OF HUMAN PSITTACOSIS BY MOST PROBABLE SOURCE OF INFECTION AND EXPOSURE CLASSIFICATION, UNITED STATES, 1970 *

Exposure Classification	MOST PROBABLE SOURCE OF INFECTION: Parakeet	Pigeon	Canary	Parrot	Chicken	Turkey	Birds, Variety or unspecified	Cockatiel	Lovebird	Unknown or No Known Exposure	Total	Percent of Total
Pet Bird Owner	9	1		2			3	1			16	44.4
Pet Bird Dealer							2				2	5.6
Pet Bird Breeder	1	1									2	5.6
Poultry Related		1			2						3	8.3
Other		1		2			5				8	22.2
Unknown										5	5	13.9
TOTAL	10	4	0	4	2	0	10	1	0	5	36	100.0
Percent of Total	27.8	11.1	0	11.1	5.6	0	27.8	2.8	0	13.9	100.1	

* Provisional Date

Source: Case reports submitted to CDC

TABLE IV

MAJOR SYMPTOMS OF 32* CASES OF HUMAN PSITTACOSIS, UNITED STATES, 1970**

Symptom	Number	Percent of Total
Fever	26	81.3
Pneumonia	23	71.9
Cough	19	39.4
Lethargy-Malaise	10	31.3
Chills	9	28.1
Headache	10	31.3
Chest pain	10	31.3
Anorexia	6	18.6
Sweating	6	18.6

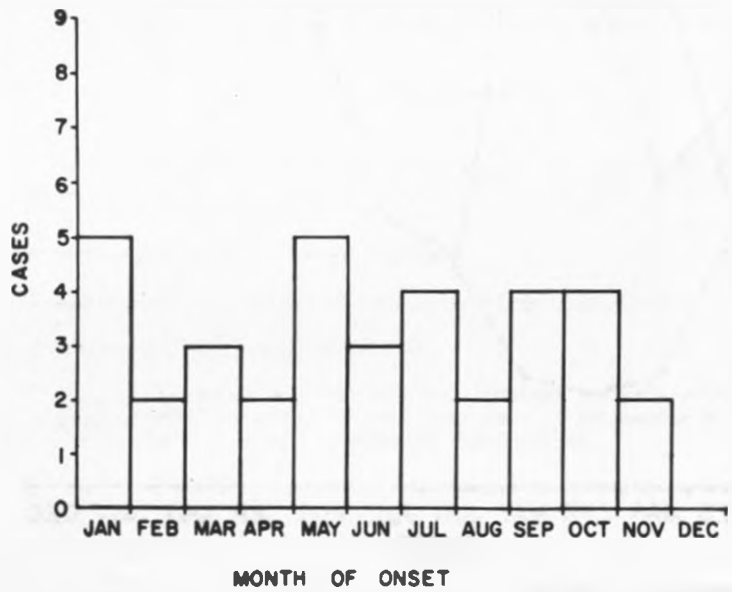
* 32 reports received in which symptoms were noted of 36 cases reported.

