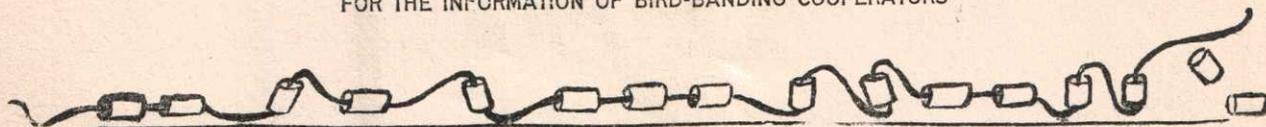


BIRD BANDING NOTES

ISSUED BY THE BUREAU OF BIOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF AGRICULTURE
FOR THE INFORMATION OF BIRD-BANDING COOPERATORS



Vol. 2

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No. 13

"Watch for Series Designations on Your Bands"
(Series letters now include A, B, C, F, L, 34, 35, and 36)

GENERAL INFORMATION TO COOPERATORS

Bird Banding Notes, vol. 2, no. 12, was merely a memorandum to cooperators and was necessarily brief. As stated therein, the fiscal year 1935, which ended on June 30, was one of unusual activity, and since the Notes of September 1934, were issued a great quantity of material has accumulated, much of which cannot be used at present because it is necessary to include in this number the report of work done during the last fiscal year. The inventive genius of many cooperators has been particularly active; and, were it possible to do so, this entire number might be filled with accounts of the different traps and other devices that have been developed for the further advancement of this means of investigation. As soon as time permits, it is planned to revise the Manual for Bird Banders and give detailed attention to new equipment.

During the year several matters have come up which it seems desirable to bring to the attention of station operators, despite the fact that most of them have been mentioned at one time or another in these circulars.

Wildlife Research Division.--The reorganization of the Division of Wildlife Research has been completed and it will be of interest to bird-banding cooperators to know the new alignment, which is as follows:

Chief of Division--Dr. W. B. Bell.

Assistant Chief of Division--Ira N. Gabrielson.

Section of Distribution and Migration of Birds--Frederick C. Lincoln, in Charge.

Section of Food Habits--Clarence Cottam, In Charge.

Section of Disease Control--Dr. J. E. Shillinger, In Charge.

Section of Fur Resources--Frank G. Ashbrook, In Charge.

Section of Mammalogy--Dr. H. H. T. Jackson, In Charge.

Certain functions of the Division, such as the Alaskan investigations with reindeer and muskoxen, cooperative work in wildlife management with State universities and agricultural colleges, and research in forest wildlife relations, are under the immediate supervision of the Chief and Assistant Chief of the Division.

NOTE.--"BIRD BANDING NOTES" is not for general distribution, but anyone using in a published paper any of the information contained in it will be expected to give credit to the person named and to the Bureau.

Reporting Return Records.--Return records should not be indicated on schedules. Occasionally a schedule will be received carrying notes relative to returns which are then transferred to cards in the Washington office, only to find later that the cooperator had already prepared and sent in cards for those particular birds. This results in loss of valuable time, both at the banding station and in the Survey office.

Also, return cards should not be made out and sent in from the stations for those return records that are reported to the stations from the Washington office. At the time such records are received in Washington a card is prepared, so it is useless duplication for the station to prepare another card.

In case a banded bird is recaptured and the band is damaged or so badly worn that it must be changed, the record should still be reported under the original date of banding, not the date of changing of the band which becomes the date of a repeat or a return record. In other words, the original date of banding is continued throughout the history of each particular bird, regardless of the number of different bands that it may carry during its lifetime.

Banding in Canada.--Canadian cooperators transmit their records through the office of Commissioner J. B. Harkin, National Parks of Canada, Department of the Interior, Ottawa, Ontario. Any cooperators from the United States planning work in Canada should apply to Mr. Harkin for the proper permit, and schedules containing records of birds banded in Canada should be sent to his office. They will then be forwarded to the Biological Survey.

Exact Date of Banding Necessary.--The exact day each bird is banded should be recorded. Occasionally schedules are received for a series of birds of some particular species, the comments showing only that the birds were banded between certain inclusive dates, which in some cases are two months or more apart. Such data are not satisfactory.

Who Had Band No. 34-602217?--A return record has been received for band no. 34-602217, which through an error in the Washington office has not been recorded in the issue index. All station operators should examine their records, and the station responsible for this banding should advise the Bureau of the complete series of bands in this set that it has used.

Check Band Shipments.--When a shipment of bands is received, the actual numbers on the bands should be compared with the numbers on the label or box, and if an error is found it should be reported promptly. In issuing large quantities of bands it seems impossible to eliminate all errors and if not detected these may result in unfortunate confusion. (See Bird Banding Notes, vol. 2, no. 9, page 126).

Banding of Fledglings.--Many of the cooperators who have been in the work for the last 10 or 15 years will remember that from the beginning the Biological Survey has discouraged the banding of fledgling birds other than those of the colonial species. Even with these birds great care must be exercised as there is real danger of causing severe loss. This is particularly true of young herons and other tree-nesting birds, which in the excitement of banding may leave their nests and never get back. Nestling birds of the perching group should never be banded except on the immediate grounds of the banding station.

Special Studies at Banding Stations.--Dr. Harold B. Wood, of Harrisburg, Pa., suggests that it would be worth while to publish in Bird Banding Notes a list of the stations that are conducting special investigations so that other stations engaged in similar lines of work could establish contact with them. The Bureau will be glad to publish such a list in a future number of Bird Banding Notes if the stations interested will supply the necessary information. A brief note setting forth the nature of the investigation, object, and methods will be sufficient.

Hawks and Owls.--Warren F. Eaton, of Upper Montclair, N. J., who is in charge of the campaign for the protection of hawks and owls of the National Association of Audubon Societies, requests that all cooperators interested in these birds be urged to make special efforts to band them. It is his hope that if enough great horned owls can be banded, definite information concerning their distribution and feeding ranges will be obtained. He suggests that it would be very much worth while to have large scale banding done on some of the game preserves where these birds are trapped and killed. At many game preserves the atrocious pole-trap is used for the capture of these birds, and it is believed that with a little tact and diplomacy on the part of cooperators the refuge keepers might be induced to change to the foot-hold type of trap developed by Vernon Bailey and described further on in this issue. Banding these birds is very much worth while as they have already yielded some return records of unusual interest. Here is a problem that all station operators should be interested in.

WORK DURING THE YEAR

For the first time since bird banding has been a regular activity of the Biological Survey, the total number of birds banded has fallen below that of the preceding year. The decrease is not serious and probably is accounted for by two important causes: First, it is quite evident that the great drought has had its effect on large numbers of birds in addition to the migratory waterfowl; and, second, the curtailment of additional banding permits has prevented the normal expansion that is so desirable.

As evidence of the effect of the great drought, the Bureau has received many reports from banding stations in the central part of the country indicating the general scarcity of small birds. For example, Miss Louise J. Miller, of Zion, Ill., reported a general decrease in sparrows. In fact, she states that she banded less during the fall of 1934 than during any similar season since she has been operating. From the station of A. A. Misk, of Brainard, Nebr., comes a similar report. By way of illustration he states that one evening while he was watering some tomato plants in his garden a bronzed grackle came down and drank water out of puddles right in front of the hose, showing no fear of him. In fact, Mr. Misk reports that the bird seemed to try to get into the spray. The bird was so tame that Mr. Misk finally captured it by hand. He states that the loss of song birds in his vicinity was heavy last summer as ponds and streams dried up. He found quite a number of dead birds and noticed young that had died in their nests.

The concentration that under such conditions takes place in the vicinity of stations where food, water, and cover are available is illustrated by the unusual abundance of birds reported by Frederick C. Labahn, Jr., of Blue Island, Ill. Mr. Labahn did, however, note also a decreased number of white-throated sparrows during the fall migration.

Corrections.--Before taking up the details of the work of the last fiscal year it is appropriate to make some corrections that occurred in the tabulation of work done during the fiscal year 1934. The Biological Survey appreciates having had these called to attention.

The total number of birds banded during the fiscal year 1934 by Nion R. Tucker, of San Francisco, Calif., should have been 3,999 instead of 3,758; W. I. Lyon, of Waukegan, Ill., banded 8,057 birds instead of 1,560; and Frederick C. Labahn, Jr., of Blue Island, Ill., banded 1,703 instead of 2,703. The names of Mrs. Frederick M. Cutler, of Amherst, Mass.; Mrs. Anna Margaret Smith, of San Anselmo, Calif.; Grant Henderson, of Greensburg, Ind.; Mrs. Francis V. Crane, of Needham, Mass.; and Wm. Davidson, of Silver Spring, Md., were all omitted from the list. The names of these five cooperators belonged in the group that banded between 500 and 800 birds. The name of Gustave Domitz, Jr., of Pequannock, N. J., also belonged in this group instead of the group having banded between 100 and 200. C. J. Goetz, of Cincinnati, Ohio, was listed in the 300 to 500 group, whereas he banded 4,015 birds. H. L. Hutchins, of Hamden, Conn., was listed as in the 200 to 300 class, whereas he was in the 300 to 500 class. The name of Floyd B. Chapman, of Columbus, Ohio, which was omitted, also belonged in this group.

There is one correction to be made that was not detected at any banding station, although it was hardly to be expected that any station operator would take the time to add up the total number of birds of the different species that were banded. When this is done, however, it gives the total number of birds banded during the fiscal year 1934, as 275,017 instead of 363,905 as reported on page 172 of Bird Banding Notes, vol. 2, no. 11. This, of course, changes the grand total of birds banded since 1920 in that tabulation to 1,656,626.

The number of cooperators has remained about the same, that is, between 1,900 and 2,000.

	1934	1935
Banded birds reported.....	275,017	249,829
Returns received.....	18,321	16,913
Grand total of birds banded since 1920.....	1,656,626	1,906,455
Grand total of returns since 1920.....	100,772	117,685

Birds Banded.--Following the usual practice, the following table lists the number of individuals of each species banded and reported during the fiscal year. The arrangement is that of the A.O.U. check list of 1910, this order still being used in the banding files. An asterisk (*) indicates a species new to the list of banded birds, of which 10 have been added during the year--Baird's cormorant, mute swan, pigmy owl, hybrid flicker, broad-tailed hummingbird, gray kingbird, crested mynah, Belding's sparrow, Bachman's warbler, and the short-billed gull.

All subspecies are included in the total for the species and the name used is that of the typical species; for example, the olive-backed thrush (H. locichla

ustulata swainsoni) does not appear in the list as this is a subspecies of the russet-backed thrush (Hylocichla ustulata ustulata), under which the olive-backed bird is grouped. In all such cases the English name is followed by the technical specific name and the word "group".

Holboell's grebe	2	Pintail	15,177
Horned grebe	1	Wood duck	435
Pied-billed grebe	8	Redhead	350
Red-throated loon	2	Canvasback	213
Atlantic puffin	17	Greater scaup	156
Black guillemot	171	Lesser scaup	1,299
Pigeon guillemot	2	Ring-necked duck	1,073
Atlantic murre	470	Golden-eye	3
Brunnich's murre	6	Bufflehead	84
Razor-billed auk	92	American eider	22
Dovekie	2	White-winged scoter	2
Glaucous-winged gull	195	Ruddy duck	15
Great black-backed gull	31	Snow goose	73
Western gull	478	Blue goose	53
Herring gull	9,974	White-fronted goose	1
California gull	300	Canada goose	302
Ring-billed gull	1,717	Whistling swan	1
*Short-billed gull	6	*Mute swan	1
Laughing gull	994	White ibis	27
Franklin gull	381	American bittern	23
Caspian tern	957	Least bittern	5
Royal tern	420	Great blue heron	445
Common tern	22,315	American egret	284
Arctic tern	391	Snowy egret	160
Roseate tern	3,891	Louisiana heron	125
Least tern	376	Little blue heron	426
Black tern	142	Green heron	64
Black skimmer	247	Black-crowned night heron	520
Leach's petrel	875	Yellow-crowned night heron	2
Anhinga	93	King rail	5
European cormorant	160	Clapper rail	1
Double-crested cormorant	370	Virginia rail	10
*Baird's cormorant	34	Sora	16
White pelican	649	Florida gallinule	57
Brown pelican	764	Coot	773
Red-breasted merganser	8	Wilson's phalarope	4
Hooded merganser	5	Avocet	2
Mallard	14,947	Black-necked stilt	1
Mallard x black duck	10	Woodcock	17
Black duck	4,037	Wilson's snipe	5
Gadwall	85	Dowitcher	35
Baldpate	689	Stilt sandpiper	21
Green-winged teal	2,307	Pectoral sandpiper	27
Blue-winged teal	973	White-rumped sandpiper	3
Cinnamon teal	42	Least sandpiper	392
Shoveler	75	Red-backed sandpiper	6

Semipalmated sandpiper	845	Spotted owl	1
Western sandpiper	101	Great horned owl	22
Sanderling	1	Snowy owl	17
Greater yellowlegs	43	Burrowing owl	146
Lesser yellowlegs	44	*Pigmy owl	1
Solitary sandpiper	21	Yellow-billed cuckoo	27
Willet	4	Black-billed cuckoo	14
Upland plover	5	Belted kingfisher	49
Spotted sandpiper	201	Hairy woodpecker (<u>villosus</u>	108
Killdeer	170	group)	
Semipalmated plover	34	Downy woodpecker (<u>pubescens</u>	449
Piping plover	37	group)	
Wilson's plover	7	Nuttall's woodpecker	5
Bobwhite	1,098	White-headed woodpecker	3
California quail	589	American three-toed woodpecker	1
Ruffed grouse	9	Yellow-bell ed sapsucker (<u>varius</u>	46
Prairie chicken	254	group)	
Ring-necked pheasant	69	Red-headed woodpecker	117
Hungarian partridge	26	Lewis's woodpecker	8
Mourning dove	1,897	Red-belled woodpecker	38
Ground dove	212	Flicker (<u>auratus</u> group)	856
Inca dove	1	*Hybrid flicker	1
White-winged dove	1	Red-shafted flicker	32
Chinese spotted dove	33	Chuck-will's widow	2
Turkey vulture	476	Whip-poor-will	1
Black vulture	361	Nighthawk	22
Marsh hawk	112	Texas nighthawk	2
Sharp-shinned hawk	21	Chimney swift	8,440
Cooper's hawk	30	White-throated swift	2
Goshawk	6	Ruby-throated hummingbird	8
Red-tailed hawk (<u>borealis</u>	28	*Broad-tailed hummingbird	2
group)		Arkansas kingbird	155
Red-shouldered hawk (<u>lineatus</u>	21	*Gray kingbird	1
group)		Kingbird	123
Broad-winged hawk	1	Crested flycatcher (<u>crinitus</u>	24
Swainson's hawk	14	group)	
Rough-legged hawk	2	Ash-throated flycatcher	1
Ferruginous rough-leg	25	(<u>cinerascens</u> group)	
Golden eagle	2	Phoebe	740
Bald eagle	3	Say's phoebe	35
Prairie falcon	8	Black phoebe	5
Duck hawk	2	Wood pewee	35
Pigeon hawk	4	Western wood pewee	3
Sparrow hawk	105	Yellow-bellied flycatcher	33
Osprey	107	Western flycatcher	5
Barn owl	67	Acadian flycatcher	13
Long-eared owl	24	Alder flycatcher	24
Short-eared owl	98	Least flycatcher	112
Barred owl	7	Horned lark (<u>alpestris</u> group)	225
Saw-whet owl	6	Magpie	33
Screech owl	115	Blue jay	2,736

Steller's jay (<u>stelleri</u> group)	49	Grasshopper sparrow	33
Florida jay	3	Leconte's sparrow	3
Woodhouse's jay	9	Sharp-tailed sparrow	1
California jay	82	Seaside sparrow	3
Canada jay (<u>canadensis</u> group)	12	Lark sparrow	10
Raven	8	Harris's sparrow	3,256
White-necked raven	2	White-crowned sparrow	4,141
Crow	227	(<u>leucophrys</u> group)	
Fish crow	269	Golden-crowned sparrow	960
Clarke's nutcracker	5	White-throated sparrow	11,102
Pinon jay	31	Tree sparrow	5,006
Starling	6,064	Chipping sparrow	2,675
*Crested mynah	2	Clay-colored sparrow	627
Bobolink	15	Field sparrow	974
Cowbird	1,755	Brewer's sparrow	2
Yellow-headed blackbird	139	White-winged junco	99
Red-winged blackbird	3,095	Junco (<u>hyemalis-oregonus</u>	15,486
Meadowlark	225	group)	
Western meadowlark	97	Red-backed junco (<u>phaeonotus</u>	372
Scott's oriole	1	group)	
Hooded oriole	42	Bell's sparrow	3
Orchard oriole	45	Pine-woods sparrow	5
Baltimore oriole	502	Song sparrow	7,563
Bullock's oriole	25	Lincoln's sparrow	2,115
Rusty blackbird	218	Swamp sparrow	624
Brewer's blackbird	362	Fox sparrow	1,661
Grackle (<u>quiscula</u> group)	5,551	Towhee	883
Boat-tailed grackle	483	Arctic towhee (<u>maculatus</u>	658
Evening grosbeak	317	group)	
Pine grosbeak	6	Canon towhee (<u>fuscus</u> group)	121
Purple finch	2,869	California towhee (<u>crissalis</u>	185
House finch	3,008	group)	
White-winged crossbill	1	Green-tailed towhee	16
Hoary redpoll	8	Cardinal	1,150
Redpoll	99	Rose-breasted grosbeak	165
Goldfinch (<u>tristis</u> group)	1,225	Black-headed grosbeak	276
Arkansas goldfinch (<u>psaltria</u>	111	Blue grosbeak	2
group)		Indigo bunting	166
Pine siskin	148	Lazuli bunting	82
English sparrow	261	Painted bunting	11
European tree sparrow	4	Dickcissel	5
Snow bunting	204	Lark bunting	20
Lapland longspur	66	Western tanager	56
Chestnut-collared longspur	15	Scarlet tanager	71
McCown's longspur	1	Summer tanager	14
Vesper sparrow	300	Purple martin	307
Ipswich sparrow	1	Cliff swallow	367
Savannah sparrow	985	Barn swallow	2,295
Baird's sparrow	1	Tree swallow	1,274
*Belding's sparrow	1	Violet-green swallow	33