** Provisional Data

Source: Case reports submitted to CDC

FIGURE 1

CASES OF HUMAN PSITTACOSIS, BY MONTH OF ONSET, UNITED STATES, 1970*

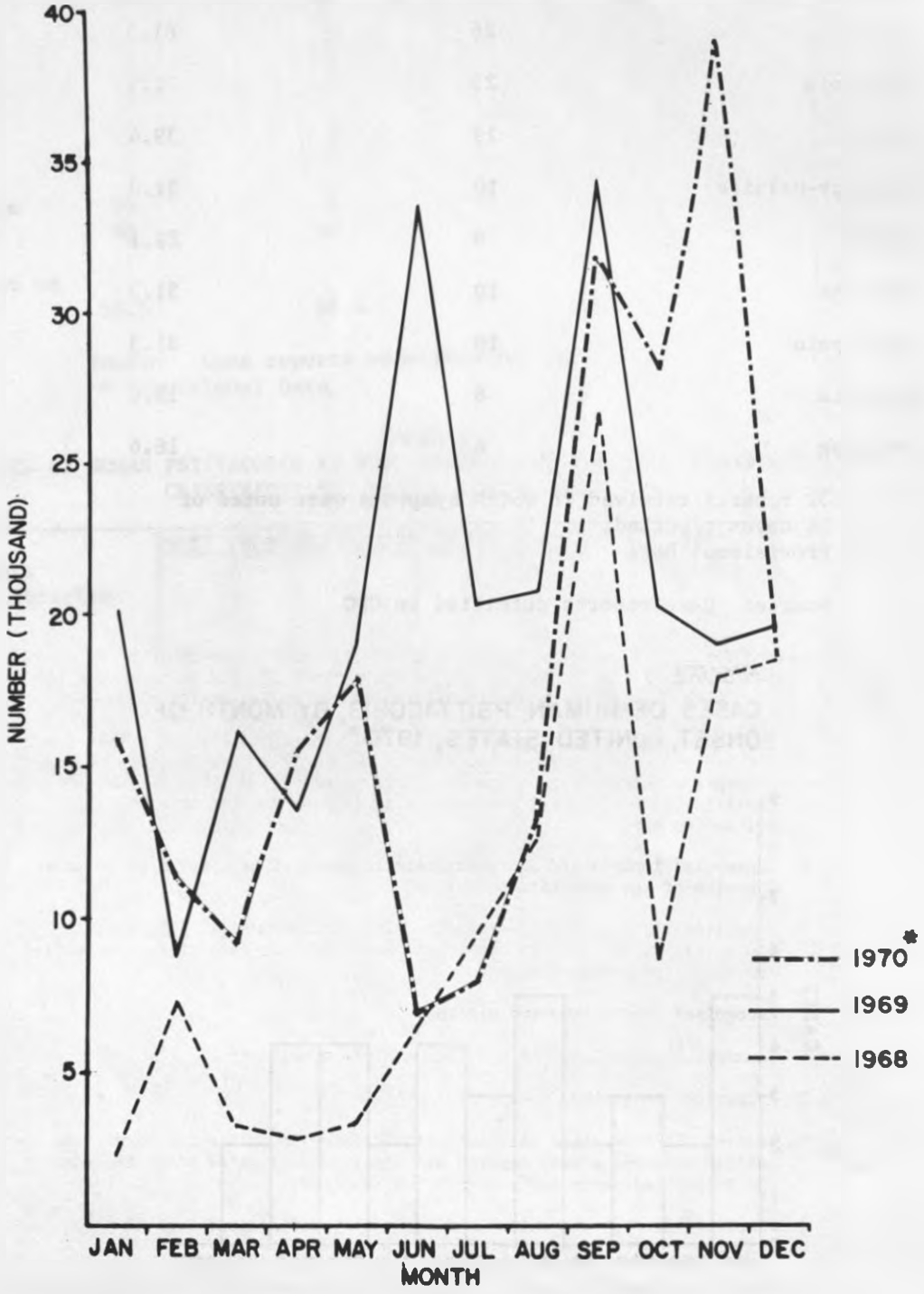


*PROVISIONAL DATA

SOURCE: CASE REPORTS SUBMITTED TO CDC

FIGURE 2

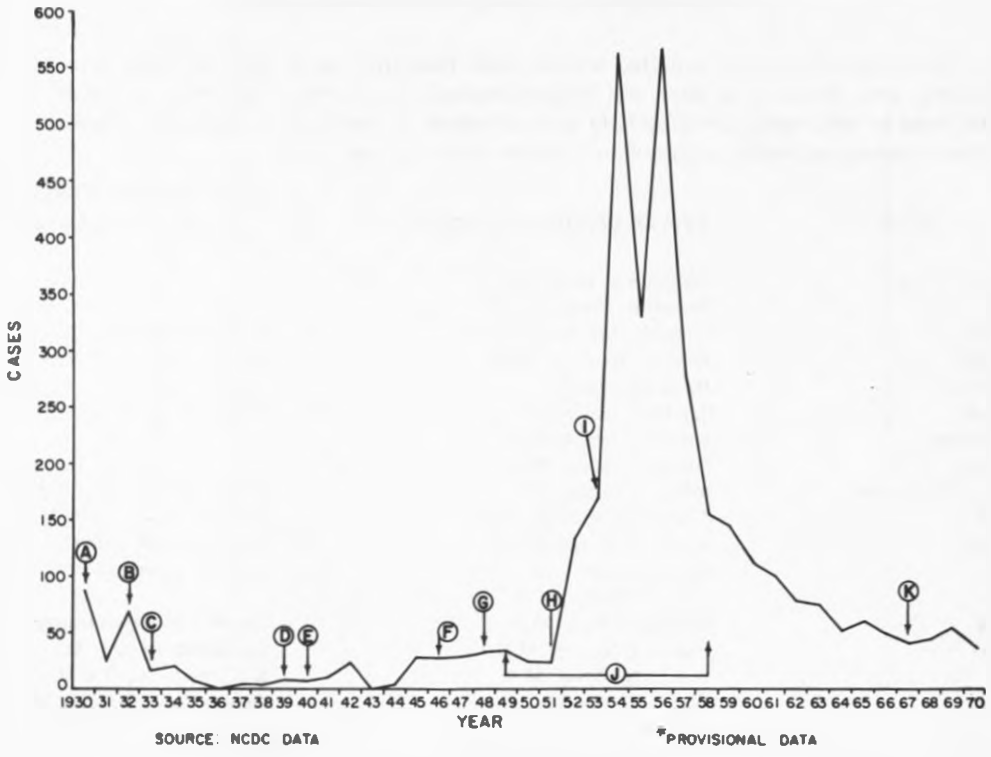
PSITTACINE BIRDS IMPORTED FROM PUBLIC HEALTH SERVICE APPROVED TREATMENT CENTERS



*PROVISIONAL DATA

SOURCE: FOREIGN QUARANTINE PROGRAM, CDC

Figure 3 REPORTED CASES OF HUMAN PSITTACOSIS, 1929 - 1970



Legend for Figure 3 — REPORTED CASES OF HUMAN PSITTACOSIS, QUARANTINE REGULATIONS, AND RECOGNITION OF DISEASE IN AVIAN SPECIES OTHER THAN PSITTACINES IN THE UNITED STATES, 1929-1970.

A Public Health Service restrictions placed on the importation of parrots.

B Interstate shipment of psittacine birds prohibited without health certificate; Public Health Service restrictions applied to all psittacine birds.

C Commercial importation and interstate shipment of psittacine birds under 8 months of age prohibited.

D Permitted importation of psittacine birds for commercial purposes, zoological parks, and scientific studies; required laboratory examination for birds for commercial use.

E Recognized in chickens and pigeons.

F Commercial importation of psittacine birds prohibited.

G Recognized in turkeys and ducks.

H Removed all interstate shipment restrictions for psittacine birds from psittacosis-free areas; removed age limit on psittacine birds imported for zoological parks and research institutions.

I Clarified foreign quarantine regulations by defining zoological parks and disposing of excluded birds.

J Many human cases recognized as acquired from commercial poultry.

K Commercial importation of psittacine birds allowed from Public Health Service approved treatment centers after 45 days chlortetracycline medication.

STATE EPIDEMIOLOGISTS
STATE PUBLIC HEALTH VETERINARIANS

Key to all disease surveillance activities are the State Epidemiologists, who 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.

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*Dual assignment