Bank swallow	1,481	Connecticut warbler	46
Rough-winged swallow	37	Mourning warbler	84
Bohemian waxwing	8	Macgillivray's warbler	10
Cedar waxwing	5,423	Maryland yellow-throat (<u>trichas</u> group)	648
Phainopepla	5	Chat	94
Northern shrike	12	Hooded warbler	4
Loggerhead shrike (<u>ludovicianus</u> group)	101	Wilson's warbler (<u>pusilla</u> group)	187
Red-eyed vireo	121	Canadian warbler	148
Philadelphia vireo	16	Redstart	738
Warbling vireo	19	Pipit	15
Yellow-throated vireo	5	Sprague's pipit	1
Solitary vireo (<u>solitarius</u> group)	19	Dipper	7
White-eyed vireo	4	Mockingbird	480
Bell's vireo	5	Catbird	2,850
Black and white warbler	425	Brown thrasher	1,790
Prothonotary warbler	2	California thrasher	44
Worm-eating warbler	4	Carolina wren	147
*Bachman's warbler	1	Bewick's wren (<u>bewicki</u> group)	72
Blue-winged warbler	17	House wren	2,121
Golden-winged warbler	35	Winter wren	76
Nashville warbler	217	Short-billed marsh wren	1
Orange-crowned warbler (<u>celata</u> group)	457	Long-billed marsh wren	134
Tennessee warbler	425	Brown creeper	315
Parula warbler	33	White-breasted nuthatch	447
Cape May warbler	42	Red-breasted nuthatch	60
Yellow warbler	376	Brown-headed nuthatch	3
Black-throated blue warbler	77	Pigmy nuthatch	91
Myrtle warbler	1,201	Tufted titmouse	333
Audubon's warbler	162	Plain titmouse (<u>inornatus</u> group)	34
Magnolia warbler	370	Chickadee (<u>atricapillus</u> group)	1,744
Cerulean warbler	4	Carolina chickadee (<u>carolinensis</u> group)	47
Chestnut-sided warbler	107	Mountain chickadee (<u>gambeli</u> group)	93
Bay-breasted warbler	65	Hudsonian chickadee (<u>hudsonicus</u> group)	12
Blackpoll warbler	190	Chestnut-backed chickadee (<u>rufescens</u> group)	18
Blackburnian warbler	73	Bush-tit	22
Yellow-throated warbler	6	Wren-tit	29
Grace's warbler	1	Golden-crowned kinglet	195
Black-throated gray warbler	2	Ruby-crowned kinglet	485
Black-throated green warbler	92	Blue-gray gnatcatcher	4
Pine warbler	60	Townsend's solitaire	1
Palm warbler (both)	60	Wood thrush	276
Prairie warbler	14	Veery (<u>fuscescens</u> group)	261
Ovenbird	879		
Water-thrush (<u>noveboracensis</u> group)	263		
Louisiana water-thrush	15		
Kentucky warbler	16		

Gray-cheeked thrush (<u>aliciae</u> group)	377	Varied thrush	42
		Bluebird	1,409
Russet-backed thrush (<u>ustulata</u> group)	1,335	Western bluebird (<u>mexicana</u> group)	119
Hermit thrush	1,222	Mountain bluebird	18
Robin	7,009		

Station Totals.—No changes have been made in the rules governing the preparation of the following table, except that since the fiscal year 1935 ended on a Sunday preceded by a business day of only 4 hours, those records that were received on July 1 and 2, and which quite obviously would have been received on June 30 had this been a business day, have been included in the total and credited to the cooperators as of 1935. There have been some objections to including only the records of birds actually reported during the fiscal year, but it is believed that a moment's thought on the part of all cooperators will convince them that it is the only practical means possible with stations scattered over the entire country as well as in Canada. In the final analysis it makes little if any difference, as records received after July 1 will be credited to the work of the ensuing fiscal year.

It again seems desirable to stress the fact that the value of any particular banding station cannot be determined solely by the number of birds banded there, as some stations band a relatively small number of birds and yet do interesting and valuable work. It is believed, however, that these tabulations are of interest to all cooperators, and there is no question that they do stimulate a certain amount of friendly rivalry.

The following banded more than 1,000 birds:

O. L. Austin Ornithological Research Station, North Eastham, Mass.....	22,678
E. A. McIlhenny, Avery Island, La.....	9,321
Wm. I. Lyon, Waukegan, Ill.....	5,595
Dr. J. F. Brenckle, Northville, S. Dak.....	5,292
F. E. and C. C. Ludwig, Lansing, Mich.....	5,054
Frank B. Foster, Phoenixville, Pa.....	4,635
Charles H. Feltes, Modesto, Calif.....	4,474
Nion R. Tucker, Burlingame, Calif.....	4,208
A. J. Butler, Chilliwack, B. C.....	3,775
Mrs. Marie V. Beals, Elmhurst, L.I., N. Y.....	3,769
F. Burton Whitman, Jr., Wollaston, Mass.....	3,688
I. H. Johnston, Charleston, W. Va.....	3,500
Mr. and Mrs. Harold Michener, Pasadena, Calif.....	3,259
Frank W. Robl, Ellinwood, Kans.....	2,738
Ben B. Coffey, Jr., Memphis, Tenn.....	2,701
Wm. P. Wharton, Groton, Mass.....	2,648
Mrs. Ethel M. Crowell, Franklin, Mass.....	2,602
F. W. George, Aberdeen, S. Dak.....	2,527
G. C. Reifel, Vancouver, B. C.....	2,218
Dr. Edmund Jurica, Lisle, Ill.....	2,209
C. J. Goetz, Cincinnati, Ohio.....	2,138
Irvin Sturgis, Lexington, Mo.....	2,104

Glenn Berner, Jamestown, N. Dak.....	2,069
Frederick C. Labahn, Jr., Blue Island, Ill.....	2,059
Prof. O. A. Stevens, Fargo, N. Dak.....	1,984
Karl E. Bartel, Blue Island, Ill.....	1,948
Dr. S. Prentiss Baldwin, Cleveland, Ohio.....	1,841
Howard W. Braun, Canton, Ohio.....	1,798
A. D. Trempe, Sault Ste. Marie, Mich.....	1,782
Egbert R. Jones, Ceres, Calif.....	1,766
Prof. Lawrence E. Hicks, Columbus, Ohio.....	1,676
Fr. Eugene Goellner, Manchester, N. H.....	1,656
Edward M. and Wm. M. Davis, Shirley, Mass.....	1,595
Irl Rogers, Modesto, Calif.....	1,593
Miss Louise J. Miller, Zion, Ill.....	1,585
Henry P. Bailey, Philadelphia, Pa.....	1,570
R. J. Middleton, Norristown, Pa.....	1,550
J. Carl Welty, Beloit, Wis.....	1,548
Geo. E. Mushbach, Ogden, Utah.....	1,537
Alfred H. Reuss, Jr., Blue Island, Ill.....	1,535
Joseph Powers, Flanders, L.I., N. Y.....	1,500
Rev. G. C. M. Bierens, Fairmount, N. Dak.....	1,456
Geo. M. Benson, Princeton, Oreg.....	1,446
Mrs. H. W. Gray, Wilton, N. Dak.....	1,435
Verdi Burtch, Branchport, N. Y.....	1,390
Prof. J. W. Stack, East Lansing, Mich.....	1,385
Dr. T. E. Musselman, Quincy, Ill.....	1,337
Edwin D. McKee, Grand Canyon, Ariz.....	1,325
Hugh M. Worcester, Berkeley, Calif.....	1,314
Mrs. F. C. Laskey, Nashville, Tenn.....	1,286
Israel J. Pothier, Lower Wedgeport, N. S.....	1,239
M. O. Thompson, Lisbon, N. Dak.....	1,237
Harold C. Wilson, Ephraim, Wis.....	1,169
E. S. Bowdish, Demarest, N. J.....	1,070
Geo. W. Fink, Crows Landing, Calif.....	1,057
Mrs. Marie Domitz and Gustave Domitz, Pequannock, N. J.....	1,030
C. Victor Bracher, Pilot Rock, Oreg.....	1,021
Vernon C. Rossman, Waukesha, Wis.....	1,008
Edward Ward, Delta, Man.....	1,004

The following banded between 800 and 1,000:

Reed W. Ferris, Beaver, Oreg.	Preston F. Osborn, Lakin, Kans.
George W. Luther, Detour, Mich.	Mrs. Charles E. Peterson, Madison, Minn.
M. J. Magee, Sault Ste. Marie, Mich.	E. L. Sumner, Sr., Berkeley, Calif.
Mrs. Daisy M. Morrison, Gulfport, Fla.	Mrs. Kenneth B. Wetherbee, Worcester, Mass.

The following banded between 500 and 800:

Robert Allison, Athol, Mass.	Stuart Criddle, Treesbank, Man.
Philip C. Barney, Farmington, Conn.	Arnold E. Davis, North Whitfield, Me.
Victor H. Coles, Cincinnati, Ohio	Wm. W. Demeritt, Key West, Fla.

Miss Constance Everett, Waseca, Minn.
Frank L. Farley, Camrose, Alta.
J. Alfred Flett, Duncan, B. C.
Charles B. Floyd, Newton, Mass.
R. D. Gordon, Abbeville, La.
Mrs. Ada Clapham Govan, Lexington, Mass.
Grant Henderson, Greensburg, Ind.
Frank Hopkins, Campbellsport, Wis.
Dr. J. E. Horning, Edmonton, Alta.
Lawrence E. Hunter, Dallas City, Ill.
Robert A. Johnson, Oneonta, N. Y.
M. L. Jones, Pomeroy, Iowa

George Lang, Indian Head, Sask.
Malcolm McDonald, Fairfield, Iowa
Grace Meleney, White Plains, N. Y.
Clifford Presnall, Zion Natl. Park, Utah
George D. Robinson, St. Petersburg, Fla.
H. D. Ruhl, Lansing, Mich.
Clarence H. Schoenike, Oconomowoc, Wis.
Gustav J. Schultz, Sutherland, Iowa
Lewis O. Shelley, Westmoreland, N.H.
Dr. Dayton Stoner, Albany, N. Y.
Dr. B. L. von Jarchow, Racine, Wis.

The following banded between 300 and 500:

Mrs. Effie A. Anthony, Bar Harbor, Me.
Dorothy A. Baldwin, Hardwick, Mass.
James E. Beecher, Chicago, Ill.
Adrey C. Borell, Yosemite Natl. Park, Calif.
Henry A. Bowden, Litchfield, Conn.
Wm. E. Brentzel, Fargo, N. Dak.
Harold J. Brodrick, Washington's Birth-
place, Va.
Oscar M. Bryens, McMillan, Mich.
Misses Agness & Susie Callaway, Fairbury,
Nebr.
Lawrence B. Chapman, Newton Highlands,
Mass.
Dr. Karl Christofferson, Blaney, Mich.
Miss Marion Clow, Lake Forest, Ill.
James Cosbey, Jr., Buffalo, N. Y.
Allan D. Creelman, North Scituate, Mass.
Mrs. Marie Dales, Sioux City, Iowa
Mrs. Florence K. Daley, Olivera, N. Y.
Verne E. Davison, Arnett, Okla.
Dr. David A. Dery, Quebec, Que.
O. E. Ehrhart, Antwerp, Ohio
Thomas E. Engleby, Roanoke, Va.
Prof. Frank M. Erickson, Salem, Oreg.
Allan C. Fraser, Ithaca, N. Y.
Rev. Paul B. Frydrych, Dayton, Ohio
Geoffrey Gill, Huntington, L.I., N.Y.
Mr. & Mrs. J.A. Gillespie, Glenolden, Pa.
Dr. Alfred O. Gross, Brunswick, Me.
A. L. Hager, Vancouver, B.C.
Edward P. Hamilton, Milton, Mass.
Floyd W. Hatch, Copemish, Mich.
Henry O. Havemeyer, Mahwah, N. J.
Dr. Harold H. Hayes, Hubbard Woods, Ill.
Paul W. Hoffman, Milwaukee, Wis.
J. P. Kennedy, Winnipeg, Man.
Eric C. Kinsey, Manor, Calif.
Howard W. Knight, Belchertown, Mass.
C. Gordon Kriebel, Norristown, Pa.
P. Kuntz, Winnipeg, Man.
Dr. Harrison F. Lewis, Ottawa, Ont.
S. A. Liddell, Summerland, B. C.
Duncan McIntosh, Fairhope, Ala.
M. A. Machris, Los Angeles, Calif.
Joseph Mailliard, San Francisco, Calif.
James P. Melzer, Milford, N. H.
Ferd C. Meyer, Rosamond, Calif.
Martin K. Nelson, Fertile, Minn.
Wm. Pepper, Jr., Wyncote, Pa.
S. E. Perkins, III, Indianapolis, Ind.
George Pickering, East Calgary, Alta.
Christopher T. Ridley, Norwood, Man.
Barton L. Sharp, Lititz, Pa.
Wm. E. Smith, South Chatham, Mass.
Herbert H. Southam, Toronto, Ont.
James W. Stiles, Houston, Tex.
Lony B. Strabala, Leetonia, Ohio
L. A. and F. H. Test, West Lafayette,
Ind.
Mrs. Georgia B. Thomas, Indianapolis,
Ind.
Prof. George Wagner, Madison, Wis.
Robert E. Ware, Clemson College, S. C.
Leslie Wheeler, Lake Forest, Ill.
Harold B. Wood, Harrisburg, Pa.
Norman Young, Midwest, Wyo.

The following banded between 200 and 300:

Robert Adams, Waukesha, Wis.	Miss Signe Lee, Glyndon, Minn.
Fred G. Bard, Regina, Sask.	Mrs. Eleanor B. McCabe, Berkeley, Calif.
L. H. Barkhausen, Chicago, Ill.	Edward McColgan, Catonsville, Md.
S. M. Batterson, Mohler, Oreg.	Mr. & Mrs. Robert R. McMath, Pontiac, Mich.
M. E. Beatty, Yosemite Natl. Park, Calif.	Charles E. McPherson, Germantown, Tenn.
Herbert Buckalew, Milford, Del.	L. C. Nielson, Battle Creek, Mich.
Waldemar Burding, Quogue, L.I., N.Y.	F. E. Norfleet, Hale Center, Tex.
Alson Clapp, Sr., Houston, Tex.	Mrs. Arthur N. Pack, Abiquiu, N. Mex.
Frank H. Convey, Elizabeth, N. J.	John L. Partin, Los Angeles, Calif.
George L. Cook, Bashaw, Alta.	James L. Peters, Harvard, Mass.
Mrs. Frederick Morse Cutler, Amherst, Mass.	Dr. Miles D. Pirnie, Battle Creek, Mich.
Ralph E. DeLury, Ottawa, Ont.	E. Carroll Poler, Medina, N. Y.
D. Kemp Edwards, Ottawa, Ont.	George S. Shortess, Elizabethtown, Pa.
E. W. Ehmann, Piedmont, Calif.	Prof. Frank Smith, Hillsdale, Mich.
Mrs. William Gerdes, Quincy, Ill.	Joseph V. Sparmaker, Philadelphia, Pa.
Mrs. Elsa K. Glossbrenner, Indianapolis, Ind.	W. B. Taber, Jr., Kansas, Ill.
Mrs. Marjorie Lee Guest, Athens, Ohio	Robert E. Taylor, Oakland, Calif.
Dr. Harry W. Hann, Ann Arbor, Mich.	Peter J. Van Huizen, Cambridge, Md.
Edward C. Hoffman, Lakewood, Ohio	Rev. Harold W. Wagar, Alexandria, S. Dak.
Mrs. Frank D. Hubbard, New Haven, Conn.	Lawrence Ward, St. Johns, Mich.
Harold L. Hutchins, Hamden, Conn.	John P. Wetherill, Jr., Philadelphia, Pa.
Miss Margaret R. Knox, Indianapolis, Ind.	Reginald V. Whelan, Smoky Falls Plant, Ont.
K. K. Kreag, Lansing, Mich.	Harry E. Woods, Huntington, Mass.
James A. Laughlin, Marshall, Mo.	Charles Yeomans, Chicago, Ill.

The following banded between 100 and 200:

Dr. Arthur A. Allen, Ithaca, N.Y.	Floyd B. Chapman, Columbus, Ohio
Walter I. Allen, Altadena, Calif.	Cyril K. Coldwell, Gaspereau, N. S.
H. L. Angus, Quincy, Ill.	Charles W. Collins, Washington, D. C.
Prof. W. C. Baker, Kingston, Ont.	Richard D. Connor, Livingston, N. J.
Bertram A. Barber, Hillsdale, Mich.	C. Blair Coursen, Chicago, Ill.
Mrs. Herman Betz, Dunedin, Fla.	Richard N. Crack, Clarendon, Va.
L. K. Beyer, Mifflintown, Pa.	Wm. A. Cumming, Teulon, Man.
Harriet W. Blake, Berkeley, Calif.	W. M. Davidson, Silver Spring, Md.
Mark A. Borkey, Auburn, Pa.	Geo. Drolet, Yakima, Wash.
John A. Briggs, Regina, Sask.	Carl Eggert, Rockford, Ill.
Adam Brown, Parry Sound, Ont.	Anthony H. Erickson, Wilton, N. Dak.
Don Buckland, New Westminster, B.C.	Robert W. Fast, Harrison, Mich.
E. Milby Burton, Charleston, S. C.	P. E. Fellows, Hartford, Conn.
D. R. Burtsfield, West Lafayette, Ind.	Mrs. H. E. Fletcher, Vancouver, B. C.
Victor H. Cahalane, Washington, D. C.	Rudolph S. Fried, Katonah, N. Y.
Ralph G. Carpenter, Wolfeboro, N. H.	Mrs. Harriet A. Frothingham, Brook- line, Mass.
Miss Frances Carter, Berkeley, Calif.	Carl M. Gevers, Chattanooga, Tenn.
Lowell E. Carter, Russiaville, Ind.	Mrs. Elizabeth C. Gilliland, Carlisle, Ind.
R. H. Carter, Sr., Muscow, Sask.	

Mrs. C. H. Hall, Lafayette, Calif.
Fred Hall, Crawfordsville, Ind.
Harold Hedges, Kansas City, Mo.
Mrs. Charles S. Hegeman, Montclair, N.J.
Edwin E. Hite, Rushville, Ind.
Misses Esther Holcombe and Sarah Hawkes,
Brewster, Mass.
Mrs. Esther L. Jackson, Ohio, Ill.
Jack H. Jennings, Bowmanville, Ont.
Mr. and Mrs. Clarence Jung, Milwaukee,
Wis.
G. Vendle Knepper, Medina, N. Y.
H. E. McArthur, Waukegan, Ill.
Mrs. Robert N. Molloy, Corsicana, Tex.
Allen S. Montgomery, Owosso, Mich.
Mrs. Blanche L. Morton, Indianapolis,
Ind.
W. Rodman Peabody, Milton, Mass.
Charles A. Pease, Berkeley, Calif.
Carl A. A. Pedersen, Montvale, N. J.
Dr. Wm. Pepper, Philadelphia, Pa.
James V. Porter, Glenwood, Minn.
J. L. Primrose, Raleigh, N. C.
Miss Ida L. Reveley, Aurora, N.Y.
Miss Agnes E. Russell, Westfield, Wis.
Walter R. Salt, Rosebud, Alta.
Mrs. Kenneth Saunders, Berkeley, Calif.
Herman W. Schaars, Milwaukee, Wis.
Frederick C. Scott, Plainfield, N.J.

Mrs. Jesseeka Seiber, Rockfield, Ind.
John E. Sibley, Whittemore, Mich.
H. M. Simpson, West Summerland, B.C.
Miss Alta Smith, Cuyahoga Falls, Ohio
Frank R. Smith, Church Creek, Md.
Wendell P. Smith, Wells River, Vt.
Cyril A. Stebbins, Van Nuys, Calif.
D. K. Stephenson, South Bend, Ind.
Miss E. Grace Stewart, New York, N. Y.
Paul A. Stewart, Leetonia, Pa.
Dr. George M. Sutton, Ithaca, N. Y.
Lester R. Talbot, Greenwood, Mass.
William A. Taylor, Sharon, Mass.
Mrs. John A. Thompson, Minneapolis,
Minn.
R. W. Toll, Yellowstone Park, Wyo.
Frank J. Vejtasa, Fairdale, N. Dak.
Ray M. Verrill, Buffalo, N. Y.
S. H. Weakley, Fort Smith, Ark.
Clarence Webb, Jr., Earleville, Md.
Louis M. Weber, St. Louis, Mo.
E. C. Weeks, Sanbornton, N. H.
C. L. Whittle, Peterboro, N. H.
William A. Willer, Fort Wayne, Ind.
Mrs. Edna E. Williams, Bakersfield,
Calif.
Miss Marie G. Willson, Greenwich, Conn.
C. Brooke Worth, St. Davids, Pa.
Wm. L. Wotherspoon, Hyas, Sask.

PHOTOGRAPHS

A great deal of work has been done in getting the photographs submitted by cooperators arranged in albums with proper legends so that they will be available for use as illustrations or lantern slides as may be desired. Several valuable contributions to the collection have been made during the year. These are as follows:

Victor H. Cahalane, Washington, D. C.: A photograph showing the use of open mesh burlap in trap construction.

Elmer Ollhoff, Winona, Minn.: Two pictures of a trap he has developed that is operated by the mechanism from a rat trap. One picture shows the trap open, and the other shows it closed.

F. W. Rapp, Vicksburg, Mich.: Two interesting photographs of young turkey vultures banded by him.

Preston F. Osborn, Lakin, Kans.: A series of nine pictures showing scenes at his bird sanctuary with different species of waterfowl and other birds and an interesting picture of the approach of a dust storm.

Edward McColgan, Catonsville, Md.: Four enlargements, three being of blue jays with young, while the fourth is of a blue jay tormenting a crow.

R. M. Sullivan, Waco, Tex.: An excellent photograph of a Hutchins goose.

C. V. Bracher, Pilot Rock, Oreg.: An excellent flight picture of mallards and pintails, and another showing the banding of a brood of young dippers.

C. H. Watson, Andover, N. Y.: A portrait of two juvenile great horned owls.

John A. Griswold, Jr., and Henry Sears, Cambridge, Mass.: A series of six photographs showing the details of construction of a catching funnel that they have adapted to a large house trap.

Paul W. Hoffman, Milwaukee, Wis.: A series of five showing the dummy nest of a Florida gallinule; a clay-colored sparrow; two juvenile least bitterns; and two portraits of a juvenile woodcock.

Verdi Burtch, Branchport, N. Y., and Chas. J. Spiker, Syracuse, N. Y.: A flash light picture showing these coöperators with the equipment they use to capture swallows roosting at night in cattail marshes and willow thickets.

Mrs. Effie A. Anthony, Bar Harbor, Maine: Five pictures of purple finches at her window feeding station, a banded mourning dove, a beautiful winter scene with a chickadee, a ruby-throated hummingbird at a sirup bottle, and an immature little blue heron. The purple finch and hummingbird pictures were taken from inside the room and make interesting silhouettes.

Vernon C. Rossman, Waukesha, Wis.: Two photographs of the first goshawk to be marked with a Biological Survey band. The bird is an immature in excellent plumage.

Allen Green, Oakville, Iowa: Two pictures showing mallards and wood ducks on his game sanctuary.

Howard W. Knight, Belchertown, Mass.: A photograph of two pine grosbeaks that last winter were particularly friendly at his station. In the photograph one of the birds is perched on his hand while the other is only a few inches away.

R. A. Johnson, Oneonta, N. Y.: A picture of a young eider duck that was ingeniously marked with a small band placed around the hind toe on one foot.

Charles H. Feltes, Modesto, Calif.: Four photographs of a new type funnel trap that he has developed. One of these traps is circular in form, while the other is square. A new principle is employed which he is finding most satisfactory.

Henry P. Baily, Philadelphia, Pa.: A photograph showing the series of traps used at his summer banding station at Northeast Harbor, Maine.

C. C. Ludwig, Lansing, Mich., : A picture taken in the ring-billed gull colony where this season he banded 1,624 birds.

WORK AT BANDING STATIONS

H. W. Schaars, of Milwaukee, Wis., has related an interesting experience with a bald eagle nest on Eagle Island in Lake Superior. The nest was located in a giant birch tree and had apparently been occupied for many years. It contained 3 young that were practically full grown. Not having any no. 7 bands, Mr. Schaars finally succeeded in placing a no. 6 band on one toe of the eaglets which, while not entirely satisfactory, may have been a solution to the immediate problem.

Fr. Eugene J. Goellner, of Manchester, N. H., has sent in a copy of "The Archaeopteryx", which is the journal of the St. Anselm's College Ornithological Society. It is a mimeographed bulletin with many interesting notes. This brings to mind the fact that there are issued throughout the country a large number of these mimeographed bulletins or circulars as the official organs of local ornithological groups. The Biological Survey is always glad to obtain these, and where a certain one has been running for some time, complete sets are desirable.

W. E. Brentzel, of Fargo, N. Dak., during the period June 15, 1934, to June 15, 1935, banded a total of 433 birds of 33 species. Mr. Brentzel comments that these birds were banded in an average back yard in a small city. It certainly is an excellent example of just what can be done in favorable locations. In the list of species banded it is noted that there are 8 species of warblers. While the robin leads the list with 88 individuals, it is remarkable to note that the second bird on the list is Lincoln's sparrow, of which 75 were banded.

Harold J. Brodrick, of Washington's Birthplace, Va., summarizes his activities of last year with the statement that he banded 284 birds representing 34 species. The total number of returns he has obtained is 21.

Raymond J. Middleton, of Norristown, Pa., has sent in his usual interesting report, which contains the records for 1,550 birds of 60 species. Thirteen different kinds of warblers are represented by 119 individuals, while his year's record on thrushes jumped to 134 birds. Mr. Middleton has been operating for 14 years, during which time he has banded 11,900 birds representing 103 species. Four hundred sixty-four returns have been received during that time.

S. H. Weakley, of Fort Smith, Ark., comments that during the past winter he did not have a single purple finch at his station and that grackles did not arrive in numbers until late in March. He sent in the records of 180 goldfinches banded during the season. He also comments that after making a war on cats and English sparrows he again has chipping sparrows nesting in his garden. His record of vagrant cats is 94.

C. E. Holcombe, of Zion, Ill., reports that half of the robins trapped at his station during the past spring had been banded by him within the last 4 years. He had no purple finches during the winter season, although he did have a brown creeper remain with him throughout the cold weather. On March 23, 1935, he captured an almost perfect albino fox sparrow, which he stated was about the most beautiful bird he had ever seen.

E. W. Ehmann, of Piedmont, Calif., again operated the waterfowl banding station at Lake Merritt, Oakland, Calif., being assisted this year by Duke Trempe of Sault Ste. Marie, Mich. An interesting feature of this year's operations was the fact that 6 out of every 10 birds captured were already banded. A European widgeon returned to the station for the eighth consecutive year.

Victor Coles, of Hampton, Va., who is working on the problem of the life history of the turkey vulture, has had remarkable success in trapping and banding these birds. With them he frequently takes a considerable number of black vultures.

Rev. G. C. M. Bierens, of Fairmount, N. Dak., captured on April 1, 1935, the first European starling to be taken in North Dakota. This is further evidence of the persistent westward movement of this species.

Dr. T. E. Musselman, of Quincy, Ill., is continuing his study of bluebirds, and this year had well over 100 nesting boxes under observation. He makes a comment that we have frequently stated in Bird Banding Notes; namely, that it would be a fine thing if a larger number of cooperators would work on some particular problem in addition to just placing bands on birds. There is a wealth of opportunity for interesting investigations at almost every banding station. Chimney swifts were noted in greatly reduced numbers in his vicinity during the fall season of 1934.

Joseph V. Sparmaker, of Philadelphia, Pa., has established a banding station at his new home, from the description of which it would seem that he should have excellent success. Eighty-five species of birds have been observed, and he has already taken a large percentage of these. Some difficulty has been encountered from rats, which on at least one occasion entered a trap and killed a junco.

Glenn Berner, of Jamestown, N. Dak., has again sent in a most interesting report, including a graphic account of a visit to Chase Lake with an assistant to band young white pelicans. About 200 were banded, but the operators had a somewhat hazardous experience in wading through almost bottomless mud. Mr. Berner comments that the 6-cell warbler trap again proved its effectiveness in taking warblers and goldfinches. He states that although his trap was placed within a short distance of a pool where they could easily bathe and drink without any risk, the trickle of the water drip seemed to be magnetic to them, bringing them in even after they had taken several sips from the pool.

F. E. and C. C. Ludwig, of Lansing, Mich., have sent in a most interesting account of their trip during the summer of 1934 made for the purpose of banding gulls and terns. During this period they banded a total of 4,155 birds, the list being headed by the common tern with 2,456. This is followed by the herring gull with 755, the Caspian tern with 592, and the ring-billed gull with 277. They also comment on the small number of perching birds that were observed during the fall of 1934.

W. M. Davidson, of Beltsville, Md., has had considerable success in trapping bluebirds. He states that these birds may sometimes be trapped in tree traps when they form their fall flocks. He uses the Glenhaven tree trap type, put about 8

feet above ground and baited with seeds and suet. He has no explanation as to what induces birds to enter these traps as it would appear that the bait supplied is unattractive to them. Those trapped generally cause much excitement and apparent solicitation from the other members of the flock.

Alfred H. Reuss, Jr., of Blue Island, Ill., reported banding during 1934 a total of 1,465 birds of 53 species. Because of the extremely hot summer and fall weather, practically 90 percent of his birds were caught in traps baited with water. He found that it wasn't until late September that he could set traps baited with food. It is noted that his report contains the records of 15 species of warblers.

J. Lawrence Ward, of St. Johns, Mich., has a most interesting paper entitled "Hawks and Their Nests in Michigan" in the Wilson Bulletin for December 1934. As we have stated before, these birds are greatly misunderstood by most people and should be studied more carefully by all cooperators.

Charles H. Feltes and Irl Rogers, of Modesto, Calif., had a most interesting experience the past spring in banding cedar waxwings. About 4,000 birds were banded, and on some days the total ran more than 400 individuals. Mr. Feltes gives a most interesting account of the work in the July number of Bird Banding.

Karl E. Bartel, of Blue Island, Ill. (which, by the way, must be an excellent place for birds, as each of the 3 or 4 stations there report large numbers) reported last December that with one month yet to go to make up two years that he had been engaged in banding work, he had banded 2,530 birds of 83 species, 24 of which were warblers. Mr. Bartel also is much interested in banding birds of prey and has conducted an educational campaign to convince farmers and others of the value of these birds.

Mrs. F. C. Laskey, of Nashville, Tenn., in her semiannual report of January, listed the records of 571 birds, representing 24 species, the list being headed by the field sparrow with 160. Mrs. Laskey states that a little planting of millet within a circular brush fence, proved a great attraction for indigo buntings. She trapped 42 of these birds in 1934 as compared to 16 in 1933. Also, she finds that these little enclosures make splendid trap sites during the winter, being frequented by sparrows, towhees, cardinals, and others.

Frederick C. Labahn, Jr., of Blue Island, Ill., reports that during the fall migration of 1934 he banded 950 birds and obtained 9 returns, as compared with about 450 birds and 3 returns obtained during the preceding season. His list included 52 species, 7 of which had not been previously banded at his station.

Vernon C. Rossman, of Waukesha, Wis., gives an interesting account of the goshawk that he captured and banded, and which was mentioned previously under "Photographs". The bird was in hot pursuit of a blue jay when it flew against the backstop of a tennis court. Apparently dazed, the bird reversed and flew against the backstop at the other end of the court. Then an observer threw a sweater around the bird and hung on. As previously noted, this is the first goshawk to carry a Biological Survey band.

BANDS

The contract for manufacturing bird bands for the fiscal year 1936 has been awarded to Theodore A. Gey, of Norristown, Pa. Mr. Gey is well known to bird-banding cooperators in the vicinity of Philadelphia, as he has taken an active interest in the banding work, in addition to the supplying of bands.

Band specifications have been made as follows: Sizes 0, 1, and 1A, no change; size 2, height reduced to 3/16 in.; size 3, no change; size 4, caliber (inside diameter) reduced to 1/4 in. instead of 5/16 in.; size 5, 1/4 in. height and 5/16 in. diameter; size 6, 3/8 in. height and 3/8 in. diameter; size 7, 7/16 in. height and 1/2 in. diameter; size 8, 5/8 in. height and 7/8 in. diameter. The principal change is the restoration of the old size 4 and the changing of the number of the size 4 of last year to size 5, with corresponding changes in the larger sizes.

Mrs. Effie A. Anthony, of Bar Harbor, Maine, has given as her opinion that size 0 is still too large for some of the smaller warblers such as the parula and redstart. The Survey would appreciate comments from other stations where warblers have been banded in numbers. Due to the mechanical difficulties involved, it seems impossible to make a smaller band and have a number of five figures, and for obvious reasons, a number of this size is essential.

William Pepper, Jr., of Wyncote, Pa., makes inquiry as to the correct way of banding belted kingfishers. He states that there did not seem to be enough room between the hind toe and the joint above for the band, and he accordingly placed it above the ankle joint. Several cooperators have had experience with these birds, but the Survey has been unable to locate any definite comments that have been previously made on this subject. Who can supply the information?

Victor Coles, of Hampton, Va., comments on the fact that size 7 (now size 8) is necessary for turkey and black vultures but that it must be trimmed down to fit these birds. It should be remembered that size 8 is intended for all birds requiring bands larger than size 6. It is made large enough for pelicans and eagles, but for smaller birds it must be trimmed down. This is readily done with a pair of tin snips, side-cutting pliers, or diagonal wire cutters.

Herman H. Crouser, of Mannington, W. Va., inquires whether it makes any difference which leg of a bird is banded. From the viewpoint of the Biological Survey it makes no difference. It so happens that the compiler of these notes is left-handed. He thus probably bands the opposite foot to that banded by the majority of cooperators, but without affecting the results. At some stations special significance is given to the foot on which the band may be placed as indicative of age, sex, or some other character.

TRAPS

As stated earlier in this issue, many descriptions of new types of traps have been received, but because of the size of this number it will be impossible to do more than briefly mention them. Some of these new types are merely modifications of others that have been in use for several years; others are improvements, while in some cases there are distinct new departures.

A special number of Bird Banding Notes in which this material might be described has been considered, but it now appears likely that the best course will be to hold the material until it is possible to revise the Manual, at which time all approved types can be described in detail. When this time comes all stations will be asked for comments concerning the different types of traps that have become standard so that those believed to be obsolete may be discarded.

Victor H. Cahalane, Wildlife Division of the National Parks Service, Washington, D. C., has contributed one of the most important innovations in his announcement that he has found open mesh burlap (such as is used for small bags for potatoes, onions, and other vegetables), to be well adapted to trap construction. As a substitute for hardware cloth or other wire netting it seems to be most successful on drop-door traps, such as the Potter. For such traps the framework is made of wood, the only wire netting used being for the treadle. The chief advantage is economy, but another is the fact that it is almost impossible for a bird caught in such a trap to injure itself. Small birds, such as sparrows, are less inclined to fight the trap or flutter around in it and the only disadvantage thus far detected is the fact that rats have no difficulty in cutting the burlap and doing damage.

Elmer Ollhoff, of Winona, Minn., has submitted a drawing and photograph of a trap he has developed which is operated by the mechanism from a rat trap. Traps of this kind have been used before and for some species of birds seem to be quite satisfactory, but care should be taken to see that the closing door does not make such a crash that it unduly shocks the nervous systems of the captured bird.

Herbert M. Simpson, of West Summerland, B. C., has submitted a sketch of a trap that he calls "Simplex". It is of the sliding door type, operated by a tilting treadle that, when the rear portion is depressed, draws a trigger wire from the netting of the door, allowing the latter to slide shut.

F. W. Hatch, of Copemish, Mich., reports that he has designed a trap for the capture of grouse. He has not yet submitted an account of the device, but this should be of much interest as the birds are not easily taken.

Rev. Paul B. Frydrych, of Dayton, Ohio, has sent the Bureau a sketch and blue print of a very efficient double-wing trap that he obtained from a pet shop dealer who has them discarded in his basement. They had been sent to him from Germany more than 25 years ago. Reverend Frydrych states that he has used this trap since 1931 and found it very efficient in catching goldfinches and orioles. A green female canary is used as a decoy. This is a type of trap that has been used a great deal by professional bird catchers in Europe, and it seems that it should have a place in the banding work.

Dr. J. F. Brenckle, of Northville, S. Dak., has sent in a model of a flat trap that he had found most successful at his station. It has an entrance chamber with a funnel so placed that there is a view clear through the long diameter of the trap, which causes birds to enter more freely. A second chamber more or less

triangular in shape permits easy evacuation. The trap is about 8 inches high and a little more than 1 yard square. Dr. Brenckle states that the funnel entrance should be built low and soil excavated about an inch from under the funnel. When this is done the elevation of the ground inside the trap prevents escape through the funnel entrance. It has several other features of unusual interest, so that altogether it seems, to be a distinct improvement on traps of this kind formerly in use.

C. H. Feltes, of Modesto, Calif., sent to the Bureau a specimen of a new trap that he has developed and which has proved highly satisfactory. It is of the sliding door type but is more simple in construction than those previously in use and has other features that are highly desirable. It is understood that Mr. Feltes has made some other improvements on this trap so that it quite obviously will be one of those to be figured in the new Manual.

Dr. J. F. Brenckle, of Northville, S. Dak., the inventor of the 6-cell warbler trap described in previous issues of Bird Banding Notes, states that he believes it is better to make this trap round instead of hexagonal. He comments that the angular trap figured in Bird Banding Notes fails to illustrate one of the good features of the trap when made circular; namely, the acute angle at the center in which birds are so easily and quickly captured. He has an 8-cell trap of this type which he considers his most prized station equipment.

John A. Griswold, Jr., of Cambridge, Mass., has submitted some interesting and valuable improvements that he has worked out for the tree trap and the house trap. In the former case his development makes it possible to capture two birds without visiting the trap for the removal of the first, an important consideration when it is remembered that such birds as nuthatches and downy woodpeckers frequently travel in pairs. His house trap improvement is chiefly an arrangement to simplify the removal of captured birds. These also will be kept available for use in the new Manual.

T. L. Engleby, of Roanoke, Va., has submitted a rough sketch of an ingenious trap that is operated on the broken perch principle. Bait is placed in the rear part of the trap, to reach which the bird has to hop onto a tilted wire-netting platform which, when it moves, pulls a wire that separates the broken perch supporting the door.

Frederick C. Labahn, Jr., of Blue Island, Ill., has submitted a sketch of an improvement that he has made on the 4-cell Potter trap. The trap is made circular and is divided into four cells. Mr. Labahn comments that the advantage of this arrangement of cells is that birds can be on any side and find an entrance, whereas with the ordinary box-like type, birds may alight in back of the trap and not find the entrance. As will be readily seen, this is somewhat on the line of the Brenckle warbler trap.

Howard Braun, of Canton, Ohio, has submitted a working model of an improvement that he has developed for the trap door and trigger device that was described in Bird Banding Notes May 1933 (p. 119). The important change is a larger treadle which makes it impossible for any bird entering the trap to "side-step" it as some of the steady repeaters did in the old style. Mr. Braun states that he also has found it possible to trap as many as 4 birds at one time,

the treadle being far enough back from the door as to allow several birds to enter before one of them touches the treadle trapping all of those in the compartment. The trigger wire is made long enough that the sharp end is held tightly against the ground after the trap has been sprung.

W. W. Demeritt, of Key West, Fla., has sent the Bureau a blue print showing the different types of traps that are used at "Station Farthest South". These traps are a pyramid trap operated by the figure-4 device; a 2-door ground trap (using the broken trip stick principle); a trap made from a woven-wire desk basket and another from poultry wire; and two traps made of bamboo framework with iron wire vertical bars. One of these has two doors and the other four. Mr. Demeritt's success in the capture of mourning doves is well known to all co-operators.

Geo. M. Benson, of the Malheur Lake Bird Reservation, Princeton, Oreg., has sent in a sketch of the enlarged trap that he has built at the refuge. As now constructed the trap has a ground plan that somewhat resembles an enormous butterfly with a funnel in front and one on either side where the wings divide. The trap is placed almost entirely in the water, although a covered passageway to the rear permits the operator to drive the captured birds into a catching chamber.

In view of the widespread prejudice against all hawks and owls, and the great interest that these birds have for others, it seems desirable to include in this issue the following paper and illustration by Vernon Bailey, former Chief Field Naturalist of the Biological Survey. This trap has been fully tested and proved effective. It is protected by patents, and while it may be made by any cooperator for his own use, it must not be manufactured for sale.

POLE TRAPS FOR TAKING BIRDS WITHOUT INJURY

By Vernon Bailey

The practice of setting steel traps on top of poles for the capture of hawks and owls has become so prevalent and has proved so cruel and destructive that some States have wisely passed laws prohibiting their use. Still there are times when poultry and semidomestic game birds must be protected from certain kinds of hawks and owls or they will soon be destroyed. When these birds of prey have located an available supply of poultry or game, they will keep coming for it and there is no more effective way of capturing them than in traps set on the perches where they alight to watch for their prey.

For several years I have been experimenting with traps that would take these large birds on top of fence posts or higher poles set in the ground. At last the efforts have resulted in a simple little trap with a wire spring and a fine, flexible chain that is thrown up in a loop (or knot) around the legs of the bird, to hold it without injury or pain. When held in this way, the bird can sit on the ground or on top of the post or pole and the spring of the wire bow prevents any solid jerk or jar that might injure its legs.

Though designed for birds of prey this type of trap may prove useful in taking many other kinds of large perching birds, such as vultures, ravens, herons, gulls, and cormorants for banding purposes, thus adding to our knowledge of ranges and habits of some species not fully studied. Also, it should give some returns on birds previously banded as nestlings.

The trap is fully patented, and a few have been made by hand for local customers. It will be regularly manufactured if there is sufficient demand for it. Simple in construction, the trap can be made by anyone for his own use but not for sale. The accompanying illustration gives most of the details necessary for its construction.

The materials required for a medium-sized trap are 32 inches of no. 14 oil-tempered spring steel wire; 16 inches of small-sized double-jack chain; a 15-inch strip of strap iron $\frac{3}{4}$ or 1 inch wide, for support of chain; and a 4-inch section of strap iron to support the circular wooden pan and throw off the spring back of hinge when the pan is depressed. There should be an upright wooden support for all parts of the trap, made of soft wood, $\frac{1}{2}$ inch thick, $1\frac{3}{4}$ inches wide, and 10 inches long, to fit into a metal base nailed against the top of the post. A wide-headed tack driven into the center of the back of the wooden upright on which to hang the central coil of spring and a piece of strong cord for attaching the spring to the middle of the post complete the trap materials.

In setting the traps, select posts or poles 6 to 15 feet high set firmly in open fields or meadows, about poultry yards, or along streams, shores, and beaches. Nail the metal support socket against the side of the post near the top. To set the trap, lay it in your lap facing away from you. Hook the circle in the middle of the wire spring over the nail head in the back of the wooden upright. Bring the terminal loops in the ends of the spring together and press them down and over the two pins in the back of the trap rim, with rear end of trap pan pressed in behind them. Then raise the trap to an upright position, supported between the knees, while the loop in the chain is opened and laid around the circular frame above the three projecting points on which it is to rest, being careful that there are no twists or kinks in the chain. A simple knot may be used in the chain or a figure-8 curved slide through which the chain passes to form a running loop.

Place the set trap securely in the metal socket nailed against the post in an upright position, making sure that it will be sprung by the weight of the birds desired and not by smaller birds. The pins should be kept oily so they will not rust and stick. Tie one end of a strong cord into the ring in the middle of the trap spring and the other end to the post or pole below the middle, so the bird when caught can rest comfortably on the ground or fly back and sit on top of the post.

The traps should be set in sight of the house, or where they can be watched or visited frequently, at least twice a day, and the birds when caught released as soon as possible, although when held all night or all day they will be usually found uninjured unless by other birds or animals. If care is used not to frighten the captive birds when first approached, they will soon become quiet and can be handled without difficulty. (See p. 95 in the Manual.)

Note.--Mr. Bailey has authorized the manufacture of these traps for sale by the Humane Trap Co., 807 District National Bank Bldg., Washington, D. C. A recent price list from this company lists these traps (known as the Verball Pole Traps) at 75 cents each or \$7.50 a dozen for the no. 1 size suitable for small hawks and owls; and \$1 each or \$10 a dozen for the no. 2 size for large hawks and owls.

Here is an opportunity to do good conservation and banding work at the same time. If in your neighborhood there is any person who keeps steel traps set on poles for the destruction of hawks and owls--try to get them to abandon this cruel practice and use "Verball" traps instead. Then when they capture birds with traps of this type, persuade them to turn the birds over to you for banding. If the hawk or owl is then taken 10 to 20 miles away and released (north in spring and south in fall), it will be unlikely to return to bother the farmer who sets the traps.

RETURNS

Naturally, only a few of the many interesting returns received during the past year can be mentioned in these pages. It is planned, however, to make some arrangement, possibly with the magazine Bird Banding, whereby a larger number of these may in future be made available for the benefit of all station operators.

Allan C. Fraser, of Ithaca, N. Y., sent in some interesting comments concerning song sparrow no. A-123302. This bird was banded in 1929 and was recaptured every year up to 1934. It was found dead on July 24, 1934, having been previously recaptured that year in April. The return records for 1930-31-32 also are for April, while in 1933 it returned in March.

E. A. McIlhenny, of Avery Island, La., in commenting on the returns received by him last year refers particularly to the experiment performed by him in cooperation with the Bureau to test the homing instinct of certain ducks. Of the pintails shipped to various places in the country, he retrapped 4 that had been sent to and released at Lake Malheur in eastern Oregon; 15 that had been released at Berkeley, Calif., 5 that had been released on Cape Cod, Mass.; 3 that had been released at the Blackwater refuge in eastern Maryland; 7 that had been released on the Potomac River below Washington; and 2 that had been released on the National Bison Range in western Montana. This gives abundant evidence of the strength of the homing instinct, as all of these birds were originally from the Mississippi flyway and were shipped to points in the Atlantic and Pacific flyways.

C. C. Ludwig, of Lansing, Mich., has submitted a digest of the returns received from birds banded by him. In this it is noted that he has obtained returns from 7 foreign countries and the Gulf of Mexico. What might be called domestic returns are represented by 18 States, including Michigan, while the distribution in the home State is represented by 20 different counties.

The following represent a few of the returns that have unusual interest:

Rocky Mountain screech owl 325599, banded by Mrs. Anna Benson on March 7, 1927, at Fruita, Colo., was retaken at the same place on June 30, 1934, being at that time at least 8 years old.

Meadowlark No. 375331, banded June 14, 1926, at Ridley Park, Pa., by Mr. and Mrs. John A. Gillespie, was shot February 16, 1935, at Beaufort, N. C.

Yellow-headed Blackbird No. A292940, banded June 7, 1932, at Great Falls, Montana, by Vernon L. Marsh, was recovered March 1, 1935, at Camargo, Chih., Mexico.

Red-tailed Hawk No. A674869, banded May 26, 1934, at Knowlesville, N. Y., by G. Vendle Knepper, was killed about November 29, 1934 at Willow Hill, Ill.

Long-eared Owl No. C629600, banded July 4, 1933, at Rosebud, Alberta, by Walter Ray Salt, was shot February 2, 1935, at Layton, Utah.

Ring-necked Duck No. 34-552332, banded February 16, 1935, at Avery Island, La., by E. A. McIlhenny, was trapped and released April 27, 1935, at Thief Lake, Marshall Co., Minnesota, by Martin K. Nelson.

Redhead No. 237681, banded April 18, 1926, at Ithaca, New York, by Douglas Beyea was trapped April 29, 1935, at Thief Lake, Marshall Co., Minnesota, by Martin K. Nelson.

Lincoln Sparrow No. H75588, banded May 10, 1934, at Lansing, Michigan, by F. E. Ludwig, was found dead about April 15, 1935, at Fayetteville, Texas.

European Widgeon No. A620099, banded January 17, 1929, at Lake Merritt, Oakland, Calif., by E. W. Ehmann, was retrapped by Mr. Ehmann on January 20, 1931, and February 6, 1935.

Lincoln Sparrow No. 54-74379, banded May 10, 1935, at Northville, South Dakota, by Dr. J. F. Brenckle, was recovered June 25, 1935, at Moose Jaw, Saskatchewan.

Osprey No. A719077, banded April 26, 1934, at Slaughter Beach, Delaware, by Herbert Buckalew, was killed June 28, 1935, at Zulia, Venezuela, South America.

Red-headed Woodpecker 462748, banded June 23, 1926, at Battle Creek, Michigan, by C. E. Traut, was found dead in the same locality on May 21, 1935.

White-faced Glossy Ibis No. B604774, banded June 26, 1932, at Los Banos, California, by Brighton C. Cain, fell injured from a flock flying over the town of Price, Utah, on May 23, 1935.

Herring Gull No. 321045, banded July 18, 1924, at St. James, Michigan, by F. C. Lincoln, was found dead May 15, 1935, at Glen Lake, Michigan.

Fox Sparrow F110242, banded November 10, 1933, at Amherst, Massachusetts, by Mrs. F. M. Cuttler, was trapped and released March 1, 1935, at Washington's Birthplace, Virginia, by Harold J. Brodrick.

White-crowned Sparrow No. 34-112582, banded May 8, 1934, at Jamestown, North Dakota, by Charles E. Boardman, was captured about March 25, 1935, at Rancho Nuevo, Coahuila, Mexico.

White-crowned Sparrow No. C136924, banded May 15, 1934, at Fredericton, New Brunswick, by J. Warren Fenety, was caught in a mousetrap about March 30, 1935, at Cooter, Missouri.

Black-crowned Night Heron No. 336641, banded June 9, 1925, at Bourne, Massachusetts, by Benjamin S. Harrison, was found injured about April 5, 1935, at Ocean View, Virginia.

Fox Sparrow No. B148879, banded March 29, 1932, at North Eastham, Cape Cod, Massachusetts, by Dr. Oliver L. Austin, was killed by a cat April 7, 1935, at Haystack, Newfoundland.

Blue Goose No. A723550, banded November 12, 1933, at Avery Island, Louisiana, by E. A. McIlhenny, was shot in October, 1934, at Ship Sand Island, mouth of Moose River, James Bay, Ontario.

Evening Grosbeak No. A200964, banded May 5, 1929, at Ah-Gwah-Ching, Minnesota, by Dr. H. A. Burns, was trapped and released March 22, 1935, at Winnipeg, Manitoba, by Paul Kuntz.

Black-throated Green Warbler C92, banded September 16, 1930, at Hanover, New Hampshire, by Prof. R. R. Marsden, was found dead February 25, 1935, at Milledgeville, Georgia.

Starling No. 34-226935, banded March 17, 1934, at Columbus, Ohio, by Prof. L. E. Hicks, was found dead about February 15, 1935, at Montpelier, Vermont.

Redhead No. B636903, banded April 22, 1933, at Dawson, North Dakota, by L. C. Pettibone, was shot November 30, 1934, at Rock Hall, Maryland.

Lesser Yellow-legs B234496, banded August 14, 1933, at North Eastham, Cape Cod, Massachusetts, by Dr. Oliver L. Austin, was shot August 23, 1934, at Barbados, British West Indies.

Clay-colored Sparrow No. L53083, banded May 2, 1934, at Northville, South Dakota, by Dr. J. F. Brenckle, was found dead December 23, 1934, at Cuantla, Jalisco, Mexico.

Long-eared Owl No. B661987, banded April 22, 1934, at Escondido, California, by Fred N. Gallup, was shot October 9, 1934, at Corbeil, Ontario.

Blue Jay No. 288316, banded November 26, 1925, at Baldwin, New York, by K. W. Baasch, was found dead in the same locality in June 1934.

Junco No. 132257, banded October 21, 1926, at Oliveria, New York, by Mrs. Florence K. Daley, was retrapped by Mrs. Daley on August 31, 1934.

Flicker No. 304820, banded June 13, 1934, at East Westmoreland, New Hampshire, by Lewis O. Shelley, was killed in November, 1934, at Trenton, Florida.

Towhee No. B202372, banded May 7, 1933, at Waukegan, Illinois, by William I. Lyon, was killed January 23, 1935, at Duck Hill, Mississippi.

Pintail No. 34-515257, banded April 11, 1934, at Ellinwood, Kansas, by Frank W. Robl, was shot January 29, 1935, at Laguna de Garrobas, 15 mi. S. E. Puerto Cortes, Spanish Honduras.

Common Tern B397248, banded June 24, 1934, at North Eastham, Cape Cod, Massachusetts, by Dr. Oliver L. Austin, was killed in December 1934 at Cubagua, Nueva Esparta, Venezuela.

Mourning Dove No. A452531, banded June 26, 1934, at North Eastham, Cape Cod, Massachusetts, by Dr. Oliver L. Austin, was caught about January 15, 1935, at Gallatin, Texas.

Mallard No. 597110, banded October 31, 1927, at Moiese, Montana, by F. H. Rose, was shot January 13, 1935, at Marsing, Idaho.

Flicker No. C311727, banded June 16, 1934, at Bashaw, Alberta, by George L. Cook, was shot about January 20, 1935, at Jasper, Texas.

Mallard 555414 (A604109), banded November 29, 1927, at Antioch, Nebraska, by F. H. Keller, returned for the eighth consecutive season on March 3, 1935.

During January 1935 E. W. Ehmann, Oakland, California re-trapped two Baldpates and nine Pintails which he banded during the winter of 1927 and 1928.

ADDENDA:

On March 30, 1935, M. J. Magee, of Sault Ste. Marie, Michigan, banded his 16,000th Purple Finch.

Dickcissel No. C116938, banded at Ottawa, Ontario, August 26, 1934, by Dr. Ralph E. DeLury, is the second record for that species in the Ontario district, the first being seen at the Experimental Farm in 1895, by Prof. W. E. Saunders.

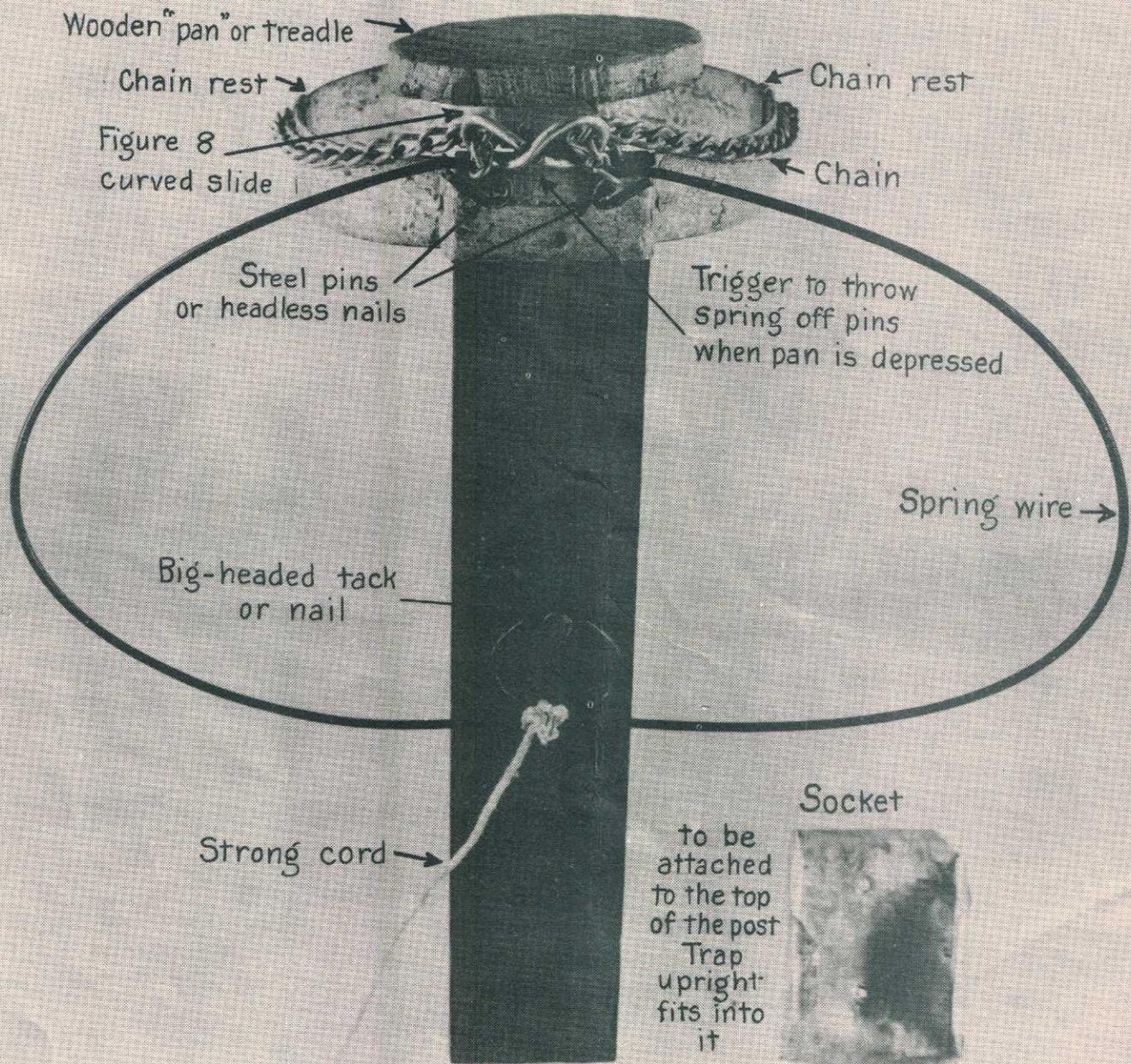


FIG 8 VERBAILE FOOHOLD TRAP

